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Sheldon M. Novick
Donald W. Stever
Margaret G. Mellon
Editors

John P. C. Fogarty
S. Lynn Stewart
Celia Campbell-Mohn
Jacqueline M. McNamara
Elizabeth Mullin
Samantha Diesenhouse
Managing Editors

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About the Contributors: Editors and Contributing Authors

Randall Abate is a member of the Legal Writing Faculty at Rutgers School of Law-Camden. He received his B.A. from University of Rochester and his J.D. and M.S.E.L. at Vermont Law School.

Stanley Abramson is a partner in the Arent Fox law firm in Washington, DC, where he co-chairs the Life Sciences Group. Mr. Abramson's practice is focused on environmental law, biotechnology, and food safety, with emphasis on product counseling and regulation. He assists clients in obtaining regulatory approvals for agricultural, industrial, and consumer products, including products improved through modern biotechnology. He deals with a wide variety of product related matters, including advertising and labeling, testing and reporting, product liability disputes, export/import clearances, data use and compensation disputes, right-to-know programs, and trade secret protection. Mr. Abramson has more than 30 years experience in risk-based programs and environmental law, including over five years as the U.S. Environmental Protection Agency's Associate General Counsel for Pesticides and Toxic Substances, where he was a principal drafter of the federal government's Coordinated Framework for Regulation of Biotechnology. He served as a member of the National Academy of Sciences Committee on Genetically Modified Pest-Protected Plants, co-authored the Model Biosafety Act (<http://www.arentfox.com/modelbiosafetyact.pdf>), chaired the American Bar Association Committee on Chemical Regulation, Pesticides and Right-To-Know, and is an editor of the Environmental Law Institute's *Law of Environmental Protection*. He received his engineering degree from Drexel University, his law degree from Rutgers University, and a Masters in Public Administration from the University of Southern California.

Jeff Allmon is an associate in the environmental practice group of Paul Hastings' Washington office. His practice primarily consists of environmental regulatory counseling, contract negotiation, and due diligence for international corporate clients. In 2007, Jeff received his J.D. from Vermont Law School, along with a Master in Environmental Law and Policy. He received his B.A. from the University of Kansas in 2003.

Eric Andreas is a partner at Wiley Rein LLP and former marine geologist who counsels and represents clients on issues regarding strategies for pesticide registration, exclusive use protection, and data compensation under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). He has worked extensively with scientific experts and consultants in the areas of public health, risk assessment, toxicology, ecotoxicity, and carcinogenicity, and has extensive litigation and counseling experience in matters involving FIFRA, the Endangered Species Act (ESA), the Clean Air Act (CAA), and the Clean Water Act (CWA).

Donald C. Baur is a partner with Perkins Coie in Washington, D.C. Mr. Baur served as General Counsel of the U.S. Marine Mammal Commission from 1984 to 1987, where he was responsible for legal oversight and coordination of federal programs involving marine and coastal resources. He is an instructor at the Vermont Law School and has published numerous articles on environmental law topics. He is the editor of the American Bar Association's Endangered Species Act deskbook. Mr.

Baur also worked for four years in the Solicitor's Office at the Department of the Interior, where he provided legal advice on public lands and energy resource issues. He is an experienced counselor on administrative, regulatory, and legislative matters. He is a graduate of Trinity College and the University of Pennsylvania Law School.

Vicki Been is a Professor of Law at New York University School of Law where she lectures on land use regulation, property, empirical issues in land use and environmental law, and state and local government. Prof. Been received her B.S. from Colorado State University and her J.D. from New York University School of Law.

Barry Breen is Director of the Office of Site Remediation Enforcement in the Environmental Protection Agency's Office of Enforcement and Compliance Assurance. Mr. Breen originally wrote his contribution to this treatise while he was Editor-in-Chief of ELR-The Environmental Law Reporter and Director of Publications for the Environmental Law Institute. He has previously served as Director of EPA's Federal Facilities Enforcement Office, as a Trial Attorney in the Department of Justice, and as Assistant to the General Counsel of the Army, where he was responsible for environmental law counseling for the Army's military activities. Mr. Breen is an Adjunct Professor of Law at The American University, a member of the District of Columbia Bar, and a graduate of Princeton University and Harvard Law School.

Susan E. Bromm is the Deputy Director of EPA's Office of Site Remediation Enforcement within the Office of Enforcement and Compliance Assurance. Since 1988, she has held a variety of senior management positions in EPA's enforcement office, with responsibilities under CERCLA, RCRA, CAA, SDWA, and TSCA, including six years as Director of the RCRA Enforcement Division. Ms. Bromm's career with EPA began in 1979 while she was still in law school. Ms. Bromm is a cum laude graduate of Georgetown University Law Center, where she was a Lead Articles Editor of Law and Policy in International Business. She is a member of the District of Columbia Bar.

Donn L. Calkins practices environmental law with the firm of Gablehouse & Epel in Denver. Mr. Calkins is a 1996 graduate of the University of Colorado Law School and received B.A. and M.A. degrees from the University of Colorado. He is a member of the Colorado Bar.

Celia Campbell-Mohn is a Visiting Assistant Professor at Vermont Law School. In her former position as Treatise Editor at the Environmental Law Institute, Ms. Campbell-Mohn edited and wrote a new treatise on environmental law. She was also a Contributing Editor to The Environmental Law Reporter and Editorial Advisor to ELR-The Environmental Forum. Before joining ELI, Ms. Campbell-Mohn was a trial attorney at the U.S. Department of Justice. At DOJ, Ms. Campbell-Mohn received a Special Achievement Award for her representation of such clients as the Department of Agriculture, Forest Service; the Department of Defense, Army Corps of Engineers; and the Department of the Interior, National Park Service, Fish and Wildlife Service, and Office of Surface Mining. Ms. Campbell-Mohn received an A.B. with honors from Duke University before receiving a J.D. from the University of Michigan Law School and an M.S. from the University of Michigan School of Natural Resources.

Jon Cannon is currently John A. Ewald Jr. Professor at the University of Virginia Law School. He has held a number of senior positions with the Environmental Protection Agency; most recently, from July 1995 to July 1998, he served as EPA's

CONTRIBUTORS

General Counsel. Mr. Cannon has also been in private practice with the firm of Beveridge & Diamond, P.C. He is a graduate of Williams College and the University of Pennsylvania Law School.

William Chandler is Vice President of the Marine Conservation Biology Institute of Redmond, Washington, and director of its Washington, D.C. office. He is a Master in Government candidate at Johns Hopkins University and a graduate of Stanford University.

Carol Clayton is a partner in the environmental practice group of Wilmer, Cutler & Pickering in Washington, D.C. Ms. Clayton counsels clients in a variety of industries on Toxic Substances Control Act regulatory issues, and assists them in designing and implementing corporate compliance programs and in conducting audits. She also represents chemical manufacturers and other companies in EPA enforcement actions under TSCA and other environmental laws. Ms. Clayton has lectured in the United States, Canada, and Europe on a variety of environmental law topics. She received her J.D. from the University of Virginia in 1982. She is a member of the District of Columbia Bar.

Lawrence N. Curtin is a partner with Holland & Knight and has practiced environmental and administrative law since 1978. He has represented and counseled clients on a variety of matters in the environmental area. Since beginning his environmental practice, he has been involved in the implementation of a number of important regulatory statutes, including the Clean Water Act, the Clean Air Act, the Resource Conservation and Recovery Act, and the Comprehensive Environmental Response, Compensation, and Liability Act, as well as the development and implementation of Florida's environmental and growth management laws. His practice involves participation in legislation activities, the formulation of rules and regulatory policies, and administrative and civil litigation involving permitting, enforcement, and hazardous waste matters. Mr. Curtin writes extensively and speaks frequently on matters involving administrative and environmental law. He is a member of the Administrative and Environmental and Land Use Law Section of the Florida Bar and Natural Resources Law, Litigation, and Corporate, Business and Banking sections of the American Bar Association where he is active on a number of committees. Mr. Curtin is a former Chairman of the Energy Law Committee of the Florida Bar. Mr. Curtin earned his B.S., with honors, in 1972 from Florida State University and his J.D., with honors, in 1976 from Florida State University College of Law, where he was a member of the Law Review. Prior to joining Holland & Knight, he served as law clerk to the Honorable William Stafford, United States District Judge for the Northern District of Florida.

Samantha Diesenhouse was the Managing Editor of Law of Environmental Protection. She was also a Staff Attorney at the Environmental Law Institute. Ms. Diesenhouse received her B.A. from Tufts University and her J.D. from Pace University School of Law.

Joseph DiMento is a professor of law and society and planning at University of California at Irvine (UCI). He serves as Head of the Focused Research Group in International Environmental Cooperation and as Director of the UCI Newkirk Center for Science and Society. Professor DiMento is the author of numerous books and articles on domestic and international environmental law, including *Environmental Law and American Business*; *Dilemma of Compliance*.

Eliza A. Dolin is a partner in the environmental group at Dewey Ballantine LLP in New York. Ms. Dolin's practice covers a wide range of environmental matters, with a specialty in the Clean Air Act. In addition to providing compliance

counseling, she represents clients in litigation and complex transactions. She is the author of a number of articles, as well as a co-editor with Donald W. Stever, in association with ELI, of *Environmental Law & Practice: Compliance/Litigation/Forms* (Clark Boardman Callaghan, 1992), and for several years prepared the updates to *Law of Chemical Regulation and Hazardous Waste* (Clark Boardman Callaghan, 1986). She graduated from Columbia Law School in 1988 and is a member of the New York Bar.

Joshua B. Epel is an environmental attorney with Gablehouse & Epel in Denver, Colorado. The emphasis of his law practice is on air quality compliance and hazardous and solid waste management. Mr. Epel is a member of the Public Advisory Committee of the Grand Canyon Visibility Transport Commission and a member of the Regional Air Quality Council, the lead planning agency for the Denver metropolitan area. He participated in the drafting and enactment of the Colorado Air Pollution Prevention and Control Act and Title V implementing regulations. He has written analyses of the air quality and economic benefits of alternative motor vehicle fuels and is currently developing an alternative motor vehicle fuel program for NASA. Mr. Epel received his undergraduate degree from William James College and his J.D. from Franklin Pierce Law Center.

Roger Fairchild is a partner with the firm of Shutler and Low in Chantilly, Virginia. Mr. Fairchild served in the EPA Office of Air Quality Planning and Standards in the EPA Office of Mobile Sources, where he was responsible for a variety of stationary source and motor vehicle emissions regulatory matters. Subsequently, he served in the Chief Counsel's Office of the National Highway Traffic Safety Administration, where he was responsible for vehicle fuel economy standards and safety regulatory matters. Mr. Fairchild received his Bachelor's Degree from Columbia University School of Engineering and his law degree from Duke University.

Joan Ferretti has been an environmental law practitioner in New York. Formerly with the United States Endangered Species Scientific Authority and the U.S. Environmental Protection Agency, Office of Legal and Enforcement Counsel in Washington, D.C., Ms. Ferretti has worked with the law firm of Sive, Paget & Riesel, P.C., in New York. Ms. Ferretti is an Adjunct Professor of Law at Pace University School of Law, where she teaches Conservation Law. She is a member of the New York and District of Columbia Bars.

John P.C. Fogarty is the Associate Director of the RCRA Enforcement Division in EPA's Office of Enforcement and Compliance Assurance. In this capacity he also serves as the principal for enforcement policy in Project XL, as well as other reinvention initiatives on risk-based enforcement and the RCRA "rifle-shot" legislative efforts. He previously served as Special Counsel to the Director of Regulatory Enforcement and as Assistant Enforcement Counsel for Superfund in EPA's Office of Enforcement, where he directed the Agency's regulatory and legislative environmental lender and trustee liability activities. He is a frequent lecturer on environmental law, and was formerly with EPA's Office of Toxic Substances, where he worked on the SARA Title III (EPCRA) Right-to-Know program. Before joining EPA, he was a staff attorney and editor with the Environmental Law Institute. Mr. Fogarty is a graduate of the George Washington University and a cum laude graduate of the New England School of Law, where he served as Articles Editor for the Law Review. He is a member of the Massachusetts and District of Columbia Bars.

Gregory Bradshaw Foote is an Assistant General Counsel at the U.S. Environmental Protection Agency in Washington, D.C. He supervises a staff of attorneys working on acid rain, new source review, visibility, radiation, and state planning issues under the Clean Air Act. Mr. Foote is a 1975 graduate of Haverford

CONTRIBUTORS

College. At George Washington University's National Law Center, he was a member of the George Washington Law Review and graduated with highest honors in 1985. He is a member of the Maryland Bar.

Mark E. Freeze is a partner with the TESTLaw Practice Group in the areas of environmental toxic tort, and commercial litigation. Mr. Freeze has extensive experience in mold claims, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) cost recovery action, CERCLA allocations, Resource Conservation and Recovery Act and Clean Water Act citizen suits, environmental insurance, and toxic tort litigation. Mr. Freeze received his J.D. in 1988 from the University of Texas.

Frank B. Friedman heads Frank B. Friedman & Associates Consulting. He is former Senior Vice President of Health, Environment and Safety at Elf Atochem North America, Inc. A graduate of Columbia Law School, Mr. Friedman was formerly a partner, based in Los Angeles and Washington, D.C., with the Los Angeles law firm of McClintock, Weston, Benshoof, Rochefort, Rubalcava & MacCuish. He previously was Vice President for Health, Environment & Safety at Occidental Petroleum Corporation. Before that he served in various law and management capacities with the Atlantic Richfield Corporation and as an attorney with the Appellate Section, Land and Natural Resources Division, U.S. Department of Justice. Mr. Friedman has lectured at various law schools and is an active lecturer and writer on environmental law and management topics. He is a member of the American Law Institute. He is also a member of the California and District of Columbia Bars.

William Funk is a Professor of Law at Lewis & Clark Law School. Before going to the law school to teach, Professor Funk was an assistant general counsel at the U.S. Department of Energy and earned a special citation for outstanding performance from the Secretary of Energy. Professor Funk also served as the principal staff member of the Legislation Subcommittee of the U.S. House of Representatives Permanent Select Committee on Intelligence and was a staff attorney in the Office of Legal Counsel of the U.S. Department of Justice. Immediately after law school he clerked for Judge James Oakes of the U.S. Court of Appeals, Second Circuit. Professor Funk received his B.A. from Harvard College and his J.D. from Columbia University.

Jeffrey Gaba is a Professor of Law at the Southern Methodist University School of Law and is Of Counsel to the law firm of Gardere & Wynne in Dallas, Texas. Professor Gaba has taught, practiced, and written in the field of environmental law since 1977. He obtained his J.D. from Columbia University Law School where he was Notes and Comments Editor for the Columbia Journal of Environmental Law. He also has a Masters Degree in Public Health from Harvard University. He was an attorney for the Environmental Defense Fund. From 1978 to 1981, he was in the Environmental Protection Agency's Office of General Counsel. He is co-author, with Donald Stever, of *The Law of Solid Waste, Pollution Prevention and Recycling* (Clark Boardman Callaghan, 1993). Professor Gaba is a member of the Colorado and Texas Bars.

David A. Giannotti has been a partner in the law firm of McKenna and Cuneo, where he directed the firm's West Coast environmental department from its Los Angeles, office. He was formerly Counsel, Health, Environment and Safety for Occidental Petroleum Corporation. He also served as environmental counsel for Occidental's Chemical Division. He began his practice of law with the firm of Stophel, Caldwell and Heggie in Chattanooga, Tennessee. He received his B.A. from Ithaca College and his J.D. from Emory University School of Law. He has lectured and has been published in the environmental field. Mr. Giannotti is a member of the Geor-

gia, Tennessee, New York, and California Bars.

Alan J. Gilbert is a partner with the law firm of Sherman & Howard in Denver, Colorado, where his practice emphasizes environmental regulation. He obtained a B.S. in mechanical engineering, magna cum laude, from Brown University in 1973. After working for the U.S. Environmental Protection Agency as an engineer assigned to its air pollution control program, Mr. Gilbert attended the University of Michigan Law School, where he graduated magna cum laude in 1977. He has written and lectured extensively in the field of environmental law and has taught environmental law at the University of Denver College of Law. Mr. Gilbert served on the Environmental Law Advisory Committee of the National Chamber of Commerce Litigation Center, is a past Chairman of the Environmental Law Section of the Colorado Bar Association, and is active in the Rocky Mountain Mineral Law Foundation. He is a member of the Colorado Bar.

Hannah Gillelan is an Ocean Policy Analyst at the Marine Conservation Biology Institute, having received her J.D. from Georgetown University Law Center in 2000 and her B.A. from St. John's College.

Tracy Gipson is an attorney at the U.S. Environmental Protection Agency in Washington, D.C. She was an attorney in the Air Enforcement Division of OEEM for eight years. She has also worked in the Contractor Listing Program implementing the Clean Air Act and Clean Water Act provisions for placing violating facilities on the governmentwide Consolidated List of Debarred, Suspended, and Ineligible Contractors. She is a graduate of the Washington College of Law at American University, and a member of the District of Columbia and Maryland Bars.

Kenneth F. Gray is a partner in the Environmental Department of Pierce Atwood's Portland, Maine office. He joined Pierce Atwood after practicing with the U.S. Environmental Protection Agency in Washington, D.C. Mr. Gray's practice concentrates on hazardous substance management, cleanup, and liability, including hazardous waste management and toxic tort matters; drinking water and Safe Drinking Water Act matters; chemical safety requirements under a variety of laws, including the Occupational Safety and Health Act; toxic substance manufacturing and processing; emergency planning, response and community right-to-know requirements; Brownfields cleanup and redevelopment; and transactional matters. He has defended numerous enforcement actions and lawsuits related to releases and spill reporting and cleanup.

Mr. Gray received his B.A. from the College of William and Mary in 1976 and his J.D., *Magna Cum Laude*, in 1979 from the University of Santa Clara. He is admitted to the bars of California, District of Columbia, New Hampshire, and Maine. Ken is listed in *The Best Lawyers in America* and *Chambers USA*.

F. Henry Habicht II is Senior Counsel to Global Environment and Technology Foundation. He is former Senior Vice President for Strategic/Environmental Planning at Safety-Kleen Corp. He formerly served four years as Deputy Administrator of EPA. He was Counsel to Perkins Coie and Vice President of William D. Ruckelshaus Associates in Washington, D.C. Mr. Habicht served as Assistant Attorney General for Land and Natural Resources at the Department of Justice from 1983 to 1987. There, he directed the division in charge of all federal litigation concerning environmental regulations and enforcement, public land, energy, and water resource development. He also served as Special Assistant to the U.S. Attorney General William French Smith, and as Chairman of the National Environmental Enforcement Counsel. Mr. Habicht has written and spoken widely on federal environmental and resource policy, particularly as applied to the regulation of hazardous waste and the development of new technologies. Mr. Habicht is a magna

CONTRIBUTORS

cum laude graduate of the Woodrow Wilson School of Public and International Affairs, Princeton University, and the University of Virginia School of Law. He is a member of the District of Columbia Bar.

Kathy Hart is with the Design for the Environment (DfE) Program in the U.S. Environmental Protection Agency's Office of Pollution Prevention and Toxics, where she serves as the Project Lead for the DfE Wire & Cable and Lead-Free Solder Partnerships. She also led the DfE Computer Display and Printed Wiring Board Partnerships. Prior to joining the DfE Program, she was a Senior Project Manager at Jellinek, Schwartz & Connolly, Inc., an environmental policy consulting firm. She also served as an Environmental Scientist with EPA's Office of Toxic Substances and the Food and Drug Administration's Center for Food Safety and Applied Nutrition. Ms. Hart earned a B.S. degree in Microbiology at the University of Michigan and holds a Masters degree in Zoology/Aquatic Ecology from Virginia Tech.

Tracy Heinzman is a partner at Wiley Rein LLP. She provides counsel on a wide range of legal and policy matters to businesses that manufacture and market chemicals, pesticides, biocides, and other highly regulated products. She is a nationally recognized expert on the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), the Toxic Substances Control Act (TSCA), and the regulation of products containing nanomaterials. Over the past 15 years, Ms. Heinzman has worked extensively with scientific experts and consultants in the areas of public health, risk assessment, toxicology, ecotoxicity, carcinogenicity, children's health, and occupational exposure. In addition, she has helped numerous companies secure the necessary regulatory approvals for their chemical products and defended companies against adverse decisions by international, federal, and state regulatory bodies.

Caroline Hermann was an attorney at the Environmental Law Institute's Center for Business Environmental Strategy, before joining the U.S. Environmental Protection Agency, Office of Civil Enforcement, in the Special Litigation and Projects Division. Previously, she was an equity analyst of central and eastern European emerging markets for Bank Austria Creditanstalt Securities in Prague, Czech Republic. Her contribution does not reflect the views or policies of the U.S. EPA.

Eric L. Hiser is a partner and heads the regulatory practice for the TESTLaw Practice Group. He is a principal author of the *Arizona Environmental Law Handbook* (3d ed. 1999) and the *South Carolina Environmental Law Handbook* (3d ed. 2000), published by Government Institutes, ABS Consulting. He represents steel mills, copper plants, oil and gas pipelines, metal fabricators, electronics manufacturers, paper mills, food/beverage plants, and other businesses. Mr. Hiser received his J.D. with honors from Duke University.

Terrell E. Hunt formerly directed EPA's Office of Enforcement Policy. In that capacity, he directed the development of national environmental enforcement policy, oversaw the Agency's contractor listing program, and directed the Enforcement Office's compliance planning and analysis activities. He joined EPA as a member of its Presidential Management Intern Program in 1972. Over a ten-year period, Mr. Hunt served in various policy- and program development capacities in EPA's pesticides and toxic substances enforcement program. In 1983, he joined the Office of the Administrator during William Ruckelshaus' second tour at EPA as a Special Assistant to the Deputy Administrator. In 1984, he became Associate Enforcement Counsel for Criminal Enforcement and Special Litigation, directing the legal and policy aspects of EPA's criminal enforcement and pesticides and toxic substances enforcement programs, overseeing EPA's legal enforcement policy development. Mr. Hunt graduated with high honors from Brigham Young University with a B.S. Degree in economics, and holds a Law Degree from the Georgetown University Law

Center (Law Fellow). He is a member of the District of Columbia Bar.

Laura J. Ketcham is an Associate at the law firm of Hopping Green & Sams in Tallahassee Florida, practicing environmental and administrative law. Her practice in the area of air quality regulation has included work in the areas of National Ambient Air Quality Standards, New Source Performance Standards, New Source Review, and State Implementation Plans. Laura graduated from the Florida State University College of Law in 2004 with high honors and is a member of the Florida Bar.

Shameek Konar is a Senior Consultant at PHB Hagler Bailly, Inc.'s Cambridge, Massachusetts office. Dr. Konar has worked extensively in the firm's environmental practice applying a variety of economic and analytical tools to solve environmental problems. He has been involved in the estimation of future costs/liabilities using (probabilistic) simulation models in a number of different areas, including the estimation of future remediation costs at environmental sites, the computation of potential damages in product liability cases, and potential settlements associated with insurance products. Dr. Konar received a B.A. with Honors in economics and mathematics from St. Stephen's College in New Delhi, India. He has completed partial requirements for an M.E. in environmental engineering and management of technology from Vanderbilt University and received his Ph.D. in economics, also from Vanderbilt.

Steven Koorse is an attorney and a registered professional engineer, who is a partner practicing environmental law with the firm of Hunton & Williams in Richmond, Virginia. He is a graduate of the New England School of Law and Northeastern University's Graduate School of Civil Engineering. Prior to joining Hunton & Williams, he served as an Assistant Regional Counsel with the EPA Office of Regional Counsel in Region I. Before that, he worked for five years as an environmental engineer in EPA's drinking water and water quality programs. Mr. Koorse is a member of the American Water Works Association; the American Society of Testing Materials; and various federal, state, and local bar organizations. He is a member of the Virginia and Massachusetts Bars.

Steve Leifer a graduate of the Cornell Law School, is a partner with Baker Botts. He handles a broad array of environmental matters, particularly those relating to hazardous waste and hazardous substances. Mr. Leifer is experienced in many different types of environmental litigation, including Superfund cost recovery, toxic tort and products liability litigation, insurance recovery actions, civil and criminal governmental enforcement proceedings, and environmental bankruptcy claims. He provides counsel to leading chemical, petroleum, utility, and manufacturing companies' environmental regulatory programs and also assists companies in managing environmental liabilities associated with acquisitions, mergers, loans, and other business transactions. Before entering private practice, Mr. Leifer worked for eleven years for the Environmental Protection Agency. In his most recent position at the EPA, he acted as director of the Hazardous Waste Enforcement Division, where he supervised policy development and litigation support activities.

Cynthia A. Lewis, Esq. is a principal in the Washington, D.C., office of Beveridge & Diamond, P.C. She received her A.B. with high honors from the College of William and Mary in 1975, and her J.D. cum laude from Harvard Law School in 1978. Her practice focuses on the environmental regulation of industrial and consumer products, including pesticides and chemicals, and involves counseling and litigation under FIFRA, TSCA, and EPCRA, as well as pollution prevention, packaging, and labeling issues. Ms. Lewis is a member of the U.S. Council for International Business working group on packaging and labeling, and of the International

CONTRIBUTORS

Chamber of Commerce's Working Party on Ecolabeling. She also edits Beveridge & Diamond's Environmental Marketplace newsletter on environmental developments affecting the design and marketing of consumer products.

Nick Livesay is an associate at Pierce Atwood LLP in Portland, Maine. In his practice, Nick assists clients in a variety of areas, including permitting, land use, and environmental litigation. Previously, Nick worked for the Florida Department of Environmental Protection. At FDEP, he focused largely on water resource conservation issues and staffed the Florida Energy 2020 Commission, a group tasked with assessing alternatives for restructuring the State's electricity industry. Nick also worked in the Natural Resource Damage Assessment and Policy Analysis practice groups at an environmental consulting firm in Cambridge, Massachusetts.

Matthew A. Low, Esq. is a graduate of the American University Washington College of Law and holds an Engineering Degree from Stony Brook University in New York. He joined EPA in 1973 and served as enforcement attorney and Branch Chief in EPA's Office of Mobile Sources until 1979. He was Chief of the Policy Division for the National Commission on Air Quality from 1979 through 1981 before entering private practice. At the time of his contribution, he was a partner in the law firm of Shutler and Low, a member of the D.C. and Virginia Bars, and served as Vice President with TLI Systems.

Robert A. Manning is a Shareholder at the law firm of Hopping Green & Sams in Tallahassee Florida. Mr. Manning's practice areas include environmental law, air quality regulation, solid and hazardous waste regulation, and administrative law. He represents public and private industrial clients in matters before local, state and federal agencies, primarily relating to air quality and hazardous waste regulation, permitting, and enforcement. Mr. Manning has successfully influenced state and federal regulatory and legislative developments in air quality and hazardous waste regulation. He has assisted clients in preparing Title V air permit applications and successfully negotiated numerous Title V permits with local, state, and federal permitting authorities. Mr. Manning has defended clients against local, state, and federal enforcement actions alleging noncompliance with environmental laws. He is also a frequent lecturer at public conferences and client seminars on various environmental and administrative law issues. Robert is the Chair of the Florida Section of the Air & Waste Management Association, and the Vice Chair of the Florida Bar's Environmental and Land Use Law Section. Robert graduated from the University of Tennessee College of Law, *Magna Cum Laude*, in 1994 and is a member of the Florida Bar.

David E. Markert is an associate at Wiley Rein LLP. He advises clients on a broad range of environmental and pesticide regulatory matters. He has written comments on pesticide-related rules proposed by the U.S. Environmental Protection Agency and Department of Homeland Security, and defended companies in administrative enforcement proceedings for alleged violations of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). Mr. Markert also has represented pesticide manufacturers and other businesses in litigation involving issues arising under FIFRA and the Clean Air Act (CAA).

A. Kent Mayo is an associate in the environmental practice group of Wilmer, Cutler & Pickering in Washington, D.C. Mr. Mayo received his J.D. from Washington University, where he was inducted into the Order of the Coif and served as Editor-in-Chief of the Washington University Law Quarterly. Mr. Mayo also served as a clerk to Justice George E. Lohr of the Supreme Court of Colorado. He is a member of the District of Columbia and Colorado Bars.

James M. McElfish, Jr. is a Senior Attorney at the Environmental Law Institute, where he is an active lecturer and author on water quality, biological diversity, land use, and mining issues. He also directs ELI's Sustainable Use of Land Program. Before joining ELI, Mr. McElfish was associated with the Washington, D.C. law firm of Dow, Lohnes & Anderson, maintaining a litigation and environmental practice. From 1979 to 1981, Mr. McElfish served as an attorney in the Office of the Solicitor, U.S. Department of the Interior. He is a graduate of Dickinson College and the Yale Law School.

Jacqueline M. McNamara served as Managing Editor of this treatise from 1993 to 1997. She has also held positions as Associate Editor for ELR-The Environmental Law Reporter and Books/Treatise Editor at the Environmental Law Institute. Ms. McNamara received her J.D. with honors from the University of Maryland School of Law and holds a B.A. in Communication with honors from Rutgers University. She is a member of the Maryland Bar.

Margaret G. Mellon has served as Director of the National Biotechnology Policy Center at the National Wildlife Federation. She was formerly Director of the Toxic Substances Program at the Environmental Law Institute, where she was involved in research and public education in the area of toxic substances control and regulation. Before that, Ms. Mellon practiced environmental law as an associate at the firm of Beveridge & Diamond and worked as a consultant for Perrin Quarles Associates in Charlottesville, Virginia. Holding both a J.D. and a Ph.D. in Biology from the University of Virginia, she has contributed to both scientific and legal literature.

Jeffrey G. Miller is a Professor of Law at Pace University School of Law. He was formerly a partner in the firm of Verner, Liipfert, Bernhard, McPherson and Hand in Washington, D.C. He has extensive experience in the practice of environmental law, including litigating, negotiating, and consulting for both public and private clients. Before entering private practice, he served as an enforcement officer at EPA for ten years, ultimately directing all of EPA's enforcement program as Assistant Administrator for Enforcement.

Marc L. Miller is Professor of Law at Emory Law School, where he has taught since 1988. In 2005-2006 he served as the Ralph W. Bilby Visiting Professor of Law at the University of Arizona Rogers College of Law. Miller is a graduate of the University of Chicago Law School and Pomona College. He writes and teaches about public lands and natural resources, with special attention to issues at the intersection of law, science and policy. He is the editor of *Harmful Invasive Species: Legal Responses* (ELI 2004) (with Robert Fabian), and of the forthcoming volume *Galapagos Conservation: Exploring Sustainability* (Stanford Univ. Press 2006) (with Matt James and Greg Aplet).

Tom Munteer is a partner in the environmental practice group of Paul Hasting's Washington office. He helps businesses comply with state and federal environmental laws for controlling air and water pollution and for managing and cleaning up solid and hazardous waste. He helps buyers, sellers, and parties to financings identify, quantify, and allocate environmental liabilities associated with businesses and real estate. He also represents businesses before Congress and federal and state agencies in a wide range of environmental, health, and safety areas. Mr. Munteer is the author of many scholarly and professional articles and a frequent speaker on a variety of environmental law topics. Since 1997, he has been an adjunct professor in the masters in environmental law program at George Washington University Law School, where he was awarded the Distinguished

CONTRIBUTORS

Adjunct Faculty Teaching Award in 2009. He is the author of the CLIMATE CHANGE DESKBOOK (ELI 2009) and a member of the Environmental Law Institute board of directors.

Elizabeth D. Mullin served as Managing Editor of Law of Environmental Protection from 1997 to 1998. She has been associated with the Environmental Law Institute since 1994. Before joining ELI, Ms. Mullin was an Assistant Regional Counsel and a Section Chief at EPA Region VIII in Denver. She has also worked for Arnold & Porter and the Natural Resources Defense Council. Ms. Mullin earned a B.A. from Mount Holyoke College, a Masters degree from the Yale School of Forestry and Environmental Studies, and a J.D. from New York University. She is a member of the District of Columbia Bar.

B. David Naidu is an environmental lawyer at Kirkpatrick & Lockhart Nicholson Graham LLP, who has advised clients on various issues, including air, water, solid and hazardous waste, CERCLA, environmental impact assessment, natural resource damages, environmental insurance and oil spills. Prior to K&LNG, he had practiced at Dewey Ballantine LLP, where he worked on transactional environmental law, managing environmental due diligence and transactional negotiations for mergers and acquisition, project finance and capital markets transactions. He graduated from Vassar College (B.A. 1990, *Phi Beta Kappa*), Cornell University (M.A., Ph.D. Candidate, 1995) and Georgetown University Law Center (J.D. 1998, *cum laude*). He has written the updates to the treatise, *Law of Chemical Regulation and Hazardous Waste*, as well as co-authored a number of articles in the New York Law Journal.

Sheldon M. Novick, the original Editor-in-Chief of Law of Environmental Protection, has been a Scholar in Residence, Vermont Law School, and wrote a biography of Justice Oliver Wendell Holmes for Dodd, Mead & Company. From 1978 to 1984, he was Regional Counsel of the United States Environmental Protection Agency, Mid-Atlantic Region, where he received three bronze medals for his work in agency management and enforcement. Mr. Novick was associated with Milgrim, Thomajan, Jacobs & Lee, P.C. in New York City in 1977 and 1978; from 1968 to 1977 he was editor of Environment magazine. He is the author of two books on nuclear power and the environment, of magazine and journal articles on law and environmental policy, and is a contributor to R. Milgrim's Trade Secrets. His books have been published in five languages. Mr. Novick was born and grew up in New York City. He attended Antioch College and Washington University School of Law, where he was articles editor of the law quarterly.

Ronald B. Outen, Ph.D. is a Vice President at Jellinek, Schwartz & Connolly, Inc., a Washington, D.C., environmental policy consulting firm. He was previously a professional staff member for the Senate Committee on Environment and Public Works, where his responsibilities included legislative issues affecting toxic substances, water pollution, and biotechnology. Dr. Outen served as Chief of the Policy Branch and the Chemical Regulation Branch of the Environmental Protection Agency's Office of Toxic Substances from 1978 to 1981. Previously, he was the Director of the Project on Clean Water at the Natural Resources Defense Council, Inc. and a Staff Assistant at the Council on Environmental Quality. He is a graduate of Davidson College and holds a Ph.D. in Environmental Sciences.

Bill Pedersen is an honors graduate of Harvard College and Harvard Law School. After graduation, he clerked for Judge Henry Friendly of the United States Court of Appeals for the Second Circuit. During his thirteen year EPA career, he served both as Deputy General Counsel and Associate General Counsel for Air and Radiation—the government's chief Clean Air Act lawyer. After leaving EPA, Bill

was a partner in two D.C. law firms before setting up his own practice in 2001. Bill has taught environmental law at Harvard Law School and the University of Michigan Law School. His writings on environmental topics have appeared in the Yale Law Journal, the Stanford Law Review, the Washington Post, and the Weekly Standard, among many other publications. Congress has twice written suggestions from Bill's law review articles into the Clean Air Act. Bill is listed in *Who's Who in America* and has been listed in *The Best Lawyers in America* since it began publication.

John A. Pendergrass is a Senior Attorney and Director of the Center for State, Local, and Regional Environmental Programs at the Environmental Law Institute.

Richard Penna is a partner in the firm Van Ness Feldman in Washington, D.C., where he heads the firm's environmental law group. He was formerly the Assistant Director of the National Commission on Air Quality and an attorney in EPA's Office of Enforcement.

Robert V. Percival is a professor of law, the Robert Stanton Scholar, and the Director of the Environmental Law Program at the University of Maryland School of Law. Professor Percival has a B.A. from Macalester College, a J.D. from Stanford Law School, and an M.A. from Stanford University. He served as a law clerk for Judge Shirley M. Hufstедler of the U.S. Court of Appeals for the Ninth Circuit and for Justice Byron R. White of the U.S. Supreme Court. Before joining the Maryland faculty, he was a senior attorney with the Washington, D.C., office of the Environmental Defense Fund. Professor Percival is the principal author of *Environmental Regulation: Law, Science, and Policy*, a leading environmental law textbook. He has written extensively on environmental law, regulatory policy, and legal history. Professor Percival has served as the co-chairman of the District of Columbia Bar's section on Environment, Energy, and Natural Resources Law and was a member of the Board of Directors of the Environmental Law Institute.

Jael Polnac was the Managing Editor of *Law of Environmental Protection*. She was also the Books Editor at the Environmental Law Institute and served as the Director of Professional Programs for ELI. Before joining ELI, she worked as an editor for Holt, Rinehart & Winston in Austin, Texas. A native Texan, Ms. Polnac received her J.D. from the University of Maryland School of Law and holds a B.A. in English from Rice University in Houston, Texas. She is a member of the Texas Bar.

Ann Powers is a faculty member of the Center for Environmental Legal Studies where her teaching and scholarship focus on water quality, wetland protection, water pollution trading programs, coastal and ocean issues, and citizen litigation. Before joining the Center in 1995, she was vice president and general counsel of the Chesapeake Bay Foundation. Professor Powers also served as a senior trial attorney in the Environmental Enforcement Section of the U.S. Department of Justice, handling both civil and criminal cases, and as an Assistant United States Attorney for the District of Columbia. Professor Powers has testified on numerous occasions before the United States Senate and House of Representatives, and state legislatures and commissions. She has served on many boards and panels, including the National Research Council's Board on Environmental Studies and Toxicology and the Board of Directors of the Environmental Law Institute. Professor Powers is a graduate of Indiana University and Georgetown University Law Center. She clerked for the Honorable Thomas A. Flannery, U.S. District Judge.

Matthew Raeburn is an associate in the environmental practice group of Paul Hastings' Washington office. He received his J.D. from the George Washington University Law School in 2008, and his B.A. from the University of Michigan in 2003.

CONTRIBUTORS

Brian M. Rayback is an associate at Pierce Atwood LLP in Portland, Maine. His practice focuses on all aspects of water law, including drinking water, waste discharge licensing, and wetlands. Brian holds a B.A. from Colby College (1995) and a J.D. from Georgetown University (1998). He served as a Maine Supreme Court law clerk to Justice Paul Rudman and Justice Susan Calkins.

Phillip D. Reed practiced environmental law in the Washington office of Skaden, Arps, Slate, Meagher & Flom, a New York firm. He was on the staff of the Environmental Law Institute for ten years as staff attorney, director of a research program on air and water pollution control law, and as Editor-in-Chief of ELR-The Environmental Law Reporter. Mr. Reed also worked at the Environmental Protection Agency and at the Connecticut Department of Environmental Protection. He was a graduate of the Yale Law School and Princeton University. Mr. Reed's untimely death in March 1993 deprived the environmental bar of one of its most creative and energetic practitioners.

Arnold W. Reitze, Jr. is the J.B. & Maurice C. Shapiro Professor of Environmental Law and Director of the Environmental Law Program at the George Washington University Law School. He is also Of Counsel to McGlinchey Stafford PLLC.

Kerry E. Rodgers is an associate in the environmental group at the law firm of Dewey Ballantine LLP in New York. Ms. Rodgers is a graduate of Brown University. She received an M.E.S. from the Yale University School of Forestry and Environmental Studies and a J.D. from New York University School of Law, where she was the Senior Articles Editor of the N.Y.U. Environmental Law Journal. Ms. Rodgers prepares updates to Law of Chemical Regulation and Hazardous Waste (Clark Boardman Callaghan, 1986). She is a member of the New York Bar.

Jim Rubin is the Assistant Chief of the Law and Policy Section of the Environment and Natural Resources Division (ENRD) of the U.S. Department of Justice. Jim has coordinated international environmental issues for ENRD since 1996, and before that was a trial attorney in the Environmental Defense Section of ENRD since 1991. Jim focuses on the interrelationship of international law and treaties with domestic environmental protection and has helped negotiate a number of international environmental and trade agreements and political declarations. He also helps coordinate bilateral and multilateral programs for exchange of information and capacity building on environmental enforcement. Prior to his work at ENRD, he clerked for the D.C. Court of Appeals and worked in private practice as an environmental attorney. Jim is a graduate of Columbia University Law School and Harvard College.

Jonathan Ryan is a senior project manager at Stantec Consulting, where he is responsible for large-scale project management, regulatory support, and permitting assistance. Mr. Ryan has specific management experience in the development of utility-scale alternative energy projects, major retail commercial developments, and regional transportation and utility infrastructure improvement projects.

Prior to joining Stantec Mr. Ryan was associated with Pierce Atwood, LLP, a Portland, Maine based law firm. Mr. Ryan received his B.A. from Colgate University, and his M.A. and J.D. from Duke University. While at Duke, Mr. Ryan served as Editor-In-Chief of the *Duke Environmental Law & Policy Forum*.

Mark Sagoff is a philosopher who has taught at Princeton, the University of Pennsylvania, and Cornell, and who currently directs The Institute for Philosophy and Public Policy. He holds an undergraduate degree from Harvard and a Ph.D. from the University of Rochester. Mr. Sagoff has published many articles on politi-

cal theory and on philosophical issues in law and economics.

Jennifer Shea is a senior associate in the environmental practice group of Paul Hastings' Washington office. Her practice primarily consists of environmental regulatory counseling in the areas of Clean Air Act and Clean Water Act compliance as well as contract negotiation and due diligence for international corporate clients. In 2003, Jennifer received her J.D. from Indiana University—Bloomington School of Law, along with Master of Public Affairs from the School of Public & Environmental Affairs. She received her B.A. from the University of Connecticut in 1998.

Sarah W. Sheive is an associate in the environmental group at the law firm of Dewey Ballantine LLP in New York. Ms. Sheive is a cum laude graduate of the School of Foreign Service at Georgetown University. She received a J.D., magna cum laude, from the Georgetown University Law Center, where she was a Senior Editor of Law and Policy in International Business. Ms. Sheive served as law clerk to the Honorable Frank E. Schwelb, Associate Judge of the District of Columbia Court of Appeals, from 1995 to 1996. She prepares updates to Law of Chemical Regulation and Hazardous Waste (Clark Boardman Callaghan, 1986). Ms. Sheive is a member of the New York Bar.

Norman D. Shutler, Esq. is a graduate of the University of Houston College of Law and holds a B.S., M.S., and Ph.D. degrees in Engineering from the University of Kansas. He joined the EPA in 1971 and served as Deputy Assistant Administrator for Mobile Source and Noise Enforcement until 1977 when he entered private practice. He has been a partner in the law firm of Shutler and Low, and is a member of the D.C. and Texas Bars. He has also served as Senior Staff Consultant/President with TechLaw, Inc.

Matthew Stanger is an associate at Porzio, Bromberg & Newman in Morristown, New Jersey. He received his B.S. from Rutgers University and J.D. from Rutgers School of Law-Camden.

Rena I. Steinzor is a Professor of Law at the University of Maryland School of Law. Professor Steinzor joined the faculty in 1994 from the Washington, D.C., law firm of Spiegel & McDiarmid, where she was the partner in charge of the firm's environmental practice. Prior to joining the firm, from 1983 to 1987, she was staff counsel to the U.S. House of Representatives' Energy and Commerce Committee Subcommittee with primary jurisdiction over the nation's laws regulating hazardous substances. From 1976 to 1983, Professor Steinzor was an attorney at the Federal Trade Commission serving in a variety of consumer protection positions, including attorney advisor to then-commissioner Patricia P. Bailey. She has written extensively on unfunded mandates and environmental federalism and efforts to reinvent the EPA in preparation for the 21st century. Prof. Steinzor received her B.A. from the University of Wisconsin and her J.D. from Columbia University.

Susan L. Stephens is Of Counsel at the law firm of Hopping Green & Sams in Tallahassee Florida, practicing environmental and administrative law, including rulemaking practice and procedure and administrative litigation. Her practice in the area of air quality regulation has included representing an industry trade group before the Florida Department of Environmental Protection on various rulemaking and policy development initiatives related to air quality, including development of Florida's Title V Air Operating Permit Program and development of state Maximum Achievable Control Technology standards for certain industry sectors. She has represented clients in the power, manufacturing, and phosphate industries to obtain both construction and operation air permits in Florida, to defend challenges to proposed permits in administrative litigation, and in enforcement actions brought

CONTRIBUTORS

by regulatory agencies related to federal, state, and local air programs. She has authored several articles, including articles on air regulatory issues. Susan graduated from the Florida State University College of Law in 1993 with highest honors and is a member of the Florida Bar.

Donald W. Stever is a partner in the Environmental Practice Group of the international law firm of Kirkpatrick & Lockhart Preston Gates Ellis LLP. He is a graduate of the University of Pennsylvania Law School and Lehigh University and has held faculty positions at Dartmouth College, New England College, the National Law Center, and Pace University School of Law. In addition to his contribution to *Law of Environmental Protection*, Mr. Stever is the author of the treatise, *Law of Chemical Regulation and Hazardous Waste*, published by Thomson/West. Mr. Stever previously served in senior litigating positions in the Environment and Natural Resources Division of the U.S. Department of Justice and in the New Hampshire Attorney General's office. His private practice spans twenty-five years, and he specializes in representing industrial and commercial business enterprises in environmental regulatory matters and litigation.

S. Lynn Stewart has practiced environmental law with the firm of Landels, Ripley & Diamond in San Francisco. She was previously Books Editor for the Environmental Law Institute. Before joining ELI as a Staff Attorney, she was an associate with the environmental group of McCutchen, Doyle, Brown & Enersen in San Francisco. A graduate of Stanford University and the Yale Law School, where she was an editor of the Yale Law Journal, Ms. Stewart is a member of the California and District of Columbia Bars.

Mark S. Tawater served as Managing Editor of this treatise while a staff attorney at the Environmental Law Institute in 1985-86. Mr. Tawater is a graduate of Harvard Law School and holds a B.A. in political science and American history from Duke University. Mr. Tawater previously served as General Counsel to the District of Columbia State Health Planning and Development Agency and the D.C. Statewide Health Coordinating Council (1986-1990).

William Taylor is a partner in the Environmental Department of Pierce Atwood's Portland Maine, office. Bill has devoted his legal practice to matters related to water law, drinking water, waste discharge, wetland and natural resource licensing, compliance counseling, rulemaking, auditing, and enforcement. He regularly represents clients before local, state, and federal administrative agencies. Bill is experienced in the negotiation and structuring of complex waste discharge and wetland alteration licenses, including site-specific water quality criterion development and preparation of use attainability analyses.

Mr. Taylor received his B.A. degree from the University of Massachusetts (*Cum Laude*, 1980) and his J.D. and a Masters in Environmental Law from the Vermont Law School (1983). He is admitted to practice in Maine, New Hampshire, and Massachusetts, and the U.S. District Court, District of Maine. Bill is recognized by *Chambers USA: America's Leading Business Lawyers* and *The Best Lawyers in America* for Environmental Law.

Madeline N. Thomas is a graduate of Dartmouth College and Harvard Law School. She also studied at the University of Toulouse in France. Ms. Thomas worked as a Student Intern at the Environmental Law Institute during 1985.

Lance E. Tunick, Esq. has been counsel for Maserati Automobiles in Baltimore. He previously practiced law in the Washington, D.C. office of Schnader, Harrison, Segal & Lewis, concentrating on environmental and safety matters with respect to the imported automobile industry. Mr. Tunick received his B.A. from Duke

University and his J.D. from the University of Denver.

Lynn Vendinello is a Special Assistant to the Deputy Assistant Administrator in EPA's Office of Enforcement and Compliance Assurance. She is working to ensure successful implementation of EPA's new vision for enforcement—one that focuses on using a broad range of tools, including compliance assistance, to bring about compliance and one that aims to measure success in terms of the environmental results from compliance and enforcement activities. Ms. Vendinello also helped launch an Enforcement Response Policy that addresses compliance assistance offered under Clean Air Act section 507. She formerly worked in EPA's Office of Pollution Prevention on integrating pollution prevention into regulatory development. Ms. Vendinello is a graduate of Williams College and holds a Masters Degree in Public Policy from the University of Michigan.

Rolf R. von Oppenfeld is Managing Partner with the Team for Environmental Science and Technology Law (TESTLaw) Practice Group, operating under the law firm of von Oppenfeld, Hiser & Freeze, P.C., with western regional offices in Phoenix, Arizona, and eastern regional offices in Columbia, South Carolina. Mr. von Oppenfeld is a Martindale-Hubbell AV-rated attorney and has been listed in *The Best Lawyers of America* (1993-1996 editions). Mr. von Oppenfeld received his B.S. in Chemistry and Biology and worked as a chemist for the U.S. Environmental Protection Agency. He received his J.D. (summa cum laude) from George Washington University.

Cheryl E. Wasserman has been with EPA since 1972 in various policy positions involving all of the EPA programs. She is currently Associate Director in the Office of Enforcement and Compliance Assurance's Office of Federal Activities, where she is responsible for building international capacity for effective compliance and enforcement of environmental requirements through a series of international conferences, published papers and proceedings, technical documents, and training materials. Ms. Wasserman is principal author of the Principles of Environmental Enforcement, a text and EPA training course that has been adopted as a framework for international exchange. She represents EPA on the U.S. Technical Advisory Group to the International Standards Organization's development of environmental auditing standards, and is an active member of EPA's Environmental Auditing Policy Workgroup. She formerly served as Chief of Compliance Policy and Planning in EPA's Office of Enforcement and Compliance Monitoring. Ms. Wasserman graduated with distinction from Cornell University in Biometrics, holds a Masters degree in City Planning from the University of Pennsylvania, a Masters in Management from Stanford Business School, and has credits toward a law degree from the National Law Center at George Washington University.

David B. Weinberg is the chair of Wiley Rein LLP's Chemicals, Safety & Environment practice. In his more than 30 years of experience, he has represented a broad range of companies, task forces, and coalitions before the U.S. Environmental Protection Agency, the California Department of Pesticide Registration, and other federal and state regulatory agencies on pesticide and pesticide-related matters. He also has successfully represented both claimants and respondents in numerous Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) data compensation negotiations and arbitrations. Mr. Weinberg is internationally recognized as one of the world's leading environmental lawyers.

Robert A. Weissman practices environmental law as a partner in the law firm of Shutler and Low. He is also General Counsel of TechLaw, Inc., an environmental consulting firm. He was previously with EPA, and from 1982 until 1985 he served as the Special Assistant to the Director of EPA's Office of Mobile Sources. Mr.

CONTRIBUTORS

Weissman holds a B.S. in Engineering from Swarthmore College, and is a 1976 graduate of the Georgetown University Law Center. He is a member of the District of Columbia and Virginia Bars.

Richard Lane White is Vice President at PHB Hagler Bailly, Inc. and a member of its environmental and insurance coverage practice. Mr. White is a resident in PHB Hagler Bailly, Inc.'s Cambridge, Massachusetts office, and he was previously a director at Putnam, Hayes & Bartlett, Inc. (PHB). Mr. White applies economic and analytical methods across a range of environmental matters, and specializes in the allocation of response costs at Superfund sites and in the allocation of liabilities in insurance coverage cases. Mr. White is a frequent contributor to environmental journals where he writes on a range of environmental allocation and insurance coverage topics. He received his undergraduate degree from Willamette University and his graduate degree in Public Policy from the Kennedy School at Harvard University.

Peter H. Wyckoff practices environmental law with the firm of Gardner, Carton & Douglas in Washington, D.C. He was previously an Assistant General Counsel (Branch Chief) in the Office of General Counsel at the Environmental Protection Agency. Mr. Wyckoff is a 1968 graduate of the University of Rochester in New York, and a 1975 graduate of the Syracuse University College of Law in New York. He was Editor-in-Chief of the Syracuse Law Review and graduated with honors. He is a member of the New York Bar.

Nicholas C. Yost practices environmental and natural resources law with the firm of Sonnenschein Nath & Rosenthal in San Francisco. He was General Counsel of the Council on Environmental Quality from 1977 until 1981 and was Deputy Attorney General in Charge, Environmental Unit, California Justice Department, from 1971 until 1977. Previously he had served as a lawyer specializing in administrative law in the California Attorney General's Office and as counsel to the California State Environmental Quality Study Council. Mr. Yost has also served as a Captain of Artillery in the U.S. Army, as a senior attorney with the Center for Law in the Public Interest, as a visiting scholar at the Environmental Law Institute, and as a private practitioner in Washington, D.C. Mr. Yost has chaired the American Bar Association's Standing Committee on Environmental Law, the environmental committee of the California State Bar, and the environmental division of the District of Columbia Bar. He also serves as a member of both the National Conference of Lawyers and Scientists and the California EPA Blue Ribbon Commission on a Unified Environmental Statute. He is a graduate of Princeton University's Woodrow Wilson School of Public and International Affairs and of the School of Law of the University of California at Berkeley (Boalt Hall). Mr. Yost is a member of the California and District of Columbia Bars.

Staff Information

PUBLISHER

Jean E. Maess, J.D.

PUBLICATION EDITOR

Rowan Seidel, J.D.

EDITORIAL STAFF

Robert Doyel

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As part of my support in this work came from EPA, it is proper to say that I am writing as a private citizen, and that this treatise does not necessarily represent the views of EPA.

Sheldon M. Novick
South Strafford, Vermont

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Part A

INTRODUCTORY

Chapter 1

Introduction*

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I. ENVIRONMENTAL PROTECTION LAW

§ 1:1 Generally

Environmental protection law is about the release of pollutants, wastes, and toxic substances into the environment. It does not otherwise concern natural resources, wildlife, wilderness, or public parks.

The subject is new enough to need explanation. Modern environmental protection law, although it had some older history, began with the Federal Water Pollution

*By **Sheldon M. Novick**; updated by **Scott Schang** and **Jon Cannon**; updates to Release #19 by **Elizabeth D. Mullin**; updates to Release #8 by **Celia Campbell-Mohn**

Control Act of 1948. The major laws took their present form after passage of the National Environmental Policy Act (NEPA) in 1969. These are relatively young statutes, but after several decades of growth and revision, they do form a single body of law.

Environmental law is no longer simply an offshoot of administrative law. Instead, enough time has passed for us to see the common shape of the pollution control statutes. Like a field of Queen Anne's lace in bloom, the separate statutes have grown until they have reached their invisible limits, and have blossomed into a single apparent surface of intricate lace. Just as after a fire a forest regrows through a succession of species, environmental protection law has grown and morphed by developing from strict command and control regulations to voluntary mechanisms to cap-and-trade schemes. Environmental governance has many tools in its toolkit, and modern pollution control law utilizes a diverse set of tools to address the multiple forms of pollution we face.

§ 1:2 Pollution and waste

Pollutants and wastes are residual materials, of no value in themselves to a particular process or purpose. This does not mean, however, that they may not be of value for other purposes. A balloon is not an air pollutant. It may be a hazard to aircraft and its release may be prohibited, but it is the intended product of an activity.

Some products are regulated to prevent excessive or inadvertent releases and to avoid unwanted effects.¹ The bulk of environmental protection law, however, deals after the fact with unwanted residuals. As products improve and industrial processes grow more efficient, this body of after-the-fact controls may eventually shrink into insignificance, but for some years longer it will dominate environmental protection law.²

Residuals—gases, liquids, and trash discarded or left behind—are called “wastes,”³ “pollutants,” or “contaminants.”⁴

The “environment” is our surroundings—air, water, soil, and groundwater both outside and below houses and workplaces and the air inside our homes and workspaces.⁵

Environmental protection law concerns the release of residuals into the environment. A common synonym, less precise, is “pollution control.”

Control of pollution has grown along with expanding ideas of what a proper habitation should be. In the cold climates where our law was formed, for centuries people lived inside their suit of clothes most of the year; wastes went under the straw. When houses became warmer and more comfortable, smoke went up the chimney and wastes went out into the street. The city became a community, and wastes were piped out of town or carried to a dump.

[Section 1:2]

¹See Chapters 16 and 17 (Part E).

²See, e.g., William McDonough and Michael Braungart, *Cradle to Cradle* (2002) (arguing for designing zero waste processes).

³See Resource Conservation and Recovery Act (RCRA) § 1004(27), 42 U.S.C.A. § 6903(27) (“solid waste”); § 14:13.

⁴See, e.g., Clean Air Act § 302(g), 42 U.S.C.A. § 7602(g) (pollutants are materials that enter ambient air); Clean Water Act § 502(6), 33 U.S.C.A. § 1362(6) (pollutants are waste materials discharged into water); Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) § 101(33), 42 U.S.C.A. § 9601(33) (a “pollutant or contaminant” is material that may cause harm if released into the environment). The term “contaminant” is more often reserved for foreign substances in food or drinking water supplies, however.

⁵See CERCLA § 101(8), 42 U.S.C.A. § 9601(8) (enumerating the definitions of separate environmental media from other statutes).

The 21st century habitation is the globe—or at least the thin film of biosphere on its surface, “spaceship earth” in Adlai Stevenson’s famous phrase. The old reflex to put wastes outside the community is still with us; there is always someone suggesting that wastes be sent to the sun, or into the depths of the earth. But for all its global size, the regulated “environment” is mostly the common space that the public inhabits. It only rarely penetrates indoors, or reaches into outer space, or into the earth below the zone of moisture.

These definitions taken together show that environmental protection law is the rule of global housekeeping; it says what the public will accept in our common habitation and what they will exclude as foreign or unsanitary. The law protects health and safety. The decisions about what to allow and what to exclude from the environment touch deep feelings about cleanliness, morality, and esthetics.⁶ Increasingly, environmental protection law is informed by an understanding of the interconnectedness between humans and the earth’s ecosystem, which breaks down traditional Western conceptions of people as separate from nature. As we see that our wastes wind up in the air we breathe and water we drink, as we find persistent pollutants in species worldwide, we are coming to understand environmental protection law to be as much about sustainable development of the human species and maintenance of the ecosystem that sustains us as about pollution control. Climate change—the environmental effects of excess emissions of greenhouse gases from human activities—is perhaps the most dramatic demonstration yet that humans are inseparable from our environment. Just as we are shaped by the quality of the air and water we breathe and drink, our environment is inexorably shaped by our activities.

§ 1:3 Ideals and practicality

The purpose of the statutes described in this book is to do away with significant pollution of the environment. Over time, the purpose of environmental protection law is also to ensure human activities do not irreparably harm the ecosphere.

When pollution was defined as garbage, without value of any kind, the purpose was sensible enough. People felt pretty strongly about it, and the statutes record this general feeling. The environmental protection statutes set their goals in absolute terms. The Clean Water Act says that all pollution discharges should be ended.¹ Four statutes say that minimum standards of environmental quality must be met regardless of the cost or inconvenience.²

With the benefit of 40 years experience, these absolute standards and goals may seem unreachable and impractical. The statutes often provide, however, a series of intermediate steps and controls that, in most cases, are designed to be accomplished with practical and available methods. The statutory goals and standards are not expressly compromised, but the schedules have lengthened, and the intermediate steps have multiplied, as experience has shown what could be accomplished within the limits of an existing industrial system. Environmental protection law as originally conceived is a complex system of transitional programs, whose overall purpose is satisfied by steady progress toward the goal, but with no realistic respect of meeting the goal.

Some consider incremental progress sufficient and believe that technological ad-

⁶See M. Douglas & A. Wildavsky, *Risk and Culture: An Essay on the Selection of Technical and Environmental Dangers* (1982).

[Section 1:3]

¹The deadline for ending all discharges was 1985. See Clean Water Act § 101(a)(1), 33 U.S.C.A. § 1251(a)(1).

²The Clean Air Act, the Clean Water Act, the Safe Drinking Water Act (nondegradation by injection wells) and RCRA; other statutes may have similar implicit requirements. See §§ 2:15, 2:20.

vances will allow progress to continue. Others believe that it is time to revisit the goals set forth in the statutes and recommit to meeting those goals or revising the goals to be achievable in light of experience.

One reaction in the late 1980s and early 1990s to the realization of the slow march of progress was the concept of pollution prevention—focus on the front end of the pipe, not the tail end. This led to new legislative and regulatory initiatives. In addition, the focus on voluntary methods for meeting environmental goals, as opposed to command and control regulations, the advent of corporate social and environmental responsibility, and the use of reporting in environmental regulations drew the focus away from complex, and what was widely portrayed as costly and inefficient, government regulation toward voluntary corporate self-policing and reporting that was expected to ameliorate environmental conditions for much of the 1990s and 2000s.

The climate crisis, which started to garner widespread public and political attention around 2005, may have combined with the financial crisis of 2007 and beyond to mark a new era in environmental protection law. A positive experience with pollution credit trading for the acid rain program and wetlands mitigation banking, among others, gave force to regional and, potentially, a federal cap-and-trade system for controlling greenhouse gases. This did not, however, preclude states and others from also relying heavily on traditional command and control regulations or from incorporating reporting and pollution prevention, in the form of energy efficiency, into climate change programs.

At the same time, public rhetoric and dialogue began to focus on all things “green,” and “sustainability” became a widespread catch phrase. Just whether these concepts will be reflected in the requirements and execution of our environmental protection laws, instead of simply in their aspiration, remains to be seen.³

II. THE PLAN OF THIS BOOK

§ 1:4 Generally

This treatise includes the federal statutes administered primarily by the United States Environmental Protection Agency. There are nine principal statutes. Listed in order of their enactment in current form, and as presently amended, they are:

1. The Clean Air Act, 42 U.S.C.A. §§ 7401 to 7671q
2. The Federal Water Pollution Control Act (commonly called “the Clean Water Act”), 33 U.S.C.A. §§ 1251 to 1387 (surface water pollution)
3. The Marine Protection, Research, and Sanctuaries Act, 16 U.S.C.A. §§ 1401 to 1445 (ocean dumping)
4. The Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C.A. §§ 135 to 136y (pesticides)
5. The Safe Drinking Water Act, 42 U.S.C.A. §§ 300f to 300j-26 (public drinking water supplies; groundwater protection)
6. The Toxic Substances Control Act (“TSCA”), 15 U.S.C.A. §§ 2601 to 2692 (manufacturing and use of toxic substances)
7. The Solid Waste Disposal Act (commonly called the Resource Conservation and Recovery Act or “RCRA”), 42 U.S.C.A. §§ 6901 to 6992k (solid and hazardous waste management)
8. The Comprehensive Environmental Response, Compensation, and Liability Act (“Superfund” or “CERCLA,” the hazardous waste cleanup program), 42 U.S.C.A. §§ 9601 to 9675
9. The Pollution Prevention Act of 1990, 42 U.S.C.A. §§ 13101 to 13109

³U.S. environmental law has long incorporated notions of sustainable development. *See, e.g.*, 42 U.S.C.A. § 4331.

A glance at the table of contents shows we have not simply taken each statute and gone through it, section by section. There are several handbooks or treatises covering one or several of the statutes in this way. As the number of statutes has grown, as they have been repeatedly amended, this kind of treatment has become less useful.

First, the statutes often overlap and refer to or supplement each other. Four statutes, for instance, have some provisions that apply to groundwater protection.

Second, the volume of materials is becoming unmanageable—the statutes alone fill a rather large book, and the Environmental Law Reporter now has over 40 volumes of cases arising principally under these statutes. EPA's implementing regulations fill several feet of shelf. Some synthesis of and guide through this material, rather than just a summary of section headings, seems to be needed.

Third, because EPA was assembled piecemeal from other agencies, and its authority was assembled piecemeal from successive statutes, there is no explicit overall charter or statement of purpose, nor is there a single statute in which EPA's organization and procedures can be found. These have all evolved in practice.

For these reasons, we have broken up and rearranged the statutes so that the practitioner can see them as they are administered and enforced, and so that general principles are easier to see.

Part B includes the general principles and methods evolving from repeated amendments of all relevant statutes, and the decisions of the courts construing or enforcing them. There is a description of EPA's organizations and procedures, which reflect this accumulated experience.

Part C describes the functional programs, such as state roles and enforcement, which are common to several statutes.

Parts D and E describe what professionals often refer to as the "media programs." These do not correspond exactly to the contours of any statute. We have presented the pertinent statutory programs as they have been administered, and as they are commonly applied to actual products or facilities. They fall into two large groups, the traditional "pollution control" programs (for air, water, soil, and groundwater), which are described in Part D, and the statutes regulating chemical products and manufacturing directly or relatively new aspects of environmental concern, which have no commonly used collective name; these last are described in Part E. Regulation of biotechnology, oceans, invasive species, and climate is included in this last Part.

For convenience of presentation, we have further grouped the pollution control statutes by environmental medium. No tightly compartmented arrangement is possible or necessary, of course. There is no sharp line between ground water and surface water; one shades imperceptibly into the other, and the statutes do not show a sharp jurisdictional break between them. A lot of cross-referencing is therefore needed in any plan of arrangement. But we have tried to group the major headings in a way that reflects the purpose or application of the statutes. We have put the injection well provisions of the Safe Drinking Water Act, for instance, under a common heading with other waste disposal statutes, rather than with the Clean Water Act, which also contains well permit provisions.

The only aspect of the outline at all surprising to the experienced practitioner may be the lack of a major heading for "hazardous waste." The Superfund program for cleaning up hazardous waste sites is at center stage, and it is linked with RCRA, the hazardous waste management program, within EPA and within Congressional committee jurisdictions. In this treatise, these two programs make a subtopic within a larger category: the protection of soil and groundwater. This arrangement represents a judgment, or at least a prediction, about the way the law is developing.

The following chapters are mainly descriptive, but as the parallel provisions of

the statutes have not been brought together before in this way, we have occasionally noted inconsistencies, and have described major proposals for reform of these common elements. These are briefly summarized in the next section.

III. CODIFICATION AND REFORM

§ 1:5 Generally

In 1983, shortly after returning as Administrator of EPA, and after a period of deep turmoil in the Agency, William D. Ruckelshaus asked the National Academy of Public Administration to study EPA's management and budget systems. The Academy set up a panel of ten, chaired by Frank C. Carlucci, and the panel delivered its report in 1984.¹ Many of the panel's recommendations have since been carried out. The following is one that has not yet been fulfilled:

Consolidating the Statutes. In our investigation of EPA's budget and personnel procedures, we were struck by the extent to which they mirror the disjointed legal structure of the agency . . .

Since EPA is responsible for administering laws that originated in many Congressional committees and subcommittees, the Agency has expressed frustration over the need to testify before 19 House committees and subcommittees plus seven Senate panels. Agency officials appear before Congress as often as 90 times a year to deliver similar reports.

Redundant testimony aside, EPA's statutory fragmentation leads to budget rigidities, impedes efficient administration and causes confusion. Statutory fragmentation, moreover, costs more money than would consistency.

Congress and the EPA should begin to develop an organic law covering protection of earth, air and water. Progress toward a comprehensive environmental protection statute may be slow, but it is worth the effort.

. . .

We recommend that EPA, the Executive Branch and Congress work closely to identify common approaches implicit in the environmental laws. Common administrative strategies can be devised for all of them.²

Even before this last recommendation had been delivered, the Administrator began an internal study of the need for statutory reform. The first report of this study, an internal memorandum delivered in June 1984,³ focused on inconsistencies among the statutes, and the confusion caused by application of several different statutes to a single environmental problem.

The first fruit of these efforts was a draft "Integrated Enforcement Act," which would have provided consistent enforcement authority for EPA under most of its statutes, drawing on what the Agency viewed as the best from each. The Administration decided, however, to use the draft during reauthorization of each of the statutes, rather than as a separate piece of legislation. (In 1984, nearly all of the Agency's statutes were due—or overdue—for reauthorization.) Some modest reforms resulted.

In 1987, the Agency began to study the possibility of a single, organic statute. Considering the difficulty getting individual statutes reauthorized—even the top-priority Superfund statute was allowed to expire in 1985 and dragged on under temporary resolutions for a year—it is no wonder this effort lags.

[Section 1:5]

¹National Academy of Public Administration, *Steps Toward a Stable Future: A Report by a Panel of the National Academy of Public Administration Assessing the Budget and Personnel Processes of the Environmental Protection Agency* (1984).

²National Academy of Public Administration, *Steps Toward a Stable Future: A Report by a Panel of the National Academy of Public Administration Assessing the Budget and Personnel Processes of the Environmental Protection Agency* 5 (1984).

³Memorandum from Ernest B. Abbott to Statutory Review Contacts, June 12, 1984 ("Response to December 27, 1983 Statutory Review Questionnaire").

The National Academy report suggests that an organic statute for EPA would begin with “common approaches implicit in all the environmental laws.”⁴ Once these have been identified, of course, they would be open to criticism and revision. Any project to draft a new statute therefore easily becomes a project to reform the laws.

More recently, former Deputy Administrator Robert Sussman proposed an “integrating” statute that would reform the implementation of EPA’s programs without replacing “the existing media-specific laws.”⁵ The purpose of such a statute would be to facilitate programs that are more flexible, performance-based, and collaborative while avoiding the controversy that has surrounded the proposal for an organic statute.

In this treatise, the authors have identified some areas of inconsistency among the statutes, and have identified gaps in their coverage. Their main task was to describe the law as they found it, but at a few points they have also discussed proposals for reform. Summarized in this section are only those suggestions which touch common features of the statutes. Many other statute-specific suggestions for clarification and improvement are found in the discussions of individual statutes.

In the following brief summary, we have tried to separate the related issues of codification—which requires consistency—and fundamental reform. The recent trend of legislation has been toward more stringent and comprehensive controls, and so “consistency” would mean bringing older, less restrictive programs—especially for toxic pollutants—up to the stringent levels of more recent legislation.

§ 1:6 Consistency among statutes

In Chapters 2 through 10, the authors review elements which are common to the EPA statutes. At almost every heading and subheading, differences and inconsistencies are noted. Some of the major inconsistencies are the following.

§ 1:7 Consistency among statutes—Designation of pollutants

The criteria for designating pollutants and wastes for control are not consistently stated, and are even less consistently administered, among the separate media programs. This may lead to diversion of pollutants from one medium to another, as famously happened when clean air mandates to use methyl tert-butyl ether (MTBE) resulted in widespread water contamination.¹ RCRA allows wastes to be designated by characteristic and potential for harm, the Clean Air Act requires a showing of actual harm from air pollutants, and the Clean Water Act contains a somewhat arbitrary list of “toxic” pollutants. Many hazardous wastes designated for regulation under RCRA are not expressly designated for regulation as toxic pollutants under other statutes, with the result that, instead of being sent to landfills, some wastes are being dumped into sewers or vented directly into the air. EPA can designate more toxic pollutants for regulation under its existing authority, and may base hazardous waste designations on actual risks, but the statutory criteria for designation are different and coverage is likely to remain inconsistent without statutory changes. Furthermore, EPA cannot usually impose controls in one medium solely to forestall diversion from another.

Designations set the priorities for government action. Consideration should be given to allowing more general, explicit use of risk analysis, particularly the sepa-

⁴National Academy of Public Administration, *Steps Toward a Stable Future: A Report by a Panel of the National Academy of Public Administration Assessing the Budget and Personnel Processes of the Environmental Protection Agency* 5 (1984).

⁵Robert M. Sussman, An “Integrating” Statute, 13 *Env’tl Forum* 16, 17 (1996).

[Section 1:7]

¹See generally <http://www.epa.gov/mtbe/faq.htm>.

rate identification of individual and population risk in all media, as under TSCA § 4(f) designations, to ensure that the worst problems are tackled first. *See* § 2:11.

§ 1:8 Consistency among statutes—Environmental quality standards and goals

Environmental quality standards and goals are sometimes inconsistent among the statutes. There are nine different definitions of what constitutes an “imminent hazard” (two in CERCLA alone), each triggering EPA’s *ad hoc* response authority a little differently. *See* § 2:20. A common provision could ratify the case law in this area, to avoid constant relitigation. Four statutes apply to groundwater quality directly, but have different and inconsistent definitions of “groundwater” and impose different, occasionally inconsistent standards. Many of the groundwater standards are also inconsistent with surface water standards and with state law. *See* § 14:1.

Environmental quality standards for toxic chemicals are established differently for drinking water and in each of the different environmental media. *See* § 2:23. Inconsistencies can be alarming to the public and may result in diversion of pollutants from one medium to another. The role these standards play and the basis for them should be clarified.

§ 1:9 Consistency among statutes—Control methods

Under many of its statutes, EPA is authorized to require controls based on the cost and availability of control measures. Some of these controls are imposed by nationally uniform rules, and others case by case. The rules differ greatly in detail, but they share common principles, which are discussed in Chapter 3.

These “technology-based” rules have been extensively criticized and as extensively praised. Because the rules differ so much among themselves, both criticism and praise may be warranted.

Most observers think that the proliferation of technology-based rules could be reduced so that there were, for instance, fewer criteria for establishing performance standards for new sources of all pollutants. The Clean Air Act alone now has three sets of such criteria, all of which may apply simultaneously to a single plant.

Technology-based rules for existing facilities might be simplified and made more uniform, to impose controls more consistently in different media. Some major sources of air pollution, for instance, remain without any control required by federal law, even for designated pollutants. This inequality is very much resented in states where controls for existing sources have been costly and difficult.

Fewer, more broadly applicable standards for control would be easier to administer, there would be fewer challenges to fundamental principles, and standards would be less vulnerable to industry-by-industry pressures.

§ 1:10 Consistency among statutes—EPA’s functional programs

The National Academy report, and EPA studies, have focused on the need for consistency in the way EPA performs identical functions—such as enforcement or financial assistance to state agencies—under different statutes. EPA’s functional programs are reviewed in Chapters 4 through 10. Inconsistency in enforcement among the statutes is probably the worst problem, and is discussed in Chapter 10, but there are also inconsistencies in the delegation of programs to state authority, the oversight of delegated programs, in the programs for providing financial and technical assistance to the states, the procedures for permit issuance, and in research and development programs.

The statutes are especially inconsistent with regard to assessment of environmental quality. This is the sort of essential, managerial work that is often neglected in

the media-specific, problem-oriented statutes. Under the Clean Air Act a monitoring network is required, but no other statute creates a systematic source of environmental quality data. Assessment of environmental quality is not even identified as a separate function in most media programs. Federal and state agencies therefore lack information about environmental problems and the effects of control programs on them. (The Council on Environmental Quality, *see* § 12:65, does not adequately remedy this lack.)

For lack of data, priorities may be badly skewed, because attention turns to the areas where information is available, instead of toward the most serious problems. EPA and many state agencies are like the man who loses his keys in a dark alley, but looks for them under a street lamp where the light is better. The Agency's creation of the Office of Environmental Information, headed by the Agency's Chief Information Officer, an Assistant Administrator level position, reflects an effort to provide better integrated environmental data to states, local governments, and the public.

§ 1:11 Reform

The subject of this treatise is the law as it stands. We hope it may also be helpful in any discussion of reform.

The following is a brief summary of some major reforms which have been suggested in the literature, or which have suggested themselves to the authors.

§ 1:12 Reform—Procedural reform

Many procedural problems in individual programs might be avoided simply by providing more consistency and choosing the best of each as a model. The Clean Air Act has already been noted as a program which would greatly benefit from features common in other statutes. But there are a few pervasive procedural problems. Two deserve particular mention.

§ 1:13 Reform—Procedural reform—The construction ban for new sources

EPA's statutes prohibit the construction of new industrial facilities until all applicable permits have been issued. The statutes also often prohibit modification or expansion of existing facilities until all permits have been issued.

The uncertainty and delay caused by this pervasive "construction ban" have been persuasively criticized as a serious obstacle to modernization,¹ which the environmental protection statutes—and economic prosperity—otherwise require.

The construction ban for new sources had its origin in the early 1970s, when NEPA and the Clean Water Act appeared to give the federal government a role in facility siting and land use planning. As the law has developed, and as the economy has changed, the need for EPA intervention in site planning, and the statutory support for NEPA-type construction permit conditions, have gradually eroded. The origin of the ban, and its pros and cons, are discussed in greater detail in § 3:17, below.

The original purpose of the ban having largely been lost, it persists because of the leverage it gives EPA (and citizen intervenors) over new-source permit applicants. It is no longer needed, however, and should be dropped, except in the few cases—such as surface mines, dredge-and-fill operations, and landfills—where construction itself must be regulated. New toxic chemical products must be subject to prior review before being distributed, of course, and TSCA's prior notice system, which

[Section 1:13]

¹*See* § 3:17.

places the burden on EPA to respond, has come under significant scrutiny and is in need of reexamination in lieu of recent European regulatory developments.

A source of friction and complaint would be removed along with the construction ban, with little cost to environmental programs.

§ 1:14 Reform—Procedural reform—Transferable permits

One reform that is energetically put forward is the proposal to abolish the whole system of technology-based controls and permits, and put in their place a system of emission trading.¹

Briefly summarized, the idea is to issue—or sell at auction—permits allowing plants to emit the same aggregate amount of pollution they now discharge. The total allowed by the permits would then be reduced every few years at a rate determined by Congress, to ensure progress in control. Companies would be free to buy and sell their permits, but each would be bound by the terms of the permit they owned.

The purpose of the reform is to allow economic incentives, rather than government commands, to guide behavior. Managers of companies that discharge pollution could increase their profits by developing new, more efficient ways of reducing pollution, and then selling off their unneeded emission permits to other less flexible or inventive companies. Pollution would decrease in the most efficient way possible, with the least degree of government intervention. An overlay of restrictions would prevent pollution “hot spots” from developing.

In the 1990 Amendments to the Clean Air Act, Congress adopted a cap-and-trade system for SO₂ acid rain controls under Title IV.² That program is generally credited with producing reductions in SO₂ emissions ahead of the statutory schedule and at a significantly lower cost than was initially predicted.³ EPA is actively pursuing other applications of emissions trading under the Clean Air Act, and it has also embraced trading among dischargers within a watershed as a cost-effective means to achieve water quality goals.⁴ Increased use of market mechanisms has been urged by a number of recent studies of EPA and its programs.⁵ Trading has been a preferred greenhouse gas control method, although it is being used in tandem with traditional regulatory efforts in California and other states.

The principal obstacle to further expansion of this reform is not statutory, but practical. Pollution emissions are not always fungible, and many are toxic and could create “hotspots” of contamination. The public therefore demands some progress in control pretty much at every source. Imagine a plant manager who comes to a public meeting and says, “We want to put our benzene into the air—which you breathe—instead of sending it to the wastewater treatment plants, because it is cheaper for us, and EPA says the risks to the United States population don’t increase.” The answer is predictable and rude. Very few individuals or communities are volunteering to inhale pollution for the public good. Once a toxic pollutant has been designated for control, and a source identified, the public regularly demands controls as close to complete eradication of the pollutant as can be achieved.

[Section 1:14]

¹See §§ 2:15, 3:24.

²CAA §§ 401 to 406, 42 U.S.C.A. §§ 7651 to 7651e. See §§ 3:24, 12:57.

³A. Ellerman, et al., 1996 Update on Compliance and Emissions Trading Under the U.S. Acid Rain Program (1997).

⁴Administration Clean Water Plan: Restoring and Protecting America’s Waters 88 (1988).

⁵*E.g.*, Enterprise for the Environment, *The Environmental Protection System in Transition* 39–40 (1998); National Academy of Public Administration, *Resolving the Paradox of Environmental Protection* 25–27 (1997); J. Clarence Davies & Jan Mazurek, *Pollution Control in the United States: Evaluating the System* 289 (1998).

Emissions trading is usually presented as a procedural reform, which would eliminate inefficient “command and control” regulations. For transferable permits to be more widely used for toxic pollutants, however, not only the present permit system, but the fundamental purposes of the laws, would have to be changed. Reform of the underlying purposes of the statutes is discussed below.

§ 1:15 Reform—Reform of standards and goals

Polls consistently show that the present statutes reflect public sentiment and political reality. Proposals for radical change are still made, knowing that they require deep changes in public attitudes, changes as profound as the social movement which produced the present system. The arguments for and against such changes are fundamentally moral and political. The principal issues are set out in Chapter Five.

Two kinds of proposals are made. The first is simply to relax environmental quality standards and goals because they are unreasonably strict or inefficient. This is a straightforward argument, and is often supported by analysis, using resource economics, showing the “inefficiency” of the laws. Efficiency may not be an appropriate standard to apply, and perhaps for this reason the argument so far has not been persuasive.

The second proposal is more complex. It accepts the public’s wish to do away with toxic pollutants as quickly as possible, but argues that the present system of laws, with its inflexible standards, distorts EPA’s efforts, so that little progress is made. The argument is made in general terms, that EPA should attack the worst problems first, and let the minor problems take care of themselves. As noted in Chapter 5, even from an environmentalist perspective, the best way may have become the enemy of the good.

The statutes admittedly set goals and standards that cannot all be met, and which often cannot be met as quickly as the statutes require, but until recently the needed compromises with practicality have been implicit, and have been expressed in extended schedules and interim steps based on cost or availability. EPA in recent years has sought to gain more flexibility in the standards themselves, to make the compromises explicit—and permanent.

The proposal most often made is to substitute for the present complex, implicit system of negotiation and compromise, a system of risk management, which would allow EPA to assess environmental risks in objective terms, estimate the costs of control, and then attack the problems that promised the best chance of progress.¹ Inconsistencies among media would be eliminated. The public would get the best results for its regulatory dollar.

Risk management is discussed in § 2:9. By sacrificing long-term goals, risk management for efficiency gives up the hope for continued progress in technology; by comparison with the present statutes it would be a static system, its optimism lost. Critics of this approach also question whether enough accurate information is available to make such management decisions, or whether in the absence of real data, the whole process would become just a screen for a preconceived agenda of relaxing controls.

Risk management also seems to miss the point, in a fundamental way. “Pollution” is not really a sliding scale. Environmental protection law is founded on a deep feeling that filth should not be thrown onto our doorsteps. The statutes reflect that judgment, and provide mechanisms for implicit compromise.

Proposals to do away with standards entirely, and substitute a form of objective

[Section 1:15]

¹See EPA Science Advisory Board, *Reducing Risk: Setting Priorities and Strategies for Environmental Protection* (SAB-EC-90-021, Sept. 1990).

risk management, require not only changes in public feeling, but changes in the way Congress deals with the conflict between ideals and practicality. Such changes may or may not be desirable: they hardly seem likely.

§ 1:16 Reform—Study recommendations

In 1998, EPA stimulated a fresh outpouring of recommendations and proposals for reform. Reports by the National Academy of Public Administration,¹ the Enterprise for the Environment,² and senior policy experts at Resources for the Future³ suggest wide agreement on points of improvement, including: (1) a performance-based or results-oriented management system, which would include setting environmental goals and measuring progress toward meeting those goals; (2) better and more accessible information about the environment; (3) more collaborative decisionmaking and public involvement; (4) increased flexibility and efficiency (e.g., through use of market mechanisms); (5) better integration across media-based programs; and (6) pilot projects and experimental programs to increase responsiveness to local conditions and needs. All of these suggested improvements have been incorporated into the Agency's own reinvention agenda and are reflected in Agency program initiatives and organizational changes.

In the early 2000s, a series of reports and books focused on sustainable development, likely in part due to major international summits of 1992 and 2002 influencing U.S. domestic thought on how the U.S. regulates environmental protection.⁴

In the late 1990s and early 2000s, attention turned away from U.S. environmental protection reform as the political rancor in Washington, D.C., reached new heights, and environmental issues often became a central point of contention between bickering parties. No new environmental laws or major reform initiatives passed Congress from 1990 until hope for a federal climate law grew in 2009 and 2010.⁵

§ 1:17 Next generation environmental protection?

As the 40th anniversaries of the passage of NEPA and creation of EPA pass in 2010, many are beginning to discuss whether it is time to birth a new generation of environmental protection. Draft federal climate legislation does not seem to be a new generation of legislation, but does reflect many of the lessons learned along the way—using market mechanisms, relying on reporting and liability to change behavior, and keeping some command and control where appropriate. Thoughts that we may be able to revise environmental protection efforts to focus on sustainable design of industrial processes, on ecosystem services, and on integrating the externalities of pollution into the mainstream economy seem like very big ideas at a point in time when the public's capacity for environmental issues is rather narrow.

[Section 1:16]

¹National Academy of Public Administration, *Resolving the Paradox of Environmental Protection* (1997).

²Enterprise for the Environment, *The Environmental Protection System in Transition* (1998).

³J. Clarence Davies & Jan Mazurek, *Pollution Control in the United States: Evaluating the System* (1998).

⁴*See, e.g.*, President's Council on Sustainable Development, *Sustainable America: A New Consensus for Prosperity, Opportunity, and A Healthy Environment for the Future* (1996), available at <http://clinton2.nara.gov/PCSD/Publications/index.html>; M. Chertow & D. Esty, *Thinking Ecologically: The Next Generation of Environmental Policy* (1997); J. Dernbach, *Stumbling Towards Sustainability* (2002).

⁵Arguably amendments to the Safe Drinking Water Act and adoption of the Food Quality Protection Act in 1996 qualify, but these were far less remarkable than the Clean Air Act Amendments of 1990. The point holds that there has been no major reworking of a federal environmental statute or new statute adopted in 20 years as of 2009.

It will be interesting to see over the next 10 to 20 years whether environmental protection law continues to incorporate the lessons of the past 40 years and the reform efforts that were made along the way, fundamentally shifts to change its goals and methods of doing things, or a little of both.

Part B

PRINCIPLES AND METHODS

Chapter 2

The Goals of Environmental Protection*

I. INTRODUCTION

§ 2:1 In General

II. THE ORIGIN OF ENVIRONMENTAL QUALITY STANDARDS

§ 2:2 Introduction

§ 2:3 Local air and water quality standards

§ 2:4 State air and water quality standards

§ 2:5 —Oregon's air pollution statute

§ 2:6 —State standards

§ 2:7 The movement for control of technology

§ 2:8 Thresholds and goals

III. THRESHOLDS OF ACTION

§ 2:9 In General

§ 2:10 Imminent and substantial hazards

§ 2:11 Designated pollutants

§ 2:12 —Conventional pollutants

§ 2:13 —Toxic pollutants

IV. NATIONAL AMBIENT STANDARDS FOR CONVENTIONAL POLLUTANTS

§ 2:14 Introduction

§ 2:15 Standards as interim goals

§ 2:16 Ambient standards as the basis of control—Environmental quality modeling

§ 2:17 Regional modeling

§ 2:18 Other aspects of ambient standards

V. GOALS

§ 2:19 Introduction

§ 2:20 Nondegradation standards

§ 2:21 —Background pollution

§ 2:22 —Increments for conventional pollution

§ 2:23 De minimis standards for toxic pollutants

§ 2:24 —De minimis standards

§ 2:25 —Schedules and controls

*By **Sheldon M. Novick**; § 2:5 by **Madeline Thomas** and **Sheldon M. Novick**; updated by **Robert V. Percival**; updates to Release #16 by **Ann Powers**

§ 2:26 Long-term goals of technology-based control

VI. THE PURPOSE OF ENVIRONMENTAL PROTECTION LAWS

§ 2:27 In General

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I. INTRODUCTION

§ 2:1 In General

Some obvious questions about environmental law do not have obvious answers. For instance: What is the purpose of the Environmental Protection Agency (EPA)? EPA administers nine major statutes, and has some responsibilities under four others,¹ but none provides the agency with a general charter.²

Each of the statutes EPA administers has narrow statements of purpose which are expressed as goals of environmental quality to be achieved. There are dozens of environmental quality goals in the laws. One of the purposes of the Clean Water Act, for instance, is to attain “water quality which provides for the protection and propagation of fish, shellfish and wildlife and provides for recreation in and on the water.”³ The Clean Air Act seeks, among other things, air quality which, “allowing

[Section 2:1]

¹(1) Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C.A. §§ 136 to 136y [hereinafter FIFRA].

(2) Marine Protection, Research, and Sanctuaries Act, 16 U.S.C.A. §§ 1401 to 1445 (the ocean dumping statute) [hereinafter MPRSA].

(3) Safe Drinking Water Act, 42 U.S.C.A. §§ 300f to 300j-26 [hereinafter SDWA].

(4) Solid Waste Disposal Act (commonly known as the Resource Conservation and Recovery Act), 42 U.S.C.A. §§ 6901 to 6992k (solid and hazardous waste) [hereinafter RCRA].

(5) Clean Air Act, 42 U.S.C.A. §§ 7401 to 7671q.

(6) Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C.A. §§ 9601 to 9675 [hereinafter CERCLA or Superfund].

(7) Federal Water Pollution Control Act, 33 U.S.C.A. §§ 1251 to 1387 [hereinafter Clean Water Act].

(8) Toxic Substances Control Act, 15 U.S.C.A. §§ 2601 to 2692 [hereinafter TSCA].

(9) Pollution Prevention Act of 1990, 42 U.S.C.A. §§ 13101 to 13109.

EPA reviews environmental impact statements prepared by other agencies under the National Environmental Policy Act of 1969, 42 U.S.C.A. §§ 4321 to 4361, which is administered by the Council on Environmental Quality, and has an advisory role under the Oil Pollution Act of 1990, 33 U.S.C.A. § 5002. EPA has some regulatory authority under the Surface Mining Control and Reclamation Act of 1977, 30 U.S.C.A. §§ 1201 to 1328, which is primarily administered by the Department of Interior. Finally, EPA has some responsibility for radiation in the environment under the Atomic Energy Act, 42 U.S.C.A. §§ 2011 to 2282, and the Uranium Mill Tailings Radiation Control Act of 1978, 42 U.S.C.A. §§ 7901 to 7942. Under the Reagan Administration, the Agency ceased implementing the Noise Control Act of 1972, 42 U.S.C.A. §§ 4901 to 4918, for which funds are no longer appropriated. I have included the Noise Control Act in the following discussion, however, as it casts its own small light on the pattern of congressional action.

²EPA was created by President Nixon’s Reorg. Plan No. 3 of 1970, 42 U.S.C.A. § 4321 note; *see* § 4:1. The order primarily transferred functions from other agencies, and neither made nor stated policy. “Indeed, it is almost impossible to describe what American ‘environmental policy’ is. Policy is not contained in statutes or even in the Federal Register, but in the multitude of orders and rulings of state and federal officials throughout the country.” S. Melnick, *Regulation and the Courts: The Case of the Clean Air Act* 384 (1983).

³Clean Water Act § 101(a)(1), 33 U.S.C.A. § 1251(a)(1).

an adequate margin of safety, [is] requisite to protect the public health.”⁴ There are environmental quality goals like these for pollution in every part of the environment of the United States—surface waters, coastal waters, ground waters, outdoor air, and soil; there are also goals for noise levels, and radiation in all media.⁵

The goals are not, of course, self-executing; the statutes often require EPA to identify pollutants which are causing the most serious problems,⁶ and then translate the general goals of the statutes into concrete objectives—limits of concentration of the designated pollutants—that are to be achieved or maintained. These precise objectives are called “environmental quality standards.”⁷ EPA must design programs, usually to be administered by the states, to accomplish these objectives—a process discussed throughout this book.

There are environmental quality goals, criteria, or standards for hundreds of pollutants in air, water, soil, and groundwater. One of EPA’s purposes, for instance, is to keep additions to the background level of sulfur dioxide below an annual average of 2 micrograms (millionths of a gram) per cubic meter of air; 5 micrograms per cubic meter in any twenty-four hour period, and 25 micrograms in any three-hour period, in the national parks and forests.⁸ Other programs are directed at other categories of air pollutants, still others to see that the states maintain dissolved oxygen levels and other conventional pollutants in surface water at levels which meet federal criteria. Scores of distinct programs are designed to maintain the quality of groundwater, drinking water, and the oceans.⁹

Do these programs fit some overall plan? The environmental protection laws are such a ragbag, collected piecemeal over the course of over twenty-five years and still changing, that we might be tempted to say EPA has no single overall purpose; it

⁴Clean Air Act § 109(a)(1), 42 U.S.C.A. § 7409(b)(1).

⁵See Clean Water Act § 303, 33 U.S.C.A. § 1313 (pollutants in surface waters of the United States); Noise Control Act § 5(a)(2), 42 U.S.C.A. § 4904(a)(2) (ambient noise) (this statute is not presently enforced); Clean Air Act § 109, 42 U.S.C.A. § 7409 (pollutants in outdoor air). The surface water and hazardous waste programs have goals for groundwater quality. See *Sierra Club v. Lynn*, 502 F.2d 68, 72, 4 *Envtl. L. Rep.* (Envtl. L. Inst.) 20844, 20851 (5th Cir. 1974) (nondegradation standards for groundwater); RCRA §§ 3002 to 3004, 42 U.S.C.A. §§ 6922 to 6924; 40 C.F.R. pt. 264, subpt. F (groundwater protection standards for hazardous waste facilities); CERCLA § 121, 42 U.S.C.A. § 9621 (standards for groundwater quality to be borrowed from other statutes). The Clean Water Act and MPRSA, the ocean dumping statute, set water quality goals for coastal waters and for the oceans beyond coastal waters used for dumping by the United States. MPRSA § 102, 33 U.S.C.A. § 1412. In Superfund, the soil pollution standards are borrowed from other statutes, as needed, to set limits for waste cleanup. See CERCLA § 121, 42 U.S.C.A. § 9621. EPA sets guidance for other agencies to use in regulating radiation-producing activities. 40 C.F.R. pts. 190 to 192.

⁶See § 2:9.

⁷See, e.g., *Lead Indus. Ass’n v. EPA*, 647 F.2d 1130, 10 *Envtl. L. Rep.* (Envtl. L. Inst.) 20643 (D.C. Cir. 1980), cert. denied, 449 U.S. 1042 (1980). In the Clean Water Act, the term “standard” is used indiscriminately to refer to emission limits, performance criteria, or environmental quality standards; professionals often follow the Clean Air Act’s usage and reserve “standards” for measures of environmental quality, a practice followed herein.

⁸Clean Air Act § 163(b)(1), 42 U.S.C.A. § 7473; 40 C.F.R. pt. 51.

⁹See Clean Water Act § 303, 33 U.S.C.A. § 1313 (pollutants in surface waters of the United States); Noise Control Act § 5(a)(2), 42 U.S.C.A. § 4904(a)(2) (ambient noise) (this statute is not presently enforced); Clean Air Act § 109, 42 U.S.C.A. § 7409 (pollutants in outdoor air). The surface water and hazardous waste programs have goals for groundwater quality. See *Sierra Club v. Lynn*, 502 F.2d 68, 72, 4 *Envtl. L. Rep.* (Envtl. L. Inst.) 20844, 20851 (5th Cir. 1974) (nondegradation standards for groundwater); RCRA §§ 3002 to 3004, 42 U.S.C.A. §§ 6922 to 6924; 40 C.F.R. pt. 264, subpt. F (groundwater protection standards for hazardous waste facilities); CERCLA § 121, 42 U.S.C.A. § 9621 (standards for groundwater quality to be borrowed from other statutes). The Clean Water Act and MPRSA, the ocean dumping statute, set water quality goals for coastal waters and for the oceans beyond coastal waters used for dumping by the United States. MPRSA § 102, 33 U.S.C.A. § 1412. In Superfund, the soil pollution standards are borrowed from other statutes, as needed, to set limits for waste cleanup. See CERCLA § 121, 42 U.S.C.A. § 9621. EPA sets guidance for other agencies to use in regulating radiation-producing activities. 40 C.F.R. pts. 190 to 192.

has just a miscellany of unrelated programs to control different pollutants that have come to attention at various times for different reasons. But there is something more than this. In the repeated enactments by Congress, there is a general pattern of the kind more familiar in the decisions of common-law courts than in statutes—open to dispute and filled with inconsistencies—but a pattern all the same.¹⁰

To help the discussion, I will first sketch out the general pattern, and then fill in or at least suggest some of the details, and the occasional inconsistencies.

Environmental protection work begins with a problem or an injury: smog in Los Angeles, say, or contaminated drinking water supplies. There is a threshold to cross; the problem must be sufficiently significant to deserve government attention. Congress has marked some general problems for attention, and has given EPA authority to identify others as they appear.¹¹

Once an environmental pollution problem has been identified as warranting government attention, pollutants which cause or contribute to the problem are formally designated—again, this may be done by Congress, or by EPA.¹² In the examples given, nitrogen oxides and hydrocarbons, constituents of automobile exhaust, were identified as causes of Los Angeles smog; and a long list of hazardous wastes has been identified as causing or contributing to contamination of drinking water supplies.

Wherever the problem is found, EPA will then set in motion a regulatory system to control or eliminate the pollutants which have been designated.¹³ When the problem and the pollutant are widespread, EPA may set a numerical standard of environmental quality which simplifies the threshold step: if a designated pollutant exceeds its numerical standard, cleanup is required, without further deliberation.¹⁴

In some cases, the threshold standard also serves as an interim goal; once the local hazard has been identified, cleanup continues until pollution drops below the threshold for response. In Clean Air Act programs to control nitrogen oxides and hydrocarbons, for instance, state and local governments have some discretion whether to continue improving local environmental quality, once the action-triggering standards have been achieved.¹⁵

In many cases, however, once a pollutant has been designated for control, the statutes set further and more ambitious goals than simply removing the immediate hazard. The first of these goals is “non-degradation.” With great consistency, environmental protection statutes prohibit any significant degradation of the environment by designated pollutants.¹⁶ Once a pollutant has been designated, therefore, no significant increase in concentration of the pollution anywhere is permitted, even if no local hazard independently meriting government response would result.

Second, if the pollutant is “toxic” or a “hazardous waste,” the statutes generally

¹⁰This is not a novel method of construing statutes. *See* G. Calabresi, *A Common Law for the Age of Statutes* (1982); Elliot et al., *Toward A Theory of Statutory Evolution: The Federalization of Environmental Law*, 1 *J.L. Econ. & Org.* 313 (1985).

¹¹In RCRA, for instance, Congress expressed the judgment that disposal of hazardous wastes on land was a serious problem requiring correction, RCRA § 1002(b), 42 U.S.C.A. § 6901(b), and gave EPA general authority to locate and respond to “imminent and substantial endangerments” caused by waste disposal; 42 U.S.C.A. § 7003, 42 U.S.C.A. § 6973. *See* § 2:10.

¹²*See, e.g.*, Clean Air Act § 112, 42 U.S.C.A. § 7412 (EPA originally directed to designate toxic air pollutants; Congress listed specifics in 1990); Clean Air Act § 122, 42 U.S.C.A. § 7422 (Congress designates certain pollutants for early attention); TSCA § 6(e), 15 U.S.C.A. § 2605(e) (Congress designates PCBs for regulation); § 2:9.

¹³*See* § 2:9.

¹⁴*See* § 2:14.

¹⁵*See* § 2:19.

¹⁶*See* § 2:20.

set a goal of eliminating all significant release of the pollutant into the environment,¹⁷ and may sometimes require rapid reduction of emissions regardless of the availability of controls.¹⁸ Most land disposal of designated untreated hazardous wastes must be ended quickly, for instance, and all contamination of soil or groundwater must be cleaned up until all significant pollution has been removed.¹⁹ If the risk posed by a toxic chemical is unreasonable, manufacture and sale of the chemical may be prohibited.²⁰

Third, all new sources of pollution, and many existing sources, are required to continually improve control of designated pollutant emissions.²¹ This general “technology-forcing” requirement has its own implicit goals of environmental quality; taken with other standards and goals, it creates an immense ratcheting mechanism, which allows movement only forward, toward continual improvement in environmental quality.

Taken together, these goals and standards show that EPA has an overall charter and purpose. The agency must identify pollutants which cause or contribute to environmental hazards. Once these pollutants are identified, with few exceptions they must be reduced to insignificant levels in the environment.

II. THE ORIGIN OF ENVIRONMENTAL QUALITY STANDARDS

§ 2:2 Introduction

There were at least four separate movements for environmental protection, in the years when the present statutes were adopted, that formed their purposes.

First, there was a long-standing movement for the conservation and preservation of wilderness and natural resources, which provided political support for pollution control statutes and contributed the pervasive nondegradation policy to the laws.¹

Second, in the 1940s there was a locally-based movement to clean up city air and water, which were fouled by soft-coal smoke and sewage.²

Third, beginning in the 1950s, there was a series of disputes between some major industrial facilities and their neighbors, often farmers whose crops were damaged by the plant emissions.³ These disputes found their way to state courts and state

¹⁷See § 22:49.

¹⁸See § 2:25.

¹⁹See RCRA § 3004(d) to (k), 42 U.S.C.A. § 6924(d) to (k); §§ 2:24 and 14:64 (restrictions on land disposal); CERCLA § 121, 42 U.S.C.A. § 9621; 40 C.F.R. pt. 264, subpt. F; § 14:22 (RCRA corrective actions and Superfund cleanup).

²⁰See § 2:13.

²¹See § 2:26 and Ch 3.

[Section 2:2]

¹See § 2:20. An alliance of eastern industrial states and western conservation groups—particularly the Sierra Club—supported the principle of nondegradation, because of their common interest in seeing that the western states did not become pollution havens for industry. See B. Ackerman & W. Hassler, *Clean Coal/Dirty Air: or How the Clean Air Act Became a Multibillion-Dollar Bail-Out for High-Sulfur Coal Producers and What Should Be Done About It* (1981). Conservation and preservation organizations and sportsmen’s groups also take credit for the wetlands protection program in the Clean Water Act and the visibility protection for national parks found in the Clean Air Act. In more recent years, conservation groups have supported strong hazardous waste legislation. For a more general history of the movement, see, e.g., J. Petulla, *American Environmentalism—Values, Tactics, Priorities* 43-96 (1980).

²See § 2:3.

³See § 2:5.

legislatures, and when added to the activism of local governments, brought state governments into pollution control for the first time.⁴

Fourth and finally, beginning in the early 1960s, there was a national movement for control of radiation and toxic chemicals, which quickly broadened into a movement for the regulation of modern technology.⁵

The purposes of environmental protection law, and the standards and goals which express those purposes, were shaped by these movements, which have converged in a single program to eliminate significant pollution.

§ 2:3 Local air and water quality standards

Drinking water supply, sewage collection and treatment, and smoke control have long been the responsibilities of city and county government; the intrusion of state and federal programs is fairly recent, and not always welcomed at the local level.

Philadelphia, New York, and Boston built public drinking water supply systems, in part to protect public health after cholera epidemics in the early nineteenth century;¹ sewage collection and treatment followed a little later.²

The first environmental quality standards probably were devised to measure the fitness of water for drinking. As public water supply systems became more common, measures of water quality were standardized. Intuitive judgments about water quality gave way to precise identification of the factors that caused illness. Water was brought to Philadelphia from the Schuylkill River, to New York from Croton, and to Boston from the Cochituate, on an intuition that improved hygiene would prevent disease—long before disease agents were known or identified. Much later, enteric bacteria were identified as the agents of cholera and other water-borne disease; indicator bacteria were identified and counted to set a standard for water quality. These were the progenitors of the present measures of water quality.³

There was a similar evolution of air quality standards. In the 1940s, the air of some major cities had become intolerable, largely because soft, high-sulfur coal was the common fuel for home heating and industrial power. In London, coal-smoke fogs had become lethal;⁴ in St. Louis, Pittsburgh, and Detroit, headlights were needed at noon on winter days because of coal smoke. In Donora, Pennsylvania, an air pollution episode caused seventeen deaths;⁵ in St. Louis, all the pine trees died.⁶

There were protests; in St. Louis, housewives marched with mops and brooms. Most eastern cities adopted smoke-control ordinances.⁷ Natural gas, newly available from the Southwest on transmission lines built during the war, began to supplant

⁴See § 2:6.

⁵See § 2:7.

[Section 2:3]

¹See, e.g., N. Blake, *Water For The Cities* (1957).

²Boston installed the first sewage collection in 1823. See P. Adrian, *Governing Urban America* 435 (1961).

³See 3 R. Clark, *Waters and Water Rights* § 201 (2d ed. 1984).

⁴Ministry of Health, *Reports on Public Health and Related Subjects No. 95, Mortality and Morbidity During the London Fog of December, 1952* (HMSO 1954).

⁵H. Schrenk et al., *Division of Industrial Hygiene, Public Health Service, Federal Security Agency, Public Health Bulletin No. 306, Air Pollution in Donora, Pa.* (1949).

⁶Personal communication with David M. Gates, Director, Missouri Botanical Garden.

⁷For a history of early municipal air pollution ordinances, see M. Creuson, *The Un-Politics of Air Pollution: A Study of Non-Decisionmaking in the Cities* (1971). See also Elaine Koerner, *Silent Partners*, 14 *Envtl. F.*, Mar./Apr. 1997, at 18 (arguing that the concern of women's clubs about air and water pollution predated the late nineteenth century conservation movement).

soft coal for heating; fuel oil began to enlarge its share of the market, and big coal-burning boilers began to control their emissions.⁸

The municipal ordinances began an evolution of air quality standards similar to the development of water quality standards. Smoke control moved from judgments that the air was foul, to rough but objective standards—the Ringelmann chart of opacity, for instance, was and is a commonly used standard of smoke control; smoke with opacity greater than 20 percent, on the Ringelmann chart, was typically prohibited by ordinances enforced by trained “smoke readers.” Later, sulfur oxides were identified as the worst component of the winter smogs caused by sulfur-rich coal burning, and numerical standards for sulfur in fuel, or in air, replaced the earlier intuitive judgments that smoke was a hazard.⁹

Such standards had two characteristics that have been carried into modern use. First, they measured the fitness of a resource for use—the fitness of water for drinking or bathing, for instance, or of air for breathing. Second, they assumed or created a threshold. Safety or fitness was an all-or-nothing determination. Legal standards generally were still in this form. The law had not yet discovered probabilities; actions were either reasonable or not, foreseeable or not, depending largely on what the judges thought proper or desirable.¹⁰ We know now that “thresholds” or “safety” standards are largely political judgments; that when a large population is exposed

⁸See L. Lave & G. Omenn, *Clearing the Air: Reforming the Clean Air Act 1 (1981)* (improvement in air quality plainly attributable to, in part, aggressive municipal and metropolitan control programs, and not from Clean Air Act).

⁹In the late 1960s and early 1970s, metropolitan governments were being encouraged to form, and regional planning organizations became the focus of federal assistance programs. See, e.g., *The Intergovernmental Assistance Act of 1968*, Pub. L. No. 90-577, 82 Stat. 1098 (codified as amended at 31 U.S.C.A. §§ 6501 to 6508, 40 U.S.C.A. §§ 531 to 535) (federal assistance must be approved by regional planning agency); Advisory Commission on Intergovernmental Relations, “Metropolitanisation: A Challenge to Federalism” (1969). Metropolitan areas which cut across local government and state boundaries were treated as units in air and water pollution control, and continue to be basic planning and enforcement units for air and water pollution control. The federal Public Health Service often worked directly at the urban level, drawing together the affected state and local governments. Air quality standards began to appear in the metropolitan areas. St. Louis, where local citizens’ groups had contributed to strong smoke-control ordinances, was the first metropolitan area (East St. Louis in Illinois was included in the area) to make the transition to a standards-based program, in part through intense Public Health Service encouragement. See, e.g., Schulman, *New Standards in the Making*, *Scientist & Citizen* (St. Louis), Jan. 1967, at 16; Missouri Air Conservation Commission, *Air Quality Standards and Air Pollution Control Regulation for the St. Louis Metropolitan Area* (1968). See also Report of Abatement Conference, New York Metropolitan Area, United States Public Health Service (1969).

¹⁰See Note, *Origin of the Modern Standard of Due Care in Negligence*, 1976 Wash. U.L.Q. 447 (1977). Through the nineteenth century, legal standards of behavior were codes of conduct. A line was drawn between that behavior which a person might follow safely and that which was proscribed. The latter was considered “conduct which a man pursues at his peril.” O. Holmes, *The Common Law* 79 (1881 & facsimile ed. 1982). Holmes thought that legal rules of behavior could be written out like a set of regulations. *Id.* at 123–29. Some behavior might be expected to harm those to whom one owed a duty of care, in the “natural” or “foreseeable” course of events, and so was forbidden by judges. See Note, *Origin of the Modern Standard of Due Care in Negligence*, 1976 Wash. U.L.Q. 447, 457–63 (1977); see also F. Pollock, *The Law of Torts* 36 (1887).

Early in the twentieth century, however, modern notions of probability and mathematical calculations of likely harm began to creep into the standard of conduct. See, e.g., *Chicago, B. & Q. R.R. v. Krayenbuhl*, 65 Neb. 889, 91 N.W. 880 (1902). In 1915, Henry Terry first stated the idea that conduct was forbidden if the severity of the probable risk outweighed the probable benefits. He analyzed risk into elements of probability and magnitude of the harm if it occurred. Terry, *Negligence*, 29 Harv. L. Rev. 40 (1915). A similar analysis was adopted by Judge Learned Hand in *United States v. Carroll Towing Co.*, 159 F.2d 169, 173 (2d Cir. 1947) and *Conway v. O’Brien*, 111 F.2d 611, 612 (2d Cir. 1940), and was approved by the Restatement of Torts §§ 291 to 293 (1934); Restatement (Second) of Torts §§ 291 to 293 (1965); but see Kelley, *A Critical Analysis of Holmes’s Theory of Torts*, 61 Wash. U.L.Q. 681 (1983) (attributing the modern view to Holmes). This is a more modern, mathematical approach to probability and harm. In the same way, the modern view is that legislative standards should be based on the empirical probability of risk weighed against the costs of control. See, e.g., Reserve

to a pollutant, there are only diminishing probabilities of harm as pollution levels drop; there is no standard of absolute safety.¹¹

§ 2:4 State air and water quality standards

State statutes at first concerned themselves with different subjects than local governments—the air and water pollution caused by large industrial facilities. These plants were often outside effective local government, or were too important to local economies for city governments to control. Oregon adopted the first state air pollution control ordinance; its history is illuminating.

§ 2:5 State air and water quality standards—Oregon’s air pollution statute¹

Oregon’s law was one result of disputes which began during the Second World War. As part of the war effort, the federal government sponsored a rapid buildup of aluminum reduction plants in the Northwest, where hydroelectric power dams provided an inexpensive source of electricity. During the Korean War, the expansion continued because of the demand for aluminum for use in jet aircraft.² Since the reduction of aluminum ore requires large amounts of electricity, the aluminum industry has been centered near large power dams and away from population centers. Reduction plants, like ore smelters, release large amounts of waste material, including air pollutants. Fluorides, which contaminate aluminum ore and which can be toxic to plants and animals, are particularly bothersome emissions.³

In Oregon, an agricultural state, orchards and farms surrounded the aluminum plants. By the late 1940s, fluoride poisoning was visible in some cattle, and damage to crops was observed. The owners of farms near the Reynolds Aluminum Company’s Troutdale plant, for example, believed that their farms were being destroyed and that their own health had been affected by emissions from the plant. Accordingly, they brought suit in 1949 for money damages and to halt the emissions.⁴ Troutdale is near the Washington border, and some of the claimants in the Oregon action were Washington landowners. Their claims were dismissed on the ground that the Oregon

Mining Co. v. EPA, 514 F.2d 492, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20596 (8th Cir. 1975); *see also* Ethyl Corp. v. EPA, 541 F.2d 1, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20267 (D.C. Cir.) (en banc), cert. denied, 426 U.S. 941 (1976). In *Ethyl Corp.*, which has been much admired, Judge J. Skelly Wright said he thought harm should be analyzed into separate elements of probability and magnitude, in terms reminiscent of Judge Hand and Henry Terry. *See also* F. Anderson, D. Mandelker & A. Tarlock, *Environmental Protection: Law and Policy* 171–72 (1984).

¹¹*See* Lead Indus. Ass’n v. EPA, 647 F.2d 1130, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20643 (D.C. Cir. 1980), cert. denied, 449 U.S. 1042 (1980) (ambient air quality standard requires judgment of levels that provide for public health with a margin of safety, although there is no scientifically “safe” threshold level).

[Section 2:5]

¹By **Madeline Thomas** and **Sheldon M. Novick**

²*See* Arvidson v. Reynolds Metals Co., 125 F. Supp. 481, 482–83 (W.D. Wash. 1954) (chronicling the advent of aluminum plants in Washington state), *aff’d*, 236 F.2d 224 (9th Cir. 1956), cert. denied, 352 U.S. 968 (1957); *see also* Renken v. Harvey Aluminum, Inc., 226 F. Supp. 169, 170–71 (D. Or. 1963) (describing the aluminum reduction process).

³*See* Renken v. Harvey Aluminum, Inc., 226 F. Supp. 169 (D. Or. 1963); Fairview Farms, Inc. v. Reynolds Metals Co., 176 F. Supp. 178, 183 (D. Or. 1959).

⁴*See* McAllister v. Reynolds Metals Co., *The Oregon Statesman*, Jan. 18, 1951, at 1. col. 4 (D. Or. Jan. 17, 1951) (suits in federal district court by 100 neighboring farmers against Troutdale plant filed in 1948 and 1949; decision by Judge James A. Fee for Oregon plaintiffs on liability issue; accounting of damages ordered).

court had no jurisdiction over the injuries to the Washington plaintiffs.⁵ However, these plaintiffs successfully refiled in Washington.⁶ Other actions were brought in both state and federal court in Oregon.⁷ This litigation eventually produced a kind of summary of common-law strategies: there were suits grounded in nuisance, trespass, and negligence, with claims for injunctions and damages for injuries to health, personal property, and real estate.⁸

The suits moved slowly; the aluminum company defendants, perhaps because of large potential liabilities to other landowners, were reluctant to settle. Many cases were decided on motion or after trial.⁹ Resolution, of course, took years; trials were long and elaborate.¹⁰ As in other pollution damage cases, there were complex factual issues regarding causation and damages.¹¹

While the suits were well publicized,¹² the plaintiffs did not passively wait for the outcome. Bills were introduced in the state legislature which would have declared air pollution a “nuisance”; this would have had the effect of deciding some of the issues in the various lawsuits. Industry lobbyists apparently did not oppose state legislation, as such, but pressed for a law that would have authorized only the study of pollution effects and control methods.¹³ A compromise bill was enacted which authorized the state to bring public nuisance actions against pollution sources, declared pollution to be contrary to state policy, and created a new state agency within the Board of Health to adopt and enforce pollution control rules.¹⁴ It seems to have been expected that the newly-created board would set air quality standards and would then review particular pollution complaints on a case-by-case basis to determine what controls would be needed when discharges caused air pollution to exceed those limits.¹⁵ There would be no enforceable rules until standards had been set and a control order issued to a pollution source; violations of an order were punishable by

⁵McAllister v. Reynolds Metals Co., *The Oregon Statesman*, Jan. 18, 1951, at 1. col. 4 (D. Or. Jan. 17, 1951).

⁶Arvidson v. Reynolds Metals Co., 107 F. Supp. 51 (W.D. Wash. 1952) (motion by Oregon industrial defendant to transfer to Oregon district court denied). *See* Arvidson v. Reynolds Metals Co., 125 F. Supp. 481 (W.D. Wash. 1954) (evidence of damages from fluorides insufficient), *aff'd*, 236 F.2d 224 (9th Cir. 1956), *cert. denied*, 352 U.S. 968 (1957).

⁷*See, e.g.*, Martin v. Reynolds Metals Co., 135 F. Supp. 379 (D. Or. 1952) (personal injuries caused by negligence), *aff'd sub nom.* Reynolds Metals Co. v. Yturvide, 258 F.2d 321 (9th Cir. 1958), *cert. denied*, 358 U.S. 840 (1958); Martin v. Reynolds Metals Co., 221 Or. 86, 342 P.2d 790 (1959) (fluoride pollution constitutes trespass), *cert. denied*, 362 U.S. 918 (1960). *See also* Reynolds Metals Co. v. Lampert, 316 F.2d 272 (9th Cir. 1963) (trespass); Renken v. Harvey Aluminum, Inc., 347 F. Supp. 55 (D. Or. 1971) (arbitration award under consent decree), *aff'd*, 475 F.2d 766 (9th Cir. 1973); Renken v. Harvey Aluminum, Inc., 226 F. Supp. 169 (D. Or. 1963) (nuisance action, injunction); Fairview Farms, Inc. v. Reynolds Metals Co., 176 F. Supp. 178 (D. Or. 1959) (trespass).

⁸*See* notes 15–20, and accompanying text.

⁹*See* notes 15–20, and accompanying text. McAllister v. Reynolds Metals Co., *The Oregon Statesman*, Jan. 18, 1951, at 1. col. 4 (D. Or. Jan. 17, 1951).

¹⁰Arvidson v. Reynolds Metals Co., 125 F. Supp. 481, 482–83 (W.D. Wash. 1954), for example, was filed in 1950 and was consolidated with a similar action filed in 1952. Seventy-five witnesses testified, 342 exhibits admitted, and a transcript of 2500 pages produced. The district court’s decision that there was insufficient evidence to prove liability was affirmed in 1956. *See* Arvidson v. Reynolds Metals Co., 125 F. Supp. 481, 482–83 (W.D. Wash. 1954).

¹¹McAllister v. Reynolds Metals Co., *The Oregon Statesman*, Jan. 18, 1951, at 1. col. 4 (D. Or. Jan. 17, 1951).

¹²*See, e.g.*, McAllister v. Reynolds Metals Co., *The Oregon Statesman*, Jan. 18, 1951, at 1. col. 4 (D. Or. Jan. 17, 1951).

¹³Air Pollution Compromise Attempted, *Oregon Daily Journal*, Mar. 9, 1951, at 4, col. 3.

¹⁴Oregon Air Pollution Act, 1951 Or. Laws, 696, *codified at* Or. Rev. Stat. §§ 449.705 to 449.755, *repealed* 1959 Or. Laws c. 357 § 15.

¹⁵The members of the Air Pollution Authority, established by the Oregon Air Pollution Act, took it for granted that their job was to set air quality standards. *See* Minutes of the first meeting of the

fine. These provisions apparently emerged as a compromise between the plaintiff's groups, who wanted pollution emissions to be *per se* actionable, and industry representatives, who took the position that there should be careful study of each pollution claim and that no action should be taken without evidence of actual harm.¹⁶ Soon after the implementation of the Oregon pollution control law, the Manufacturing Chemists Association published a pamphlet in which they recommended the Oregon statute as a model for other states.¹⁷

The lawsuits, unsurprisingly, dragged on for years;¹⁸ outcomes often depended on arbitrary factors, such as the residence of the plaintiffs or on the forms of action available in the courts.¹⁹ Although all the claims arose from the similar actions of the aluminum company defendants, the standard of liability to be applied varied in each case in accordance with the type of harm incurred. Claims for damage to health, for example, could only be maintained on a negligence theory. In such cases, the reasonableness of the defendant's behavior was the criterion of liability.²⁰ Damage to real estate, by comparison, gave rise to a claim in trespass, which provided for strict liability without regard to the reasonableness of the defendant's behavior.²¹ Nuisance suits could potentially reach more of the damage claims, but the courts had to weigh the value of the offending conduct against the magnitude of the damage which resulted. At the time the initial suits were brought, aluminum plants were recognized as an essential defense industry during wartime; the value of this activity therefore outweighed its incidental injurious effects.²² A nuisance action against an aluminum reduction plant finally succeeded in 1963, after the exigency of war had abated and the technology to better control the fluoride effluents became available; the remedy was an injunction to curb the plant's emissions.²³ There were also the difficult problems of proof of causation and of damages: one trial required 75 witnesses, 342 exhibits, trips to all of the plaintiffs' farms, and a 2500-page transcript.²⁴ In another case, one plaintiff, who was a minor when the litigation began, eventually prevailed on a negligence theory for personal injuries only after she had married and the Korean conflict had long ended.²⁵

The administrative procedures set up by the state statute suffered from their own delays and vagaries, however, and produced few results.

[Oregon] Air Pollution Authority, Aug. 24, 1951 (available at Environmental Law Institute Library, Washington, D.C.).

¹⁶Newspaper reports made it plain, as did the proceedings of the Air Pollution Authority, that the administrative procedures were intended to resolve the same disputes that were being brought to court. Oregon Air Pollution Act, 1951 Or. Laws, 696, *codified at* Or. Rev. Stat. §§ 449.705 to 449.755, *repealed* 1959 Or. Laws c. 357 § 15. Control of Air Pollution, The Oregon Statesman, Jan. 11, 1951, at 4. col. 1; 1954-56 Or. St. Air Pollution Auth. Biennial Rep. 8-9 (1956).

¹⁷See Subcommittee on Legislation Principles, Manufacturing Chemists Association, A Rational Approach to Air Pollution Legislation 6 (1952).

¹⁸See, e.g., *Arvidson v. Reynolds Metals Co.*, 125 F. Supp. 481, 482-83 (W.D. Wash. 1954); *Martin v. Reynolds Metals Co.*, 221 Or. 86, 342 P.2d 790, 793 (1959).

¹⁹See *McAllister v. Reynolds Metals Co.*, The Oregon Statesman, Jan. 18, 1951, at 1. col. 4 (D. Or. Jan. 17, 1951), and accompanying text (Oregon court without jurisdiction to assess claims for damage to property located in Washington state; court suggested that Washington plaintiffs might have nuisance cause of action).

²⁰See *Reynolds Metals Co. v. Yturbide*, 258 F.2d 321, 327-28 (9th Cir. 1958) (discussion of standards of reasonable conduct), cert. denied, 358 U.S. 840 (1958).

²¹See *Martin v. Reynolds Metals Co.*, 221 Or. 86, 342 P.2d 790, 793 (1959).

²²See, e.g., *Arvidson v. Reynolds Metals Co.*, 125 F. Supp. 481, 483 & 488 (W.D. Wash. 1954) (United States has "very important interest" in "large scale production of aluminum essential to national defense"), aff'd, 236 F.2d 224 (9th Cir. 1956), cert. denied, 352 U.S. 968 (1957).

²³*Renken v. Harvey Aluminum, Inc.*, 226 F. Supp. 169, 174, 175-76 (D. Or. 1963).

²⁴*Arvidson v. Reynolds Metals Co.*, 125 F. Supp. 481, 482-83 (W.D. Wash. 1954).

²⁵*Reynolds Metals Co. v. Yturbide*, 258 F.2d 321 (9th Cir. 1958), aff'd, *Martin v. Reynolds Metals Co.*, 135 F. Supp. 379 (D. Or. 1952), cert. denied, 358 U.S. 840 (1958).

Minutes of the Oregon Air Pollution Control Board's early meetings are taken up with discussions of budgets, personnel, and procedure. At the third meeting, the Authority heard its first complaint—from farmers near the Troutdale aluminum reduction plant. The Authority responded by agreeing to acquire copies of the research studies underway at Oregon State College in conjunction with other government agencies and promising to investigate the complaint.²⁶ Other citizen complaints of smoke and bad smells were heard: “Mrs. Olson also stated that the plant operates twenty-four hours per day and an odor is wafted on the breeze, and that when she complained to the local authorities they told her it was caused by trains which run near her home and they were of no help.”²⁷ The Authority, as do all government agencies, had to wade through a bog of trivialities, politics, and institutional pettiness.

After five years, the Authority decided that fluoride emissions were not a public nuisance. No standards were set and no emission controls were required by the government until the first private nuisance suit succeeded in 1963.²⁸

What role did environmental quality standards finally play in the administrative program? They seem to have developed as general standards of liability; the administrative agency could make *ad hoc* judgments that emissions were a “nuisance” requiring a remedy; or the agency could set environmental quality standards for particular pollutants, which would simplify the decision process. Wherever the standards were exceeded, there a remedy would be imposed, without further evidence of damage or causality. In this way, uniform environmental quality standards substituted for the standards of liability under common law that had been used by courts and absorbed into legislation.

It is plain that, while the term “nuisance” is carried into the legislation, the standards were not derived from any of the common law forms of action; they were simply intuitive judgments of what was actionable. In this they more closely resembled the standards of reasonable conduct in negligence law than any other, but were not derived from the common law at all. They were a new development in law—express thresholds for administrative action.

§ 2:6 State air and water quality standards—State standards

Other states soon followed Oregon's path. California set numerical guidance criteria for air quality—to establish uniformity among the local governments who were regulating air and water quality, and to set thresholds for action by the state and local agencies for major dischargers. In California, a major impetus for the new legislation was the dispute between farmers in the Los Angeles basin, whose crops were being damaged by air pollutants, and local oil refineries which the farmers believed—erroneously, as it turned out—to be the source of the oxidants which were doing the damage; the real culprit was the smog produced largely from auto exhausts.¹ By the early 1960s, the movement was widespread, and the United States Public Health Service began to provide assistance to state health agencies in setting air and water quality standards.

²⁶Minutes of the third meeting of the [Oregon] Air Pollution Authority, December 21, 1951, at 1-2 (available at Environmental Law Institute Library, Washington, D.C.).

²⁷Minutes of the fourth meeting of the [Oregon] Air Pollution Authority, June 11, 1952, at 4 (available at Environmental Law Institute Library, Washington, D.C.).

²⁸*Reynolds Metals Co. v. Yturbide*, 258 F.2d 321 (9th Cir. 1958), *aff'd*, *Martin v. Reynolds Metals Co.*, 135 F. Supp. 379 (D. Or. 1952), cert. denied, 358 U.S. 840 (1958); *see also* Or. St. Air Pollution Auth. Biennial Report 20, 21 (1956).

[Section 2:6]

¹In California, state air pollution control law began with disputes between farmers and oil refineries; the farmers thought, erroneously, that the refineries were the source of ozone which had been damaging their crops. *See Middleton & Clarkson, Motor Vehicle Pollution Control*, 15 *Traffic Q.* 306, 311 (1961) (damage to crops from ozone traceable to motor vehicle emissions). The state set criteria for

There was a dramatic expansion in the use of air quality standards in the 1960s, in part because of the Public Health Service's energetic sponsorship. Federal officials actively campaigned for state and local ordinances based on air quality standards; the campaign urged an expanded role for the standards themselves.² Instead of merely serving as thresholds for government response, standards—in the Public Health Service's model ordinances—served also as the goal to be achieved and the basis for remedies.³ This expanded role for standards is discussed in § 2:15, below.

By 1967, the standards approach was sufficiently widespread to be adopted as the national norm, and the first federal legislation simply tried to establish more uniformity among the states in setting the thresholds for regulation; federal controls or remedies were rejected.⁴

§ 2:7 The movement for control of technology

In the 1960s and early 1970s, many people perceived industry as expanding without limits and industrial technology as developing too rapidly for comprehension or rational control. The environmental protection statutes codify some of this concern.

Nuclear fallout and the indiscriminate use of pesticides were the first objects of concern for this movement, which drew together national organizations and local citizens groups.¹ There is no place here for a complete history of this complex movement, about which there is a growing literature. Its contribution to environmental protection law was profound. A whole vocabulary of “technology assessment” and “technology forcing” entered the legal lexicon, and statutes sought to guide technology toward distant goals.²

The movement for technology control had a reactionary reputation,³ but its aims were not destructive; it was a movement to reform industry and make it more responsive to public policy; to bring an end to pollution without sacrificing consumer

air quality to guide county enforcement action; *see, e.g.*, [California] Assembly Interim Committee on Public Health, *Air Pollution: Its Health Effects and Its Control* (Assembly Interim Committee Report 1957–1959, No. 17) 15–16 (1959).

²*See* Air Pollution Control Board, *State of New York, Ambient Air Quality Objectives—Classification System* (1964).

³Considerable impetus was given to this trend by a national conference convened by the Public Health Service in 1962, and then by an influential report. *See* Committee on Science on the Promotion of Human Welfare, American Association for the Advancement of Science, *The Air We Breathe* (1965) [hereinafter cited as *Dixon Report*]; *see also* Dixon & Lodge, *Air Conservation Report Reflects National Concern*, 148 *Sci.* 1060 (1965), widely known at the time as “the Dixon Report.” Much of the technical work for this report was done at the National Center for Atmospheric Research in Boulder, Colorado. In the following year, Colorado adopted a standards-based system. *See* 1966 *Colo. Sess. Laws* 210, ch. 45; Subcommittee on Air and Water Pollution, *Air Pollution—1967*; Hearings on S. 780, 90th Cong., 1st Sess. 849–75 (1967). In all of these studies, reports, and statutes, the standards are the conventional all-or-none thresholds. In the *Dixon Report*, this is the premise of the system. The margin of pollution that can be accepted is called the “assimilative capacity” of the air; this “assimilative capacity” is treated as a natural resource to be distributed efficiently among competing users. Both the premise and the conclusion are open to serious question.

⁴In 1967, the Administration proposed uniform national emission limits, but Congress rejected the proposal; the 1967 Air Quality Act encouraged the states to continue to develop air quality standards as triggers for case-by-case abatement action and required state standards to meet minimum federal criteria. *Air Quality Act of 1967*, Pub. L. No. 89-234, 79 Stat. 903.

[Section 2:7]

¹*See* Lutts, *Chemical Fallout: Rachel Carson's “Silent Spring,” Radioactive Fallout, and the Environmental Movement*, 9 *Env'tl. Rev.* 211 (1985); Commoner, *Fallout and Water Pollution—Parallel Cases, Scientist & Citizen*, Nov. 1964, at 2.

²*See, e.g.*, Bonine, *The Evolution of Technology Forcing in the Clean Air Act* (BNA Environment Reporter Monograph No. 21 1975).

³*See, e.g.*, R. Neuhaus, *In Defense of People: Ecology and the Seduction of Radicalism* (1971).

products or economic prosperity; and to a large extent, although with varying degrees of force, the environmental statutes adopted the movement's aims.⁴ Science and ingenuity, given enough time, would accomplish this seemingly utopian objective without undue cost or disruption.⁵ As it has turned out, pollution cannot be entirely abolished, and so the goal of minimizing pollution has produced a new set of environmental quality standards that express the goal in achievable terms.⁶

§ 2:8 Thresholds and goals

As we have seen, in each of the settings in which environmental quality standards appeared, there has been a similar pattern of development. First, when environmental problems came to government attention, courts, agencies, and legislatures decided whether the problems required government response. As these decisions were repeated, they developed a common form, and similar analyses were used to support the results; a standard of liability or public health hazard provided the threshold of government response.

Where a response was called for, the next step often was to identify particular chemicals or pollutants as the cause of the problem (or as symbols or indicators of more complex pollution sources). Finally, ambient standards were set for the designated pollutants, which thereafter served as the threshold for government response.

In this way, local agency determinations that smoke was intolerable or water unfit to drink gradually gave way to standards for identified pollutants; as we have seen, in state programs, ambient standards became surrogates for findings that pollution required a remedy.

In the 1960s, federal statutes began to set uniform or minimum criteria for state programs; the elements of earlier state law were absorbed into the federal statutes, which began to require that the states set environmental quality standards at minimum levels.¹

The environmental protection statutes each encapsulate this history. Each of the

⁴See § 2:19. Nuclear electric power, the ill-conceived supersonic transport, the fluoridation of drinking water, unsafe autos, and the proposal to dig a sea-level Panama Canal using nuclear explosives, were other targets of this loosely organized movement; prominent figures were Ralph Nader and Barry Commoner, but there was no overall organization and the movement is difficult to characterize. As to its aims, see, e.g., S. Novick, *The Electric War: The Fight over Nuclear Power* (1977); L. Tribe, *Channeling Technology Through Law 1-5* (1973); Speth, *The Federal Role in Technology Assessment and Control*, in *Federal Environmental Law 420* (E. Dolgin & T. Guilbert eds. 1974).

⁵See § 10:62.

⁶See § 2:19.

[Section 2:8]

¹The Water Pollution Control Act of 1948, ch. 758, 62 Stat. 1155, the first federal statute to address pollution expressly, authorized federal "abatement" actions only where pollution in one state caused danger in another. The Rivers and Harbors Act of 1899, §§ 10 and 13, was revived and reinterpreted in the 1960s to prohibit unpermitted discharges of pollution into navigable waterways, see *United States v. Republic Steel Corp.*, 362 U.S. 482 (1960), but the older law lacked any legislative basis for setting a threshold of allowable pollution, and therefore was used as a means of gaining jurisdiction and framing remedies; cases were brought on *ad hoc* judgments of hazard. The first suggestion of numerical threshold standards appears in an Administration proposal in 1955, in the legislative history of what became the 1956 Amendments to the Water Pollution Control Act. The Administration proposed uniform standards to serve as thresholds for abatement action in place of the awkward, case-by-case findings of danger to health or welfare. See Staff of the House Comm. on Public Works, *Comparative Changes Proposed to be Made in the Water Pollution Control Act*, 84th Cong., 1st Sess. 6 (1955). The proposal was not accepted, and both air and water legislation continued to rely on administratively awkward abatement conferences which were convened upon *ad hoc* findings of injury or hazard. See *The Clean Air Act of 1963*, Pub. L. No. 88-206, 77 Stat. 392. In 1965, Congress for the first time required states to set water quality standards for "interstate" waters, in accordance with uniform federal criteria. *Water Quality Act of 1965*, Pub. L. No. 89-234, 79 Stat. 903. *The Air Quality*

statutes gives EPA similar authority to respond in appropriate fashion to “imminent and substantial hazards,” the term of art for pollution discharges which require a local response,² or to pollution which causes or contributes to public health damage.³ If a pollution problem is widespread or often repeated, EPA is directed to identify the pollutants which cause or contribute to the problem. Controls may then follow; if the pollutant is a common one, EPA may be required to set environmental quality standards, that will henceforward serve as the thresholds for government response, and displace the earlier local, *ad hoc* determinations.⁴ Wherever common or “conventional” pollutants exceed these threshold standards, they are presumed to require regulation. The threshold standards, of course, are in the traditional form, judgments of acceptable or safe environmental quality. Toxic pollutants, as we shall see, are treated somewhat differently.⁵

Finally, as we have already noted, the statutes set up environmental quality goals: When a pollutant is designated, and the threshold for regulation is passed, a system of controls is put in motion whose goal is usually to keep or reduce the pollutant to insignificant levels.⁶ These are the goals of technology management, and as we shall see, the ultimate purposes of environmental protection.⁷

III. THRESHOLDS OF ACTION

§ 2:9 In General

Criteria for identifying environmental problems that require government response lie at the threshold of environmental protection law. The early history of threshold criteria and standards is discussed above.¹ In the following section we will discuss in more detail the present form and use of threshold criteria, in their three common expressions: criteria for “imminent and substantial endangerment” responses, criteria for designating pollutants for control, and numerical standards.

§ 2:10 Imminent and substantial hazards

The first threshold of environmental quality is the “imminent and substantial hazard” criterion, preserved in all statutes except the Noise Control Act.¹ This is the government’s general emergency-response authority.

Act of 1967, Pub. L. No. 90-148, 81 Stat. 485, required states to adopt similar standards for air quality in polluted regions. *See generally* Barry, *The Evolution of Enforcement Provisions of the Federal Water Pollution Control Act: A Study of the Difficulty of Developing Effective Legislation*, 68 Mich. L. Rev. 1103 (1970); Jorling, *The Federal Law of Air Pollution Control*, in *Federal Environmental Law 1058*, 1062 n.19 (E. Dolgin & T. Guilbert eds. 1974).

²See § 2:10.

³See § 2:13.

⁴See § 2:12.

⁵See § 2:23.

⁶See Ch 3.

⁷See § 2:26 and § 2:27.

[Section 2:9]

¹See § 2:2.

[Section 2:10]

¹See FIFRA § 6(c), 7 U.S.C.A. § 136d(c) (EPA may suspend registration of pesticide on finding of “imminent hazard,” by order without hearing in case of “emergency,” but states have primary responsibility to enforce); TSCA § 7, 15 U.S.C.A. § 2606 (district courts may grant relief in suits by EPA to “protect health or the environment from the unreasonable risks associated with” an “imminently hazardous chemical”); Clean Water Act § 504, 33 U.S.C.A. § 1364 (EPA may bring suit and provide financial assistance to abate “imminent and substantial endangerment to the health [or] welfare of persons”); MPRSA § 105(d), 33 U.S.C.A. § 1415(d) (district courts may enjoin “an imminent . . . violation” of the ocean dumping permit requirements); Safe Drinking Water Act § 1431, 42

The federal government has not used its emergency response authority very often in the older air and water pollution control programs, where state and local agencies have been in place for many years. In the new hazardous waste programs, however, the government began with a series of emergency responses, and the imminent hazard authority continues to be the principal criterion for triggering government action.²

Superfund—the hazardous waste cleanup program—required EPA to publish guidelines for use of imminent hazard authority under several statutes, which the Agency did in cursory form, by listing the factors it would consider before acting.³ These were general, common-sense criteria: The numbers of people affected, the routes by which they may be exposed, and the availability of alternate means of resolving the problem.⁴

Once these factors are assessed, the Agency must weigh them in some fashion, and determine whether to proceed. Although the language of the imminent hazard authorities differs in small ways among the statutes, there are fundamental principles common to all of them.

It is well established, for instance, that only the risk, and not necessarily the damage, must be imminent.⁵ Thus, where hazardous chemicals are slowly seeping out of a landfill, and will not reach water supplies for years, still there is an “imminent and substantial endangerment,”⁶ and probably would be so even if the leaking had not yet begun, but was imminent.

This places the emphasis on risk, in the sense of probabilities of future harm. In a leading case, Judge J. Skelly Wright pointed this out, and laid the basis of modern practice.⁷

EPA and the federal courts now tend toward analysis of the significance of risk. In idealized form, this means grouping and weighing factors in a manner reminiscent of older tort-law standards. Significance is analyzed into the probability that a

U.S.C.A. § 300i (after determining local government has not acted, EPA may issue orders, file suits, or take other action “necessary” to abate an “imminent and substantial endangerment to the health of persons”); RCRA § 7003, 42 U.S.C.A. § 6973 (EPA may issue orders or bring suit to “restrain” persons contributing to an “imminent and substantial endangerment to health or the environment,” or take such other action as may be “necessary to protect health and the environment”); Clean Air Act § 303, 42 U.S.C.A. § 7603 (EPA may issue orders or bring suits to abate “imminent or substantial endangerment to the health of persons”); CERCLA §§ 104 & 106, 42 U.S.C.A. §§ 9604 & 9606 (EPA has different authorities for different substances; for conventional pollutants, called “pollutants or contaminants,” the agency may respond where there is an “imminent and substantial danger to the public health or welfare,” under section § 104(a)(1)(B), but it is not clear whether EPA has authority to issue orders or bring suits in such cases. At any location where there are toxic pollutants, however, called “hazardous substances” in this statute, the agency may either respond itself, if there is a “threat of a release,” or issue orders or bring suit for equitable relief, where there is an “imminent and substantial endangerment to the public health or welfare or the environment”). Under the Noise Control Act, EPA’s Administrator may only issue orders or bring suits to “restrain” violations of the Act “necessary to protect the public health and welfare.” Noise Control Act § 11, 42 U.S.C.A. § 4910.

²See CERCLA §§ 104(a), 106(a), 42 U.S.C.A. §§ 9604(a), 9606(a); RCRA § 7003, 42 U.S.C.A. § 6923.

³See 47 Fed. Reg. 20664 (1982).

⁴47 Fed. Reg. 20664 (1982). See § 14:115.

⁵See *United States v. Price*, 688 F.2d 204, 213–14, 12 *Envtl. L. Rep.* (Envtl. L. Inst.) 21020, 21024–25 (3d Cir. 1982) (and cases cited); *cf. Ethyl Corp. v. EPA*, 541 F.2d 1, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20267 (D.C. Cir. 1976) (en banc), cert. denied, 426 U.S. 941 (1976) (lead in fuel unreasonably endangers public health). See *generally* Skaff, *The Emergency Powers in the Environmental Protection Statutes: A Suggestion for A Unified Emergency Provision*, 3 *Harv. L. Rev.* 298 (1979).

⁶See *United States v. Price*, 688 F.2d 204, 213–14, 12 *Envtl. L. Rep.* (Envtl. L. Inst.) 21020, 21024–25 (3d Cir. 1982).

⁷See *Ethyl Corp. v. EPA*, 541 F.2d 1, 6, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20267, 20270 (D.C. Cir. 1976), cert. denied, 426 U.S. 941 (1976).

harm will occur, and the magnitude of the harm if it happens; the significance of the risk analyzed in this way is then weighed against the burden of preventive measures.⁸ This is the method of analysis developed in common-law negligence cases beginning about 1900, and it is expressed in some well-known decisions of the late Judge Learned Hand, and in the Restatement of Torts,⁹ which have been brought into environmental protection law via Judge Wright's decision and those which have followed his.

This analysis remains somewhat abstract and academic because in the press of urgent work, EPA has rarely had time to make such analyses expressly, and the courts have only rarely been called on to review imminent hazard determinations, until recently. In the hazardous waste program, imminent hazard determinations are sometimes made on the ground, by On-Scene Coordinators who must determine whether to respond to traditional emergencies.¹⁰ In more extended cleanup operations, the agency uses a rather mechanical "Hazard Ranking System," which allows the agency to list all hazardous substance "releases" in order of priority; while all such releases must present imminent and substantial hazards, it will be some years—if ever—before the agency begins to approach the lowest rankings which set the threshold for response.¹¹

§ 2:11 Designated pollutants

While EPA may formulate *ad hoc* responses to imminent local hazards, national regulatory programs are established only for designated pollutants or categories of pollutants.¹ In most cases, EPA must designate any pollutant that meets the criteria

⁸See, e.g., *Massachusetts v. Andrus*, 594 F.2d 872, 892 (1979); *Carroll Towing Co.*, 159 F.2d at 173 (2d. Cir. 1947). See also *Environmental Defense Fund, Inc. v. EPA*, 548 F.2d 998, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20012 (D.C. Cir. 1976); *Environmental Defense Fund, Inc. v. EPA*, 510 F.2d 1292, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20243 (D.C. Cir. 1975). In these pesticide cases, EPA has expressly based its decision on an analysis of significant risk. See also 41 Fed. Reg. 7552 (1976).

Unifying the emergency response powers is hindered by the differences in wording among them. The only consistent thread is that all the statutes protect health against an imminent risk. But the different statutes protect "health," "public health," or the "health of persons"; some also protect "welfare," "public welfare," the "welfare of persons," or no welfare at all. Some protect the "environment" and others do not; some defer to local authority and others do not; some authorize administrative orders, others only suits; some allow any relief necessary, some allow relief *in rem*, others only *in personam*. CERCLA requires a balancing of equities, presumably preserving the common-law standard for injunctions, while others are unclear. Two statutes allow relief only when the statute has been violated, others allow relief regardless of violations. Still others, like RCRA, are ambiguous on this point. One may argue to a court that the health of (identified?) persons is narrower than public health, and narrower still than a notion of unqualified "health," but it is hard to imagine that any difference in meaning was actually intended. The problem is of long standing, but no legislative remedy has been proposed. See Skaff, *supra* note 6. Instead, Congress has directed EPA to issue guidelines for using the emergency, information gathering, and other enforcement authorities under six of the nine statutes (omitting ocean dumping, noise, and pesticides). See CERCLA § 106(c), 42 U.S.C.A. § 9606(c). EPA responded by listing some common-sense criteria it would consult, but left both the method of setting the standard to be determined separately in every case. See 47 Fed. Reg. 20664 (1982).

⁹See § 2:2.

¹⁰See 40 C.F.R. Part 300; § 14:115.

¹¹See CERCLA § 105, 42 U.S.C.A. § 9605; 40 C.F.R. Part 300, appendix B. § 14:115.

[Section 2:11]

¹See, e.g., Clean Air Act §§ 108, 109, 42 U.S.C.A. §§ 7408, 7409; Clean Water Act § 304(a)(1), 33 U.S.C.A. 1314(a)(1) (water quality criteria concerning effects of "pollutants"); RCRA § 7003, 42 U.S.C.A. § 6973 (imminent hazards from "solid waste" or designated hazardous wastes); CERCLA § 104, 42 U.S.C.A. § 9604 (listed hazardous substances, or category of "pollutant or contaminant"). Note that water quality standards were established for "dissolved oxygen," which is not a pollutant but a quality of the environment necessary to support life; complex computer models are used to relate pollutant discharges to this standard. See *Mississippi Comm'n on Natural Resources v. Costle*, 625 F.2d 1269, 10

provided in a statute.² (In a few cases, Congress itself has designated pollutants.)³ Once a pollutant has been designated, environmental quality standards must be set,⁴ or other regulatory programs set in motion, whose environmental quality goals are implicit.⁵

Not all pollutants are equal. The pollution control laws express a special distaste for “toxic” pollutants, which are subject to especially stringent standards. Toxic pollutants include cancer-causing chemicals, as well as unfamiliar synthetic chemicals, which are produced in small quantities or which have only local effects. There is no precise definition of what distinguishes a toxic from a conventional pollutant, however, and the categories vary from one statute to another, although each has some version of the distinction.⁶ In the Clean Water Act, pollutants are either “toxic” or “conventional,” and I will follow the common practice of using these terms of art to apply to all the statutes, although in the Clean Air Act, for instance, both “conventional” and “toxic” pollutants may be toxic chemicals in the ordinary sense of those words.

Envtl. L. Rep. (Envtl. L. Inst.) 20931 (5th Cir. 1980); *see also* § 2:16. The levels of ozone in the stratosphere would be another exception. *See* Clean Air Act § 601(10), 42 U.S.C.A. § 7671(10) (EPA establishes “ozone depletion potential” for substances).

²*See* NRDC v. Train, 545 F.2d 320, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20004 (2d Cir. 1976) (designation of lead as an air pollutant mandatory); Clean Air Act § 108, 42 U.S.C.A. § 7408. *See also* NRDC v. Train, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20588 (D.D.C. 1976) (settlement agreement to designate and regulate toxic water pollutants); Environmental Defense Fund, Inc. v. Ruckelshaus, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20173 (D.D.C. 1973) (EPA must regulate designated hazardous air pollutants); Clean Water Act § 307(a), 33 U.S.C.A. § 1317(a).

³*See, e.g.,* TSCA § 6(e), 42 U.S.C.A. § 2605(e); RCRA § 3004(d), 42 U.S.C.A. § 6924(d); Clean Air Act § 112(b), 42 U.S.C.A. § 7408. More often, however, Congress lists pollutants for EPA to consider. *See, e.g.,* CAA § 122, 42 U.S.C.A. § 7422; RCRA § 3004(g), 42 U.S.C.A. § 6924(g).

⁴*See* Clean Air Act, §§ 109 & 112, 42 U.S.C.A. §§ 7409 & 7412; Clean Water Act, §§ 303 to 304, 33 U.S.C.A. §§ 1213 to 1314. *See also* Environmental Defense Fund, Inc. v. Ruckelshaus, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20173 (D.D.C. 1973) (final order) (EPA must promulgate final rule for asbestos, beryllium, and mercury).

⁵*See* § 2:26.

⁶*See* Ethyl Corp. v. EPA, 541 F.2d 1, 14, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20267, 20273 (D.C. Cir. 1976) (en banc), cert. denied, 426 U.S. 941 (1976) (contrasting conventional endangerment standard with measure of *de minimis* harm). *Compare, e.g.,* Clean Water Act §§ 301(b)(1), 304(a)(4), 33 U.S.C.A. §§ 1311(b)(1), 1314(a)(4) (control of “conventional” pollutants) *with* Clean Water Act §§ 301(b)(2)(A),(C), 304(e), 307, 33 U.S.C.A. §§ 1311(b)(2)(A), (C), 1314(e), 1317 (control of “toxic” pollutants); *compare also* Clean Air Act § 109, 42 U.S.C.A. § 7409 *with* Clean Air Act § 112, 42 U.S.C.A. § 7412.

The MPRSA and the Ocean Dumping Convention prohibit dumping of “toxic” materials beyond *de minimis* concentrations, but permit some dumping of conventional materials. *See* § 2:20, note 4. RCRA, the hazardous waste disposal statute, distinguishes between ordinary solid wastes and “hazardous” solid wastes. *Compare* RCRA §§ 4001 to 4009, 42 U.S.C.A. §§ 6941 to 6949 (ordinary solid waste) *with id.* §§ 3001 to 3011, 42 U.S.C.A. §§ 6921 to 6934 (hazardous waste). The waste-spill cleanup statute, CERCLA, distinguishes between “pollutants” and “hazardous substances.” CERCLA § 104, 42 U.S.C.A. § 9604. TSCA and FIFRA apply to toxic materials only. TSCA § 3, 15 U.S.C.A. § 2602; FIFRA § 2, 7 U.S.C.A. § 136. The Safe Drinking Water Act alone fails to make the distinction (although pollutants that have no health effects at all are distinguished from those that do) and applies “conventional” safety limits to all pollutants. Safe Drinking Water Act § 1401, 42 U.S.C.A. § 300f. *Cf.* Hazardous Substances Act, 15 U.S.C.A. § 1261; The Delaney Amendment, 21 U.S.C.A. § 348(c)(3)(A) (distinguishing carcinogenic food additives).

The distinction is neither complete nor consistent, of course; like everything else in environmental protection laws, there are idiosyncracies in each statute. The Clean Water Act requires EPA to list pollutants that are neither toxic nor conventional. Clean Water Act § 301(g)(1), 33 U.S.C.A. § 1311(g)(1). Some materials are treated as conventional under some statutes and toxic under others. Acid, for instance, is a conventional pollutant under the Clean Water Act § 304(a)(4), 33 U.S.C.A. § 1304(a)(4), but may be a hazardous waste under RCRA, *see* 40 C.F.R. Part 261, and consequently a hazardous substance under CERCLA as well. Lead is regulated as a conventional “criteria” pollutant under the Clean Air Act, but as a toxic chemical under all others. The reasons for some of these differences lie in the absorptive capacity of the different environmental media, but other differences seem to be owed solely to whimsy.

There are separate programs for toxic and conventional pollutants in each statute, each with its own peculiarities, drawn from the medium itself and from the statute's history. Here we will say only a few words about the characteristics of the two categories of pollutants, so far as they affect the designation process.

§ 2:12 Designated pollutants—Conventional pollutants

Conventional pollutants are the familiar materials of traditional pollution control programs. They include the pollutants discharged into water by sewage treatment plants,¹ as well as the smoke and dust² that are still the most common air pollutants. As noted earlier, the first environmental quality standards were devised for these pollutants by local water protection agencies in the nineteenth century, and such pollutants are conventional, in the sense of being both common and familiar.

Conventional pollutants often are treated as if, in very low concentrations, they had no effect at all; by implication, therefore, they are treated as if effects would only appear above some level or "threshold."³ (This is, as we have noted, the traditional assumption.)

Consequently, there is an orderly system of identifying conventional pollutants, and setting environmental quality standards which serve as thresholds for government response. These standards have played an important role in environmental protection, and for a time dominated air and water pollution control: they are discussed more fully in the next section.

§ 2:13 Designated pollutants—Toxic pollutants

For toxic pollutants, however, good practice assumes there is no threshold of risk; while perhaps not always correct, this is a prudent assumption and is consistently applied to cancer-causing chemicals.¹

The goals set for the regulation of "toxic" chemicals are very stringent, for the very reason that there is assumed to be no threshold of safety. We will discuss these goals below.² For the moment, however, the question is a narrower one, the designation of toxic chemicals for regulation. This is in part a matter of setting priorities—at any given time, in a limited government faced by a limitless number of diminishing risks, there must be a threshold for designating chemicals for attention.

[Section 2:12]

¹See Clean Water Act § 304(a)(4), 33 U.S.C.A. § 1314(a)(4). The 1987 amendments to the Clean Water Act provide for a category of pollutants that is neither conventional nor toxic. It includes ammonia, chlorine, iron, color, and total phenols. Clean Water Act § 301(g)(1), 33 U.S.C.A. § 1311(g)(1).

²Smoke and dust are regulated as "particulate" pollutants designated under Clean Air Act § 108, 42 U.S.C.A. § 7408; 40 C.F.R. §§ 50.6.

³Lead Indus. Ass'n v. EPA, 647 F.2d 1130, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20643 (D.C. Cir. 1980) (standards must be set, although there is no actual threshold), cert. denied, 449 U.S. 1042 (1980). Conventional pollutants may have a threshold of action in any one person; it seems likely that a healthy adult, for instance, could breathe sulfur dioxide at the levels allowed by ambient standards without any risk at all. There is no evidence that healthy adults have ever been injured by breathing ambient sulfur dioxide. When a large population is exposed, however, young, old, sick, and disabled people are also exposed, and the apparent threshold vanishes. In any uncontrolled situation, therefore, the idea of a threshold has little meaning, even for conventional pollutants. For toxic pollutants, such as cancer-causing chemicals, there is no threshold even for a single person; if a single molecule of DNA is damaged, for instance, the damage may express itself as an injury—the only theoretical threshold is zero. See *Industrial Union Dep't, AFL-CIO v. American Petroleum Inst.*, 448 U.S. 607, 636 n.41 (1980).

[Section 2:13]

¹See, e.g., *Industrial Union Dep't, AFL-CIO v. American Petroleum Inst.*, 448 U.S. 607, 624–25 (1980); 44 Fed. Reg. 58642 (1979) (EPA's air "cancer policy"); 42 Fed. Reg. 54148, 54165 to 67 (1977) (OSHA policy for carcinogens); D. Doniger, *The Law and Policy of Toxic Substances Control: A Case of Vinyl Chloride* 82–84 (1978).

²See § 2:24.

From 1970 to 1980, Congress and EPA repeatedly addressed this question; in those years, it seemed plain that any chemical found to be already causing or contributing to health damage through its presence in the environment, and not a conventional pollutant, would be designated “toxic” and listed for control.³ This criterion was established in the Clean Air Act,⁴ which also provided that, once designated, toxic pollutants were to be reduced drastically—well below the threshold for designation—to levels that provided an “ample margin of safety.”⁵ For cancer-causing chemicals and most other toxic pollutants, this required substantial eradication of the pollutant, as there was no threshold of safe concentration.

This two-step procedure, of designation and eradication, was followed, somewhat less clearly, in the Clean Water Act,⁶ and the hazardous waste regulatory statute, the Resource Conservation and Recovery Act (RCRA). In RCRA, the definition of a “hazardous waste” is a material which meets the Clean Air Act’s criterion for a toxic pollutant, or which causes an imminent hazard.⁷ Once designated, the waste enters a severe regulatory program designed to gradually end contamination of soil and groundwater.⁸

The designation process was formalized in the Toxic Substances Control Act (TSCA). This statute allowed EPA to look to the sources of toxic chemicals, and designate them before they became actual problems in the environment.⁹ Under TSCA, the criterion for designating a chemical is that it poses a “significant” or “unreasonable” risk of hazard;¹⁰ a determination EPA must make using modern risk analysis; significant risks must be weighed against the social burden of control.¹¹ Once designated under TSCA, however, the chemical may be subject to severe control. Congress set the tone by designating polychlorinated biphenyls (PCB) in the statute itself, and then requiring that the chemical be removed from all use that would allow any significant release into the environment.¹² The statute gives the Agency authority to ban manufacture or use of designated chemicals.¹³

Partly because the controls which followed designation could be so drastic, EPA proceeded very cautiously to designate toxic pollutants, and occasionally was spurred on by citizen suits to act more quickly than it wished.¹⁴

In 1980, however, the Agency dramatically abandoned its cautious, case-by-case

³These were years in which a series of chemical products already in wide use—PCBs, PBBs, mercury, cadmium, asbestos, chlorofluorocarbons, halogenated solvents, and so on—were discovered or thought to create hazards like those attributed to radioactive fallout from weapons testing, and the broadcast of pesticides. *See, e.g.*, Environment Magazine issues for the early 1970s; *see* § 2:2.

⁴*See* Clean Air Act of 1970, Pub. L. No. 91-604, § 112(a)(1) (subsequently amended).

⁵*See* Clean Air Act of 1970, Pub. L. No. 91-604, § 112(b)(1)(B). This language was retained in the 1990 amendments to the Clean Air Act, § 112(f)(2), 42 U.S.C.A. § 7412(f)(2).

⁶*See* Federal Water Pollution Control Act Amendments of 1972, § 307, Pub. L. No. 92-500.

⁷*See* RCRA § 1004(5), 42 U.S.C.A. § 6903(5).

⁸*See* § 14:22.

⁹*See* § 14:22.

¹⁰*See* TSCA §§ 4(f), 5(b)(4)(A)(i), 5(e), 5(f), 6(a), 15 U.S.C.A. §§ 2603(f), 2604(b)(4)(A)(i), 2604(e), 2604(f), 2605(a).

¹¹*See, e.g.*, TSCA § 4(f), 15 U.S.C.A. § 2603(f). A chemical must be designated for early regulation if it poses either a “serious” or a “widespread” risk of harm; the disjunctive seems to require separate analyses of individual and population risks. The risk must also be found to be “unreasonable,” which seems to require that the risk be weighed against some estimate of control costs.

¹²*See* TSCA § 6(e), 15 U.S.C.A. § 2605.

¹³*See* TSCA §§ 6(a)(1)(A), 6(a)(5), 15 U.S.C.A. §§ 2605(a)(1)(A), 2605(a)(5). It does, however, admonish the Agency to impose the “least burdensome requirements” that will protect adequately against risk. *Id.* § 6(a), 15 U.S.C.A. 2605(a).

¹⁴*See, e.g.*, Natural Resources Defense Council v. Train, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20588 (D.D.C. 1976) (consent decree to designate and regulate toxic water pollutants); *cf. Comm. on Pub. Works, National Air Quality Standards Act of 1970*, S. Rep. No. 91-1196, at 20, 94–95 (1970) (few air

designations.¹⁵ In its regulations implementing RCRA hazardous waste provisions, EPA designated a wide range of industrial chemicals, simultaneously, for regulation as toxic and otherwise “hazardous” wastes.¹⁶ Congress ratified this wholesale designation¹⁷ and so the pattern of designations has now fundamentally changed.

The change had profound effects on all of environmental law. The hazardous waste control programs themselves became extraordinarily ambitious. RCRA now requires that land disposal of most hazardous wastes in existing facilities must end, and that any land disposal of many wastes is prohibited.¹⁸

Hazardous wastes listed for control under RCRA are also automatically designated as “hazardous substances” under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), which imposes retroactive liability on persons who discarded these materials in the past;¹⁹ any continued release risks serious liability.²⁰ Where hazardous substances or hazardous wastes contaminate soil or groundwater, responsible parties may bear the cost of cleaning them up everywhere that EPA finds a hazard—and without regard to whether the designated substances cause or contribute to the hazard.²¹ Again, because of the broad designation of chemicals, these requirements create an immensely ambitious cleanup program, and begin to stretch the limits of manufacturers’ liability.

There have also been effects on other environmental protection programs, where designations have proceeded much more cautiously. The broad designations of chemicals for rigorous control under the hazardous waste laws may have driven pollutants out of landfills and into sewers, where they are more narrowly regulated under the Clean Water Act. An EPA study showed that in Philadelphia, and perhaps other cities, the sewage treatment plants were the largest source of toxic air pollution as volatile industrial chemicals dumped into sewers found their way to the treatment plants’ aeration ponds.²²

In the late 1980s national environmental groups pressed EPA to designate more toxic air pollutants, and to regulate more aggressively discharges into sewage treatment plants, under Clean Water Act categorical pretreatment regulations.²³ EPA abandoned the compromises of earlier years—in which the goal of the elimination of

pollutants were expected to be designated as toxic, in part because designation was expected to be followed by virtual prohibition); W. Rodgers, *Environmental Law* 277 n.10 (1976).

¹⁵*See, e.g.*, *Natural Resources Defense Council v. Train*, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20588 (D.D.C. 1976). In this case, EPA agreed to establish water quality standards for toxic water pollutants, but required best available technology controls more quickly; D. Doniger, *The Law and Policy of Toxic Substances Control: A Case of Vinyl Chloride* 82–86 (1978). The vinyl chloride settlement provided for air pollution controls based on the best currently available technology, to be tightened as technology improves, until all significant emissions are eliminated. EPA did not move beyond the original emission limits in ten years, however, and NRDC brought suit to enforce the original settlement agreement. In deciding the case, the court set out criteria for interpreting the mandate of Clean Air Act § 112 which were later adopted in the 1990 Clean Air Act Amendments. *See NRDC v. Thomas*, 824 F.2d 1146, 17 *Envtl. L. Rep.* (Envtl. L. Inst.) 21032 (D.C. Cir. 1987); *see also* § 12:68.

¹⁶*See* 45 *Fed. Reg.* 33119 (1980); 40 *C.F.R.* pt. 261.

¹⁷*See* RCRA §§ 3004(d) to (h), 42 U.S.C.A. §§ 6924(d) to (h) (land-disposal prohibition applied to all listed wastes; additional wastes to be listed).

¹⁸RCRA §§ 3004(d) to (h), 42 U.S.C.A. §§ 6924(d) to (h).

¹⁹*See* CERCLA §§ 101(14), 107, 42 U.S.C.A. §§ 9601(14), 9607.

²⁰*See* § 14:128.

²¹*See* *United States v. Wade*, 546 *F. Supp.* 785, 12 *Envtl. L. Rep.* (Envtl. L. Inst.) 21051 (E.D. Pa. 1982); § 14:139.

²²*See* Haemisegger, Jones & Reinhardt, *EPA’s Experience with Assessment of Site-Specific Environmental Problems: A Review of IEMD’s Geographic Study of Philadelphia*, 35 *JAPCA* 809, 813 (1985).

²³*See, e.g.*, *Natural Resources Defense Council v. EPA*, 790 F.2d 289, 16 *Envtl. L. Rep.* (Envtl. L. Inst.) 20693 (3d Cir. 1986).

toxic pollution discharges was preserved as a goal to be approached only as rapidly as the best available treatment technology would allow. The Agency sought to have the statutes altered to avoid the problem.²⁴ In 1987, Congress showed its impatience with the slow pace of controlling water toxics by amending the Clean Water Act to require specifically the assessment and control of various sources.²⁵ Then, in 1990, after years of negotiations, a major revision to the Clean Air Act was enacted. Regarding toxics, Congress completely revised section 112, adding a list of 189 hazardous air pollutants to be regulated and requiring EPA to establish standards for major sources.²⁶ In addition, the amendments directly addressed the problem of ozone depletion, phasing out those substances that cause depletion and regulating their disposal and replacement.²⁷

IV. NATIONAL AMBIENT STANDARDS FOR CONVENTIONAL POLLUTANTS

§ 2:14 Introduction

EPA and state agencies set standards for environmental quality, as we have seen, for designated pollutants.¹ These standards were particularly important in the early years of the air and water pollution control programs, and continue to serve several different functions, not always clearly distinguished.

To begin with, as we saw in the previous section, standards for conventional pollutants served as uniform thresholds for government response to widely-found chemicals. The standards, or the criteria on which they were based, were set uniformly across the country, and the government's response was therefore triggered by similar concentrations of pollutants wherever they were found. This triggering function continues to be important, especially in air and water pollution control programs.² A similar function is served by the numerical scores assigned to abandoned hazardous waste sites, and the groundwater quality standards which trigger corrective action under RCRA.³

Under the Clean Air Act, for example, states must identify areas in which designated pollutants exceed national standards;⁴ for each such area, the state must prepare and carry out a plan to control the designated pollutant.⁵

Standards can be used in this way for only a limited number of commonly found pollutants, of course; it would not be practical to set uniform national standards for

²⁴See L. Thomas, *Controlling Pollution for Permanent Protection: Toward A Whole Systems Approach to Environmental Policy* 9 (1985) (pamphlet published by EPA).

²⁵Water Quality Act of 1987, Pub. L. No. 100-4, § 308(a), 33 U.S.C.A. § 1314(1). In 1992, EPA promulgated guidance on priority toxic pollutants for the states that had not yet adopted regulations. One of the more controversial issues was determination of an "acceptable" level of risk for human carcinogens. See 54 Fed. Reg. 60848 (Dec. 22, 1992); § 13:73.

²⁶Pub. L. No. 101-549, § 301; 42 U.S.C.A. § 7412.

²⁷Clean Air Act § 602, 42 U.S.C.A. § 7671a. The United States was a signatory to the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer, 26 I.L.M. 1550 (1987), which imposed limits on the production and consumption of chlorofluorocarbons (CFCs) and other chemicals that are depleting stratospheric ozone. Congress demonstrated its concern about this problem when enacting the 1990 amendments to the Clean Air Act by including provisions that are more protective than those required by the Protocol. See Clean Air Act §§ 601 to 618, 42 U.S.C.A. §§ 7671 to 7671q.

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¹See § 2:24.

²See Chs 12, 13.

³See RCRA §§ 14:104, 14:126.

⁴See Clean Air Act § 107(d)(1), 42 U.S.C.A. § 7407(d)(1).

⁵See Clean Air Act §§ 110(a), 172, 42 U.S.C.A. §§ 7410(a), 7502.

thousands of chemicals, many of which are only rarely found as pollutants, and for many of which no threshold is accepted.⁶

But, for conventional pollutants, which by definition require national cleanup programs, threshold standards have been necessary and useful.

Once a cleanup program is in motion, the state or federal standard which triggered the program may also serve as a goal. This happens so naturally that the shift in function is not always noticed.

§ 2:15 Standards as interim goals

Interim goals are useful where cleanup programs must begin with drastic or disruptive measures to meet a perceived emergency. The standard which triggers cleanup tells the state or EPA where these measures are needed; once the pollution drops below the triggering threshold, the emergency is past, and while further control may still be required, it can be carried out on a more relaxed schedule. The Clean Air Act primary standards, and Clean Water Act standards for fishable and swimmable water, are indeterminate standards of this type. Ultimate or long-range goals of pollution control may also be in the form of standards.¹

Standards which define the goals of pollution control programs also define the limits of a natural resource. There is only so much water flowing in a stream. Once a standard has been set, it defines the capacity of the stream to receive pollutants; the amount of pollutant that can be discharged into the stream in any hour or day is fixed. This limited capacity to absorb pollutants can be parcelled out, auctioned, or traded in a market, like any scarce commodity.

Wherever standards can be used in this way, the government's role in pollution control theoretically can be limited. Once the standard is set, and the allowable rate of discharges determined, the allowable discharges can be sold or distributed in some way that mimics the operation of a free market, and each discharger is left free to exercise his or her ingenuity to find the most efficient way of staying within the purchased limits. State plans to achieve primary air quality standards may be set up this way.

The potential for such market-type allocations of control, which—assuming the premises—would be optimally efficient, was one of the strong forces behind the adoption of standards-based air and water pollution control programs.² There are only a few situations, although these few are important, where market-type programs based on standards have proven to be practical, however.

Market-type schemes may work where a single discharger's emissions are not very important, and the government is therefore indifferent, within wide limits, to the way controls are allocated among sources. On a big river, for instance, it may not matter very much how much organic material a sewage treatment plant or fac-

⁶In 1981, for instance, EPA had 3,500 chemicals under consideration for regulation under one of its nine statutes. *See* National Research Council, *Risk Assessment in the Federal Government* 12 (1983).

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¹*See* § 2:19. The distinction between interim and long-term goals in Canadian air pollution law is similar. *See* M. Mellon, L. Ritts, S. Garrod & M. Valiante, *The Regulation of Toxic and Oxidant Air Pollution in North America* 93 (1986).

²The important support the Public Health Service and the academic community gave standards-based programs, for instance, was based in part on the idea that air and water had limited "assimilative capacity," and that this limited capacity was a resource that could be allocated most efficiently by markets, or by calculations which mimicked market operation. *See, e.g.*, Committee on Science on the Promotion of Human Welfare, American Association for the Advancement of Science, *The Air We Breathe* (1965).

tory discharges, so long as the aggregate of emissions from all sources is kept within the stream's ability to maintain the specified levels of dissolved oxygen.³

One often-cited success of market-type allocations is the Clean Air Act "bubble" program for hydrocarbon emissions; these discharges are often innocuous in themselves, but the aggregate emissions from a wide area contribute to the formation of smog. Individual emission controls, within the overall limit or "bubble," can be allocated by auction or other market-type schemes.⁴ Diffuse or distant sources of pollution—like the sources of acid rain—are good candidates for such control programs. In this regard, Title IV was added to the Clean Air Act in 1990, creating a market-based system to reduce SO₂ emissions. Its scope is limited, however, and it can be criticized for not forcing higher levels of reduction.⁵

When a single source's emissions are important, goal-setting standards cannot be divided and sold very easily. Single-source impacts are important whenever, taken alone, they have an impact that requires a remedy. This happens most often in one of two cases: where a very large source of conventional pollutants has emissions that exceed allowable standards; and where a source emits toxic pollutants, and the goal is to reduce emissions from each source to insignificant levels.⁶

Even in these cases, a sort of market for pollution rights can be established. But there is only one source of pollution; the other traders are the neighbors of the source, who want to consume the air or water by breathing and drinking. They can bargain with the source to allocate the resource among them; the Weirton Steel plant in West Virginia, for instance, is the main source of pollution, as well as jobs, in Weirton, West Virginia. The employees of the plant own it and live nearby; when they decide on levels of control, they are bargaining among themselves to allocate the burden of pollution. EPA for a time tried to encourage such bargaining among the owners and neighbors of a copper smelter, the principal source of arsenic pollution in Tacoma, Washington. Here, instead of allocating controls among sources in an efficient way, the government is allocating injuries among the people affected by pollution, and this raises different moral and political questions.

Uniform national standards encourage the first sort of market-type allocation, where many sources contribute to the pollution problem. They allow an efficient allocation of controls. They effectively prohibit the second type of market allocation, however, where a single source's emissions are important, and the bargaining must be held between the source and its neighbors who risk injury. National standards were intended to—and do—prohibit such bargains. Industry is obliged, in effect, to bargain with the government, which is in a stronger negotiating position than the scattered neighbors of industrial plants.

When emissions from a single source are important, the standard is transformed. Instead of simply triggering a control program, and providing a method of allocating controls among sources, the standard defines the level of control needed at a single source. The standard of liability becomes, all at once, the measure of relief. In this third role, standards have proven complex and hard to manage.

In the following section,⁷ we will discuss the use of standards directly as the basis of relief, to define the level of control needed at a single source.

³For a rare success story of such a control program, see Ackerman & Sayer, *The Uncertain Search for Environmental Policy: Decisionmaking Along The Delaware River*, 120 U. Pa. L. Rev. 419 (1972).

⁴See, e.g., T. Tietenberg, *Emissions Trading: An Exercise in Reforming Pollution Policy* (1985); cf. R. Liroff, *Air Pollution Offsets: Trading, Selling and Banking* (1980) (markets for regulatory credits in air pollution programs).

⁵Clean Air Act § 403, 42 U.S.C.A. § 7651b.

⁶See § 2:23.

⁷See § 2:16.

§ 2:16 Ambient standards as the basis of control—Environmental quality modeling

It is sometimes possible to measure directly the impact of a single source on environmental quality. More often, however, the impact must be calculated or predicted.

The technique for predicting an emission's impact on environmental quality is called "modeling." Direct experiments to determine the impact of pollutant emissions on the environment are rarely carried out, in part because they are expensive and in part because they are rarely conclusive. Air quality standards, for instance, must be met with respect to all air to which the public has access,¹ while physical experiments necessarily are limited to a few places and times. Abstract calculations are therefore required, if only to generalize from the results of experiments. Where the environment is already clean, experiments to detect the tiny increments of degradation permitted by the statutes are not possible, and calculations of theoretical impact are all that can be done.² Finally, the regulation of new sources requires some method of predicting the impact of pollution sources not yet built.

Instead of releasing a pollutant and seeing where it goes, therefore, a state official trying to set an emission control for a major source will perform mathematical calculations of where the pollutant would be carried if it were released. A mathematical formula which serves as a surrogate or "model" of the environment can be used in such work to predict the effects of an emission on environmental quality at all times and places.³

Air quality modeling is probably the best developed of these methods. The 1990 amendments to the federal Clean Air Act imposed a wide variety of technology-based controls on emission sources. This has served to reduce the role of air quality modeling in setting emission limits for many sources. The 1990 amendments also focus much more heavily on long-range regional air quality control strategies, a trend that also diminishes the role of air quality modeling for individual sources. Nevertheless, there remain some situations in which modeling as it was practiced before the 1990 amendments remains important. The following text describes some of the experiences with air quality monitoring during the era following the 1972 amendments.

The principal air-quality modeling techniques approved by EPA for general use⁴ were tested after World War I by British scientists trying to learn how poison gas clouds were dispersed on battle fields. The scientists found that, over short distances and close to the ground, a plume of buoyant gas would travel with the wind and disperse in a regular way through the random motions of the air. The slow dispersal of the plume could be described by the familiar bell-shaped or "Gaussian" curve of chance distribution.⁵ Over the last sixty years, Gaussian-plume dispersion modeling has been refined and is now applied to the dispersion of buoyant plumes of

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¹See 40 C.F.R. pt. 50.1(e).

²See *Alabama Power Co. v. Costle*, 606 F.2d 1068, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) 20400 (D.C. Cir.), modified, 636 F.2d 323, 10 *Envtl. L. Rep.* (Envtl. L. Inst.) 20001 (D.C. Cir. 1979).

³See Kramer, *Air Quality Modeling: Judicial, Legislative and Administrative Reactions*, 5 *Colum. J. Env'tl. L.* 236 (1979).

⁴See 45 Fed. Reg. 42279, 42280 to 42281 (1980); Office of Air Quality Planning and Standards, Environmental Protection Agency, *Guideline on Air Quality Models* (revised) (EPA-450/2-78-027R), supplement A (1987), supplement B (1993), and supplement C (1995); 40 C.F.R. Part 51, Appendix W. Supplement C is found at 60 Fed. Reg. 23928 (May 8, 1995) [hereinafter cited as *Modeling Guideline*]. The *Modeling Guideline* is incorporated by reference in EPA regulations. See, e.g., 40 C.F.R. §§ 51.160(f), 51.166(l)(1).

⁵See F. Pasquill, *Atmospheric Diffusion* 5, 168–69 (1974).

pollutants from smokestacks; this modeling technique provides a reasonable approximation of pollutant dispersion over several miles.

EPA-approved forms of Gaussian-plume dispersion modeling cannot be extended over long distances, however, because the layering of the atmosphere and large-scale movements of air overwhelm the steady winds and small, random motions which account for the regular dispersion pattern upon which the approved modeling depends.⁶ Any rough terrain that rises higher than the emitting chimney adds serious difficulties. Predicting so simple a movement as the passage of a plume of smoke over a hilltop higher than the smokestack, under all meteorological conditions, is still as much an art as it is a science. Under some conditions, a smoke plume may run squarely into the hill, and at other times it may be lifted smoothly over the hilltop without touching the ground. The effects of stagnant or very turbulent air are especially difficult to predict. Moreover, the dispersion coefficient—the rate of spread—of the plume under some conditions is a hotly debated factor. These uncertainties make it difficult to adopt enforceable emission limits. Predictions are usually expected to be accurate within only a factor of two.

It must be remembered that a major industrial plant emits hundreds of thousands of tons of sulfur dioxide each year, which may travel hundreds of miles with the winds, while national ambient air quality standards allow only millionths of a gram to be present in any cubic meter in any three-hour period.⁷ Models can certainly be improved and eventually may account for all of the myriad pertinent factors that affect the impact of one source's emissions on the environment. Yet, as the models become more elaborate and accurate, the modeling exercise requires more and more data about the actual physical conditions of the site. Because slight variations in the physical circumstances can affect the results of the model, the refinement of the models requires ever more detail about the site itself. As a result, the distinction between modeling and monitoring experiments begins to blur, and the effort devoted to modeling approaches that needed to measure the actual event.

In the many cases where EPA-approved models are not suitable, the Agency allows a case-by-case demonstration of the validity of a new model.⁸ The courts have urged EPA to open its list of generic approvals for new models;⁹ the Agency has somewhat increased the number and variations of approved models, but site-by-site judgments of the models still are necessary.

Despite the severe limits of site-specific models, modeling must be done. The whole scheme of controls for existing sources based on environmental quality depends on establishing the degree to which emissions from a source will be precipitated from or diluted by the surrounding air. EPA and state scientists, and a growing corps of professional consultants, have developed a variety of *ad hoc* techniques. All modeling involves a good deal of professional judgment in selecting the appropri-

⁶See Modeling Guideline, 60 Fed. Reg. 23928 (May 8, 1995).

⁷See, e.g., 40 C.F.R. § 50.4 (primary standards for SO₂ are measured in micrograms—millions of a gram per cubic meter).

⁸EPA provides in Appendix A of the Modeling Guideline summaries of refined air quality models that are preferred for specific site applications. Both EPA models and models developed by others are included. Appendix B of the Guideline contains summaries of other refined models that may be considered with a case-specific justification. Appendix C contains a checklist of requirements for an air quality analysis. Modeling Guideline, *supra*. Further guidance for case-by-case modeling is given in Environmental Protection Agency, Workbook for the Comparison of Air Quality Models (1978). Cf. Clean Air Act § 320, 42 U.S.C.A. § 7620 (triennial review of modeling techniques).

⁹See *Texas v. EPA*, 499 F.2d 289, 301 n.16, 4 Env'tl. L. Rep. (Env'tl. L. Inst.) 20744, 20749 n.16 (5th Cir. 1974) (upholding EPA reliance on simple "rollback" modeling but urging more refined techniques); *Alabama Power Co. v. Costle*, 636 F.2d 323, 374-94, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20001, 20019-32 (D.C. Cir. 1979) (opinion by Robinson, J.) (urging EPA to move beyond Gaussian-plume models approved in the Modeling Guideline), modifying 606 F.2d 1068, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20400 (D.C. Cir. 1979) (per curiam).

ate tools and data, in adjusting assumptions to meet the apparent circumstances, and in discarding obviously incorrect results. Because scientists differ in their exercise of such judgment, however, each modeling effort is open to criticism. Even when approved models are used—but more surely when *ad hoc* techniques must be employed—modeling can be a source of delay and controversy. As in the case of all technical decisions, of course, courts will be highly deferential to EPA's determinations regarding choice of air quality models and data inputs. Only where there is marked deviance between model predictions and monitored data or between the EPA Guideline and EPA practice will a court be likely to reverse or remand.¹⁰

The natural and inevitable result was that site-specific “modeling” developed into a form of gamesmanship.¹¹ Because of the difficulty in reaching scientific agreement on the dispersal of pollutants in the air at any location, there is a strong temptation to reach compromise verdicts; to set an emission limit that represents, not the level which protects health or welfare in all instances, but the level which can be achieved politically and economically. Such decisions are unsatisfactory in themselves and are open to attack in the courts.¹²

§ 2:17 Regional modeling

There are many situations in which site-specific air quality modeling cannot be done. The most important case is the common one of an ambient air pollutant that is not emitted as such from any source, but which results from chemical or physical changes in airborne matter. An example of such a pollutant is smog. When hydrocarbons and nitrogen oxides are exposed to sunlight, they undergo complex reactions which produce a mix of chemicals, including ozone, which may be damag-

¹⁰*See, e.g.,* *Kamp v. Hernandez*, 752 F.2d 1444, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20216 (9th Cir. 1985); *Ohio Power Co. v. EPA*, 729 F.2d 1096, 14 *Envtl. L. Rep.* (Envtl. L. Inst.) 20354 (6th Cir. 1984), cert. denied, 53 U.S.L.W. 3403 (U.S. Nov. 27, 1984); *Wisconsin Elec. Power Co. v. Costle*, 715 F.2d 323, 13 *Envtl. L. Rep.* (Envtl. L. Inst.) 20803 (7th Cir. 1983); *Texas v. EPA*, 499 F.2d 289, 4 *Envtl. L. Rep.* (Envtl. L. Inst.) 20744 (5th Cir. 1974); *see also* *Cleveland Elec. Illuminating Co. v. EPA*, 572 F.2d 1150, 8 *Envtl. L. Rep.* (Envtl. L. Inst.) 20312 (6th Cir. 1978) (CEI II) (upholding selection of Gaussian-plume modeling for rural sources, but remanding for reconsideration of modeling of highly turbulent conditions).

EPA decided that the RAM model upheld by the Sixth Circuit in CEI II was incorrectly applied to two Cleveland Electric Illuminating plants, and remodeled the proposed emission limits, *see* 44 Fed. Reg. 33711 (1979), but because of uncertainty over the modeling, EPA suspended the plants' compliance date until June 17, 1980. 45 Fed. Reg. 1022 (1980). The Commonwealth of Pennsylvania, joined by several Northeastern states and an environmental group, filed petitions for review of EPA's compliance date (of the revised limits), in the U.S. Court of Appeals for the Sixth Circuit (Nos. 80-3147 and 80-3148), whereupon EPA changed its mind again and used another Gaussian-plume model, called CRSTER, to set yet another emission limit for the plants. 45 Fed. Reg. 42279 (1980). CRSTER, a single-source reference model, was announced as the only approved model in such situations. *Id.* at 42280-81. Power and coal companies, citizen and environmental groups, and downwind states all challenged this rulemaking. On remand, the EPA affirmed its own modeling in turbulent (“stability class A”) conditions, despite the lack of on-site validation. *Id.* at 41501. EPA was apparently following the procedures adopted in this case generally, as an interpretation or modification of its Modeling Guideline. In 1986, however, the Sixth Circuit remanded the CEI emission limits to EPA once again, holding that EPA's choice of the CRSTER model was arbitrary since—unlike RAM which EPA had earlier accepted and then abandoned—it had not been validated at the site, and the factor-of-two error in the model was too large to permit EPA to prefer it over a locally-validated model. *See Ohio v. EPA*, 784 F.2d 224, 16 *Envtl. L. Rep.* (Envtl. L. Inst.) 20447 (6th Cir. 1986), on reh'g, 798 F.2d 880, 16 *Envtl. L. Rep.* (Envtl. L. Inst.) 20870 (6th Cir. 1986). Since EPA generally relies on the CRSTER model without local validation, this latest opinion seems to send the Agency back to zero, and to require revalidation of the model at every site where it is challenged.

¹¹“Modeling is becoming elevated to the same high art of gamesmanship as lawyering, and often a company finds it cheaper to hire modelers and lawyers than to put in pollution control equipment.” Address by Douglas M. Costle to the Air Pollution Control Association (Montreal, June 23, 1980) at 10.

¹²*See Union Elec. Co. v. EPA*, 427 U.S. 246, 265-66, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20570, 20575 (1975) (EPA may not consider feasibility of provisions of state plans to meet standards).

ing to health. Some of the pollutants which enter into the smog reaction are quite inert under other circumstances, and may travel long distances before becoming a part of the physical and chemical reaction which produces smog. Sulfur dioxide, nitrogen oxides, particles, and hydrocarbons all participate in atmospheric reactions. Different reactions predominate at different times of day, depending upon the height of the sun, the temperature and humidity, and the presence of other pollutants and natural materials.

Water quality, even more than air quality, is determined by the interactions of pollutants with the environment and living things. EPA has found few techniques for modeling the effects of a single source's emissions through such complex interactions of pollutants over a long distance, and there are reasons to think such modeling may not be possible in many situations except in the most abstract sense, because the actual physical relationship of sources and effects is so attenuated that no site-specific model could ever be validated.

In such situations EPA has used two methods instead of site-specific models. The first, principally used in the early years after the 1970 Clean Air Act Amendments, is called "rollback." When using rollback modeling, a state determines, as best it can, the area in which emissions contribute to pollution of ambient air or water. The state requires all sources of relevant pollutants to reduce or "roll back" their emissions by the proportion in which concentrations of pollutants exceed the standard. If pollutant levels are 150 percent of the standard, for instance, each source which contributes to the problem will reduce its emissions by one third. There is no effort to determine the actual contribution of any one source to ambient pollution, and the effect of rollback on purely local pollution is difficult to predict.¹ The technique has been used with some success in water pollution control, where it is a form of "waste load allocation."²

A second approach is the use of regional models, which aggregate the emissions from several sources and calculate their impact over long periods of time and over large geographical areas. Regional models are less sensitive to minute variations in local conditions than are site-specific models, and therefore can be used with less data and less effort. These models are used to predict the aggregate pollutant contributions of large regions to the smog which forms over them; other such models are being adapted for use in predicting long-range transport of sulfur dioxides, nitrogen dioxides, and smog. Although their predictions of long-term averages and wide impacts are difficult to verify, regional models allow more realistic allocation of control burdens than do rollback models, and provide some promise as knowledge of the atmosphere and its chemistry improves.

Regional models may ultimately be adapted to the site-specific state plans by some variation of the "bubble" procedure; controls will be allocated among sources within a region according to political or economic considerations, so long as the total emissions from the region being modeled remain within permissible, modeled limits. To the extent such regional models dominate a cleanup program—as they may in any scheme for controlling acid rain, smog and particulate pollution, which account for the bulk of conventional pollutants in the air, and nonpoint source or long-range conventional water pollution—the controversies over site-specific models will diminish.

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¹See generally *Texas v. EPA*, 499 F.2d 289, 4 *Envtl. L. Rep.* (Envtl. L. Inst.) 20744 (5th Cir. 1974); *South Terminal Corp. v. EPA*, 504 F.2d 646, 662–63, 4 *Envtl. L. Rep.* (Envtl. L. Inst.) 20768, 20772–73 (1st Cir. 1974).

²See *Clean Water Act* § 303(d)(1)(C), 33 U.S.C.A. § 1313(d)(1)(C); Ackerman & Sayer, *The Uncertain Search for Environmental Policy: Scientific Factfinding and Rational Decisionmaking Along the Delaware River*, 120 *U. Pa. L. Rev.* 419 (1972).

During the period 1990 to 1995, EPA made rapid progress in the development of advanced regional models for interstate movement of ground-level ozone. Those models are a significant determinant of the level of emission reduction needed in state implementation plans to attain the ozone standard.

§ 2:18 Other aspects of ambient standards

Environmental quality standards, once set, apply everywhere and at all times in the environment.¹ Defendants have explored the limits of these standards, however, and have found some jurisdictional issues. Standards are set medium-by-medium; for instance, federal surface water quality criteria usually do not apply to groundwater² and air quality standards apply only to outdoor air to which the public has access.³ There may be room to argue that an air standard does not apply, and that controls therefore are not required, when an alleged violation occurs over company-owned land. EPA generally takes the view that a discharger may not buy up surrounding lands in order to remove discharges from the “environment,” but this view has not been tested in court.

Standards are limits in time as well as space. A standard is always measured over some period of time, although the period may be only an instant. There is a very large difference between emissions averaged over a year, and emissions measured instantaneously. Enforcement officials generally prefer instantaneous measurements as they are easiest to establish and enforce; industry generally asks for long-term averages, which allow greater flexibility of operation. When a short-term standard has been exceeded in absolute terms, the defendant may argue that he has nevertheless complied with the standard when considered as an annual average. In this way, the defendant may get credit for shutdowns and periods of low emissions. Enforcement officials are forced to argue over averaging times, which are technical and seem less important than absolute concentrations. In reality, of course, averaging times are as important as concentrations, since damage is done by exposure over time.

Finally, there is the abstruse issue of probability. Environmental quality varies continuously over time and space; concentrations of pollutants in air or water obviously do not remain constant, but vary in response to changes in source emissions, the flow of the medium, turbulence, and the random motions of molecules. By stating the standards as averages, some of the shorter-term variations are ignored. But continuous variations still create several difficult problems.

The worst is the problem of the rare event. Early in the control programs, EPA professionals discovered that rare conjunctions of weather and pollution could create unusually bad pollution in small spaces or for brief periods. It seemed unreasonable to base control programs on these rare events; standards were therefore written in a way that discounted their effect. Air quality standards, for instance, ignore

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¹See Clean Air Act § 109, 42 U.S.C.A. § 7409 (1982); 40 C.F.R. § 50.1(e) (definition of “ambient air”). The Clean Water Act’s water quality criteria apply everywhere and at all times, although the standards based on the criteria are set for each water segment. *Mississippi Comm’n on Natural Resources v. Costle*, 625 F.2d 1269, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20931 (5th Cir. 1980); Clean Water Act § 304, 33 U.S.C.A. § 1314.

²See *Exxon Corp. v. Train*, 554 F.2d 1310, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20594 (5th Cir. 1977); *but see United States Steel Corp. v. Train*, 556 F.2d 822, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20419 (7th Cir. 1977). The Fifth Circuit’s well-reasoned opinion in *Exxon Corp.* is plainly preferable, and has generally been followed, although the issue remains unresolved. See *Norfolk v. United States Army Corps of Eng’rs*, 968 F.2d 1438, 22 Env’tl. L. Rep. (Env’tl. L. Inst.) 21337 (1st Cir. 1992).

³See 40 C.F.R. § 50.1(e) (definition of “ambient air”).

single “exceedances”;⁴ control requirements are based on the *second* highest pollution value measured or predicted; and water quality standards do not apply to very unusual stream flow conditions.⁵ Short-term air quality standards must be exceeded at a specified frequency before controls will be required.⁶

Environmental quality modeling, however, tends to rest on worst-case assumptions. The result is that modeling will predict extremely rare events, based on unlikely conjunctions of worst-case weather and worst emissions. Controls based on such calculations may seem unreasonable.

EPA has occasionally proposed to change its modeling techniques to allow more realistic assumptions and to disregard rare events,⁷ but for years the Agency was immobilized by the expectation that more severe controls will eventually be needed to reduce acid rain. It would be a pointless exercise to relax controls only to have them tightened again to better control acid rain. The unreasonableness of basing controls on extremely rare events remains a strong argument against such controls, however, and industrial sources occasionally rely on such arguments to obtain relaxation of state regulations.

All of these factors add additional complexity to the systems of controls based on environmental quality standards. Because these complexities have meant delay, Congress, to ensure at least some immediate cleanup at existing sources, began in 1972 to impose technology-based requirements on existing sources—as they had already been imposed on new facilities. This was a considerable step, and effectively removed the need for a local, action-triggering standard. Once a pollutant had been designated, control was required, regardless of local pollution levels.

This technology-based model was followed in most later legislation, so that action-triggering threshold standards, and remedies based directly on such standards, are receding in importance.⁸ Technology-based controls are discussed in Ch 3.

V. GOALS

§ 2:19 Introduction

There are several express goals to be achieved for designated pollutants. Where the environment has already been polluted, environmental quality standards for conventional pollutants may serve as both triggers for the cleanup and as milestones to mark progress. These interim standards were discussed in the preceding section, and need no further elaboration.

There are other express goals for control of designated pollutants.

First, where the environment is still unpolluted, it is to be kept free of any signif-

⁴“Exceedances” is a jargon term that refers to concentrations of a pollutant in excess of the standard set for it, but which are not repeated and are therefore not violations of the standard. *See* 40 C.F.R. § 50.4–12.

⁵*Mississippi Comm’n on Natural Resources v. Costle*, 625 F.2d 1269, 10 *Env’tl. L. Rep.* (Env’tl. L. Inst.) 20931 (5th Cir. 1980).

⁶*See, e.g.*, 40 C.F.R. § 50.8 (one-hour carbon monoxide standard may be exceeded no more than once per year).

⁷The “ExEx” Modeling technique for sulfur dioxide emissions to take into account variability of sulfur in coal is an example of one such proposal. The “ExEx” method (for “expected exceedances”) is a statistical probability model to determine the effects of emissions, taking into account the daily variations in the sulfur content of coal. *See generally* Memorandum from Walter C. Barber, Director, Office of Air Quality Planning and Standards, to Barbara Blum, Deputy Administrator, EPA Memorandum on Proposal for Determining Compliance with Sulfur Dioxide Standard, *reprinted in* 10 *Env’t Rep.* (BNA) 1872 (1980). *See also* 12 *Env’t Rep.* (BNA) 353 (1981) (rejection of 30 day averaging method to substitute for ExEx).

⁸Congress does, however, continue to rely on such standards in some circumstances. *See* Clean Water Act § 304(l)(1), 33 U.S.C.A. § 1314(l)(1) (toxic control strategies to meet water quality standards).

icant pollution; this goal has been translated into complex environmental quality standards under several statutes. *See* § 2:20.

Second, especially tight controls are usually required for emissions of toxic substances. These emissions are considered hazardous even from single sources, and so controls have been based directly or implicitly on environmental quality standards. *See* § 2:23.

Third, beginning with the Clean Water Act, environmental protection programs have increasingly relied on technology-based forms of relief or control, for all designated pollutants. These control programs have another set of environmental quality goals, sometimes explicit, and sometimes implicit. *See* § 2:26.

All of the statutes have slightly different formulations of these goals, and some goals must be inferred from control schemes. These goals have enough in common to allow some generalization. All of them are expressions of an overriding purpose, which is to keep designated pollutants at negligible levels, and to reduce them to insignificance wherever they are found.

§ 2:20 Nondegradation standards

The first of the goal-setting standards to be fully articulated grew out of the nondegradation programs. These began with a policy established under the forerunner of the Clean Water Act, later codified in EPA regulations and endorsed by Congress, which provided that standards for interstate waters must not allow any degradation of existing water quality, no matter how clean the environment already was.¹

This goal, as articulated by Judge Pratt in *Sierra Club v. Ruckelshaus*, was added to the Clean Air Act in 1970:

In Section 101(b) of the Clean Air Act, [42 U.S.C.A. § 7401(b) (1982)] Congress states four basic purposes of the Act, the first of which is “to protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population.” . . . On its face, this language would appear to declare Congress’ intent to improve the quality of the nation’s air and to prevent deterioration of that air quality, no matter how presently pure that quality in some sections of the country happens to be.²

Federal law now also fixes a nondegradation standard for groundwater³ and for the oceans.⁴

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¹The Department of Interior announced a “nondegradation policy” for interstate waters in a press release dated February 8, 1968, quoted in part in Zener, *Federal Law of Water Pollution Control*, in *Federal Environmental Law* 682, 717 (E. Dolgin & T. Guilbert eds. 1974). This is now a requirement for water quality standards set by the states. 40 C.F.R. §§ 131.6, 131.12. It arguably rested on language now found in the Clean Water Act, specifically “to restore and maintain the . . . integrity of the nation’s waters,” Clean Water Act § 101(a), 33 U.S.C.A. § 1251(a), and is reinforced by the goal of ending all discharges of pollutants. Clean Water Act § 101(a)(1), 33 U.S.C.A. § 1251(a)(1). Congress, in amending the Act in 1987, included specific reference to this antidegradation policy. Clean Water Act § 303(d)(4)(B), 33 U.S.C.A. § 1313(d)(4)(B). *See also* Clean Water Act § 402(o), 33 U.S.C.A. § 1342(o) (antibacksliding); § 13:73. There is at least a hint in their language and history that the secondary standards authorized by the Clean Air Act § 109(b)(2), 42 U.S.C.A. § 7409(b)(2), are *de minimis* standards: “air quality . . . requisite to protect the public welfare from *any* known or anticipated adverse effects.” (emphasis added.)

²*Sierra Club v. Ruckelshaus*, 344 F. Supp. 253, 256, 2 *Envtl. L. Rep.* (Envtl. L. Inst.) 20262, 20263 (D.D.C.), *aff’d per curiam*, 2 *Envtl. L. Rep.* (Envtl. L. Inst.) 20656 (D.C.Cir. 1972), *aff’d* by an equally divided court sub nom. *Fri v. Sierra Club*, 412 U.S. 541, 3 *Envtl. L. Rep.* (Envtl. L. Inst.) 20684 (1973).

³The Safe Drinking Water Act requires waste disposal wells to be designed and used so as to eliminate any significant release of wastes into groundwater. Safe Drinking Water Act § 1421, 42

In general, therefore, environmental protection law prohibits any significant increase of designated pollutants anywhere in the environment. This is, however, not so draconian as it first appears. It is not a ban on all new emissions: Some new emissions are allowed so long as they do not lead to impermissible increases in environmental pollution. “Nondegradation” is, in short, a severe form of environmental quality standard.⁵ It has two components: a background level, and an increment of allowable increase.

§ 2:21 Nondegradation standards—Background pollution

Trees emit “pollutants”—hydrocarbons that may contribute to a kind of natural smog. The blue haze over the Smoky Mountains is in part natural.¹ There are also naturally occurring oxides of sulfur and nitrogen in the air; mercury and other metals, of course, occur naturally.² Pollution from human activities is often as pervasive and more severe than naturally occurring phenomena.

Generally, new facilities, or major modifications of existing facilities, are not permitted to increase existing pollution significantly.³ In some programs, existing emissions also must be cut back to *de minimis* levels.⁴ Background pollution, from human and natural sources, therefore, is measured in order to set control limits for existing or proposed facilities. Accordingly, background pollution is determined site-by-site; one measures the upstream, “upgradient” (for groundwater) or upwind

U.S.C.A. § 300h; 40 C.F.R. §§ 146.1 to 146.52. Other kinds of hazardous waste land-disposal facilities must be designed not to release significant concentrations of waste into groundwater. *See, e.g.*, RCRA § 3004, 42 U.S.C.A. § 6924 (performance standards for facilities must “protect human health and the environment”; no other considerations are authorized); 40 C.F.R. §§ 264.90, 264.301. Solid waste disposal on land generally should not pollute groundwater. RCRA §§ 4001 to 4009, 42 U.S.C.A. §§ 6941 to 6949. Finally, underground storage tanks must be designed to avoid leakage. RCRA § 9002, 42 U.S.C.A. § 6991a. While the coverage is spotty, nondegradation standards consistently apply where federal law designates groundwater pollutants for regulation.

⁴The Ocean Dumping Convention, implemented in the United States by the Marine Protection, Research and Sanctuaries Act, prohibits the dumping of any significant concentration of toxic chemicals or radioactive materials. Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters, art. IV, § 1(a), Dec. 29, 1972, 26 U.S.T. 2403, T.I.A.S. No. 8165. The Convention prohibits dumping of toxic materials, oil, and persistent plastics listed in Annex I, when they are present in wastes in more than “trace” concentrations. *Id.* at Annex I, *Envtl. L. Rep. (Envtl. L. Inst.) Current Materials*, at 40331.

EPA may not ban all dumping under MPRSA, but must prohibit significant degradation of the ocean. *See New York City v. EPA*, 11 *Envtl. L. Rep. (Envtl. L. Inst.)* 20763 (S.D.N.Y.), modified, 543 F. Supp. 1084, 12 *Envtl. L. Rep. (Envtl. L. Inst.)* 21003 (S.D.N.Y. 1981).

⁵*See Hines, A Decade of Nondegradation Policy in Congress and the Courts: The Erratic Pursuit of Clean Air and Clean Water*, 62 *Iowa L. Rev.* 642 (1977).

[Section 2:21]

¹The “blue haze” over the Great Smoky Mountains “is due to . . . aerosol produced in photochemical reactions of natural, volatile organic emissions from plants and trees. Since 1960, investigators . . . have discovered that plants and trees do, in fact, emit a variety of volatile organics and have concluded that natural organic vapors may contribute significantly to formation of aerosols.” Stevens, Dzubay, Shaw, McClenny, Lewis & Wilson, *Characterization of the Aerosol in the Great Smoky Mountains*, 14 *Envtl. Sci. & Tech.* 1491, 1491 (1980) (EPA study conducted by Environmental Sciences Research Laboratory). The study concluded, however, that over half the fine-particle aerosol in the Great Smoky Mountains is currently composed of acid sulfates, the result of industrial pollution. *Id.* at 1497.

²*See Kim & Fitzgerald, Sea-Air Partitioning of Mercury in the Equatorial Pacific Ocean*, 231 *Sci.* 1131 (1986) (mercury vapor from natural sources in ocean comparable to all vapor releases from human activity).

³*See, e.g.*, Clean Air Act §§ 165 to 166, 173, 42 U.S.C.A. §§ 7475 to 7476, 7503; *see* § 2:20 for nondegradation standards applicable to groundwater and oceans.

⁴This is the goal for all water pollution sources—often more honored in the breach than the observance—and hazardous waste land disposal facilities found to be emitting hazardous wastes. 40 C.F.R. § 264, Subpart F (groundwater protection). It also is the case with sources of toxic air pollutants. Clean Air Act § 112, 42 U.S.C.A. § 7412. *See generally* § 2:23.

concentrations of pollutants and deducts the contributions attributed to known controllable sources. The remainder is background.⁵ Measurement can be a considerably complex process, especially when determining the background pollution level of groundwater, where flows are complex and hard to determine. Determination of background air pollution is also very complex; the factors to consider are highly variable, and pollution can be carried for considerable distances.⁶ As a general rule, a discharger is not required to control his emissions below background—that is, below the level of incoming air or water. Moreover, dischargers may use their own calculation of background pollution to defend against charges of impermissible pollution.⁷

Background pollution levels are highly variable from place to place and from moment to moment. All nondegradation standards must take this variability into account, either by averaging it over a baseline period, as in the Clean Air Act,⁸ or by including a statistical measure of variability within the standard, as in the groundwater standards set for hazardous waste facilities.⁹

§ 2:22 Nondegradation standards—Increments for conventional pollution

The second component of the nondegradation standard is an “increment”—the increase in pollution above background levels that will be accepted. This is sometimes a measure of concentration, as in the Clean Air Act’s increments for some conventional pollutants,¹ or it may be a measure tied to the existing variation in background levels, as in the hazardous waste regulations which prohibit statistically significant increases in pollution from land disposal facilities,² or water quality standards that prescribe a range of variation.³

The term “increment” is taken from the Clean Air Act, where nondegradation standards are expressly analyzed into baseline and increment components. A moment’s thought will show, however, that any nondegradation standard must include both a baseline and some measure to determine significant increases: First, because the baseline fluctuates, there must be some means of detecting significant increases in this fluctuating base; and second, because modern chemistry can detect

⁵See Office of Air Quality Planning and Standards, Environmental Protection Agency, Guideline on Air Quality Models (revised) (EPA-450/2-78-027R), supplement A (1987), supplement B (1993), and supplement C (1995). Background is also calculated as part of the modeling process to predict the impact of existing sources. For each, the method of calculation is the same.

⁶See § 2:16 (dispersion modeling).

⁷EPA may not rely on generalized presumptions when local data are available. *See, e.g.*, *Ohio v. EPA*, 784 F.2d 224, 16 *Envtl. L. Rep.* (Envtl. L. Inst.) 20447 (6th Cir. 1986), on reh’g, 798 F.2d 880, 16 *Envtl. L. Rep.* (Envtl. L. Inst.) 20870 (6th Cir. 1986). *Cf.* *Natural Resources Defense Council v. Train*, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20588, 20591 (D.D.C. 1976) (consent decree: EPA need not regulate toxic water pollutants present in a discharge solely as a result of their presence in intake from the same body of water).

⁸Background for new sources is fixed, somewhat arbitrarily, as the average pollution level during the year in which a permit application is first submitted; this is called a “baseline.” *See Alabama Power Co. v. Costle*, 606 F.2d 1068, 1088–89, 9 *Envtl. L. Rep.* (Envtl. L. Inst.) 20410–11 (D.C. Cir. 1979), modified, 636 F.2d 223, 10 *Envtl. L. Rep.* (Envtl. L. Inst.) 20001 (D.C. Cir. 1980); Clean Air Act § 169(4), 42 U.S.C.A. § 7479(4). For existing sources, the background is calculated as an average of the data which is available. *See* Office of Air Quality Planning and Standards, Environmental Protection Agency, Guideline on Air Quality Models (revised) (EPA-450/2-78-027R), supplement A (1987), supplement B (1993), and supplement C (1995).

⁹40 C.F.R. § 264.99 (and appendix IV to section 264).

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¹Clean Air Act § 163, 42 U.S.C.A. § 7473.

²40 C.F.R. § 264.

³Water quality standards for conventional pollutants typically include a mean value and a range of allowable variations; *see, e.g.*, 40 C.F.R. § 131 subpart D (federally promulgated standards).

infinitesimal concentrations of pollutants—with radioactive tracers, as small as a single molecule—and models of the impact of proposed new sources will mechanically predict infinitely small concentrations of pollution from almost any activity. A simple prohibition, therefore, is impossible. Nondegradation must come to mean, as it has, no *significant* degradation.⁴

When increments were first defined for conventional pollutants in the Clean Air Act, the foregoing considerations were not controversial propositions. Conventional pollutants, more or less by definition, were considered largely harmless in concentrations below the conventional standards. Congress set somewhat arbitrary increments for sulfur dioxide and particles and authorized EPA to set further increments.⁵ The states have had nondegradation standards for conventional water pollutants since the 1960s, with few challenges.⁶ The purpose of the conventional nondegradation programs, however, was not to prevent immediate harm—except in some cases to prevent loss of visibility over long distances—but to preserve a resource.⁷ The increment therefore was a rough, nearly arbitrary measure to distinguish statistically significant increases of pollution from background variations.

When EPA began to consider increments for toxic chemicals, the situation was more complex. EPA prudently assumed that there was no threshold for risk from these pollutants—that even very slight concentrations might give cause for concern. Of course, there was still an infinite gradation of possible concentrations, and certainly at some low level of concentration, risk became trivial for any pollutant, but the problem of setting increments became more complex.

There is an interesting proposal which in effect would extend the conventional pollutant approach. It would define the increment for radiation and perhaps some toxic chemicals which occur naturally, as some fraction of the *variation* in preexisting or natural background levels of pollution.⁸ Something like this approach has been taken in defining the nondegradation standard for groundwater pollution from land disposal facilities, where the increment is a statistically significant increase in background pollution, measured by a common statistical test.⁹ In principle, increments or *de minimis* standards could be set for pollutants in some other programs by this technique, although it may not be practical for many synthetic chemicals for which baselines in air and surface water cannot be established.

Nondegradation standards do more than protect unpolluted environments. They also protect the gains made by cleanup programs in polluted areas. On the one hand, environmental quality is preserved everywhere against any significant increase. On the other hand, EPA's panoply of steadily tightening control requirements requires declining emissions of all regulated pollutants.

The result is that industry is lashed to a vast ratcheting mechanism, on which

⁴See *Alabama Power Co. v. Costle*, 606 F.2d 1068, 9 *Envtl. L. Rep.* (Envtl. L. Inst.) 20400 (D.C. Cir. 1979), modified, 636 F.2d 323, 10 *Envtl. L. Rep.* (Envtl. L. Inst.) 20001 (D.C. Cir. 1980); Jorling, *Federal Law of Air Pollution Control*, in *Federal Environmental Law* 1058, 1078 (E. Dolgin & T. Guilbert eds. 1974) [hereafter Jorling].

⁵Clean Air Act §§ 161, 163, 42 U.S.C.A. §§ 7471, 7473.

⁶See § 2:20.

⁷See Jorling, *Federal Law of Air Pollution Control*, in *Federal Environmental Law* 1058, 1078–79 (E. Dolgin & T. Guilbert eds. 1974).

⁸See Weinberg, *Science and Its Limits: The Regulator's Dilemma*, *Issues Sci. & Tech.*, Fall 1985, at 59, 69–70; Adler & Weinberg, *An Approach to Setting Radiation Standards*, 34 *Health Physics* 719, 719 (1978). Adler and Weinberg apparently want to use the variability of natural radiation over the whole world as a benchmark, which would be relatively permissive. EPA's hazardous waste rules prohibit increases of contamination that exceed the local variation at the site of the disposal facility by a statistically significant amount, a much more restrictive application of the concept. 40 C.F.R. § 264.99(c).

⁹See 40 C.F.R. § 264.99(c) (and Appendix IV to Part 264) (adaptation of "student's T-test" for statistical significance).

movement is always forward toward a cleaner environment, and never backward. The pressure of economic growth may keep pollution levels constant for a time, but the pressure for improvement, and the ratchet to prevent backsliding, are always in place.

§ 2:23 De minimis standards for toxic pollutants

Both the Clean Air and Clean Water Acts, when first enacted, contained very stringent requirements for “toxic” pollutants. The language of the statutes led to the irresistible conclusion that no more than *deminimis* levels of these pollutants were to be allowed in air or water.¹ The London Dumping Convention as implemented by MPRSA, the ocean-dumping statute, similarly prohibited the dumping of significant concentrations of toxic chemicals in the oceans.² The Safe Drinking Water Act, RCRA, and CERCLA—the statutes regulating disposal of hazardous wastes into the ground—prohibit the release of toxic materials into groundwater.³ With regard to toxic chemicals, therefore, an undegraded environment was a clearly stated goal.

There were several problems with these provisions for toxic pollutants that hindered their implementation. The first was conceptual: toxic chemicals could be measured in tiny quantities, and could be mathematically predicted to occur in infinitesimal concentrations. They sometimes occurred as accompaniments of ordinary activity. A ban on all toxic pollutants would be equivalent to a ban on much economic activity, unless the ban were selective, or modified by some notion of significance.⁴

§ 2:24 De minimis standards for toxic pollutants—De minimis standards

The increment approach taken for conventional pollutants would not necessarily satisfy the purpose of the statutes, however, for there was no level of toxic pollutants—even an arbitrarily small one—that could be taken as a threshold. Regulators prudently assumed that cancer-causing chemicals, the most common toxic pollutants, posed some risk at any exposure. The mathematical models used to predict injuries from toxic chemicals are capable of predicting infinitesimal gradations of risk to match the infinitesimal gradations of concentration predicted by diffusion models.

Most statutes are silent on how this difficulty should be resolved. At least in some settings, a statistical test may be used to determine significant departures from background pollution regardless of absolute concentration, as in RCRA groundwater protection.¹ For many toxic chemicals in other settings, however, this approach is not feasible.

[Section 2:23]

¹Both the Clean Air Act and the Clean Water Act when enacted required environmental quality standards for toxic pollutants that allowed “an ample margin of safety.” Clean Air Act § 112(a), 42 U.S.C.A. § 7412(a); Federal Water Pollution Control Act Amendments of 1972, Pub. L. No. 92-500, § 2, 86 Stat. 816, *amended by* Clean Water Act of 1977, Pub. L. No. 92-217, 91 Stat. 1566, *codified at* 33 U.S.C.A. § 1317. Since there was assumed to be no threshold for most toxic pollutants, this was taken to require a virtual ban on emissions. *See, e.g., Comm. on Pub. Works, National Air Quality Standards Act of 1970*, S. Rep. No. 91-1196, 94–95 (1970).

²*See* § 2:20.

³*See* § 2:20.

⁴*See, e.g., Industrial Union Dep’t, AFL-CIO v. American Petroleum Inst.*, 448 U.S. 607, 625 (1980) (benzene); *Natural Resources Defense Council v. EPA*, 824 F.2d 1146, 1154 (D.C. Cir. 1987) (en banc).

[Section 2:24]

¹*See* 40 C.F.R. § 264.99(c), pt. 264 app. IV.

The difficulty remains, therefore, of setting some standard which is so low as to be negligible, but which is not an unattainable zero.²

There is some guidance from case law in different settings. As discussed in an earlier section, the courts of appeals have occasionally looked at the threshold of government action, and in this context there is a hint of how *de minimis* standards might be set. In the course of applying a tort-law analysis of significant risk, which like “reasonably foreseeable” harms was to be analyzed into the probability of the accident, and the magnitude of the harm if it occurred, Judge J. Skelly Wright observed:

This position must be confined to reasonable limits, however. In *Carolina Environmental Study Group v. United States*, 510 F.2d 796 (1975), a division of this court found the possibility of a class 9 nuclear accident, a disaster of ultimate severity and horrible consequences, to be so low that the Atomic Energy Commission’s minimal consideration . . . was sufficient. Likewise, even the absolute certainty of *de minimis* harm might not justify governmental action.³

Toxic pollutants are like the Class 9 accident; they have horrible consequences; many cause cancer. At some point, horrible as they are, however, they are just too dilute to be concerned about. The probability of harm is too remote. There is some *de minimis* concentration of cancer-causing chemicals that does not merit control.

Just how this *de minimis* level is to be set may take some time to resolve. EPA is trying to apply a traditional tort-law formula, by weighing the significance of the risk, against the burden of regulation; the agency implicitly compares itself to the reasonable person of negligence law, who is under a duty to take only those control measures not grossly disproportionate to the significance of the risk.

Environmentalists, however, have argued that costs should not be taken into account in setting the limits of regulation; once designated, toxic pollutants should be reduced to negligible levels, regardless of cost.⁴

In logic and in practice it seems costs must be weighed in some fashion, or no risk

²“Zero” is a mathematical abstraction. In environmental practice, there is an engineer’s “zero,” which may be the limits of detection, or the limits of controls; there is a psychological “zero,” a person’s subjective judgment of what he or she will trouble themselves over. *See, e.g.*, B. Fischhoff et al., *Acceptable Risk* (1981). There is a cultural or political “zero,” the level of environmental quality that the members of a community accept as “clean” or “safe.” *See* M. Douglass & A. Wildavsky, *Risk and Culture: An Essay on the Selection of Technical and Environmental Dangers* (1982). These different purposes may coincide, of course, but often they do not. Statutes, more or less by definition, express a political and cultural judgment, which is analyzed more fully in Ch 5.

There is an international effort to set a *de minimis* standard for radioactive pollutants. The concept has had many forms over the years, and is termed by EPA as “below regulatory concern” (BRC). *See generally* W. Holcomb & F. Galpin, *The Environmental Protection Agency’s Standards Development for Radioactive Waste that is “Below Regulatory Concern”* (EPA, Office of Radiation Programs) (paper for presentation at the 21st Annual Meeting of the U.S. Public Health Service Professional Ass’n, June 15–18, 1986, in Washington, D.C.); 48 Fed. Reg. 39563 (1983) (advance notice of proposed rulemaking, standards for low-level radioactive waste disposal, seeking to determine whether there is “some limit of exposure . . . below which radiation-related regulation is not warranted”). *See* Sheldon Myers, Office of Radiation Programs, EPA, Remarks at the Third Annual Midwest Workshop on Low-Level Radioactive Waste Management, Columbus, Ohio (Oct. 23, 1985) at 4–6.

³*Ethyl Corp. v. EPA*, 541 F.2d 1, 18 n.32, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20267, 20275 n.32 (D.C. Cir. 1976) (en banc), cert. denied, 426 U.S. 941 (1976).

⁴*See* Novick, *In Defense of Irrational Laws*, *Envtl. Forum*, July 1984, at 10; Doniger, *Time for Action*, *Envtl. Forum*, Feb. 1984, at 29. “Negligible” remains to be defined, of course, since “zero” is only a mathematical abstraction; this is some implicit recognition of cost in any standard. The question is whether the standard will be a cultural or psychological minimum, or whether some cognizable risk will be accepted for the sake of other values. As a goal, eliminating all risk is not unreasonable; it simply expresses a preference among choices for the one which leads toward least pollution. *See* W. Rodgers, 1 *Envtl. L.* 20 (1986). Compromises with practicality may be made on the route and in the schedule, but not on the goal itself. *See* Ch 3.

would ever be too slight to escape control. Some pollutants—probably radiation and benzene among them—cannot be entirely eradicated. A complete blindness to cost would lead to a permanent crusade against diminishing risk. Since the costs of control rise as the risks decline, there must be some stopping place. EPA calculates costs and benefits to society as a whole. This slights the individual who is exposed to the toxic pollutants, who seems to be sacrificed to the general welfare in this kind of calculus.⁵

At least part of the government's job is to concern itself with otherwise helpless individuals. But it need not take the most extreme position. Most people are willing to make some sacrifices for the community of which they are citizens; and so the average, affected individual does not entirely ignore costs. There is still some *de minimis* level of risk he or she is willing to assume, as a good citizen. It is probably this objective standard of reasonableness that the laws set.⁶

In the last few years much attention has been brought to the issues of risk assessment and management. The Agency itself has made efforts to evaluate its work in light of the seriousness of the risks addressed,⁷ and Congress has taken a deep interest in using it to set priorities for the various programs.⁸ Risk assessment is

⁵See Novick, In Defense of Irrational Laws, *Env'tl. Forum*, July 1984. The Reagan Administration formally adopted cost-benefit analysis as an overriding element of regulation, wherever it is not forbidden by statute, see Exec. Order No. 12,291, 46 Fed. Reg. 13193 (Feb. 17, 1981). See, e.g., Thomas Decides Cost Data Can Be Used in Setting Secondary Air Quality Standards, *Inside EPA Weekly Report*, Sept. 6, 1985, at 1. As we have seen, however, environmental quality standards are not a balance between equally weighed costs and benefits; public health and welfare are given priority, and the standards express levels of risk to public health and welfare that require government response, or ultimate goals of environmental protection programs. Cf. *American Textile Mfrs. Inst. v. Donovan*, 452 U.S. 490, 11 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 20736 (1981) (cost benefit analysis not required for reasonable regulation under Occupational Safety and Health Act). See also Stewart, *Regulation in a Liberal State: The Role of Non-commodity Values*, 92 *Yale L.J.* 1537 (1983). The Reagan order was supplanted in 1993 by Executive Order No. 12,866, signed by President Clinton, which took a more balanced approach to regulatory analysis. 58 *Fed. Reg.* 51735 (Oct. 4, 1993).

⁶See *Industrial Union Dep't, AFL-CIO v. American Petroleum Inst.*, 448 U.S. 607 (1980). Here, a plurality of the Court found that there is some level of risk too small to regulate, and thought it "obvious" that a risk of one chance in a billion of contracting cancer from a drink of water was too trivial for the government to concern itself with. *Id.* at 725–26. This standard of *de minimis* risk is evidently easier to state than to explain. It is plainly an objective standard, but is not based on an equal weighing of costs against benefits or on general utilitarian values. See discussion in note 5. It presumably is based on inarticulate cultural or moral values; see, e.g., *Lochner v. New York*, 198 U.S. 45, 74 (1905) (Holmes, J. dissenting) ("General propositions do not decide cases. The decision will depend on a judgment or intuition more subtle than any articulate major premise"). See Ch 5; Stewart, *Regulation in a Liberal State: The Role of Non-commodity Values*, 92 *Yale L.J.* 1537 (1983). The judgment in *Industrial Union* reflects in part, as the Court's example shows, the government's proper concern for the most affected individual; see § 5:3. It seems to rest on what a reasonable person would be willing to accept. It would be unreasonable for the government to remedy risks that are accepted by some objective standard as among the necessary risks of life in a civilized community. To the extent the standard of reasonableness rests on this rationale—the willing acceptance by an imagined reasonable person who is most adversely affected by the risk—it rests on fundamental principles of fairness and justice. See J. Rawls, *A Theory of Justice* 11–17 (1971).

⁷EPA's first major work on the subject of risk-based programs was a 1987 report by its Science Advisory Board, *Unfinished Business: A Comparative Assessment of Environmental Problems*. A second report by the Board, *Reducing Risk*, was issued in 1990. The two publications are credited with stimulating much of the current congressional debate. They found, not surprisingly, that EPA's regulatory priorities corresponded much more closely with the concerns of the general public than with the comparative risk rankings of the Agency's experts.

⁸When amending the Clean Air Act in 1990, Congress directed a review by the National Academy of Sciences of the risk assessment methodology used by EPA to determine risks associated with hazardous air pollutants. Clean Air Act § 112(o), 42 U.S.C.A. § 7412(o). The amendments also established a Risk Assessment and Management Commission charged with making a full investigation of the policy implications and appropriate uses of risk assessment and risk management in regulatory programs under various federal laws. In 1996, Congress authorized limited use of comparative risk as-

not without its flaws, however, and the debate over its appropriate uses will undoubtedly continue.⁹

§ 2:25 De minimis standards for toxic pollutants—Schedules and controls

The second difficulty was the lack of any adequate transition; the statutes seemed to call for an immediate reduction of toxic pollution to *de minimis* levels.¹ It quickly became apparent that literal enforcement of these statutes would require the shutdown of large segments of industry. EPA at first simply delayed taking any action. Then, in a series of compromises with environmentalists concerning air and water pollution, EPA constructed a system modeled on that used for conventional pollutants. The *de minimis* air and water quality standards were converted into more or less distant goals; existing pollution sources were required only to use the best available control technology, and then to make steady progress in further reducing pollution by updating the technological requirements. Strict environmental quality standards were not abandoned, but were deferred.²

This was an important compromise, with implications for all of environmental protection law. It allowed EPA to stretch out schedules for control technology in implicit recognition of practical constraints.

In 1977, the Clean Water Act was amended to incorporate a version of this scheme.³ EPA began to develop general criteria for *de minimis* standards for the

assessment to justify alternative maximum contaminant levels for radon in drinking water. Safe Drinking Water Act § 1412(b)(13), 42 U.S.C.A. § 300g-1(b)(13).

⁹See, e.g., Resources for the Future, Worst Things First? The Debate Over Risk-Based Environmental Priorities (1994); Paul A. Locke, Reorienting Risk Assessment (Environmental Law Institute Research Brief No. 4, Sept. 1994).

[Section 2:25]

¹The 1972 Federal Water Pollution Control Act Amendment required that effluent limitations based on *de minimis* standards were to be set for each toxic chemical and were to be promulgated in final form within nine months from the listing of a pollutant. Clean Water Act § 307(a)(2), 33 U.S.C.A. § 1317(a)(2). Such effluent limitations were to be effective within a year, and the whole country was to be in compliance with them by July 1, 1977. *Id.* § 301(b)(1)(C), 33 U.S.C.A. § 1311(b)(1)(C). The Clean Air Act required immediately effective “emission standards” for toxic pollutants to be promulgated in final form within six months after designation of the pollutants. See Environmental Defense Fund, Inc. v. Ruckelshaus, 3 Env’tl. L. Rep. (Env’tl. L. Inst.) 20173 (D.D.C. 1973); Clean Air Act § 112, 42 U.S.C.A. § 7412.

²See D. Doniger, The Law and Policy of Toxic Substances Control: A Case of Vinyl Chloride 82–86 (1978) (vinyl chloride settlement); see also Environmental Defense Fund, Inc. v. Ruckelshaus, 3 Env’tl. L. Rep. (Env’tl. L. Inst.) 20173 (D.D.C. 1973) (consent order). In general, the terms of the settlements allowed EPA to preserve the environmental quality goals contained in the statutes, but avoided any draconian effects by deferring their attainment until such time as they could be achieved by using best available technology. This was explicit in the vinyl chloride settlement, and implicit in the structure of the water toxics settlement. The latter allowed—and for a few chemicals, required—EPA to set separate toxics standards, but generally fitted the control of toxics into the general scheme of gradually tightening best available technology, with a goal of ending all pollution discharges. See Natural Resources Defense Council v. Train, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20588, 20590 (D.D.C. 1976) (consent decree); Clean Water Act § 301(b)(2)(A), 33 U.S.C.A. § 1311(b)(2)(A). *Cf.* City of New York v. EPA, 543 F. Supp. 1084, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 21003 (S.D.N.Y. 1981) (prohibition of ocean dumping of sludge limited to materials that unreasonably degrade the ocean).

³Clean Water Act of 1977, Pub. L. No. 95-217, §§ 42(b), 53(a), 54(a), 91 Stat. 1566, 1583, 1591–92 (amending Clean Water Act §§ 301, 307, 33 U.S.C.A. §§ 1311, 1317). These amendments incorporated into the statutes a version of the settlement reached in Natural Resources Defense Council, Inc. v. Train, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20588 (D.D.C. 1976). EPA now requires state water quality criteria for designated toxic pollutants, 40 C.F.R. § 131.11(a)(2), but did not press very hard to have such standards established. Then in 1987, Congress expressed its displeasure with the slow pace of regulation by enacting Clean Water Act § 304(l) requiring control strategies for toxic wastewater discharges. 33 U.S.C.A. § 1314(l). The program has been controversial but has led to increased controls.

largest class of toxics—the cancer-causing chemicals.⁴ But implementation was delayed by the difficulty of setting standards for cancer-causing pollutants. With the change in Administration in 1981, the whole program was abandoned.⁵ The problem of *de minimis* standards for toxic pollutants therefore remains unresolved, but a prudent assumption is that it will not disappear. In the 1984 RCRA amendments, Congress reaffirmed its intention of protecting groundwater from any significant contamination. Land-disposal of hazardous wastes may continue so long as the wastes are treated to best-available-technology levels, which presumably must continually improve; the ultimate goal remains to ban all but *de minimis* pollution of soil and groundwater.⁶ In the 1986 Superfund revisions, *de minimis* standards for toxic pollutants set under other statutes were adopted as the goals for cleaning up soil and groundwater.⁷ Until recently, it seemed very unlikely that Congress would accept any softening of the standard for eliminating significant toxic pollution of air or surface water by EPA or the courts. Revisions to FIFRA and the Safe Drinking Water Act adopted in 1996 indicate that there was a substantial philosophical shift in that body in the 104th Congress.

§ 2:26 Long-term goals of technology-based control

The Clean Water Act sets as the national purpose that, “the discharge of pollutants into navigable waters be eliminated by 1985.”¹

Senator Edmund S. Muskie was the proponent of this language, added to the statute in 1972, similar to the action-forcing schedules he sponsored in the Clean Air Act in 1970. Unfortunately, however, the goal was so ambitious and the schedule was so short, that this language has not always been taken very seriously.² If we set aside the unrealistic date, however, and soften the draconian “eliminated” by some notion of reasonableness or significance—just as similar language in the Clean Air Act has been softened to require only that no “significant” degradation occur—the Clean Water Act’s goal is simply the gradual end of significant pollution. This is an awesomely ambitious, but not an unreasonable goal.

The method by which this goal is to be achieved is a system of gradually tightening controls based on available technology. The state of the art of control technology continually improves, and EPA’s regulations are periodically revised to take the improvement into account. Emissions from every source therefore will gradually—

⁴See 44 Fed. Reg. 58642 (1979).

⁵See, e.g., *Sierra Club v. Ruckelshaus*, 602 F. Supp. 892, 15 Env’t. L. Rep. (Env’t. L. Inst.) 20080 (N.D. Cal. 1984). At issue was the Administrator’s refusal to regulate emissions of radionuclides, a designated toxic air pollutant, from sources where the controls would have been very expensive, and the aggregate risk to the population small. See Brief for Respondent at 30–30B, *Environmental Defense Fund, Inc. v. Thomas*, No. 84-1524 (D.C. Cir. brief filed 10–9–86); 50 Fed. Reg. 5191 (1986); 49 Fed. Reg. 43913 (1985).

⁶See, e.g., RCRA §§ 1002(b)(5) to 1002(b)(7), 3004(d) to (k), 42 U.S.C.A. §§ 6901(b)(5) to (7), 6924(d) to (k).

⁷See CERCLA § 121, 42 U.S.C.A. § 9621; 50 Fed. Reg. 47946, 47948 (1985) (applicability of environmental quality standards to Superfund remedial program). H. R. Conf. Rep. No. 99-962, at 243–51 (1986) (discussing cleanup standards); Pub. L. No. 99-499, § 121, 100 Stat. 1613 (1986).

[Section 2:26]

¹Clean Water Act § 101(a)(1), 33 U.S.C.A. § 1251(a)(1).

²See, e.g., Monitor: WPCF Roundtable Discussion—Congressional Staffs Take a Retrospective Look at P.L. 92-500, *J. Water Pollution Control Fed’n*, Aug.-Sept. 1981, at 3; cf. *National Wildlife Fed’n v. Gorsuch*, 693 F.2d 156, 181, 13 Env’t. L. Rep. (Env’t. L. Inst.) 20015, 20027–28 (D.C. Cir. 1982).

but continually—decline, until the goal of eliminating all significant pollution discharges has been achieved.³

These gradually tightening controls first appeared in the Clean Air Act's standards for new vehicles and major new stationary sources of pollution. When the Clean Water Act was amended in 1972, they became the central method of the program, and were extended to all sources, although the heaviest burden continued to lie on new sources. This general program was then followed in the subsequent statutes, so that there is now a generally tightening system of controls.⁴ This system is described in more detail in the next chapter.

Taken together with the system of environmental quality standards, these controls create a vast ratcheting effect. Ambient environmental quality standards for conventional pollutants are interim goals, which must be promptly achieved everywhere. Nondegradation standards prohibit any significant increase in pollution anywhere. Emissions of toxic pollutants and land disposal of hazardous wastes must be eliminated as quickly as improvements in the best technology allow. Control technology must always improve. As existing sources of pollution are slowly outmoded and replaced by new facilities, equipped with the best available pollution controls, environmental quality can never worsen, and eventually should improve until all significant discharges are ended.⁵ This is the ultimate goal of environmental protection law.

VI. THE PURPOSE OF ENVIRONMENTAL PROTECTION LAWS

§ 2:27 In General

Looking across all of the statutes, as we have done, some landmarks are visible. EPA must identify and designate the pollutants which cause or contribute to

³See, e.g., *EPA v. California ex rel. State Water Resources Control Bd.*, 426 U.S. 200, 204–05, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20563, 20564 (1976) (goal of technology-based emission limits is to end all discharges).

⁴See, e.g., *EPA v. California ex rel. State Water Resources Control Bd.*, 426 U.S. 200, 204–05, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20563, 20564 (1976) (water pollution must be gradually eliminated); *ASARCO, Inc. v. EPA*, 578 F.2d 319, 327, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20164, 20168–69 (D.C. Cir. 1978) (Clean Air Act new source performance standards ensure continual progress in reducing air pollution emissions, even where air quality standards have been met); *Environmental Defense Fund, Inc. v. Costle*, 578 F.2d 337, 342, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20200, 20202 (D.C. Cir. 1978) (Safe Drinking Water Act Controls are “progressive in nature, adapting to increasing knowledge and experience”); RCRA § 3004(o), 42 U.S.C.A. § 6924(o) (performance standards for hazardous waste management facilities, “[s]hall be revised from time to time to take into account improvements in the technology of control and measurement”); § 3:2.

⁵See, e.g., *ASARCO, Inc. v. EPA*, 578 F.2d 319, 327, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20164, 20168 (D.C. Cir. 1978); *EPA v. California ex rel. State Water Resources Control Bd.*, 426 U.S. 200, 204–05, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20563, 20564 (1976); *ASARCO, Inc. v. EPA*, 578 F.2d 319, 327, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20164, 20168–69 (D.C. Cir. 1978); *Environmental Defense Fund, Inc. v. Costle*, 578 F.2d 337, 342, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20200, 20202 (D.C. Cir. 1978). See also DeMocker, Greenwald & Engels, *Extended Lifetimes for Coal-Fired Power Plants: Effect Upon Air Quality*, Pub. Utils. Fortnightly, Mar. 20, 1986, at 30. EPA's projections show sulfur dioxide emissions declining rapidly toward a minimum less than one-third of the present total, despite economic growth, if new plants replace the old as originally expected (beyond that point, economic growth again causes an increase in emissions if new source standards are not further tightened). The increased cost of new plants, however, has led power companies to keep older facilities in operation for up to sixty years, thwarting the original program. The question here, however, is not whether the original program was well conceived or whether it works, but only what the purpose of the law has been.

For the sake of disclosing bias, I will say that I support the program to gradually eliminate significant pollution. Many of the most substantial costs are behind us, and new developments in biotechnology, energy conversion, and materials promise to make possible, albeit slowly, the fundamental changes in productive technology that the statutes aim for and encourage. The federal government can play a modest part toward seeing that the great changes in industrial technology, which are coming in any case, serve social purposes as much as possible.

environmental hazards which rise above statutory thresholds. The Agency must set ambient standards that trigger cleanup actions and which serve as milestones for progress in control.

The Agency must then continue managing the national system of remedies over which it presides, toward the goal of gradually eliminating all significant concentrations of designated pollutants from the environment.

De minimis standards of environmental quality define the ultimate goals of environmental protection law; they express a standard of negligible pollution, different from an abstract and unachievable mathematical zero. These goal-setting standards include the nondegradation standards, which prohibit any significant increase in designated pollutants in any environmental medium, and *de minimis* standards for toxic pollutants, which are less clearly defined. Finally, technology-forcing regulations implicitly drive all pollution levels toward *de minimis* levels.

The goal of ending significant pollution is not quickly achievable, and may not be achievable at all; there are inconsistencies and omissions in the statutory scheme which have evolved. Still, the general pattern is clear, and gives a clear direction to EPA and to the regulated community. Congress has repeatedly affirmed the general pattern in recent years, and seems unlikely to change it in any fundamental respect.

Chapter 3

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*By Sheldon M. Novick; § 3:24 by Barry Breen; updates to §§ 3:1 through 3:20 by Robert V. Percival

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I. INTRODUCTION

§ 3:1 In general

In the last chapter, we summarized the common goals and standards of the environmental protection statutes EPA administers, whose overall purpose is the gradual elimination of significant pollution.

In this chapter we will review the common methods of carrying out these programs.

The dominant method is a system of permits issued to facilities where pollutants are discharged or hazardous wastes are managed. Five of EPA’s statutes establish such permit systems.¹

[Section 3:1]

¹The Clean Air Act requires major sources of air pollution to obtain operating permits that embody all the Act’s restrictions applicable to those sources. The Clean Water Act, Safe Drinking Water Act (well disposal), and Marine Protection, Research, and Sanctuaries Act (MPRSA) (ocean dumping) prohibit discharges of designated pollutants without a permit. The Resource Conservation and Recovery Act (RCRA) prohibits hazardous waste management without a permit. *See* § 3:20. Under the Toxic Substances Control Act (TSCA), manufacturers must submit information about existing toxic chemical substances and prior notice before manufacturing new products; the burden is on EPA to act, but when it does the Agency issues rules and conditional orders which are the functional equivalent of permits. *See* Ch 16. Under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), pesticides

Permits contain emission limits, or other performance standards, for release of designated pollutants or management of wastes. Federal statutes and EPA regulations set minimum criteria for these standards and schedules for compliance; state agencies usually issue the permits and enforce them, in accordance with procedures that permit participation by the public. Federal and state governments, the private discharger, and interested members of the public therefore converge in the permit system.

Emission limits and other standards in permits are of two general kinds. The first is determined site by site, and protects minimum levels of environmental quality;² the second kind of emission limit is part of a general system of “technology forcing.”³ Technology-forcing emission limits are usually set uniformly for categories of industry,⁴ and are periodically revised and made more stringent.⁵ Permits accordingly bring to bear on individual facilities methods designed to achieve both interim standards and long-range goals of environmental protection law.

II. TECHNOLOGY-FORCING

§ 3:2 Assessment and control of technology

Environmental protection law was strongly influenced by a movement, in the 1960s and early 1970s, for assessment and control of industrial technology.¹ The movement began in the 1950s with a successful effort to put nuclear power under civilian guidance and control.² The movement expanded with the broadly based opposition to atmospheric testing of nuclear weapons, which ended with the Partial Test Ban Treaty of 1963.³ Rachel Carson’s 1962 book on the hazards of pesticides, *Silent Spring*, had an immense impact; and Ralph Nader, after the publication of *Unsafe At Any Speed* in 1965, led a growing consumer movement that sought to influence industrial technology and products.⁴ Barry Commoner produced an overall theory; he thought that modern technology was fundamentally disruptive to the environment, because of its immense scale and its release of chemicals and radiation that were foreign to the natural environment.⁵ The remedy would require a conscious redirection of industrial development.

The federal government was one focus of this growing movement. Some of the more doubtful new technologies were federally sponsored—the supersonic transport, nuclear power plants, civilian applications of nuclear explosives, and chemical and

must be submitted to EPA for registration, and may then only be sold subject to EPA’s label restrictions. *See* Ch 18.

²*See* § 3:4. Controls based directly on environmental quality are discussed more fully in § 2:14.

³*See generally* § 3:2.

⁴*See* § 3:6.

⁵*See* §§ 3:8, 3:12.

[Section 3:2]

¹*See, e.g.,* Speth, *The Federal Role in Technology Assessment and Control*, in *Federal Environmental Law 420, 422* (E. Dolgin & T. Guilbert eds., 1974) (“the new movement for technology assessment and control”).

²*See* S. Novick, *The Electric War: The Fight Over Nuclear Power 24–30* (1976).

³*See* United States Arms Control and Disarmament Agency, *Arms Control and Disarmament Agreements: Texts and Histories of Negotiations* (1982 ed.); *Scientist and Citizen*, Sept.-Oct. 1964 (test-ban treaty anniversary issue).

⁴Also important in these years was the curious movement against fluoridation of drinking water, which mobilized a great deal of hostility to modern technology.

⁵*See* B. Commoner, *The Closing Circle: Nature, Man and Technology* (1971); B. Commoner, *Science and Survival* (1966).

biological weapons testing.⁶ Pesticides, drugs, and food additives were already registered and regulated by the federal government. The literature of the time argued that only the federal government could control the biggest industrial companies. To some degree the movement was modeled on the Civil Rights movement, and looked to the federal government as an agent for social change.⁷

One concern of the movement was that industrial companies had grown so large in the post-war years, and industrial technology had grown so powerful, that they dominated the marketplace and responded only to internal needs; lacking constraint, industrial growth was inadvertently damaging the environment.⁸ Federal controls and alternative, smaller-scale and more adaptive technology were sought.⁹

This strand of the movement lost much of its impetus after the oil shock of 1973, the long industrial recession that followed, and the rise of foreign competition to challenge U.S. corporations.¹⁰ American industrial technology no longer seemed so powerful as to need control. By the 1980s, pollution in the United States began to seem more a relic of obsolescent technology than a result of modern advance.¹¹

A second theory, ultimately more influential, was that there was nothing inherently damaging about technological development, but that market prices—and therefore industry—simply had not taken the costs of environmental damage into account; the federal government, through taxes or regulations, therefore should force industry to “internalize” the costs of environmental damage. Industrial ingenuity would then provide goods and services without excessive damage to the environment.¹²

Federal agencies which sponsor new technology similarly are required—by the

⁶For a snapshot of some of this discussion, see *Our World In Peril: An Environment Review* (S. Novick & D. Cotrell eds., 1970).

⁷The Environmental Defense Fund and the Natural Resources Defense Council, leading environmental plaintiffs groups, were as their names suggest modeled in part on the NAACP's Legal Defense Fund; both continue to be associated with individual rights. An important dispute at the center of environmental law is the degree to which affected individuals must be protected from risk, an issue in which both groups have been active. *See* § 2:24; S. Novick, *The Electric War: The Fight Over Nuclear Power 259* (1976) (interview with Gus Speth, one of the founders of NRDC). *See also* L. Tribe, *Channeling Technology Through Law* (1973) (emphasizing the potential of new technology to invade personal rights).

⁸*See* J.K. Galbraith, *The New Industrial State* (1967); Speth, *The Federal Role in Technology Assessment*, in *Federal Environmental Law 420, 422–24* (E. Dolgin & T. Guilbert eds., 1974). Speth cites many of the numerous books of the 1960s addressing this general theme. The brief summary in the text hardly does justice to the many thoughtful analyses of modern technology published in these years. There were also, of course, counterarguments. Some people thought that whatever technology was in use, population growth would rapidly overwhelm any progress made, and would shatter the fragile environment. Attention to technology was therefore a dangerous diversion. *See, e.g.*, Ehrlich & Holdren, *Review of Commoner, The Closing Circle*, *Env't*, Mar. 1972, at 24. For a more detached view of the movement, see M. Douglas & A. Wildavsky, *Risk and Culture: An Essay on the Selection of Technical and Environmental Dangers* (1982).

⁹*See, e.g.*, E.F. Shumacher, *Small Is Beautiful* (1973). A far more sophisticated analysis is M. Bookchin, *Post-Scarcity Anarchism* (1971).

¹⁰*See, e.g.*, E. Rothschild, *Paradise Lost: The Decline of the Auto-Industrial Age* (1973).

¹¹The emphasis now is on stimulating new technology that is less destructive than the old. *See, e.g.*, Ashford et al., *Using Regulation to Change the Market for Innovation*, 9 *Harv. Envtl. L. Rev.* 419 (1985).

¹²If there is an established view, this is it. *See* Message of the President of the United States, *Message on the Environment*, H.R. Doc. No. 91-225, at 1, 2 (1970) [hereinafter *The President's 1970 Message*]. There is an immense literature on the problem of “externalities”—the difficulty is that free goods, like air and water, are also limited. Lacking a price, there is no inducement to conserve them. K.W. Kapp argued in *The Social Costs of Private Enterprise* (1963) that the traditional method of accounting for costs was simply a “cloak for large-scale spoliation.” Garrett Hardin popularized the question in his paper, *The Tragedy of the Commons*, 162 *Science* 1243 (1968), where he was similarly pessimistic.

National Environmental Policy Act (NEPA)—to assess the impact of their programs on the environment.¹³ An early and important victory for the technology-assessment movement was the decision in *Scientists' Institute for Public Information v. AEC*, which held that under NEPA, federal agencies must assess the environmental impacts of whole programs, and not only of separate permit and funding actions.¹⁴

Passage of NEPA itself was owed in part to the influence of the movement. NEPA expresses the faith that advancing science and technology would ultimately reconcile industry to the environment, without any sacrifice of prosperity, if only industry and government could be obliged to exercise their ingenuity in this direction.¹⁵ This expression of faith was the preamble for the technology-forcing provisions of the environmental protection laws.

In 1970, President Nixon's message to Congress on the environment¹⁶ contained the first proposals for technology-forcing in federal law. Emission standards for new models of automobiles, and for selected categories of industrial plants, would be set more stringently than technology already in wide use could meet.

The express intent was to force a shift to fundamentally new industrial technology, believed to be available but not in use for lack of incentive. For instance, although emission limits for automobiles might soon "begin outrunning the technological limits of our capacity to reduce pollution from the internal combustion engine,"¹⁷ the President's message said, emission limits would continue to tighten, and the government would provide assistance in developing "an alternative low-pollution power source."¹⁸ For new factories in selected categories, "[n]ational standards will ensure that advanced abatement technology is used in constructing the new facilities, and that levels of air quality are maintained in the face of industrial expansion."¹⁹ Toxic air pollutants were to be subject to stringent regulations, "to guarantee the earliest possible elimination of clear health hazards even in minute quantities."²⁰ This was the charter of modern environmental protection law. In the year following his message President Nixon proposed legislation for control of air

¹³See National Environmental Policy Act of 1969 § 102(2)(c), 42 U.S.C.A. § 4332(2)(c); § 10:1.

¹⁴*Scientists' Inst. for Pub. Information v. Atomic Energy Comm'n*, 481 F.2d 1079, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20525 (D.C. Cir. 1975). Plaintiff's counsel and the moving force in the litigation was the young Natural Resources Defense Council.

¹⁵See NEPA § 101(b)(3), 42 U.S.C.A. § 4331(b)(3); Congressional White Paper on a National Policy for the Environment, Submitted to the United States Congress under the auspices of the Committee on Interior and Insular Affairs, United States Senate, and the Committee on Science and Astronautics, United States House of Representatives, 90th Cong. (1968). The Congressional white paper, which contained a draft of the eventual NEPA statement of policy, was a paean to technology assessment. It said, "[d]ecisions to make new technological applications must include consideration of unintended, unanticipated, and unwanted consequences. Technology should be directed to ameliorating these effects so that the benefits of applied science are retained." *Id.* at 16. See generally § 10:55; cf. T.B. Taylor & C. Humpstone, *The Restoration of the Earth* (1973). These authors, a well-known scientist and an attorney, proposed that all human activities be conducted in a contained manner, without any release of residuals to the environment except air, water, carbon dioxide, and heat. The authors are even optimistic about containing carbon dioxide from fuel burning. The authors cited the Clean Water Act amendments of 1972, which called for the end of all discharges of pollution, as the first step in their program. *Id.* at 47.

¹⁶See Message of the President of the United States, Message on the Environment, H.R. Doc. No. 91-225, at 1, 2 (1970).

¹⁷Message of the President of the United States, Message on the Environment, H.R. Doc. No. 91-225, at 6 (1970).

¹⁸Message of the President of the United States, Message on the Environment, H.R. Doc. No. 91-225, at 6 (1970).

¹⁹Message of the President of the United States, Message on the Environment, H.R. Doc. No. 91-225, at 8-9 (1970).

²⁰Message of the President of the United States, Message on the Environment, H.R. Doc. No. 91-225, at 8 (1970).

and water pollution, ocean dumping, regulation of solid wastes, and the control of toxic chemical manufacture; in all of these statutes, a moderate form of what we now call “technology-forcing” was an important feature. Industrial technology was to be nudged into nonpolluting paths.

§ 3:3 Action-Forcing

Congress soon made the nudge a shove.

The Senate environmental pollution subcommittee, chaired by Senator Edmund S. Muskie after 1963, played a key role in federal legislation, and through the 1960s the subcommittee was determinedly deferential to the states. Early pollution control statutes consequently deferred heavily to state governments, and allowed them to construct minimal (or optimal, depending on one’s perspective) control strategies, based on their judgments of what the local environment would require and what local industry could afford.¹

The pace of progress in control was excruciatingly slow, however, and there was considerable disparity among the states. Congress gradually took up in gingerly fashion the idea of nationally uniform controls for industry, to force the pace and direction of development more rapidly and consistently across the country. Senate Public Works Committee Chairman Jennings Randolph, responding to Johnson Administration proposals in 1967, said that control technology, and the regulations which required control, should make progress “hand in hand,” so that industry would be obliged to adopt controls that were available, but not yet in use.² This was one of the themes of later legislation, but technology-forcing was not a part of the Clean Air Act amendments that year.

As pollution continued to worsen, public and congressional patience wore thin, and a series of increasingly drastic measures were imposed. President Nixon’s message to Congress in 1970, and the legislative proposals that accompanied the message, included proposals for guiding technology toward better control, but contained few schedules or inducements for rapid progress. The Administration proposals, as noted in the preceding section, applied technology-forcing only to selected new sources of pollution, and left the bulk of existing industry to be controlled by state plans of the kind that had so far produced little progress.

Public pressure was swelling, however. In the spring of 1970, the press gave extensive attention to the first “Earth Day” conferences held on campuses across the United States, clean-shaven copies of anti-war demonstrations. Senator Gaylord Nelson, the patron of Earth Day, shared in the publicity. Also that spring there appeared a book by two young associates of Ralph Nader, sharply critical of Senator Muskie, and of the Administration’s cautious approach.³

By summer, Senator Muskie’s subcommittee began to add very stringent schedules and enforcement programs to the Administration proposals.⁴ The Clean Air Act of 1970 and the Clean Water Act amendments of 1972, as they emerged from the subcommittee and as they were finally adopted, both required the states to clean up air and water, at least to the levels EPA deemed acceptable for public

[Section 3:3]

¹See, e.g., Air Quality Act of 1967 Pub. L. No. 90-148, 81 Stat. 485; Muskie, *The Role of the Federal Government in Air Pollution Control*, 10 *Ariz. L. Rev.* 17 (1968); § 2:9.

²Senate Subcommittee Hearings on S.780, Air Quality Act of 1967, 90th Cong., 766–77 (1967).

³J. Esposito & L. Silverman, *Vanishing Air: The Ralph Nader Study Group Report on Air Pollution* (1970).

⁴See Bonine, *The Evolution of “Technology-Forcing” in the Clean Air Act*, (BNA *Envtl. Rep. Monograph* No. 21, 1975).

health, on roughly a five-year schedule, without regard to the present availability of control technology.⁵

One focus of attention in 1970 was the pace of development in the auto industry. Senate additions to the Clean Air Act told the auto makers—in the face of their insistence that changes could not be made so quickly—to produce new cars that would bring air quality within health-based standards on the same short schedule.⁶

Stringent schedules were added to the state plans for existing sources of pollution as well. The schedules in the Clean Air Act of 1970 are sometimes called “technology-forcing,” but they were too short to allow much change in technology; and to the extent they applied to existing sources of pollution, no great changes were expected. They were action-forcing or compliance-forcing; they said, “Comply or shut down.” State governments were given some latitude to make provisions for individual facilities, but overall air and water quality standards were to be met regardless of cost.⁷ If older plants had to shut down to make way for newer, cleaner facilities, the costs and disruption would be accepted.

Congress also adopted the Administration’s long-range program of technology-forcing for new industrial facilities, which was now a complementary element of a larger scheme. Beginning with the Clean Air Act of 1970, environmental protection statutes all required that new sources of pollution, before they were built, would be required to adopt state-of-the-art pollution control technology.⁸

Congressional schedule-setting changed the character of the programs. Action-forcing schedules for existing sources of pollution would ensure prompt protection of public health. The longer range program required steady overall progress in the technology used in industry; every advance, as soon as it was demonstrated, would become an industry norm.⁹ This second program of long-range technology forcing was intended to guide industry into a path which would lead to the eventual elimination of all significant pollution.¹⁰

Action-forcing and technology-forcing have merged into a single, complex program. Short-term schedules ensure that the program has urgency, that public health is protected, and that pressure on existing sources of pollution is at least as sharp as the pressure applied to technology for new sources. The hopes for long-term progress continue to rest with the more leisurely development of new technology.

Technology-forcing programs, as they developed in the air and water pollution laws of the early 1970s, have been a feature of all environmental protection law since then. To the Administration’s unforced “hand-in-hand” approach Congress continued to add action-forcing schedules; as in the hazardous waste laws,¹¹ the 1986 Amendments to the Safe Drinking Water Act,¹² and the 1990 Clean Air Act

⁵See Ch 11.

⁶“Congress has served notice on the automobile industry that it expects development of a very low emission vehicle within the next five years—a feat that some automobile company executives claim to be impossible.” R. Ayres & R. McKenna, *Alternatives to the Internal Combustion Engine* v (1972).

⁷See, e.g., *Union Elec. Co. v. EPA*, 427 U.S. 246, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20570 (1976).

⁸See § 3:20.

⁹See Stewart, *Regulation, Innovation and Administrative Law: A Conceptual Framework*, 69 *Calif. L. Rev.* 1259 (1981). Stewart argues that such a scheme discourages innovation. See also Huber, *The Old-New Division in Risk Regulation*, 69 *Va. L. Rev.* 1025 (1983).

¹⁰See *EPA v. California ex rel. State Water Resources Bd.*, 426 U.S. 200, 202–05, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20563, 20564–65 (1976); § 2:23.

¹¹See, e.g., RCRA § 3004(d) to (k), 42 U.S.C.A. § 6924(d) to (k) (staged ban on land disposal of hazardous wastes).

¹²See, e.g., *Safe Drinking Water Act Amendments of 1986*, Pub. L. No. 99-339, 100 Stat. 642 (1986). A decade later Congress relaxed some of these requirements when it adopted the *Safe Drinking Water Act Amendments of 1996*, Pub. L. No. 104-182, 110 Stat. 1613. The 1996 Amendments provide

Amendments,¹³ where they again served to give the technology-forcing program urgency and bite.

Technology-forcing, in short, is a continuing experiment in national management, with goals and objectives to be met, and schedules for their attainment. Like other modern management systems, it is performance-based; the characteristic control method is a performance-based emission limit, described in the next subsection.

§ 3:4 Performance standards

The third component of most control strategies is a performance standard. A common example is an emission limit, contained in a facility permit. The emission limit states the amount or concentration of pollutant that may be released to the environment from a facility. The permit holder may use any control technology—with some exceptions discussed below—to achieve this performance.

There are three common methods of setting performance standards.

First, EPA may base them directly on environmental quality standards, by calculating the discharge which can be allowed without exceeding the environmental quality standards, and then translating this into an emission limit or some other performance standard. Controls based directly on environmental quality in this way are discussed in § 2:14, above. Such limits are set without explicit reference to cost or available technology, and may be “action-forcing” in the sense that they must be met on a fixed schedule, regardless of cost; but they are not part of the technology-forcing system EPA administers, except as they serve to protect minimum standards of public health and welfare while longer-range goals are being met.

A second type of performance standard is based on a balance between the benefits of an activity and the environmental damage it may do. The balance is usually struck at the point where the costs of control become greatly disproportionate to the benefits, given the available technology. For pesticides used on food crops, for instance, this balance is reflected in a tolerance set for pesticide residues in food.¹ Once the balance is struck and required levels of performance are determined, EPA works backward and sets an emission limit or other performance standard. This is necessarily a case-by-case process, and eschews uniform controls. It is technology-forcing only in the mild, hand-in-hand fashion. Except under the Toxic Substances Control Act (TSCA) and the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), it is rarely authorized explicitly.

The third type of performance standard is based on some benchmark performance—of the best plant in an industry, for example. Standards of this kind are called “technology based”; they can be technology-forcing when they require performance that cannot be achieved without some advance over usual practice. This is the preferred method of control under the five EPA statutes that regulate air, surface water, and groundwater pollution.

more flexibility to EPA to consider costs and benefits when setting standards. They also replace a requirement that EPA issue rules for twenty-five drinking water contaminants every three years with a mandate to decide whether to regulate at least five additional contaminants every five years.

¹³Clean Air Act Amendments of 1990, Pub. L. No. 101-549, 104 Stat. 2399 (1990).

[Section 3:4]

¹See Federal Food, Drug and Cosmetic Act § 408, 21 U.S.C.A. § 346a; § 18:4.

§ 3:5 Performance standards—“Technology-Based” control

Uniform national controls based on industrial benchmarks, the program of technology-forcing first sketched out by the Johnson¹ and Nixon² Administrations, were developed in the Clean Air and Clean Water Acts into a highly structured system of performance standards that was further elaborated in later statutes.

Two types of benchmarks are often used to set performance standards. The first is sometimes called “reasonably available” control technology, and the second, “best available” control technology, although each statutory program has its particular terms and variations.

The first category, which is now of diminishing importance, is usually applied only to “existing” sources of conventional pollutants. Existing sources may be required, for a time, to perform only as well as the best plants in their industry already do. This is a modest standard, tied to the upper levels of existing practice; it is a kind of standard of reasonable behavior, and provides a transition for existing sources of pollution into the new regulatory system.³

A higher standard is set for most hazardous waste management facilities and sources of toxic pollutants, and for all new sources of pollution. The benchmark for this level of control is often some variation of the best technology which has been demonstrated, and which will be available when required.⁴ This standard looks not to existing practice, but to demonstrations of what can be achieved by effort; it is a standard that in time grows steadily more stringent, forcing technology into new paths.⁵

Many existing sources of conventional pollutants, initially required only to install reasonably available controls, eventually are required to upgrade their performance to standards based on the best available technology.⁶

Once benchmarks of either type are chosen, EPA sets enforceable standards which reflect their performance, and writes these standards, with schedules for compliance, into enforceable permits.

Performance standards based on benchmark technology are sometimes more briefly called “technology-based,” which is a convenient term as long as it is not misunderstood. Many factors may go into the choice of the benchmark, including cost and availability, and the financial condition of the industrial category as a whole. The choice of technology is the result, and not the basis, of a decision on the performance which should be required.⁷ Furthermore, EPA regulations do not ordinarily require any particular technology to be *used* (although there are marked exceptions in the hazardous waste program.⁸) Permit holders are usually free to find the most efficient way of meeting performance standards.

[Section 3:5]

¹Senate Subcommittee Hearings on S.780, Air Quality Act of 1967, 90th Cong., 766–77 (1967).

²See Message of the President of the United States, Message on the Environment, H.R. Doc. No. 91-225 (1970).

³See § 3:7.

⁴See § 3:7.

⁵See § 3:12.

⁶See § 3:9.

⁷See, e.g., § 12:144. See generally B. Ackerman & W. Hassler, *Clean Coal/Dirty Air: or How the Clean Air Act Became a Multibillion-Dollar Bail-Out for High-Sulfur Coal Producers and What Should Be Done about It* (1981).

⁸See, e.g., RCRA § 3004(o)(1)(A), 42 U.S.C.A. § 6924(o)(1)(A); 40 C.F.R. § 264.301(c) (new landfills must have two liners and a leachate collection system). Even here, however, landfill owner/operators may obtain approval of alternate systems with equivalent performance. RCRA § 3004(o)(2), 42 U.S.C.A. § 6924(o)(2).

Practice often departs from theory. Sometimes, the apparent freedom to choose a method of meeting performance standards is no more than a form, and the control technology is effectively prescribed. In a much-studied instance, large new coal-burning electric power plants were effectively required to employ stack-gas scrubbers for sulfur dioxide, although the Clean Air Act otherwise calls for performance-based standards wherever possible.⁹

In the hazardous waste laws, extensively revised after the Reagan Administration's ill-starred reform efforts, the statutes often prescribe the means by which performance standards are to be met.¹⁰ And performance-based standards are not always possible; when a building is demolished, for instance, the contractor cannot measure emissions of asbestos dust.¹¹

In situations like these, the statutes abandon the performance principle, and authorize or require specified practices or design standards.¹²

§ 3:6 Performance standards—Emission limits: “dilution is not the solution”

A common form of performance standard is the “emission limit,” as it is called in the Clean Air Act, or “effluent limitation” in the Clean Water Act, which specifies an allowable discharge of a designated pollutant. The Clean Air and Clean Water Acts rely heavily on emission limits and effluent limitations applied to major discharges,¹ and this pervasive control method is a point of reference for later statutes.² A few words about emission limits (to use just one term) therefore may be helpful.

Emission limits are usually written as allowable *rates* of release—amounts of pol-

⁹See B. Ackerman & W. Hassler, *Clean Coal/Dirty Air: or How the Clean Air Act Became a Multibillion-Dollar Bail-Out for High-Sulfur Coal Producers and What Should Be Done about It* (1981).

¹⁰See, e.g., RCRA § 3004(o), 42 U.S.C.A. § 6924(o) (minimum technological standards).

¹¹See *Adamo Wrecking Co. v. United States*, 434 U.S. 735, 8 *Envtl. L. Rep.* (Envtl. L. Inst.) 20171 (1978); Clean Air Act § 111(h), 42 U.S.C.A. § 7411(h).

¹²Clean Air Act § 111(h), 42 U.S.C.A. § 7411(h).

[Section 3:6]

¹See, e.g., Clean Air Act §§ 110(a)(2)(B), 110(a)(2)(D), 42 U.S.C.A. §§ 7410(a)(2)(B), 110(a)(2)(D) (state plans must contain emission limits for existing and new stationary sources); Clean Air Act § 111(a)(1)(A)(i), 42 U.S.C.A. § 7411(a)(1)(A)(i) (new source performance standards to include emission limitations); Clean Water Act §§ 301 to 302, 33 U.S.C.A. §§ 1311 to 1312 (effluent limitations for point sources).

²Hazardous waste land treatment and disposal facilities are subject to a general nondegradation standard of environmental quality, which has been translated into a complicated set of overlapping design and performance standards, some of which can be understood as stringent emission limits similar to the emission limits for toxic pollutants set in the Clean Air and Water Acts. Land treatment facilities, for instance, must operate within the parameters of a “demonstration” that wastes will not be released from the treatment facility. See 40 C.F.R. §§ 264.272(a)–.273(a).

New land disposal facilities must have two liners, an upper liner which is usually a plastic membrane that may tear or leak, and a bottom liner of compacted clay or other natural material, as a last line of resistance. The performance of bottom liners is specified as a maximum “permeability,” which is defined as the rate at which liquids pass through the liner, and is in effect an emission limit for the facility, when other safeguards fail. The thickness of the bottom liner prevents discharges during the operating life of the facility. See RCRA § 3004(o)(5)(B), 42 U.S.C.A. § 6924(o)(5)(B). New land disposal facilities must have active leachate collection systems to prevent emissions even if the liners are faulty. See 40 C.F.R. § 264.99. The facilities must also have leak-detection systems, RCRA § 3004(o)(1)(A), 42 U.S.C.A. § 6924(o)(1)(A), and overlaid on these standards is a separate set of criteria for groundwater protection which must be met, if other systems fail and there is some detectable contamination of groundwater. See RCRA § 3005(d) to (m), 42 U.S.C.A. § 6925(d) to (m). Finally, apparently on the theory that none of the performance and design standards can be reliably met, there are separate controls on the wastes which can be placed in land disposal facilities, for which there must be a demonstration, “to a reasonable degree of certainty,” that there will be “no migration” from the disposal facility, RCRA § 3004(d) to (g), 42 U.S.C.A. § 6924(d) to (g). It would be rash to generalize about these multiple layers of belts and suspenders, but it might be helpful to think of them as separate

lutant per unit of time—rather than as concentrations—amounts of pollutant per unit of dilution. This simple device prevents dischargers from meeting their performance standards by diluting their discharges.

Only the Clean Air Act expressly provides that dilution is not an acceptable form of control; and even that prohibition is sharply limited. What now amounts to a general rule against dilution as a method of control has grown up within the administrative process; like some other principles of environmental protection law, it is no less well established for lacking explicit statutory authority.³

In many cases, the rule against dilution has a firm environmental basis. Discharges from sewage treatment plants, to take an example, may burden small bodies of water, where the total quantity of nutrients has an effect on aquatic life. In air pollution the total quantity of precursors, rather than their concentration, may be the critical factor in the accumulative effects of acid deposition.

There are exceptions to the rule, when pollutants are innocuous after dilution.⁴ But even where there is no firm evidence that the total mass of pollutants has any effect in itself, or where pollutants may be rapidly degraded after release, the principle is usually followed.⁵ There is even a common saying, “dilution is not the solution to pollution.” This general principle sometimes requires extraordinary efforts to clean up or dispose of very dilute pollutant or waste streams.

The more general reasons for the rule seem to be, first, to maintain an equitable distribution of controls among the states—those with extensive resources available for diluting effluents or wastes should not become pollution havens; and second, to preserve the integrity of the technology-forcing system. If dilution were available as a control method, there would be little inducement to limit discharges, until the whole environment had been saturated to reduce wastes or to capacity. The rule against dilution is therefore an important, if rarely mentioned, tool in the program to eliminate all significant pollution.

emission limits, each of which allows no significant discharges, and each of which must operate when all others fail.

(If all fail, of course, the owner or operator of the facility may be required to take corrective action—containing or cleaning up the spill; and if the owner/operators are not available, generators who sent wastes to the facility and other responsible parties may be liable for the costs of cleanup. *See* § 14:85.)

Underground oil and chemical storage tanks regulated under RCRA are subject to performance standards that similarly attempt to limit leaks, and to prescribe leak detection and response standards that are functionally equivalent to emission limits. *See* RCRA §§ 9003 to 9004, 42 U.S.C.A. §§ 6991b to 6991c; § 14:74.

³Like the nondegradation principle, this is a part of EPA lore and is only partly codified. *See, e.g.*, Clean Air Act § 123, 42 U.S.C.A. § 7423 (prohibiting “dispersion techniques”); §§ 13:62, 13:63 (emission limits under Clean Water Act are usually written to prohibit dilution as a method of control); 40 C.F.R. § 261.3(b)(2) (certain listed hazardous wastes remain subject to regulation regardless of dilution). Dilution is not accepted as a method of treatment that would exempt hazardous waste from otherwise applicable restrictions on land disposal. *See* 51 Fed. Reg. 40572, 40592 (1986) (citing legislative history).

⁴When wastes are hazardous solely because of a characteristic that they lose when diluted—acidity or reactivity would be examples—they cease to be regulated when they lose the characteristic. 40 C.F.R. § 261.3(a)(2)(iii). Discharges of acid, oil and grease, and heat to surface waters are similarly regulated on the basis of concentration, presumably because these pollutants have no effect when diluted, and are very unlikely to be reconcentrated once released to the environment.

⁵The Clean Air Act prohibition against dispersion techniques, for instance, on its face applies to all regulated pollutants, even those like carbon monoxide, which degrade rapidly in the environment, although it has not been often applied to such pollutants. EPA generally tried to prohibit dumping and discharge of nutrient materials into the ocean until partially overruled by a court, *New York City v. EPA*, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20763 (S.D.N.Y. 1981), modified, 543 F. Supp. 1084, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 21003 (S.D.N.Y. 1981), and by Congress, *see* Clean Water Act § 301(h), 33 U.S.C.A. § 1311(h) (exemption for ocean discharges of publicly owned sewage treatment works available on some conditions).

III. “EXISTING” AND NEW SOURCES OF POLLUTION

§ 3:7 In general

Environmental protection law is new, and requires many changes to be made in settled industries. Much of the law is therefore devoted to the transition from an old order to a new one.

This transition is marked by a pervasive distinction between existing and new sources of pollution, existing and new facilities for hazardous waste management, existing and new chemical substances and pesticides.

Existing industrial plants, of course, represent existing jobs and considerable investments, and have only limited flexibility to change. Planned new enterprises, however, can be based on fundamentally new technology, built in from the outset, without disrupting settled arrangements. With sufficient ingenuity, the conventional wisdom goes, clean new factories can be built to provide the same economic product that the older, polluting technology supplied.¹

The separation of existing and new is common and natural enough; it first appeared in distinctive form in the Clean Air Act of 1970. Until 1970, federal law rested on state plans, which imposed controls only where thresholds of damage had already been passed.² These environmental-quality based programs were elaborate and unwieldy, and slow to show progress. Successive Administrations proposed uniform national performance standards for major sources of pollution³ to ensure more rapid progress. After a decade of increasing frustration with the states' efforts to control their industries, Congress in 1970 finally accepted a compromise: For existing sources of air pollution, the states could continue to tailor controls to each site, requiring controls only where thresholds of damaging pollution had already been passed. For planned major new sources of pollution, however, Congress authorized uniform national performance standards.⁴

In this grand compromise, existing sources of pollution were put under considerable pressure, but settled arrangements were protected as much as public health would allow. For planned new facilities, however, there were no settled arrangements to protect, no complex demonstrations of damage and causality to overcome; EPA was directed to set performance standards for selected categories of new facilities, applied uniformly across the country, to drive technology in a new direction. This was technology-forcing: “The law had finally cut through the bewildering complexities to promise our children a new world in which spanking new plants would churn out the old consumer goods in harmony with nature.”⁵

This grand compromise survived in its initial form for only a few years. Congress grew impatient, and, beginning with the Clean Water Act of 1972, increased the

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¹See § 3:2; *cf.* § 10:53 (technological optimism is the basis of NEPA substantive policies). Of course, there are critics who say that only a new social order can produce a new kind of productive technology, but even these critics share the optimism as to what technology can accomplish, given the right social conditions. *See, e.g.,* B. Commoner, *The Closing Circle* 287-92 (1971).

²See Jorling, *The Federal Law of Pollution Control*, in *Federal Environmental Law* 1058, 1062 (E. Dolgin & T. Guilbert eds., 1974).

³See §§ 3:2, 3:3.

⁴See Clean Air Act § 111, 42 U.S.C.A. § 7411; § 11:2.

⁵B. Ackerman & W. Hassler, *Clean Coal/Dirty Air: or How the Clean Air Act Became a Multibillion-Dollar Bail-Out for High-Sulfur Coal Producers and What Should Be Done about It* 12 (1981). Ackerman and Hassler are speaking sarcastically, but accurately. They go on to say, “By giving statutory prominence to technological means of production in new plants, Section 111 [of the Clean Air Act] would disort policy perceptions for years to come.” *Id.*

pressure on existing sources of pollution, by requiring performance-based controls for their discharges.⁶

Industrial growth slowed in the 1970s, and new sources were fewer and less important than had been expected; by the 1980s it was plain that technology-forcing would be slower and more difficult than had appeared to the bright hopes of ten years before. Attention turned to end-of-the-pipe controls for pollutants and waste that were equally suitable for existing and new sources and generators.

But the distinction between existing sources and new sources was fundamental. The Clean Air Act drew the distinction most sharply, but all later statutes (except Superfund) followed to some degree.⁷

The overall pattern of the statutes as they emerged from the 1970s was this: Environmental protection standards were imposed on new sources from the day construction began. As to existing sources, however, controls were slowly phased in over a prolonged grandfathering period, and installed in increments. Eventually, however, most existing sources were brought up to standards comparable in cost, if not always in performance, to standards for new sources. Under the Clean Air Act—where new source controls differ most widely from controls on existing sources—EPA uses econometric models to predict the impact of new source performance standards, in an effort to forestall self-defeating stringency.⁸

New source standards were immediately effective, but controls for existing sources were phased in over several years, and so there was a period—more than a decade—when new sources were disproportionately burdened. Some large new projects may have been delayed or cancelled for this reason. Commentators argued that

⁶See Federal Water Pollution Control Act Amendments of 1972, Pub. L. No. 92-500, § 2, 86 Stat. 816 (1972); Ch 13.

⁷See Clean Air Act § 111, 42 U.S.C.A. § 7411 (new source performance standards); Clean Air Act § 165, 42 U.S.C.A. § 7465 (permits for new sources in attainment areas); Clean Air Act § 173, 42 U.S.C.A. § 7503 (permits for new sources where air quality standards have not been achieved). Later statutes carried the distinction forward in numerous ways; the most important are the Clean Water Act § 306, 33 U.S.C.A. § 1316 (new source performance standards, and RCRA § 3004(a), 42 U.S.C.A. § 6924(a) (new and existing hazardous waste management facilities distinguished). TSCA's overall purposes are divided among information gathering, regulation of existing risks, and prevention of risks from new products. See § 16:1. FIFRA grandfathers existing pesticides, but only for a time; eventually all must be reregistered on a schedule expedited by amendments adopted in 1996. FIFRA § 4, 7 U.S.C.A. § 136a-1. Under Safe Drinking Water Act regulations, some existing injection wells are grandfathered, and some new injection wells for waste disposal are severely restricted or banned. See 40 C.F.R. pt. 144, subpts. B, C. The ocean dumping statute, the MPRSA, does not explicitly distinguish between old and new dumping practices, but the statute cut off most existing dumping on December 31, 1981, and new dumping after that time was required to meet very stringent requirements. MPRSA § 101(a). Early noise regulation for aircraft, which preceded EPA, contained performance standards for new aircraft alone, and grandfathered existing aircraft. See Greenwald, Law of Noise Pollution 7-8 (BNA Env't Rep. Monograph No. 2, May 1, 1970). In the Noise Control Act of 1972, still in effect but no longer funded, EPA was directed to study the "adequacy of noise emission standards on new and existing aircraft, together with recommendations on the retrofitting and phaseout of existing aircraft." Noise Control Act § 7(a), 42 U.S.C.A. § 4906.

⁸"Under the cost minimization model [used by EPA to evaluate new source performance standards—NSPS—under the Clean Air Act] the higher the costs of pollution controls required by the NSPS, the more utilities will delay the retirement of older plants which do not have to comply with the NSPS, and the more utilities will be discouraged from building and operating new plants which must meet the NSPS." Costs are accordingly minimized to prevent this from occurring. *Sierra Club v. Costle*, 657 F.2d 298, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20455 (D.C. Cir. 1981).

See TSCA § 2(b)(3), 15 U.S.C.A. § 2601(b)(3) ("[EPA's] authority over chemical substances and mixtures should be exercised in such a manner as not to impede unduly or create unnecessary technological barriers to innovation.").

environmental protection law—along with other health and safety regulation—had contributed to the decline in industrial productivity.⁹

It is difficult to see how the transition to a new system of control could have been managed differently, however. It was important to keep from building existing problems into another generation of new industrial plants. Yet it was not possible to immediately bring existing facilities up to the same high standards. The only real possibility for rapid progress was the one chosen.

As described in the following sections, this transition is largely complete. Standards for new sources and products will continue to tighten, as they are reviewed in the light of technological advance, as will standards for existing sources. Somewhat better performance should be steadily required of new sources, to reflect the greater ease with which controls can be installed in new plants.¹⁰

New plants and new products, in short, continue to carry the hopes of technology-forcing as a means of creating a fundamentally new industrial technology, and of continually reducing the production of pollutants and waste.

But the cost and the burden of new controls should no longer be much greater for new than for older facilities; there are a few lingering exceptions, which seem to have little intrinsic justification. Under RCRA, existing hazardous waste land-disposal facilities were not subject to the minimum technology-based requirements imposed on new facilities because of the near impossibility of retrofitting landfills with bottom liners. Most land disposal of untreated waste is to be ended as soon as possible, in any case, and few if any new facilities are expected to be built. Manufacturers of new chemical substances must submit prior notices to EPA before manufacturing, but they may proceed without delay unless EPA takes some regulatory action; this program is considered something of a model by industry.

For the future, of course, new source standards will continue to tighten, as we note in § 3:12 below. Whether EPA will succeed in keeping the new standards at a high enough level to encourage innovation, but not so high a level as to discourage innovation, remains to be seen.

So much for the theoretical scheme. In practice, there is a substantial added burden on new products and facilities, but it is procedural, and has nothing to do with substantive requirements. Existing plants generally continue in operation while permit applications are processed. But construction of new facilities, and modernization of many existing facilities, must wait until a permit has been issued. The burden of regulatory delay and uncertainty therefore falls much more heavily on a new plant; a large facility often needs several permits, each of which has its own single-purpose procedure. And in each procedure, EPA generally requires opportunities for public participation. This, of course, allows neighbors who oppose a new facility to delay its construction.

Prior review of new facilities and products is discussed at more length in § 3:17, below. We will note here only that the delays and uncertainties caused by new source review are substantial, are only sometimes justified, and may play a role in discouraging exactly the innovation which the technology-forcing program—the source of the requirement—seeks.

⁹*See, e.g.*, Huber, *The Old-New Division in Risk Regulation*, 69 Va. L. Rev. 1025 (1983); Stewart, *Regulation, Innovation, and Administrative Law: A Conceptual Framework*, 69 Calif. L. Rev. 1259 (1981). Even in the 1970s, however, substantive rules did not discriminate against new sources. Clean Water Act NSPS for many industries were less stringent than “best available technology” or BAT (issued prospectively) for existing facilities. Since new sources were protected from changes for 10 years, they often had a cost advantage. *See* 1 General Counsel Opinions 395 (1979); § 3:8.

¹⁰[T]he most desirable time to determine the health and environmental effects of a substance, and to take action to protect against any potential adverse effects, occurs before commercial production begins. Not only is human and environmental harm avoided or alleviated, but the cost of any regulatory action, in terms of jobs and capital investment is minimized.

H.R. Rep. No. 94-1679, at 65 (1976) (conference report on TSCA).

IV. CONTROLS FOR “EXISTING” SOURCES AND FACILITIES

§ 3:8 Introduction: Grandfathering

EPA’s major statutes differentiate between “existing” and new sources of pollution, hazardous waste management facilities, chemical substances and pesticides.¹ In this section we will discuss the rules which apply to “existing” sources and facilities. “Existing” is in quotation marks because it is a jargon term, customarily used to describe everything which is not “new,” itself a term of art.

“Existing” sources and facilities include those already in operation, but also some which have not yet been built. Under the Clean Air Act, a “new” source comes into existence when construction commences; a source under construction, but not yet built on the date when new-source standards became applicable, may be an existing source.² A source comes into existence when substantial commitments are made; the emphasis of all the statutes is on settled arrangements, rather than physical facilities.

For existing sources of pollution, the statutes allow time for transition from these settled arrangements, and provide some variances to ensure fair—or at least reasonable—treatment of sources in different circumstances.

The transition time is often short: The Clean Air Act of 1970, for instance, gave the states about three years to carry out their plans for bringing air pollution within federal health standards;³ the Clean Water Act Amendments of 1972 allowed five years for dischargers to employ minimum controls;⁴ and RCRA made standards for hazardous waste management facilities effective six months after promulgation.⁵ Statutes regulating toxic chemicals and pesticides, however, allowed existing

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¹The Clean Air and Clean Water Acts have special provisions for “new” sources of pollution, *see* § 3:7; all other sources are “existing,” and for a time are subject to less restrictive controls. The underground injection well regulations issued under the Safe Drinking Water Act carry forward these distinctions to some degree and grandfather some existing wells. *See* § 3:7. RCRA expressly authorizes a distinction between “existing” and “new” hazardous waste management facilities, RCRA § 3004(a), 42 U.S.C.A. § 6924(a), and follows the Clean Air Act pattern by requiring technology-based standards for new hazardous waste land-disposal facilities, RCRA § 3004(o), 42 U.S.C.A. § 6924(o), and underground storage tanks, RCRA § 9003(e), 42 U.S.C.A. § 6991b. Existing toxic chemical and pesticide products are grandfathered under TSCA and FIFRA, although EPA must eventually reregister all existing pesticide products, FIFRA § 4, 7 U.S.C.A. § 136a-1, and may regulate unreasonable hazards from existing toxic substances. TSCA § 6, 15 U.S.C.A. § 2605.

Superfund, *see* § 14:85, which only applies after the fact to releases that must be cleaned up, of course has no distinction between new and existing sources. Moreover, it applies retroactive liability to previously legal waste disposal practices, exactly the reverse of the usual grandfathering for existing practices. This exception tests the rule, but nonetheless seems consistent with it. Past practices have no special sanctity as such. The purpose of grandfathering is generally to protect settled arrangements, and there is no continuing investment in past dumping.

²“New sources” are those to which no substantial commitments have yet been made on the date in question. *See* 40 C.F.R. § 51.18(j)(1)(xvi). In common usage “existing sources” are sources which are not new, and therefore the term includes some facilities which have not yet been built, but for which substantial commitments have been made, such as entering into an enforceable contract which cannot be breached without significant penalty, or by making substantial commitments to a continuous course of on-site construction. *Id.*

³The 1970 Amendments allowed about two years for EPA to set standards and for the states to prepare and submit plans to meet them; the plans were required to show attainment of standards by 1975. *See* *Union Elec. Co. v. EPA*, 427 U.S. 246, 6 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20570 (1976).

⁴*See* Clean Water Act § 301(b)(1), 33 U.S.C.A. § 1311(b)(1).

⁵*See* RCRA § 3010(b), 42 U.S.C.A. § 6930(b).

products to remain on the market without additional control, unless and until EPA had reviewed them.⁶

The schedules in the statutes at first were so short that it was easy to overlook that they did establish a transition period, however brief. The Clean Air Act's deadlines were occasionally called "technology-forcing," because the statute required compliance regardless of cost.⁷ But, it would be more accurate to call them "action-forcing" or "compliance-forcing," since they did not allow enough time for any real development of technology for retrofitting existing sources.⁸ In these early years the schedules for retrofitting seemed only to put added pressure on older facilities to make way for new ones with more efficient production techniques and controls.⁹

A deadline is only one side of a schedule; the other is the time allowed for compliance. As deadlines were missed, schedules were extended,¹⁰ and the purpose of the time allowed for compliance became more apparent. The more time that was allowed for compliance, the less disruption there was for settled arrangements.

Even after existing facilities were brought into the new regulatory system, controls were imposed in increments, providing a further period of transition.

First, existing fixed sources had to ensure that their emissions did not violate health-based environmental quality standards, once the initial transition period was over. (These threshold standards of environmental quality are discussed in the preceding chapter.) This, as one might expect, was a consistent requirement in all the statutes.¹¹ The minimum controls required to protect health-based standards were sometimes burdensome, but EPA had designated few toxic pollutants for regulation, and there were relatively few sources large enough to violate standards for conventional pollutants on their own.¹² When environmental quality standards were limiting, it proved extremely difficult to base controls directly on them.

Environmental protection statutes, beginning with the Federal Water Pollution

⁶FIFRA, however, requires EPA to reregister all existing pesticide products under the more stringent health and safety provisions of its 1972 and 1996 amendments. FIFRA § 4, 7 U.S.C.A. § 136a-1.

⁷See *Union Elec. Co. v. EPA*, 427 U.S. 246, 258–59, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20570, 20573 (1976).

⁸The Clean Air Act allowed about five years for attainment of air quality standards, of which two years would be consumed by setting of standards and preparation and approval of state implementation plans. By contrast, construction time for a major new power station was then more than five years.

⁹See *Union Elec. Co. v. EPA*, 427 U.S. 246, 259, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20570, 20573 (1976); see also *id.* at 269–70, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) at 20576 (Powell, J., concurring).

¹⁰The original Clean Air Act deadline for meeting most health-based "primary" air quality standards was 1975; the latest extension for transportation-related pollutants runs to the end of 2010, thirty-five years later. The Clean Water Act still states a goal of ending all discharges of pollution to surface waters by 1985, Clean Water Act § 101(a)(1), 33 U.S.C.A. § 1251(a)(1), but many interim deadlines were extended to dates ranging from 1983 to 1987, Clean Water Act § 301(b)(2), 33 U.S.C.A. § 1311(b)(2), and the ultimate goal remains as an aspiration for the indefinite future.

¹¹See, e.g., Clean Air Act § 110(a)(2)(B), 42 U.S.C.A. § 7410(a)(2)(B); Clean Water Act § 302(a), 33 U.S.C.A. § 1312(a). Under RCRA, existing land disposal facilities must assess groundwater quality while their permit applications are pending, 40 C.F.R. § 265.93, and may be required to remedy any imminent hazard which is found. Once a permit is issued the existing facility must comply with groundwater protection standards. 40 C.F.R. § 264.92. Standards for injection wells under the Safe Drinking Water Act are similar, and generally prohibit any significant deterioration of underground drinking water supplies. See 40 C.F.R. pt. 146. Prior to 1982, some ocean dumping of sewage sludge and industrial waste which did not "unreasonably degrade" the ocean environment was allowed to continue, MPRSA § 102, 42 U.S.C.A. § 1412; dumping of dredged materials is still subject to this standard, MPRSA § 103, 42 U.S.C.A. § 1413. Existing toxic chemical products and pesticides may remain on the market so long as EPA does not find they pose an unreasonable risk.

¹²These few large sources are primarily large power stations, steel mills, and auto manufacturing plants. (Existing smelters, major air pollution sources in the West, were allowed to install RACT controls rather than comply with air quality standard based emission limits. Clean Air Act § 119, 42

Control Act Amendments of 1972, therefore required a system of uniform controls. These began with a general standard of reasonable behavior for existing facilities, regardless of whether emissions exceeded threshold standards of environmental quality.¹³ Existing sources of pollution were held to a standard of reasonable cleanliness, which weighed the costs and availability of controls, but generally assumed, *a priori*, that the environment required protection without proof of harm. This first layer of control ensured some progress toward environmental quality goals, where they had not been met; reasonably available controls also were a gradual first step in a broad, highly structured technology-forcing program.

This layer of reasonably available controls is generally in place for conventional industrial air and water pollutants, public drinking water supplies, municipal sewage, and nonhazardous wastes, see § 3:9 below, although there are continuing enforcement problems at a few major facilities in each category.

The third increment of control was only just getting underway in 1986; this was a layer of more strongly technology-forcing controls for most pollutants, but with special emphasis on toxic discharges and hazardous wastes.¹⁴ These controls bring existing sources up to levels comparable or identical to those required of new sources. The term of art for this layer of control is “BAT”—“best available technology.”

Existing plants may have a final protection, even at this stage, which differentiates them from new sources: variances which may be used to extend schedules, to excuse compliance or to adapt nationally applicable rules to local conditions. The Supreme Court has held that strict, otherwise uniform rules must provide some variance procedure for existing sources, but not for new sources.¹⁵

Controls for toxic chemicals and pesticides are set case by case, according to very general criteria, and there accordingly are no uniform standards applied to categories of products, as there are in pollution control and hazardous waste management. However, these statutes differentiate in their own way between existing and new products. Existing chemical substances and pesticides were allowed to remain on the market without additional controls under TSCA and FIFRA, at least for a time; under FIFRA, this provided for a lengthy grandfathering period until Congress required EPA to expedite the reregistration of existing products when it amended the statute in 1996.

The whole system of controls for existing sources of pollution is an immense grandfathering system, filled with exceptions and special provisions. Its purpose is to assist the birth of a new industrial order, with least disruption to the old.

§ 3:9 Reasonably available controls

As we saw in the last chapter, environmental protection began with a system of controls based directly on environmental quality. Beginning in the 1970s, a second

U.S.C.A. § 7419.) They were, however, the focus of EPA enforcement efforts during the 1970s. Controls based directly on environmental quality standards are discussed in more detail in §§ 2:16, 2:17.

¹³The Federal Water Pollution Control Act Amendments of 1972 extended this requirement to all existing dischargers. See Clean Water Act § 301(b)(1), 33 U.S.C.A. § 1311(b)(1). The Clean Air Act followed suit in 1977, but only for those major sources in areas where air quality does not meet primary standards. These sources must employ reasonably available control technology, but only with respect to the pollutants which exceed the standards. See Clean Air Act § 172(b)(2), 42 U.S.C.A. § 7502(b)(2).

¹⁴See, e.g., Clean Water Act § 301(b)(2), 33 U.S.C.A. § 1311(b)(2); § 3:10. RCRA contains a series of progressively tightening restrictions on land disposal of hazardous wastes, and further required EPA to revise its standards for all existing as well as new hazardous waste management facilities to reflect advancing control technology. RCRA § 3005(o), 42 U.S.C.A. § 6925(o). Under TSCA and FIFRA, however, toxic chemical and pesticide products, once they have passed muster, are not subject to additional controls, unless needed to alleviate unreasonable risks. See § 3:10.

¹⁵See § 3:11.

layer of controls was added, “reasonably available controls”; these controls were imposed uniformly, even where no damage to environmental quality was attributed to the source. A third round of strongly technology-forcing controls based on the “best available” technology followed. For many dischargers, this has been a progression of increasingly stringent controls.

In the 1980s, programs for control of hazardous wastes and toxic pollutants tended to skip over the intermediate, “reasonably available” control step. Environmental quality standards were set at very stringent *de minimis* levels for toxic substances and hazardous wastes, and any transition between these and still more stringent standards, designed to end most toxic emissions and hazardous waste land disposal, was brief, or omitted entirely. See § 2:23, above.

TSCA and FIFRA, the statutes regulating the manufacture of toxic substances and pesticides, as already noted, called for case-by-case controls, and so of course there were no categorical controls comparable to reasonably available control technology or best available control technology.

By the 1980s, therefore, reasonably available controls were required principally for existing sources of conventional pollutants and nonhazardous wastes. Under the Federal Water Pollution Control Act Amendments of 1972,¹ existing “point sources” of conventional pollutants were required to install at least a minimum level of reasonably available controls, in addition to whatever requirements the states imposed to protect water quality standards, by July 1, 1977.² In 1977, the Clean Air Act was amended,³ and a similar requirement of “reasonably available control technology” was extended to major existing sources of conventional pollutants—those for which national air quality standards had been established—in areas where the states had failed to achieve the health-based air quality standards.⁴ RCRA imposed a similar round of modest controls on nonhazardous waste disposal facilities.⁵ Safe Drinking Water Act “interim” regulations were similar.⁶

Under the Clean Air and Clean Water Acts, benchmarks for this round of controls are explicitly provided. Under the Clean Water Act, the benchmark for industrial sources of conventional pollutants was the “best practicable control technology currently available.”⁷ For publicly owned sewage treatment works, the benchmark was “secondary treatment,” already widely in use.⁸ Under the Clean Air Act, the benchmark was “reasonably available control technology,”⁹ the term we have been using for the entire class.

Under all of these standards, existing sources must perform at least as well as the best plants in their industry.¹⁰ Under the Clean Air Act, performance standards

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¹Pub. L. No. 92-500, 86 Stat. 816 (1972).

²See Clean Water Act § 301(b)(1)(A), (B), 33 U.S.C.A. § 1311(b)(1)(A), (B).

³Clean Water Act § 301(a)(1)(A)(i), 33 U.S.C.A. § 1311(a)(1)(A)(i).

⁴See Clean Air Act Amendments of 1977, Pub. L. No. 95-95, *adding* Clean Air Act § 172(b)(3), 42 U.S.C.A. § 7502(b)(3).

⁵See RCRA § 4004, 42 U.S.C.A. § 6944. RCRA also authorized controls for existing underground storage tanks, which may be similar. See RCRA § 9003, 42 U.S.C.A. § 6991b.

⁶See Safe Drinking Water Act § 1411(a), 42 U.S.C.A. § 300g-1.

⁷See Clean Water Act § 301(b)(1)(A), 33 U.S.C.A. § 1311(b)(1)(A).

⁸Clean Water Act § 301(b)(1)(B), 42 U.S.C.A. § 1311(b)(1)(B).

⁹The Clean Air Act requires emission limits based on “reasonably available control technology” (RACT) for existing sources in areas where air quality standards had not been attained. See Clean Air Act § 172(c)(1), 42 U.S.C.A. § 7502(c)(1); 40 C.F.R. pt. 51, app. B.

¹⁰Under the Clean Water Act, the BPT standard is the “average of the best existing performance,” and has its primary impact on “the most pollution-prone segment of the industry.” *EPA v. National*

may be site-specific,¹¹ but under the Clean Water Act, EPA set performance standards uniformly across the country.¹²

EPA weighs costs before imposing transitional controls for existing sources, but environmental values predominate, unless costs are greatly disproportionate to the benefits of control.¹³

Although mildly technology-forcing, reasonably available controls set a standard of reasonable behavior, usually drawn from existing practice; they are what a civilized facility is expected to do, even without proof of harm.

§ 3:10 Best available controls

EPA gradually updates most of the controls imposed on existing sources and chemical products. One reason is the failure of earlier expectations that new sources would rapidly replace older and more polluting industrial facilities. Such progress, which might have been relatively painless, has not occurred. The great transformations that were hoped for, from new energy sources, new auto power plants, and biotechnology, have been slow in coming. The focus has shifted for a time, therefore, from fostering new technology in future facilities to forcing much more stringent controls in existing plants.

Ocean dumping of industrial wastes and sewage sludge was to end by December 31, 1981, except for dumping of materials that would not significantly degrade the ocean.¹ Public drinking water supplies were subject to expanded, more stringent, final regulations.²

On July 1, 1983, all existing dischargers of water pollution were to be subject to a second round of more stringent controls based on the “best” technology for controlling conventional and toxic pollutants (these rules were completed by 1986).³ Hazardous waste management permits for existing facilities were further tightened by Congress in 1984, and both the permits and underlying standards must be reviewed periodically by EPA.⁴ Most land disposal of hazardous wastes now being carried out must be ended, or the waste subjected to the best available treatment before

Crushed Stone Ass'n, 449 U.S. 64, 76, 10 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20924, 20927 (1980); 39 *Fed. Reg.* 6580 (1974).

Under the Clean Air Act, the states determine what is “reasonable available control technology,” and their determinations are not reviewable in federal courts. *Union Elec. Co. v. EPA*, 427 U.S. 246, 6 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20570 (1976); *National Steel Corp. v. Gorsuch*, 700 F.2d 314, 325, 13 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20295 (6th Cir. 1983).

See Weyerhaeuser Co. v. Costle, 590 F.2d 1011, 1061, 9 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20284, 20306–07 (D.C. Cir. 1978) (BPT may exceed all existing industry practice, “when present practices are uniformly inadequate”).

¹¹*See National Steel Corp. v. Gorsuch*, 700 F.2d 314, 322–23, 13 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20295, 20298–99 (6th Cir. 1983).

¹²*See E.I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112, 7 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20191 (1977) (Clean Water Act): RCRA § 3005(a), 42 U.S.C.A. § 6925(a).

¹³*Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1061, 9 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20284, 20306–07 (D.C. Cir. 1978).

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¹*See City of New York v. EPA*, 11 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20763 (S.D.N.Y.), modified, 543 F. Supp. 1084, 12 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21003 (S.D.N.Y. 1981); § 3:6; *see also* 42 U.S.C.A. § 1412a.

²*See Environmental Defense Fund v. Costle*, 578 F.2d 337, 339–40, 8 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20200, 20200–01 (D.C. Cir. 1978); Safe Drinking Water Act § 1412(b), 42 U.S.C.A. § 300g-1(b).

³*See Clean Water Act* § 301(b)(2), 33 U.S.C.A. § 1311(b)(2).

⁴*See RCRA* §§ 3004(o), 3005(a), 42 U.S.C.A. §§ 6924(o), 6925(a).

disposal.⁵ The Toxic Substances Control Act provides a range of measures for EPA to use, and while there is no formal program of increasing control, the few existing chemical products that have been designated for regulation under this statute often have been subject to gradually tightening control.⁶ Pesticides with existing registrations must be “reregistered,” and their label requirements brought up to modern standards.⁷

Superfund, under which EPA cleans up abandoned waste dumps, is also a “retrofitting” statute, in a way; many companies must go back and clean up—or pay for EPA’s cleanup—of waste disposal practices that may have been entirely proper at the time.⁸

In 1990, Congress amended the Clean Air Act to require sources of 189 listed toxic air pollutants to employ the maximum achievable control technology.⁹ It also mandated sharp cutbacks in sulfur dioxide emissions. EPA has periodically tightened existing controls for conventional pollutants. Air quality standards for ozone and particulate matter were tightened in 1997 and the states will be obliged to impose a new round of control measures.

The near-universal pattern, therefore, is a second round of controls to ensure further progress in controlling pollution emissions, especially toxic pollutants and hazardous wastes. This round of gradually tightening regulations for existing sources—often called “retrofitting”—brings them fully into the technology-forcing program, which at first was reserved for new sources.

The most common benchmark for this round of emission limits is the “best available” technology.¹⁰ “Available” means that the technology has been demonstrated, although it is not necessarily in use, and will be available when compliance is required.¹¹ Versions of this benchmark are used to set standards for control of toxic air pollutants, toxic or “unconventional” water pollutants,¹² and for treatment of many hazardous wastes preceding land disposal.¹³

Conventional pollutants are treated somewhat differently under the Clean Air and Clean Water Acts. The Clean Air Act does not now require a second explicit, technology-based round of controls for existing sources of conventional pollutants for which national air quality standards have been established, although controls have been tightening as deadlines for attainment of the standards approach and pass.

⁵See RCRA §§ 3004(b) to (o), 42 U.S.C.A. §§ 6924(b) to (o).

⁶See, e.g., TSCA § 6(e), 42 U.S.C.A. § 2605(e) (gradual elimination of most PCB manufacturing and use).

⁷See FIFRA § 4, 7 U.S.C.A. § 136a-1.

⁸See §§ 14:100, 14:139.

⁹The statute requires the maximum degree of emissions reductions achievable taking into consideration costs and non-air quality health and environmental impacts and energy requirements. For new sources, this cannot be less stringent than controls achieved in practice by the best-controlled similar source. For existing sources, this cannot be less stringent than controls achieved by the best performing 12 percent of such sources. See Clean Air Act § 112(d), 42 U.S.C.A. § 7412(d).

¹⁰The term is from the Clean Water Act § 301(b)(2)(A), 33 U.S.C.A. § 1311(b)(2)(A), but is now commonly used as an acronym for the whole class of technology-forcing controls. See, e.g., Stewart & Ackerman, Comment: Reforming Environmental Law, 37 Stan. L. Rev. 1333, 1335 (1985).

¹¹See, e.g., Hooker Chem. & Plastics Corp. v. Train, 537 F.2d 620, 636, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20467, 20476–77 (2d Cir. 1976).

¹²See Clean Water Act § 301(b)(2)(A), 33 U.S.C.A. § 1311(b)(2)(A).

¹³The 1984 Hazardous and Solid Waste Amendments to RCRA allow prior treatment of wastes as a means of avoiding the land-disposal ban. RCRA § 3004(m), 42 U.S.C.A. § 6964(m). The Agency, relying on legislative history, interprets this as requiring the “best demonstrated, available technology” (BDAT). See 51 Fed. Reg. 40572, 40588 (1986); 40 C.F.R. pt. 268, subpt. D. EPA describes BDAT as a technology which has been demonstrated, if only at bench scale, but which is currently *commercially* available; in this latter respect, it differs somewhat from BAT under the Clean Water Act. See 51 Fed. Reg. 40572, 40588 (1986).

The Clean Water Act does require the “best conventional pollutant control technology”—usually abbreviated as “BCT”—which differs from BAT by including a cost-effectiveness criterion.¹⁴ Sewage treatment plants, and nonhazardous waste disposal facilities, are not subject to a second round of technology-based controls.

End-of-the-pipe controls for pollutants and wastes—and the program to clean up waste dumps—may hold center stage for a while longer. It has been much more difficult and taken much more time to clean up existing sources of pollution than was thought when the environmental protection statutes were written. For the long run, however, continued progress will rest on the replacement of existing sources of waste and pollution with newer and more efficient facilities, and federal law continues to look toward that horizon.

§ 3:11 Variances

Technology-forcing controls for existing sources of pollution are often subject to variances and waivers.

The Clean Air Act allows states to consider local factors in setting technology-forcing emission limits for existing sources of air pollution.¹ The Supreme Court has held,² and twice reaffirmed,³ that technology-forcing rules for existing sources under the Clean Water Act—the most extensive scheme of retrofitting rules in EPA statutes—must have provisions for variances. Congressional efforts to do away with such variances for toxic substances have been narrowly construed.⁴ Existing hazardous waste facilities are subject to performance standards, which allow some variation in permit terms from site to site,⁵ and the rules for ending land disposal of hazardous wastes have a provision for variances.⁶

Variances are not usually available solely on the basis of financial hardship.⁷ Congress does occasionally give dispensations for financial hardship, however. An example is the relief given to some troubled steel companies under the Clean Air Act, who were in a few cases allowed to modernize their facilities in exchange for extended schedules of compliance with consent decrees.⁸ “Waivers” are also available to some existing sources of nontoxic water pollutants, otherwise subject to BAT

¹⁴See *American Paper Inst. v. EPA*, 660 F.2d 954, 11 *Envtl. L. Rep.* (Envtl. L. Inst.) 20865 (4th Cir. 1981); Clean Water Act § 301(b)(4)(B), 33 U.S.C.A. § 1311(b)(4)(B).

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¹See *National Steel Corp. v. Gorsuch*, 700 F.2d 314, 322–23, 13 *Envtl. L. Rep.* (Envtl. L. Inst.) 20295, 20298–99 (6th Cir. 1983).

²See *E.I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112, 128, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20191, 20194 (1977).

³See *Chemical Mfrs. Ass’n v. Natural Res. Def. Council, Inc.*, 470 U.S. 116, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20230, 20234 (1985); *EPA v. National Crushed Stone Ass’n*, 449 U.S. 64, 72–73, 10 *Envtl. L. Rep.* (Envtl. L. Inst.) 20924, 20926–27 (1981).

⁴See *Chemical Mfrs. Ass’n v. Natural Res. Def. Council, Inc.*, 470 U.S. 116, 125, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20230, 20233 (1985) (EPA has discretion to grant “fundamentally different factor” variances from pretreatment controls for existing sources of toxic pollutants, despite Clean Water Act provision which apparently bars variances for toxics.).

⁵See 40 C.F.R. pt. 264; §§ 14:54, 14:60.

⁶See RCRA § 3004(h), 42 U.S.C.A. § 6924(h).

⁷See, e.g., *EPA v. National Crushed Stone Ass’n*, 449 U.S. 64, 10 *Envtl. L. Rep.* (Envtl. L. Inst.) 20924 (1980) (no hardship variances from Clean Water Act BPT regulations); *National Steel Corp. v. Gorsuch*, 700 F.2d 314, 13 *Envtl. L. Rep.* (Envtl. L. Inst.) 20295 (6th Cir. 1983) (Clean Air Act RACT rules need not be achievable by particular company). TSCA and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) lack any provisions for financial hardship variances. RCRA’s performance standards do not consider financial capability, and it is a condition of most permits that permit applicants demonstrate adequate financial resources to comply. See § 14:57.

⁸See Pub. L. No. 97-23, § 2, 95 Stat. 139 (1981) (known as the Steel Industry Compliance Extension Act, or “SICEA”).

effluent limits, which are making reasonable progress in control but cannot afford to comply fully.⁹ The Safe Drinking Water Act authorizes variances for small water supply systems that cannot afford to comply with national standards.¹⁰ There are no financial hardship variances in the hazardous waste laws.

More commonly, financial resources are taken into account, if at all, on an industry-wide basis when rules are set determining what controls are available or feasible; weaker companies sink or swim.¹¹

Fairness nevertheless remains an underlying factor in variance procedures. In the Clean Water Act cases referred to above,¹² the Supreme Court has held, not only that some provision for variances for existing sources must be allowed under the Clean Water Act, but that this is a more general requirement of law, with Constitutional overtones. It is not yet clear how far these decisions apply to technology-forcing rules under other statutes, nor what variance procedures meet the requirement.

The Court began this line of cases, in *E.I. du Pont de Nemours & Co. v. Train*, with what appeared to be construction of a narrow provision in the Clean Water Act. The statute called for technology-based rules for existing “point sources” of pollution; the Court upheld EPA’s rules setting standards for whole categories of sources, in part because the Agency had provided for variances where “fundamentally different factors” differentiated an existing point source from others in its category.¹³ The Court held that no such variances for new sources were required, however. In denying variances to new sources, the Court seemed to reject any available arguments from the statutory language for requiring them at existing sources.¹⁴ In a later opinion, however, the Court repeated that a variance procedure must be included in categorical rules for existing sources.¹⁵

EPA, partly relying on the *du Pont* rule, created an “FDF” variance procedure for discharges of toxic pollutants into treatment systems, despite a Clean Water Act provision which seemed to prohibit any variances for toxic discharges.¹⁶ These “pretreatment standard” FDF variances, and EPA’s broad reading of the *du Pont* variance requirement, were attacked in *Chemical Manufacturers Association v. Natural Resources Defense Council*,¹⁷ and a majority reaffirmed *du Pont*. The Court now held, however, that the requirement of a variance procedure was not found in the Clean Water Act, but rested on a more general principle of law: “The Court has previously upheld regulations [under other statutes] in part because provision for

⁹Clean Water Act § 301(c), 33 U.S.C.A. § 1311(c). *But see* Clean Water Act § 301(g), 33 U.S.C.A. § 1311(g) (eliminating “BAT waivers” for toxic pollutants, which leaves waivers applicable only to dischargers of the small number of “unconventional pollutants”—neither conventional nor toxic—that have been designated). *See id.* Clean Water Act § 301(b)(2)(A), (F), 33 U.S.C.A. § 1311(b)(2)(A), (F).

¹⁰*See* SDWA § 1415(E), 42 U.S.C.A. § 300g-4(E).

¹¹*See* EPA v. National Crushed Stone Ass’n, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20924 (1980).

¹²*See* § 3:11.

¹³*See* *E.I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112, 128, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20191, 20194 (1977).

¹⁴*E.I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112, 137–38, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20191, 20197 (1977). The Court said, for instance, that variances were expressly provided for BAT rules, but not for new sources, and that the rules for new sources required uniformity, *id.* at 138, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) at 20197; concluding that no variances for new sources were required. But these arguments would have just as much force applied to BPT regulations, where the Court reached the opposite result.

¹⁵*See* EPA v. National Crushed Stone Ass’n, 449 U.S. 64, 72, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20924, 20926 (1980).

¹⁶*See* Clean Water Act § 301(g), 42 U.S.C.A. § 1311(g).

¹⁷*Chemical Mfrs. Ass’n v. Natural Res. Def. Council, Inc.*, 470 U.S. 116, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20230 (1985).

an exception or variance helped assure the parties of due process.”¹⁸ No further explanation was given. The majority of five seemed to be saying to the dissenters that, if pressed any further, it would find a requirement for variances in the Constitution.¹⁹

Since existing sources, but not new sources, must have access to a variance procedure, the *du Pont* line cases suggests that any broad technology-forcing program must have special provisions for existing facilities.

V. CONTROLS FOR NEW SOURCES AND FACILITIES; NEW PRODUCTS; MODIFICATIONS OF EXISTING SOURCES AND FACILITIES

§ 3:12 Introduction

Six of EPA’s nine statutory programs contain provisions for prior review of new pollution sources, hazardous waste management facilities, toxic chemical products, and pesticides.¹ A tenth statute, NEPA, sets out a model of general procedures for these prior reviews,² and Superfund requires notices to be given when unpermitted releases occur.³ The system of prior review is comprehensive, but was assembled in pieces at different times, and is composed of overlapping, single-purpose procedures. Integrating these separate reviews is a significant management problem.

The procedures fall into two categories: preconstruction reviews for new facilities (and major alterations in existing facilities), and prior reviews for new products (or significant new uses for existing products).

¹⁸Chemical Mfrs. Ass’n v. Natural Res. Def. Council, Inc., 470 U.S. 116, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20230, 20235 n.25 (1985).

¹⁹Justice White wrote for the majority. Justice Stevens, author of the unanimous *du Pont* opinion which was at issue, joined the vigorous dissent by Justice Marshall. The dissenters left no shred of basis for the *du Pont* holding in the Clean Water Act; apparently in response the majority added the footnote quoted in the text, asserting broader “due process” grounds for the variance requirement. Of the three cases cited as precedent, two dealt only with statutes that required “hearings,” and the question was whether a rule making procedure met the requirement. *Federal Power Comm’n v. Texaco, Inc.*, 377 U.S. 33, 39–41 (1964); *United States v. Storer Broadcasting Co.*, 351 U.S. 192, 205 (1956). In the third case, *United States v. Allegheny Ludlum Steel Co.*, 406 U.S. 742 (1972), the Esch Car Service Act required not hearings, but that regulation be “reasonable.” The Court held that an informal rulemaking, coupled with a variance procedure, met this requirement. There is no hint of a general requirement that all rules be “reasonable” in this sense; if there is such a general requirement it is more likely to be found in the Administrative Procedure Act.

[Section 3:12]

¹See Clean Air Act §§ 165, 172(b)(6), 173, 42 U.S.C.A. §§ 7475, 7502(b)(6), 7503 (major stationary sources of air pollution).

The Clean Water Act contains no express construction ban, but EPA regulations prohibit construction of a new point discharge before a permit has issued (or a finding of no significant impact has been made). See 40 C.F.R. § 122.29; § 3:11.

Others are RCRA § 3005(a), 42 U.S.C.A. § 6925(a) (hazardous waste management facilities), and TSCA § 5, 15 U.S.C.A. § 2604 (premanufacture notices). FIFRA does not prohibit manufacture, but prohibits any person from transferring or holding for sale, any unregistered pesticide. FIFRA § 3(a), 7 U.S.C.A. § 136a(a).

MPRSA § 102, 42 U.S.C.A. § 1412, prohibits ocean dumping without a permit and essentially supplements the Clean Water Act permit program. See § 13:132.

Although not a separate statutory program, prior review of biotechnology products that may be released into the environment is becoming a functionally separate federal program. See Ch 19.

The Safe Drinking Water Act is the only one of EPA’s regulatory programs which has no requirement for prior review. Permits for public drinking water supplies are not federally required, but state law usually requires prior regulatory approval.

Superfund and the Pollution Prevention Act do not regulate private behavior.

²See National Environmental Policy Act § 102(2), 42 U.S.C.A. § 4332(2); § 3:17.

³See CERCLA § 103, 42 U.S.C.A. § 9603.

Preconstruction reviews have common procedural and substantive elements, which are discussed in this section, although details vary considerably.

Major new air pollution sources, all new water pollution sources, and hazardous waste management facilities are subject to similar preconstruction reviews. None may be built without a permit, which incorporates any site-specific environmental quality limits, and technology-forcing performance standards.⁴ States may also (but need not) have a permit program for new underground storage tanks of petroleum products and hazardous substances.⁵

New product reviews are more variable. New toxic chemicals and pesticide products (and significant new uses of existing products) must be submitted to EPA.⁶ New biotechnology products may be subject to review before release into the environment. The emerging procedures in this area are discussed in more detail in Ch 19, below.

These pervasive requirements for prior review have a double purpose: to prevent irreversible environmental damage before it occurs and to inject environmental values into management planning. These are also among the purposes of NEPA, and so it is not surprising that NEPA and new-source review have been closely entwined.

§ 3:13 Definition of new source or facility; New products

The first new-source program was the New Source Performance Standards (NSPS) of the Clean Air Act.¹ The 1970 Clean Air Act Amendments applied these standards to major new sources in designated industrial categories. A “new” source was one whose construction had not yet “commenced” on the date that an NSPS for the category was proposed.² As new-source review procedures were added to the statute, the same definition was used, and eventually was applied to any major source of an air pollutant designated for regulation.³ The definition was then picked up in subsequent pollution-control statutes.

The key for defining a new source is still the date on which construction “commenced.”⁴ Construction of a pollution source or hazardous waste management facility “commences” when a substantial and enforceable commitment is made, or a continuous course of on-site construction has begun, and all local pollution-related

⁴See § 3:20.

⁵See RCRA § 9004(a)(7), 42 U.S.C.A. § 6991c(a)(7).

⁶See discussion in note 1; Chs 16, 18.

[Section 3:13]

¹See Clean Air Act § 111, 42 U.S.C.A. § 7411.

²See *Potomac Elec. Power Co. v. EPA*, 650 F.2d 509, 11 *Envtl. L. Rep.* (Envtl. L. Inst.) 20815 (4th Cir. 1981); Clean Air Act § 111(a)(2), 42 U.S.C.A. § 111(a)(2); 40 C.F.R. § 60.1 (“commenced construction” means committed to a continuous course of construction of the affected facility).

³See 40 C.F.R. § 60.1(a).

⁴See *Potomac Elec. Power Co. v. EPA*, 650 F.2d 509, 11 *Envtl. L. Rep.* (Envtl. L. Inst.) 20815 (4th Cir. 1981) (Clean Air Act).

Clean Water Act new source standards apply to facilities in regulated categories if their construction “commences” on or after the date standards are promulgated (if they take effect within 120 days after promulgation). Clean Water Act § 306(a)(5), 33 U.S.C.A. § 1311(a)(5); 40 C.F.R. § 122.2. The definition of “commences construction” is closely similar to the Clean Air Act regulations. 40 C.F.R. § 122.29(b)(4).

Under EPA’s RCRA regulations, existing “interim status facilities” were those that had “commence[d] construction” on or before the effective date of interim status regulations; this definition follows the Clean Air Act regulations. 40 C.F.R. § 270.70. All facilities which commence construction after this date are “new” in the sense that they must receive permits containing technology-forcing controls before construction or operation. RCRA § 3005(a), 42 U.S.C.A. § 6925(a).

permits have been obtained.⁵ Preliminary site-preparation, such as clearing land and building access roads, usually is not “commencement of construction,” except in the Clean Water Act program where site preparation is more likely to be a source of significant water pollution.⁶

There is no similarly sharp line defining the point at which new products enter the regulatory system. Under TSCA, EPA must be notified before a “new” chemical substance is “manufactured”;⁷ the Agency takes the view that this requirement may apply to production for commercial research or development.⁸ Pesticides may not be distributed or sold without EPA registration and labelling, but there is no similar bar to manufacturing.⁹ EPA issues “experimental use” permits to allow spraying of some unregistered pesticides during research and development.¹⁰

New biotechnology products are subject to TSCA, and must be reviewed before they are released to the environment during commercial development, unless they have been reviewed under FIFRA or another agency’s statutes; these products are discussed in more detail in Ch 19.

§ 3:14 Modifications of existing sources or facilities; New uses of existing products

Some modifications of existing sources of pollutants, expansions of hazardous waste management facilities, and significant new uses of chemical products and pesticides may be treated as if they were new sources, facilities, or products. This is an area of considerable technical complexity; only major headings are given here. Rules concerning modifications give management some flexibility, at least in big industrial companies, to determine whether or when new-source rules will apply to new capacity, but only if these considerations are taken into account early in planning. Once modification or construction begins, a new regulatory apparatus may be installed along with the new equipment.

§ 3:15 Modifications of existing sources or facilities; New uses of existing products—Reconstruction

Under the Clean Air Act, existing sources in industrial categories to which NSPS applied become subject to those standards if they are “reconstructed”—if they are more than half rebuilt.¹ Under RCRA, there is a similar rule, which prohibits replacement of existing land disposal units during “interim status.”² New-source rules will apply to these reconstructions, even if the reconstructed facilities would emit fewer pollutants or handle fewer wastes than the existing sources and facilities.

⁵See, e.g., 40 C.F.R. §§ 60.2 (air), 122.29(b) (water), 270.2 (waste).

⁶40 C.F.R. § 122.29(b)(4)(B).

⁷See TSCA § 5(a)(1)(A), 15 U.S.C.A. § 2604(a)(1)(A).

⁸See 40 C.F.R. § 704.3 (“manufacture for commercial purposes”). “Manufacture” also includes production as byproduct. 40 C.F.R. § 704.3. A “new” chemical substance is one which does not appear on a list of existing chemical products EPA compiled under TSCA § 8(b). See TSCA § 3(9), 15 U.S.C.A. § 2602(9).

⁹See FIFRA § 3(a), 7 U.S.C.A. § 136a(a); 40 C.F.R. § 152.15.

¹⁰See FIFRA § 5, 7 U.S.C.A. § 136c; 40 C.F.R. pt. 172.

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¹See 40 C.F.R. § 60.15.

²EPA RCRA regulations, 40 C.F.R. § 270.72, had included a reconstruction rule copied from the Clean Air Act program, except that the baseline for measuring reconstruction was the entire facility. As this would have allowed considerable expansion at interim status land disposal facilities, Congress amended the regulation in 1984. RCRA now applies new facility rules to any replacement for an existing “unit,” or any added “unit,” at an existing interim status facility. RCRA § 3015, 42 U.S.C.A. § 6936. This is similar to the application of Clean Air Act modification rules to an “affected facility” rather than an entire plant.

Under the Clean Water Act, by contrast, there is no “reconstruction” rule: New-source rules apply only to free-standing new sources, and not to modifications of existing sources.³ The logic, at least, is consistent, since under the Clean Water Act, existing and new sources are both subject to comparable BAT controls.

The question of rebuilding existing facilities does not arise under other statutes. A similar issue, new uses of existing chemicals and pesticides, is addressed in the next subsection.

§ 3:16 Modifications of existing sources or facilities; New uses of existing products—Expansion and new uses

Expansions are treated differently at different times and places. The Clean Air Act and RCRA impose new-source rules for expansions of stationary sources and hazardous waste land-disposal facilities. The Clean Water Act has no similar rule; other statutes vary.

Under the Clean Air Act, “major modifications”—substantial increases in a facility’s capacity to emit pollution—may be treated as new sources.¹ Unless an NSPS applies, however, new source rules apply only if the modification results in a significant increase in emissions. So long as older capacity is being retired, and new capacity does not increase emissions, it may be possible to gerrymander the boundaries of the “source” so that new-source rules will not apply.²

Under RCRA, expansions of existing land-disposal facilities also trigger new-facility rules, and there is less opportunity to gerrymander.³

The Clean Water Act, as noted in the preceding subsection, does not apply new-source rules to expansion or modification of existing facilities. Expansions of existing pollution sources under the Clean Water Act, and expansions other than those enumerated above, may require permit modifications, but do not trigger new-source review.⁴

New uses of existing chemical substances and pesticides may also be subject to review as if they were new products; here again, however, the applicable statutes differ somewhat.⁵

§ 3:17 Preconstruction review; Construction bans

NEPA requires federal “agencies” to give prior consideration to the environmental impact of their major actions affecting the environment.¹ Since EPA appeared to be an “agency” to which the statute applied, in the early 1970s environmentalists and regulated companies both sued EPA under NEPA, the environmentalists to enjoin

³See 40 C.F.R. § 122.29(b)(1). A complete replacement of an existing source is a new source, however. 40 C.F.R. § 122.29(b)(1)(ii).

[Section 3:16]

¹See Clean Air Act §§ 111(a)(4), 171(4), 42 U.S.C.A. §§ 7411(a)(4), 7501(4); 40 C.F.R. § 60.14; § 12:89.

²See *Chevron, U.S.A. v. NRDC*, 467 U.S. 837, 14 *Envtl. L. Rep. (Envtl. L. Inst.)* 20507 (1984); *Alabama Power Co. v. Costle*, 636 F.2d 323, 10 *Envtl. L. Rep. (Envtl. L. Inst.)* 20001 (D.C. Cir. 1979).

³See RCRA § 3015, 42 U.S.C.A. § 6936.

⁴See, e.g., 40 C.F.R. §§ 122.62, 124.5 (procedures for modifying permits).

⁵See TSCA §§ 5(a)(1)(B), 5(a)(2), 15 U.S.C.A. §§ 2604(a)(1)(B), 2604(a)(2) (significant new uses of existing chemical substances).

[Section 3:17]

¹NEPA § 102(2)(C), 42 U.S.C.A. § 4331(2)(C); § 10:1.

EPA from approving new sources, and regulated companies to enjoin or defer new source standards.²

The responses to these suits were complex.

In *International Harvester Co. v. Ruckelshaus*, the D.C. Circuit Court of Appeals held that NEPA did not apply to EPA's new-source standard rulemaking under the Clean Air Act, because the Agency was following equivalent procedures, and was carrying out the purposes of both statutes.³ The courts have broadened this holding into a general rule that EPA is excused from NEPA procedures so long as it follows functional equivalents under other statutes.⁴ In 1972, while this litigation was pending, the Federal Water Pollution Control Act Amendments made their way to passage. Congress, siding with environmentalist plaintiffs, applied NEPA procedures to EPA's grants and permits for new industrial sources of water pollution, but exempted permits for existing sources and EPA's rulemaking from NEPA.⁵ Relying on NEPA, the Agency then promulgated regulations prohibiting construction of any new point source of water pollution until a Clean Water Act permit had been granted.⁶ The Clean Water Act, which prohibited only discharges, plainly would not support a construction ban. The Agency believed such a ban was necessary, and authorized by NEPA, to avoid the irreversible commitment of environmental resources which NEPA was intended to forestall.⁷

By 1974, after the first OPEC oil embargo, Congress exempted all Clean Air Act actions from NEPA procedures, apparently hoping to avoid procedural obstacles to increased coal use.⁸ NEPA procedures were not explicitly addressed in any of the subsequent statutes, and EPA now assumes that the "functional equivalent" rule applies everywhere that NEPA is not expressly made applicable.

In a separate line of cases, the Supreme Court cast doubt on the proposition that NEPA conferred any substantive authority on agencies,⁹ which in turn seemed to undercut EPA's construction ban regulations. But Congress meanwhile had added

²See generally F. Anderson, *NEPA In the Courts* 109-16 (1974); § 5.15.

³*International Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 650 n.130, 3 *Envtl. L. Rep.* (Envtl. L. Inst.) 20133, 20149 n.130 (D.C. Cir. 1973) (Leventhal, J.) (one-year suspension of new-model auto standards).

⁴See *Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 379-87, 3 *Envtl. L. Rep.* (Envtl. L. Inst.) 20642, 20643-47 (D.C. Cir. 1973) (Leventhal, J.) (New Source Performance Standards). Judge Leventhal relied on the now-famous compromise over jurisdiction between Senators Jackson and Muskie. The "narrow exemption" created by this decision, *Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 387, 3 *Envtl. L. Rep.* (Envtl. L. Inst.) 20642, 20647 (D.C. Cir. 1973), has been broadened into a general exemption for EPA's procedures when they are "functionally equivalent" to NEPA's. See, e.g., *Maryland v. Train*, 415 F. Supp. 116, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20496 (D. Md. 1976), rev'd in part, 556 F.2d 575, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20443 (4th Cir. 1977). This latter case, which concerned ocean dumping, added the dictum that functionally equivalent procedures must provide for public participation.

⁵Clean Water Act § 511(c)(1), 33 U.S.C.A. § 1371(c)(1). The FWPCA Amendments of 1972 also applied NEPA procedures to Corps of Engineers dredge-and-fill permits, often needed before construction of a new project begins, but exempted all EPA actions concerning permits for existing facilities, where presumably the only effect would be to reduce pollution, and all EPA rulemaking procedures. *Id.* Because of the latter exemption, EPA's programmatic regulations for the sewage treatment program are subject to neither the Administrative Procedure Act nor NEPA.

⁶See 40 C.F.R. § 122.29(c). The ban is tied to NEPA procedures. If an Environmental Impact Statement (EIS) is required, construction may not commence until a permit reflecting the EIS has been issued. 40 C.F.R. § 122.29(c)(3). If a preliminary assessment shows no EIS will be needed, construction may commence more rapidly.

⁷See General Counsel Opinion No. 76-18 (Sept. 23, 1976), reprinted in 1 EPA General Counsel Opinions 307, 311 (1979).

⁸See Energy Supply and Environmental Coordination Act of 1974, § 7(c)(1), 15 U.S.C.A. § 743(c)(1).

⁹See *Vermont Yankee Nuclear Power Corp. v. Natural Res. Def. Council, Inc.*, 435 U.S. 519, 8 *Envtl. L. Rep.* (Envtl. L. Inst.) 20288 (1978).

express authority for a construction ban to the Clean Air Act,¹⁰ to which NEPA did not apply, and then to RCRA, where it applied to the extent EPA regulations were not equivalent.¹¹

Neither the question of whether substantive authority is conferred by NEPA, nor the basis of EPA's Clean Water Act construction ban, has ever been squarely decided. Under the Clean Water Act, EPA follows what it believes are functionally equivalent procedures. Under the Clean Air Act, where alone the Agency is unconditionally exempt from NEPA compliance, EPA has kept in place regulations which are usually equivalent to NEPA's.

For new sources, as matters now stand, two of the three statutes which require facility permits, the Clean Air Act and RCRA, prohibit construction without a permit; the third, the Clean Water Act, does not expressly contain such a ban, but it makes NEPA applicable, and EPA's regulations, jointly based on the Clean Water Act and NEPA, prohibit construction without a permit.

The construction ban for new sources and facilities (and major modifications of existing sources and facilities to which the new-source regulations apply), is the only substantive aspect of environmental law that discourages innovation, which the statutes otherwise seek to foster. EPA permit regulations, in part to preserve their "functional equivalence" to NEPA procedures, generally require opportunities be given for public participation; *see* § 3:20, below. However desirable in itself, this adds to the delays and uncertainties of permitting. Because of the construction ban, the burden of delay falls entirely on the applicant.

Except in a few cases, the value of the ban now seems to be marginal. It may have seemed necessary in a time of rapid industrial expansion, but today it only seems justified in a few cases, such as construction in wetlands, or the construction of strip mines, where construction itself may be the source of environmental damage. In most cases, new source standards apply to operation, rather than construction, of the facility. The standards are published and must be taken into account in design and construction, with or without a construction ban. Unless NEPA indeed confers authority on EPA to make land-use planning decisions, the ban has little purpose.¹²

EPA staff like the construction ban because it gives them considerable leverage in negotiating with permit applicants. The question is whether the added burden on new facilities is justified, or whether it just favors continuation of older and presumably less desirable facilities.

Under TSCA section 5, by contrast, new product manufacturing may proceed, after notice to EPA, unless the Agency acts to stop it. This procedure has worked well, and might be adopted more widely.

§ 3:18 Performance standards for new facilities

Performance standards for new sources and facilities are similar in form to those for existing sources and facilities. Under the Clean Air and Clean Water Acts, for instance, performance-based emission limits are often based on a benchmark technology—variations on the "best available" theme.¹ Under the Clean Air Act,

¹⁰*See* *Citizens to Save Spencer County v. EPA*, 600 F.2d 844, 9 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20194 (D.C. Cir. 1979); Clean Air Act §§ 165, 172(b)(6), 173, 42 U.S.C.A. §§ 7475, 7502(b)(6), 7503.

¹¹*See* RCRA § 3005(a), 42 U.S.C.A. § 6925(a).

¹²The Agency's original justification for the ban acknowledges that it only has a significant purpose if it allows the Agency to consider siting alternatives, and other factors outside its authorizing statutes. *See* EPA General Counsel Opinion No. 76-18.

[Section 3:18]

¹*See generally* J. Quarles, *Federal Regulation of New Industrial Plants* (BNA *Env'tl. Rep. Monograph* No. 28, 1979).

categorical New Source Performance Standards are emission limits based on the best available, demonstrated technology.² When categorical standards do not apply, the permitting agency establishes similar benchmarks, site by site, during new source review.³ Under the Clean Water Act, new source performance standards are set for industrial categories, and are usually identical to the BAT emission limits for existing sources.⁴

New hazardous waste disposal facilities (and modifications of existing disposal facilities) are subject to “minimum technological requirements,”⁵ as well as any additional controls needed to forestall groundwater contamination. Congress specified minimum standards in the statute, and required that they be updated periodically. The standards appear to require the best available or feasible technology, but no benchmark is expressly set.⁶ Treatment standards for hazardous waste, to allow continued land-disposal in the future, resemble new source performance standards under the Clean Air and Clean Water Acts.⁷

New source performance standards are technology-forcing in the strongest sense:

We are inclined to agree with the Administrator, that as long as feasible technology permits the demand for new automobiles to be generally met, the basic requirement of the [Clean Air] act would be satisfied, even though this might occasion fewer models and a more limited choice of engine types. The driving preference of hot rodders are not to outweigh the goal of a clean environment.⁸

Performance, in short, is to be improved, even if substantial costs are required, and even if some changes in products or production technology are needed. The benchmark technology for new sources is feasible, or “available,” if it is technically proven, and is not simply out of reach because of cost or other limitations.

Most new source standards are to be periodically reviewed and updated, and presumably to be tightened, as technology advances.⁹ From a public policy standpoint, intermediate standards are far less important than the general principle of steady improvement.¹⁰

The hope for new-source standards was that they would produce new processes and products that would be free of significant pollution. The hope, and the method, were based on an expanding and innovating industrial base. However, existing facil-

²See *Portland Cement Ass’n v. Ruckelshaus*, 486 F.2d 375, 3 *Envtl. L. Rep.* (Envtl. L. Inst.) 20642 (D.C. Cir. 1973); Clean Air Act § 111(a)(1), 42 U.S.C.A. § 7411(a)(1).

³The benchmarks are “best available control technology” in attainment areas, Clean Air Act § 169(3), and “lowest achievable emission rate,” presumably a more stringent standard, where air quality standards have not been attained. Clean Air Act § 171(3), 42 U.S.C.A. § 7501(3). EPA often sets both BACT and LAER equal to the applicable NSPS, but where there is no NSPS, it may set the benchmarks case by case. See *Northern Plains Resource Council v. EPA*, 645 F.2d 1349, 11 *Envtl. L. Rep.* (Envtl. L. Inst.) 20635 (9th Cir. 1981). Both benchmarks may apply to different emissions in the same plant, and other conditions attach to new sources in nonattainment areas. See Clean Air Act § 173, 42 U.S.C.A. § 7503. See generally § 12:86.

⁴See Clean Water Act § 306(a)(1), 33 U.S.C.A. § 1316(a)(1) (“best available, demonstrated technology”).

⁵See RCRA § 3004(o), 42 U.S.C.A. § 6924(o).

⁶See RCRA § 3004(o), 42 U.S.C.A. § 6924(o).

⁷See § 3:8.

⁸*International Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 640, 3 *Envtl. L. Rep.* (Envtl. L. Inst.) 20133, 20143 (D.C. Cir. 1973).

⁹Clean Water Act § 306(b)(1)(B), 33 U.S.C.A. § 1316(b)(1)(B); RCRA § 3004(o), 42 U.S.C.A. § 6924(o).

¹⁰See, e.g., *ASARCO, Inc. v. EPA*, 578 F.2d 319, 327, 8 *Envtl. L. Rep.* (Envtl. L. Inst.) 20164, 20169 (D.C. Cir. 1978) (purpose of NSPS is to enhance air quality beyond levels required by national air quality standards, and to avoid any degradation of air quality).

ities were kept in service long past their expected lifetimes.¹¹ As a result, the program to redirect productive technology has proven to be much slower and more difficult than it looked in the early 1970s. It remains firmly written into the statutes EPA administers, however, and Congress shows no signs of wanting to abandon the effort.

§ 3:19 Variances

There are very few explicit variances from new source standards. When regulating new sources, there are no settled arrangements to protect; costs and feasibility have been taken into account, so far as the statutes permit, in the standards themselves.¹ There is accordingly a lot of attention paid to whether the standards apply in the first place; definitions of “commence construction” and of “source” and “major modification” are pushed to see whether they will allow room for exclusions from otherwise applicable rules.² Each program has an accretion of technical rules in this area which must be consulted.

Variances or extensions in schedules for compliance with new source standards are sometimes given to encourage innovative methods of control.³ Where a company has difficulty complying for other reasons, EPA may agree to an extended schedule of compliance in a consent order or decree.⁴

VI. THE PERMIT SYSTEM

§ 3:20 Federal and state permit programs: “Delegation”

EPA prefers to establish its requirements through legislative-type rules.¹ Permits therefore have a particular purpose in EPA procedures. Permits apply the Agency’s legislative rules to individual pollution sources and hazardous waste management facilities:

[T]he permit defines and facilitates compliance with, and enforcement of, a preponderance of a discharger’s obligations. . . . [Permits] transform generally applicable effluent limitations into obligations (including a timetable for compliance) of the individual discharger.²

Five of EPA’s statutes each create one or more such permit systems. There are tens of thousands of dischargers and waste management facilities subject to these permit programs; the federal government has neither the resources nor the expertise to issue permits to all of them. The permitting statutes EPA administers (except the

¹¹See DeMocker et al., *Extended Lifetimes for Coal-Fired Power-Plants: Effect on Air Quality*, *Pub. Utils. Fort.*, Mar. 20, 1986, at 30.

[Section 3:19]

¹See *E.I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112, 137–38, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20191, 20196–97 (1977) (Clean Water Act); *ASARCO, Inc. v. EPA*, 578 F.2d 319, 329, 8 *Envtl. L. Rep.* (Envtl. L. Inst.) 20164, 20170 (D.C. Cir. 1978) (Clean Air Act does not allow NSPS “bubbles”).

²See, e.g., *ASARCO Inc. v. EPA*, 578 F.2d 319, 8 *Envtl. L. Rep.* (Envtl. L. Inst.) 20164 (D.C. Cir. 1978).

³See Clean Air Act § 111(j), 42 U.S.C.A. § 7411(j); RCRA § 3004(o)(2), 42 U.S.C.A. § 6924(o)(2).

⁴*But see Bethlehem Steel Corp. v. Train*, 544 F.2d 657, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20019 (3d Cir. 1976) (EPA may not expressly extend the Clean Water Act’s July 1, 1977 compliance deadline). The Agency may, however, exercise enforcement discretion with regard to violations past that date. The Agency’s view is that the courts, if not EPA itself, may fashion equitable relief that extends statutory compliance dates.

[Section 3:20]

¹See § 4:5.

²*EPA v. California ex rel. State Water Resources Control Bd.*, 426 U.S. 200, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20563 (1976).

ocean dumping program) therefore oblige the Agency to defer to states with permit programs that meet statutory criteria.³ EPA now prefers to restrict itself to issuing legislative rules, leaving the permits to state officials, although early in the air and water pollution control programs the federal government played a more active role in permitting. The same transition is now underway in the newer hazardous waste management program.

State and local governments therefore have once again become the principal permit issuing—and enforcement—authorities in environmental protection programs. EPA issues permits and routinely enforces them only in those states which have not yet adopted environmental protection programs that meet federal standards.

There are several exceptions to the usual pattern. EPA issues ocean dumping permits,⁴ and registers pesticides,⁵ although once registered, pesticide sale and use is principally regulated by state agencies.⁶ EPA also has sole responsibility for reviewing toxic substances and regulating their manufacture under TSCA,⁷ and with narrow exceptions is the sole agency to regulate motor vehicle production.⁸

When EPA approves a state program under the Clean Air Act, the Clean Water Act, the Safe Drinking Water Act, or RCRA, it is customary to say that EPA has “delegated” responsibility to the state, but the term is misleading, except when applied to a few programs under the Clean Air Act. State programs are usually authorized or approved by EPA, and operate in lieu of the federal program so long as they meet statutory requirements.⁹ EPA retains concurrent authority to enforce permit requirements (after notice to the state) in authorized programs.¹⁰ The Agency may also veto individual state permits.¹¹

§ 3:21 Procedure—Permit procedures

There are common elements among the federal statutes EPA administers, but they differ greatly in detail; state programs add still more variation. The require-

³The Clean Air Act and Safe Drinking Water Act purport to require states to submit plans, Clean Air Act § 110(a)(1), 42 U.S.C.A. § 7410(a)(1); Safe Drinking Water Act § 1422(b)(1), 42 U.S.C.A. § 300h-1(b)(1) (states where underground injection control program necessary). The requirement is of doubtful constitutionality. *See* § 12:143. In all other statutes, state legislative action is voluntary. In four statutes, when states submit programs which meet statutory criteria, EPA must approve them, and thereafter must allow the states to assume the primary role in permit issuance and enforcement: (1) Clean Air Act § 110(a)(2), 42 U.S.C.A. § 7410(a)(2); (2) Clean Water Act § 402(b), 33 U.S.C.A. § 1342(b); (3) Safe Drinking Water Act § 1422(b), 33 U.S.C.A. § 300h-1(b); (4) RCRA § 3006(b), 42 U.S.C.A. § 6929(b).

In a fifth statute, FIFRA, there is no formal permit system, but states with approved programs assume “primacy” for enforcement of pesticide regulations. FIFRA § 26, 7 U.S.C.A. § 136w-1.

⁴*See* MPRSA § 102, 33 U.S.C.A. § 1412.

⁵*See* FIFRA, Ch 18.

⁶*See* FIFRA § 26, 7 U.S.C.A. § 136w-1.

⁷*See* TSCA, Ch 16.

⁸*See* Clean Air Act, tit. II, 42 U.S.C.A. §§ 7521 to 7590. The exception is a provision which allows states to adopt California’s pioneering program of vehicle emission standards. *See* Clean Air Act § 209, 42 U.S.C.A. § 7543.

⁹*See* Clean Air Act § 110(a)(1), 42 U.S.C.A. § 7410(a)(1); Safe Drinking Water Act § 1422(b)(1), 42 U.S.C.A. § 300h-1(b)(1). Under the Clean Air Act, EPA may formally “delegate” authority to the states to implement and enforce the federal new source performance standards. *See* Clean Air Act § 111(c), 42 U.S.C.A. § 7411(c). In all later statutes, Congress carefully avoided any formal delegations of federal authority, partly to avoid application of NEPA to state actions. *See, e.g.*, EPA General Counsel Opinion 76-18 (Sept. 23, 1986), *reprinted in* 1 EPA General Counsel Opinions 307 (1979) (citing legislative history of the Clean Water Act).

¹⁰*See* § 9:1.

¹¹*See, e.g.*, Clean Water Act § 402(d)(2), 33 U.S.C.A. § 1342(d)(2).

ments for approving or modifying permits therefore differ in many large and small ways in the various state and federal media-specific programs.

EPA made one exhausting attempt to provide a single, integrated set of permitting regulations, but was defeated by the differences among the statutes; the “consolidated permit regulations” were “deconsolidated” in 1983.¹

Despite reform and rereform of the substantive regulations, however, there is still a reasonably uniform set of *procedural* regulations for most permits. Part 124 of EPA’s regulations, title 40 of the Code of Federal Regulations, now contains procedures for issuing, modifying or terminating hazardous waste management permits under RCRA, point-source discharge permits under the Clean Water Act, stateadministered section 404 permits, injection-well permits issued under the Safe Drinking Water Act, and PSD permits issued under the Clean Air Act.

Excluded from the common procedures are emergency permits and RCRA “permits-by-rule,” ocean dumping permits, federally-issued section 404 permits, and state new-source air pollution permits issued under nonattainment area rules. Also excluded are actions which EPA does not consider permit actions, such as RCRA interim status and Safe Drinking Water Act authorization by rule, and actions under TSCA and FIFRA.

The major common elements in the permit procedures are as follows:

1. *Notice.* When a permit application is complete, the permit issuing agency will prepare a draft permit (or a statement of intent to deny the permit), and issue a public notice, with a request for comment. If EPA is the issuing agency, the proposal will be accompanied by a detailed statement of facts or of the basis of the proposal. *See* 40 C.F.R. §§ 124.6 to 124.10.

2. *Hearing and Comments.* A public hearing may be held; public comments will be received during a stated period. 40 C.F.R. §§ 124.10 124.14. A trial type evidentiary hearing on NPDES permits will be held if requested. An EPA innovation is the informal, nonadversary “panel” hearing which may be employed at this stage, if trial-type hearings are not requested. *See* 40 C.F.R. part 124 subpart F. Contested permit provisions will be stayed, if they are severable.

3. *Action.* The issuing agency (for EPA, a regional office) will then take action on the permit application. The original notice and statement of basis, public comments and any agency responses form the administrative record in EPA proceedings.

4. *Appeals.* Appeals in state proceedings are usually governed by state law. In EPA proceedings, persons who have commented usually may file a written appeal within the Agency. Permits are issued by regional offices; appeals are taken to the administrator.

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¹The consolidated permit regulations combined in one format the permit regulations for the RCRA hazardous waste program, the Clean Water Act NPDES and section 404 permits, Safe Drinking Water Act injection well permits, and the Clean Air Act’s PSD program. Ocean dumping permits were not included, presumably because they were not state administered. *See* 45 Fed. Reg. 33290 (1980). The consolidation was a regulatory reform effort, designed to make permits easier to obtain, especially for new facilities. Its heart was in the right place: It provided a single, combined application form, a uniform procedure and a single set of regulations. In practice, however, the Agency found that consolidated permit applications were very rare, partly because the permitting authorities were divided at the state level, and partly because “the various permit programs regulate inherently different activities and thus must impose generally different sorts of requirements.” 48 Fed. Reg. 14145, 14147 (1983). Environmentalists and trade associations challenged the consolidated permit regulations, with a long list of complaints which had accumulated in the separate programs. The President’s Task Force on Regulatory Reform targeted the consolidated regulations, and EPA finally undid the consolidation. 48 Fed. Reg. 14145 (1983).

There are still common procedural regulations, however, found at 40 C.F.R. Part 124, which note any variations in procedure among the different permit programs.

§ 3:22 Procedure—Confidentiality of business information

Most business people who deal with the federal government have become used to the openness of federal records. The federal Freedom of Information Act (FOIA)¹ requires federal agencies, including EPA, to disclose their records to anyone who asks, with only a few, narrowly drawn exceptions.² Agency records, for these purposes, include documents submitted to the agency and in the agency's control. Information submitted to EPA to obtain a permit, or in response to EPA's authorized information-gathering, will usually become a public record even if under other circumstances it would be exempt from disclosure under FOIA.³ The only important exceptions are trade secrets, which must be disclosed to EPA under TSCA and FIFRA, and which the Agency will keep confidential.⁴ Under FIFRA, however, EPA may require compulsory licenses to be granted to competitors applying for approval of similar products.⁵

Although few such claims are granted, EPA does allow business firms submitting information to make claims of business confidentiality, and will maintain confidentiality while it decides the claims. If the Agency makes an adverse ruling, it will continue to retain confidentiality for a brief period to allow district court review. Business confidentiality is never accepted as a reason for withholding information which the Agency demands, however. Nonprofit organizations sometimes file claims, but are not eligible for the FOIA exemption.⁶

EPA may not disclose confidential business information; improper disclosure may be a criminal violation of the Trade Secrets Act.⁷

§ 3:23 Procedure—Negotiating a permit

Permits are issued by EPA's regional offices (*see* § 4:3 below), and in a state-administered program, usually by local or regional offices as well. Permit writing is not a mechanical task, and judgment goes into the application of general rules to particular circumstances. Each local office develops a good deal of lore about permit conditions, much of which is never written down.

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¹5 U.S.C.A. § 552.

²*See* 5 U.S.C.A. § 552(b). Trade secrets and confidential business information are exempt from disclosure by 5 U.S.C.A. § 552(b)(4).

³*See, e.g.,* Clean Air Act § 114(c), 42 U.S.C.A. § 7414 (“emissions data” otherwise exempt from disclosure become public records); Clean Water Act § 308(b), 33 U.S.C.A. § 1318(b) (“effluent data”). RCRA arguably does not alter the exemption already available, however. *See* RCRA § 3007(b), 42 U.S.C.A. § 6927(b) (excluding from disclosure only material prohibited from disclosure under 18 U.S.C.A. § 1905).

⁴*See* TSCA § 14, 15 U.S.C.A. § 2613 (prohibiting disclosure of data exempt from disclosure under 5 U.S.C.A. § 552(b)(4), i.e., trade secrets and confidential business information, but excluding health and safety studies); FIFRA § 10, 7 U.S.C.A. § 136h (prohibiting disclosure of trade secrets and confidential business information, with several significant exemptions for health and safety tests and other data).

⁵Applicants for registration may rely on supporting data submitted by prior registrations, even without the permission of the prior registrant, so long as the new applicant offers compensation. FIFRA § 3(c)(1)(F), 7 U.S.C.A. § 136a(c)(1)(F). Pesticides with active ingredients initially registered after September 30, 1978, are protected for ten years from compulsory licensing of supporting data. FIFRA § 3(c)(1)(F)(i), 7 U.S.C.A. § 136a(c)(1)(F)(i). *See* Ruckelshaus v. Monsanto Co., 467 U.S. 986, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20539 (1984).

⁶*See, e.g.,* National Parks & Conservation Ass'n v. Morton, 498 F.2d 765, 770, 4 Env'tl. L. Rep. (Env'tl. L. Inst.) 20385, 20388 (D.C. Cir. 1974) (exemption only available to avoid harm to competitive position); Washington Research Project, Inc. v. HEW, 366 F. Supp. 929, 936 (D.D.C. 1973), modified on other issues, 504 F.2d 238 (D.C. Cir. 1974), cert. denied, 421 U.S. 963 (1974); R. Milgrim, 1 Trade Secrets § 6.02A[2][A].

⁷18 U.S.C.A. § 1905.

Face to face conversations are usually helpful. In any substantial matter, and always when the permit application is contested, it is a good idea to involve both EPA and state personnel from the outset.

VII. BEYOND COMMAND AND CONTROL REGULATION: INNOVATIVE APPROACHES TO ENVIRONMENTAL PROTECTION*

§ 3:24 Introduction

As noted in the previous section, current law protects the environment primarily through a system of legislative-type regulations applied to particular polluters through individual permits. Permittees may comply with their permits in any way they choose so long as they meet whatever minimum requirements the permits set out; government agencies bring enforcement actions if those requirements are violated. This arrangement, generally called “command and control” regulation, can be bureaucratic and can make the achievement of environmental protection more costly than necessary.¹

Command and control regulation is not the only possible legal structure for protecting the environment. Existing law has experimented with several alternatives in particular environmental contexts, and other variations are possible although not presently codified in American law. The remainder of this chapter examines these alternative approaches and describes existing laws embodying them.

One major theme of this discussion is that there is no one universally best approach to environmental protection. Policymakers must therefore do more than obediently learn one approach and apply it to every new problem. Rather, they can best serve environmental protection by selecting a tactical mix of approaches, using each when its advantages are maximized and its disadvantages minimized. Adopting a combination of different approaches is often the best strategy. Although modern environmental law has experimented modestly with alternative approaches, it has overemphasized command and control regulation without adequately considering the limits of that model.

The following subsections treat in turn six principal alternatives to command and control regulation:

- tinkering with the command and control system while retaining its basic structure of legislative rules applied through government permits;
- directly influencing the process by which decisionmakers make their decisions;
- enlisting private economic institutions, such as banks and insurance companies, as regulators of their customers’ environmental activities;
- using the tax system to impose costs on polluters;
- using the liability system to impose costs on polluters; and
- granting legal rights to the environment itself.

§ 3:25 Tinkering with command and control regulation—The command and control process

The pure command and control system is a four-step regulatory process. Three steps are exclusively the province of government; one step is exclusively the province of the regulated entity.

First, *government* writes regulations setting general standards for pollution control.

*By Barry Breen

[Section 3:24]

¹For a detailed critique of the failures of command and control regulation, see Stewart, Economics, Environment, and the Limits of Legal Control, 9 Harv. Envtl. L. Rev. 1 (1985).

Second, *government* writes permits setting particular requirements for individual facilities.

Third, regulated *private entities* operate their facilities in any way they choose so long as they meet the minimum permit requirements.

Fourth, if permit conditions are violated, *government* brings enforcement actions against the private parties.

In most environmental contexts, this pure command and control approach has now been altered at least modestly. Existing law has granted private parties varying degrees of influence over each of the steps in which government is the prime actor. The following three subsections analyze these modifications.

§ 3:26 Tinkering with command and control regulation—Citizen suits to enforce standards contained in regulations and permits

The least intrusive way to modify the pure command and control model is to provide for citizen suits. This approach modifies the fourth step of command and control regulation by allowing nongovernmental entities to bring enforcement actions. In effect, it appoints “private attorneys general.”

Most federal environmental laws that adopt the command and control model now allow private citizens as well as the government to sue to enforce regulatory requirements and permit conditions.¹ First added to the Clean Air Act in 1970, citizen suit provisions have become a staple of all major command and control statutes except the Federal Insecticide, Fungicide and Rodenticide Act.² Basically, these provisions allow any adversely affected person to bring a civil action in federal court against any other person who is violating a specific legal requirement.³ Citizen suit provisions typically authorize injunctive relief; three of them go one step farther and also allow citizens to seek monetary penalties, which are deposited into the federal treasury rather than paid to the citizen enforcers.⁴ Persons who bring citizen suits can recover their costs, including reasonable attorney fees and expert witness fees.

Essentially, provisions for citizen enforcement suits leave it to government agencies to define environmental goals through regulation and permit writing. They tinker with the command and control model by allowing private *enforcement* of the goals thus defined. The government has already done all the policy-level balancing

[Section 3:26]

¹Clean Air Act § 304, 42 U.S.C.A. § 7604; Federal Water Pollution Control Act § 505, 33 U.S.C.A. § 1365; Noise Control Act § 12, 42 U.S.C.A. § 4911; Resource Conservation and Recovery Act § 7002, 42 U.S.C.A. § 6972; Toxic Substances Control Act § 20, 15 U.S.C.A. § 2619; Safe Drinking Water Act § 1449, 42 U.S.C.A. § 300j-8. On citizen suits generally, see J. Miller & Environmental Law Institute, *Citizen Suits: Private Enforcement of Federal Pollution Control Laws* (1986).

²FIFRA’s congressional parentage may explain this exception. Although administered by EPA, FIFRA was written and is amended by the Senate and House Agriculture Committees rather than by one of the environmental committees. See J. Miller & Environmental Law Institute, *Citizen Suits: Private Enforcement of Federal Pollution Control Laws*, 6 (1986).

³How much “adverse effect” is necessary to confer standing is sometimes unclear, but courts have been quite liberal in allowing plaintiffs to bring citizen suits. See J. Miller & Environmental Law Institute, *Citizen Suits: Private Enforcement of Federal Pollution Control Laws*, 19–25 (1986).

⁴See J. Miller & Environmental Law Institute, *Citizen Suits: Private Enforcement of Federal Pollution Control Laws*, 83 (1986); Garrett & Winner, *A Clean Air Act Primer*, 22 *Envtl. L. Rep. (Envtl. L. Inst.)* 10301, 10310 (1992). The three statutes that authorize monetary penalties are the Clean Water Act, Clean Air Act, and the Resource Conservation and Recovery Act. On avoiding the requirement that penalties be paid to the federal treasury by instead funding particular projects or specially created environmental trust funds, see Stever, *Environmental Penalties and Environmental Trusts—Constraints on New Sources of Funding for Environmental Preservation*, 17 *Envtl. L. Rep. (Envtl. L. Inst.)* 10356 (1987).

of costs and benefits; the citizen suit revolves around the factual issues of whether or not the defendant has met the government standards.⁵

Citizen suits thus do not seriously alter the command and control model. They do not interfere with the formal processes by which government sets environmental priorities and balances costs and benefits—they merely implement those decisions by enforcing them. They do not exclude the government’s own enforcement program, but rather operate alongside it. When government has limited enforcement resources and hence limited ability to prosecute all the violations that deserve prosecution, citizens can serve as supplemental enforcers, acting in cases that government regulators miss or that are of lower priority but nonetheless worthy of enforcement. In a period of governmental inattention to environmental laws, citizen suits can rise to the level of primary enforcement agent.

These advantages come with certain drawbacks, however. In some cases, a regulatory agency and a permit holder have long-term understandings about the conditions that will trigger enforcement, but have not reduced these understandings to writing in the permit. In these cases, the government will not seek enforcement sanctions when it believes the regulated entity has lived up to the environmental demands made of it, although not up to the letter of the permit. Nevertheless, a successful citizen suit could be brought. After a few such cases, permit holders and regulators are likely to reduce all such understandings to writing in their permits. While this has the salutary effect of bringing more of the government’s regulatory decisions into the open for public scrutiny and comment, it also increases the transaction costs of administering the system by making the permits critically important as embodiments of all the understandings between the regulators and the regulated.⁶

§ 3:27 Tinkering with command and control regulation—Removing the rulemaking function from the regulators: California’s Proposition 65 and negotiated rulemaking—In general

Two other types of tinkering alter the command and control structure more seriously than citizen suit provisions do. Citizen suit provisions make the government share authority for enforcement, the fourth step of the command and control system. The next two types of tinkering, direct regulation by voters and negotiated rulemaking, affect the system’s first step, the up-front legislative rulemaking.

§ 3:28 Tinkering with command and control regulation—Removing the rulemaking function from the regulators: California’s Proposition 65 and negotiated rulemaking—Direct regulation by voters

In the typical command and control approach, the legislature sets out a statutory framework for the environmental program, then delegates authority to the regulatory agency to write specific rules implementing it. There is always some variation

⁵One citizen suit provision, RCRA § 7002, was amended in 1984 and now gives the citizen-plaintiff and the court a role in balancing competing policy interests. This expanded citizen suit authority is more than mere tinkering with the command and control approach to regulation. It is analyzed in § 3:39.

⁶See Terris, *Environmentalists’ Citizen Suits*, 17 *Envtl. L. Rep. (Envtl. L. Inst.)* 10254, 10255–56 (1987).

There is also the theoretical possibility, acknowledged by some who actually bring citizen suits, of a kind of blackmail. *Id.* The scenario is something akin to a “strike suit” in tort law: a frivolous claim brought to harass the defendant and cause it to settle for some modest but nonetheless real sum rather than pay the legal fees necessary to defend the case. Such suits are less likely in the environmental context because penalties are not paid directly to plaintiffs, but the suits may still be brought to obtain settlements consisting of funding of particular environmental projects. See Stever, *Environmental Penalties and Environmental Trusts—Constraints on New Sources of Funding for Environmental Preservation*, 17 *Envtl. L. Rep. (Envtl. L. Inst.)* 10356 (1987). On the whole, there is little evidence of such abuse in practice.

in exactly how much specificity is written into the statute and how much is left to regulatory discretion. At one extreme, the statute may simply state goals and allow the agency nearly complete discretion in implementation. At the other extreme, the legislative direction may be very detailed, even specifying harsh regulatory standards that will automatically take effect unless the administrative agency affirmatively finds that a less stringent approach is more appropriate.¹ Despite this variation, the fundamental model remains one of the agency implementing broad statutory guidance through regulatory rules.

One recent variation, however, is so complete a removal of agency discretion as to constitute a virtual end to the agency's rulemaking function. This variation appears in California's Proposition 65, which was enacted into law on November 4, 1986.² Adopted by voter referendum, Proposition 65 is lawmaking by the people themselves, not the legislature. Proposition 65 prohibits businesses from knowingly discharging known carcinogens and reproductive toxins into water or onto land where drinking water will likely be affected, unless the business can show that no significant amount of the discharged chemical will enter drinking water and that the discharge otherwise conforms with all laws.³ Proposition 65 requires the governor of California to promulgate a list of known carcinogens and reproductive toxins to be covered by this prohibition.⁴ While the state Health and Welfare Agency is the lead agency for implementing Proposition 65, there is remarkably little discretionary rulemaking to be done. Essentially, the people of California, not a combination of legislature and administrative agency, have made the rules. The people chose virtually to ban the discharge of listed chemicals outright, eliminating the initial command-and-control step of legislative rulemaking.

Proposition 65 has advantages and disadvantages. On the one hand, it carries a strong moral mandate and very high popular awareness. There is an appealing and elegant simplicity to its straightforward approach. On the other hand, it is criticized as rigid, unrealistic, and poorly integrated with California's numerous legislative and regulatory provisions on toxics control. Moreover, it is not clear that Proposition 65 has actually succeeded in replacing the rulemaking functions normally performed by the legislature and the implementing agency. The breadth of its provisions has resulted in agency efforts to issue regulations making it more manageable.⁵ Some of these regulations have been "legislative" in the sense of being very general. They have also been highly controversial. It may be that while citizen efforts such as Proposition 65 can partially replace the rulemaking step of the command and control system, they cannot replace that step completely.

§ 3:29 Tinkering with command and control regulation—Removing the rulemaking function from the regulators: California's Proposition 65 and negotiated rulemaking—Negotiated rulemaking

Another recent innovation, negotiated rulemaking, tinkers with the rulemaking

[Section 3:28]

¹These are often called "hammer provisions," and are an innovation introduced in the 1984 amendments to the Resource Conservation and Recovery Act. See C. Harris, W. Want, & M. Ward, *Hazardous Waste: Confronting the Challenge* 84-98 (1987). In general, successive legislative enactments have moved environmental statutes in the direction of greater legislative specificity and less administrative discretion. See Strook, *The Congress and the President: From Confrontation to Creative Tension*, 17 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 10006 (1987).

²The formal title of Proposition 65 is the California Safe Drinking Water and Toxic Enforcement Act, codified at Cal. Health & Safety Code §§ 25249.5 to 25249.13.

³Proposition 65 also requires certain consumer warnings concerning hazardous substances. See § 3:32.

⁴As of July 1, 1988, 231 such chemicals had been listed.

⁵See, e.g., 22 Cal. Code Regs. §§ 12201, 12401, 12405, 12601, 12711, 12901.

step of command and control regulation in a different way than Proposition 65 does. Negotiated rulemaking is the convening of interest groups outside of the administrative agency to draft regulations for the agency to consider proposing.¹ In the environmental context, this involves face-to-face meetings among agency representatives and industry and environmental groups, though ultimately agency management can accept or reject any consensus reached at these meetings.² EPA has experimented with negotiated rulemaking on several occasions.³

Essentially, negotiated rulemaking is ordinary rulemaking with an extra step: before the agency proposes a rule for public comment, it first solicits very intensive input from the groups most affected or interested. Although it increases the up-front costs of drafting regulations, when applied to properly selected topics it can decrease costs in the long run by averting court challenges to the promulgated regulations.⁴

To encourage negotiated rulemaking, in 1990 Congress passed the Negotiated Rulemaking Act, adding specific statutory authority for the process to the Administrative Procedure Act.⁵

§ 3:30 Tinkering with command and control regulation—Modifying the permitting function of the regulators: Transferable pollution permits¹

Citizen suit provisions tinker with enforcement, the fourth step of command and control regulation; Proposition 65 and negotiated rulemaking affect the first step, regulation writing. A system of transferable pollution permits modifies the second step, permit issuance. Under this approach, permits are not written for individual facilities. Instead, they are written for individual units of pollution. The permits are initially issued to facilities, but may subsequently be traded, bought, and sold among facilities in an open market. If it works properly, this open market controls pollution cost-effectively: facilities that can cut pollution cheaply will do so and sell their extra permit units to those that cannot. The system is sometimes called “emissions trading.” Because each facility can make a profit by selling its “excess compliance,” it has an economic incentive to do better than the minimum necessary to stay

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¹See Procedures for Negotiating Proposed Regulations, Recommendation No. 82-4 of the Administrative Conference of the United States, 1 C.F.R. § 305.82-4.

²Procedures for Negotiating Proposed Regulations, Recommendation No. 82-4 of the Administrative Conference of the United States, 1 C.F.R. § 305.82-4.

³For example, EPA has tried negotiated rulemaking in developing regulations on pesticide emergency exemptions and truck engine emission penalties. See Procedures for Negotiating Proposed Regulations, Recommendation No. 85-5 of the Administrative Conference of the United States, 1 C.F.R. § 305.85-5.

⁴Procedures for Negotiating Proposed Regulations, Recommendation No. 85-5 of the Administrative Conference of the United States, 1 C.F.R. § 305.85-5. The literature on negotiated rulemaking is extensive. See, e.g., Harter, *Negotiating Regulations*, 71 *Geo. L.J.* 1 (1982); Panel Discussion: *Negotiated Rulemaking*, 17 *Envtl. L. Rep. (Envtl. L. Inst.)* 10245 (1987); Perritt, *Negotiated Rulemaking: An Evaluation*, 74 *Geo. L.J.* 1625 (1986); and Perritt, *Negotiated Rulemaking in Practice*, 5 *J. Pol’y Analysis & Mgmt.* 482 (1986).

⁵Pub. L. No. 101-648. The Negotiated Rulemaking Act is codified at 5 U.S.C.A. §§ 561 to 570. See Pub. L. No. 102-354.

[Section 3:30]

¹This subsection is based in part on § 3:24 of a previous edition of this treatise; that section was written by Sheldon M. Novick.

within its initial permit allotment. The overall level of pollution can be controlled by periodically reducing the amount of pollution allowed under each permit unit.²

EPA has adopted transferable pollution permits in a few contexts, and has them under consideration in several others. EPA's regulatory program under the Clean Air Act includes a mature system of emissions trading.³ After the 1990 Clean Air Act Amendments, the Chicago Board of Trade announced it would set up a trading market for sulfur dioxide emission allowances.⁴ There have been a few examples of emissions trading under the Clean Water Act.⁵ The agency has considered extending the concept to nonpoint source water pollution, pesticide registration, and efforts to preserve stratospheric ozone.⁶

Emissions trading seems most suitable for regulatory problems in which sources collectively harm a regional environment, but singly do not appreciably harm local environments. As emission permits are traded, pollution levels in the immediate vicinity of some sources will probably rise or fall substantially. If this significantly increased the risk to local populations, it would largely be viewed as unfair, since individuals would be exposed to increased pollution, involuntarily and without compensation, in order for society overall to control pollution less expensively.

§ 3:31 Directly influencing the decisionmaking process— Governmentalizing operational decisions

In a sense, all of the modifications to command and control regulation analyzed in the previous subsections serve to “privatize,” or at least “de-governmentalize,” the three steps of command and control regulation in which government is the primary actor. That is, they all allow nongovernment entities some measure of influence on these steps.

Another alternative takes the opposite approach. It “governmentalizes” the one step that classic command and control regulation leaves to private entities: the making of operational decisions.¹ The command and control system lets regulated entities operate as they choose, so long as they stay within the regulatory boundaries. In contrast, this alternative gives regulators a role in operational decisionmaking. In its pure form, it inserts the regulatory process directly into the fabric of private decisions on activities that may harm the environment. Since this approach is not necessarily focused on ensuring that decisions comply with the specific substantive rules and permit requirements issued under command and control regulation, it can be virtually independent of those rules and permits.

No United States environmental laws currently incorporate the pure form of this alternative. However, two modified versions are widely used. The first version

²On transferable pollution permits generally, see Ackerman & Stewart, Comment: Reforming Environmental Law, 37 Stan. L. Rev. 1333 (1985), and Ackerman & Stewart, Reforming Environmental Law: The Democratic Case for Market Incentives, 13 Colum. J. Envtl. L. 171 (1988).

³This program is analyzed in detail in § 12:35. See also U.S. EPA, Emissions Trading Policy Statement (Nov. 18, 1986), 51 Fed. Reg. 43814 (1986), Envtl. L. Rep. (Envtl. L. Inst.) Administrative Materials 35007. See generally Hahn & Hester, Where Did All the Markets Go? An Analysis of EPA's Emissions Trading Program, 6 Yale J. Reg. 109 (1989). Hahn & Hester estimate that in the air program, emissions trading has already achieved savings in the billions of dollars with no significant detriment to environmental quality. *Id.* at 136–38.

⁴Potts & Lippman, Regulators Approve Trading In Firms' Pollution Credits, Washington Post, Apr. 22, 1992, at F1. See also Hamilton, TVA to Buy Pollution “Credits” From Wisconsin Utility, Washington Post, May 12, 1992, at C1.

⁵See U.S. General Accounting Office, Water Pollution: Pollutant Trading Could Reduce Compliance Costs If Uncertainties Are Resolved (1992).

⁶Levin, Bubbles and Barriers, The Environmental Forum, May/June 1988, at 13.

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¹See § 3:25.

requires government entities to consider environmental factors in making certain decisions about their own activities and those of private parties. This forces public and private actors to design their activities in consideration of those environmental factors. The second version obligates private entities to disseminate information about the environmental effects of their activities. This may have various effects on the behavior of both the parties disseminating the information and those receiving it.

§ 3:32 Directly influencing the decisionmaking process—Requiring decisionmakers to consider environmental factors

The most prominent example of the decisional approach to environmental protection is the National Environmental Policy Act.¹ NEPA requires federal decisionmakers to prepare environmental impact statements for major federal actions significantly affecting the quality of the human environment.² These federal actions include decisions to allow private parties to conduct certain activities. Since private parties must design those activities to satisfy federal decisionmakers, NEPA's insertion of environmental considerations into federal decisionmaking has an indirect but powerful influence over private decisionmaking. Therefore, although this subsection focuses on the federal decisionmakers whom NEPA directly addresses, much of the discussion also applies to the private decisionmakers whom the statute indirectly affects.³

NEPA does not impose any particular emission limits, technology standards, ambient environmental standards, or other substantive requirements. Rather, it imposes essentially procedural controls on the process of deciding whether—and how—to conduct proposed actions. It forces decisionmakers to explicitly confront the environmental consequences of those actions, opening the process to public and EPA comment⁴ and requiring public explanations for the final decisions. NEPA ultimately relies on the power of public opinion and the good faith of decisionmakers to ensure consideration of environmental values.

While NEPA is the most widely known federal law that operates this way, it is not the only one. The Endangered Species Act⁵ requires federal decisionmakers to consult with the Fish and Wildlife Service or the National Marine Fisheries Service to determine that a proposed action is not likely to jeopardize any endangered species.⁶ The consulted service issues a biological opinion on whether the action is likely to jeopardize such a species. Ultimately, however, the responsible federal decisionmaker, not the service issuing the biological opinion, is responsible for determining whether the proposed action violates the Endangered Species Act's prohibition of federal actions likely to jeopardize endangered species.⁷

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¹42 U.S.C.A. §§ 4321 to 4370a.

²NEPA's requirements are thoroughly analyzed in Ch 10.

³Of course, the entities that are indirectly subject to NEPA because they must satisfy the requirements of federal agencies may themselves be other government agencies rather than private parties.

⁴EPA acts under a legislative provision which by historical accident happens to have been placed in the Clean Air Act, but which authorizes EPA to comment on all impact statements, whether they have to do with air or not. Clean Air Act § 309, 42 U.S.C.A. § 7609. *See* § 10:31.

⁵16 U.S.C.A. §§ 1531 to 1543

⁶Which service must be consulted depends on the type of species. Endangered Species Act § 7, 16 U.S.C.A. § 1536. Implementing regulations are at 50 C.F.R. § 402.

⁷*Sierra Club v. Froehlke*, 534 F.2d 1289, 1303, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20448, 20454 (8th Cir. 1976); *National Wildlife Fed'n v. Coleman*, 529 F.2d 359, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20344, 20349 (5th Cir. 1976). *See also* the suggestion in the implementing regulations that compliance with

Similarly, the National Historic Preservation Act⁸ requires federal decisionmakers to consider the effects a proposed action will have on historic properties, and to seek the comments of the State Historic Preservation Officer, the federal Advisory Council on Historic Preservation, and interested members of the public.⁹ The federal decisionmakers can choose to ignore these comments, however.¹⁰

These statutes do not go so far as they might in terms of regulatory intrusiveness into the decisionmaking process. The Coastal Zone Management Act¹¹ gives environmental regulators an even greater say in federal decisions.

These statutes give environmental regulators, and in some circumstances the public, a point of entry into the decisionmaking process. This forces decisionmakers to explicitly consider environmental values. Although federal decisionmakers need not obtain permits, and environmental regulators do not usually have ultimate veto power over their decisions, these statutes have proven quite effective in protecting the environmental values they address. This may be in part because few federal decisionmakers are actively anti-environment; that is, few officials make environmental damage a goal. More commonly, decisionmakers simply fail to think about the environment at all: it has no constituency in the way that grants or program needs do, and environmental harm often does not become manifest until after a particular set of decisionmakers leaves office.

Each of these federal statutes inserts environmental regulators into the *process* of making compliance decisions on private actions, but only through other federal officials who must approve those actions under other law anyway. This class of statutes does not go so far as to insert regulators directly into *private* decisionmaking. Though it has been suggested that private parties be required to submit environmental impact statements directly,¹² restricting such requirements to government agencies is not as severe a limitation as might at first appear. The statutes discussed above generally apply to federal funding or loans for private projects, federal permitting or approval, and other federal involvement with otherwise private decisions, whether that federal involvement is environmental or not. Thus, these statutes have a powerful reach into private life, leading one commentator to reflect that NEPA's application is "virtually unlimited" and that the required federal nexus is a "nonissue."¹³

Nineteen states and Puerto Rico have followed the federal model and added "mini-NEPAs" to state law.¹⁴ Four of these state laws—those of California, Hawaii, New York, and Washington—apply not only to *state* government decisions but also

the jeopardy opinion is not automatic. 50 C.F.R. § 402.15(b) (1987) ("If a jeopardy biological opinion is issued, the Federal agency shall notify the Service of its final decision on the action.").

⁸16 U.S.C.A. §§ 470 to 470w-6.

⁹National Historic Preservation Act § 106, 16 U.S.C.A. § 470f. Implementing regulations appear at 36 C.F.R. § 800.

¹⁰Paulina Lake Historic Cabin Owners Ass'n v. U.S.D.A. Forest Serv., 577 F. Supp. 1188, 1192 n.1 (D. Or. 1983); Pennsylvania v. Morton, 381 F. Supp. 293, 299, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20008, 20011 (D.D.C. 1974). See also Bell, Protecting the Built Environment: An Overview of Federal Historic Preservation Law, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 10354, 10362 (1985); Bell, Historic Preservation: A New Section 106 Process, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 10002, 10004 n.54 (1987).

¹¹16 U.S.C.A. §§ 1451 to 1464. See Coastal Zone Management Act § 307(c), 16 U.S.C.A. § 1456(c).

¹²Stone, Should Trees Have Standing?—Toward Legal Rights for Natural Objects, 45 S. Cal. L. Rev. 450, 484 (1972).

¹³F. Anderson, NEPA in the Courts 57 (1973). See generally Ellis & Smith, The Limits of Federal Environmental Responsibility and Control Under the National Environmental Policy Act, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 10055 (1988) (concluding that the limits to NEPA are based on the actual jurisdictional reach of the federal agency involved).

¹⁴See § 7:11.

to decisions of local governments.¹⁵ Thus, private development decisions subject to local land use regulation such as zoning require environmental impact statements.¹⁶ While this does not bring the private sector completely within the ambit of the statutes that directly influence the decisionmaking process, it comes close.

§ 3:33 Directly influencing the decisionmaking process—Giving decisionmakers more information

Direct regulatory involvement in the actual processes of private decisionmaking is rare or nonexistent in our society. Indeed, it may be outside our frame of reference for distinguishing public from private responsibilities.¹ Nonetheless, with increasing frequency, environmental protection laws have endeavored to *affect*, if not control, private decisions by supplying particular kinds of information to private decisionmakers. Those decisionmakers are then free as before to act as they choose, but as a practical matter, at least some of them are likely to act differently after receiving new information.

A leading example of this “more information” style of protecting the environment is California’s Proposition 65,² which includes a powerful right-to-know provision. Proposition 65 requires businesses to give “clear and reasonable warning” to any individuals they expose to known carcinogens and reproductive toxins, with very narrow exceptions. This requirement serves conventional command and control purposes such as informing local planning agencies and emergency response teams of the nature of the hazards in their areas. In addition, however, public dissemination of warnings might be expected to lead to public pressure not to use these chemicals and to less public use of the products associated with them.³ These effects on individual decisionmaking may in turn influence businesses to reduce their use or discharge of these chemicals. Proposition 65 enforcement prompted the Gillette Company to reformulate its “Liquid Paper” correction fluid so that it no longer contains trichloroethylene, a hazardous chemical.⁴

Federal law also includes an example of environmental protection through public information. The Emergency Planning and Community Right-to-Know Act (EPCRA)⁵ was enacted in 1986 as Title III of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).⁶ EPCRA generally requires public reporting of hazardous chemical data that already exists but had been difficult to obtain and compare. Facilities must provide local agencies and any inquiring member of the public with information on hazardous chemicals used and with annual reports of toxic chemical releases.⁷

¹⁵Mandelker, NEPA Law and Litigation § 12.02 (2001).

¹⁶Mandelker, NEPA Law and Litigation § 12.02 (2001).

[Section 3:33]

¹See Commoner, A Reporter at Large—The Environment, *The New Yorker*, June 15, 1987, at 46, 64.

²The formal title of Proposition 65 is the California Safe Drinking Water and Toxics Enforcement Act, codified at Cal. Health & Safety Code §§ 25249.5 to 25249.13. § 3:26, discussed Proposition 65’s outright ban on discharges to water of known carcinogens or reproductive toxins.

³Haag, Proposition 65’s Right-to-Know Provision: Can It Keep Its Promise to California Voters?, 14 *Ecology L.Q.* 685, 687–89, 703–07 (1987).

⁴See Stevens, Regulating Toxics at the State Level: Proposition 65’s Warning Requirement, 9 *Stan. Env’tl. L. Rev.* 84, 128–29 (1990).

⁵42 U.S.C.A. §§ 11001 to 11050.

⁶42 U.S.C.A. §§ 9601 to 9675.

⁷See § 14:150. See generally Burcat & Hoffman, The Emergency Planning and Community Right-to-Know Act of 1986: An Explanation of Title III of SARA, 18 *Env’tl. L. Rep. (Env’tl. L. Inst.)* 10007

§ 3:34 “Private command and control regulation”: Enlisting banks and insurers as regulators

In the traditional command and control model, the government writes regulations setting general standards, then writes individual permits for regulated facilities. Private owners and operators of the facilities then make their own decisions on how to comply, and if they fail the government brings enforcement actions.

Section 3:25 described several ways in which the government’s roles in command and control regulation can be partially “privatized,” or shared with nongovernmental entities. In contrast, § 3:31 described the government’s heightened role in otherwise private decisionmaking under statutes modeled after the National Environmental Policy Act. Under either approach, however, when there is real, discretionary regulating to be done, government regulators do it.

Some environmental laws superimpose on this structure a system that turns private institutions into regulators in their own right. These private institutions are generally financial intermediaries such as banks¹ and insurance companies. It is their pervasiveness that makes these institutions attractive as quasi-regulators. They administer the capital markets; without bank loans and insurance, as a practical matter many private undertakings could not be pursued. Because banks and insurers are asked to participate voluntarily in so many private ventures, making environmental protection in their self-interest goes a long way toward integrating that protection into the structure of their clients’ projects.

The “private regulation” system works by making banks and insurers liable in some circumstances when projects they lend to or insure are liable. For banks, this is done in two principal ways.

First, applicable law may subordinate a bank’s security interest in its loans’ collateral to a higher priority government interest in environmental cleanup expenses.² This encourages every bank to protect the government’s environmental interests, since until those higher priority interests are satisfied the bank’s interests go unsatisfied. Thus, before lending to a project posing environmental dangers, a bank has reason to ensure that environmental safeguards are in place.

Second, environmental statutes may treat banks as themselves liable in specified circumstances. Current law is often imprecise on exactly when bank liability is triggered, leading to EPA interpretive rulemaking on the issue.³ To avoid this liability, banks are increasingly calling for environmental assessments on questionable properties before accepting them as collateral for loans. Merely identifying previously

(1988). Dow Chemical Company credits a pre-EPCRA voluntary pollution report with triggering the company’s program to cut its air pollution. *See* Kriz, An Ounce of Prevention, *National Journal*, Aug. 19, 1989, at 2094.

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¹The term “bank” is used here to include true banks as well as savings and loans and similar financial institutions that lend money to or invest in facilities subject to environmental regulation.

²Statutes, frequently called “superlien statutes,” often provide for such subordination. *See generally* Comment, State Superfund Superliens: Who Do They Lean On?, 1 *Vill. Envtl. L. J.* 163 (1990); Priority Lien Statutes: The States’ Answer to Bankrupt Hazardous Waste Generators, 31 *Wash. U.J. Urb. & Contemp. L.* 373 (1987); State “Superlien” Statutes: An Attempt to Resolve the Conflict Between the Bankruptcy Code and Environmental Law, 59 *Temp. L.Q.* 981 (1986). CERCLA § 107(1) creates a federal lien subordinating some but not all other interests, and the Justice Department has vigorously asserted the need for government priority. *See* Firestone, Government Perspectives on Bankruptcy and Environmental Law Interaction, 18 *Envtl. L. Rep. (Envtl. L. Inst.)* 10358 (1988). *See* especially the useful cataloguing of the government’s mixed success at this effort at 10359 n.4.

³The EPA rule is at C.F.R. pt. 300, 57 *Fed. Reg.* 18344 (Apr. 29, 1992). *See generally* Burcat et al., The Law of Environmental Lender Liability, 21 *Envtl. L. Rep. (Envtl. L. Inst.)* 10464 (1991).

latent problems often serves to accelerate cleanup, and of course banks can insist on environmental improvements prior to making loans.⁴

Insurers have a similar incentive to police the operations of their insureds. Insurers have traditionally provided educational programs to reduce many kinds of risks, and periodically inspect large insureds either to offer advice on making their operations safer or to decide what insurance rates to assess and whether to insure at all. So long as there is some reasonable chance that insurers will ultimately be held liable for environmental cleanup costs, as is certainly the case now, insurers have a powerful incentive to incorporate environmental concerns into their programs.⁵

There are limits to how much “regulating” can be done through banks and insurers, however. First, banks and insurers compete among themselves for business. They stay in business by actually making loans and writing insurance policies, not by turning them down. If a bank or insurer became too strict in its environmental demands, potential customers would switch their business to a laxer bank or insurer, thus “forum shopping” among these private regulators. Depending on how readily customers switch among competing banks and insurance companies, regulation through these financial intermediaries could be only as effective as the standards imposed by the laxest among them, at least in the short run.⁶

Another limit to the role of banks and insurers is that they do not completely control the capital markets. For example, very large companies that need money can bypass banks and issue corporate bonds instead. Such “disintermediation,” as financial analysts label it, is becoming more and more common. Similarly, some firms avoid insurance companies and “self-insure” instead by putting aside contingency funds. In such cases, the overlay of banks and insurers as private regulators will have little effect.⁷

Finally, one possible limit is the strength of the banking and insurance industries themselves. For example, the savings and loan portion of the banking industry is in serious trouble, and there are reports of trouble among some mainline banks as well. When failed banks and savings and loans are rescued by their government insurers such as the Federal Deposit Insurance Corporation, environmental liabilities assigned to the failed institution could then further burden the government’s insurance funds.⁸

Limits such as these suggest that private regulators, such as banks and insurers, cannot completely replace other methods of environmental enforcement. But they still have major roles to play. Banks and insurers are unique leverage points to

⁴McMahon, *Lender’s Perspectives on Hazardous Waste and Similar Liabilities*, 18 *Env’tl. L. Rep. (Env’tl. L. Inst.)* 10368 (1988).

⁵There is currently a split in the case law on whether the standard commercial insurance policy language covers CERCLA response costs. There is virtually unanimous agreement, however, that it covers natural resource damages, and this is enough to trigger the insurer’s duty to defend the entire lawsuit. Moreover, insurance coverage for personal injuries from environmental pollution remains unaffected by the case law split on coverage of CERCLA response costs.

⁶This problem may abate fairly rapidly after financial intermediaries are made liable for environmental problems. For example, barely five years after CERCLA was enacted, hazardous waste insurance had become extremely difficult to obtain at any price. This hardly suggests that insurers were competing for this business by lowering their environmental standards. Moreover, in the very long run, the accumulated liabilities of polluting customers may drive the laxest banks and regulators out of business.

⁷To the extent that companies avoid financial intermediaries, the alternatives they use may or may not further environmental protection. For example, a company that cannot obtain hazardous waste insurance will, if it is risk-averse, take steps to prevent ever having to “collect” on its self-insurance fund. However, this caution results from the liability imposed on the company as a hazardous waste handler, not as an insurer. It is only indirectly influenced by the insurer liability that may have tightened the insurance market and forced it to self-insure in the first place.

⁸Pollution Raises Cost of Bailout, *N.Y. Times*, July 20, 1990, at D1, col. 6.

insert environmental considerations, and by virtue of their special roles in the economy they have special responsibilities as well. Environmental improvement is one of them.

§ 3:35 Using the tax system to impose costs on polluters

All the approaches considered so far attempt to influence private decisions through regulation. Under the command and control model, government sets regulatory parameters within which private decisions must be made. Under statutes like NEPA, regulators play a participatory role in these decisions. When banks and insurers are drafted into service as private regulators, regulated entities probably view them much as they do government regulators.

There is another approach entirely, which is less direct but which can be as effective, and perhaps more so. It involves revising the cost calculus faced by private decisionmakers, so that they internalize costs and behave optimally based on their own perceptions of profit and loss possibilities rather than on the direction of outsiders. This subsection and the next consider the two principal ways of doing this, taxes and liability mechanisms.

A pollution tax system imposes a tax on each unit of pollution. The tax rate can differ among pollutants—one assessment per pound of sulfur dioxide emitted into the air, for example, but another per pound of organic sewage discharged into the river. Economists hail pollution taxes as a way to correct for the market conditions that allow pollution and to raise government revenue at the same time.¹ Government sets the tax rates at the levels necessary to achieve targets for environmental quality; the higher the rates, the less pollution will be produced. The tax rates can be raised or lowered to fine-tune the attainment of environmental goals, or to reflect changing goals. Economists believe that to control a given type of pollution effectively, pollution taxes must replace, not supplement, command and control regulation of that type of pollution.²

A system of pollution taxes is not without disadvantages, however. It suffers from many of the same vulnerabilities as a system of transferable permits. Conceptually, the two approaches are very similar: both allow individual corporations to decide how much they will pollute, and require them to pay for their decisions. In the first case, the payment is to the government in the form of a tax; in the second case, it is to other corporations in the form of the purchase price of permit units. So, for example, although taxes may control pollution at the national or regional level, they seem unsuitable when individual sources willing to pay high rates can create acute local effects.

This is a big limitation, but there remain important environmental issues regarding which pollution taxes could play a greater role than they currently do. Certain global concerns, such as ozone depletion and global warming, seem especially well-suited to pollution taxes.

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¹See, e.g., Blinder, Why Not Sell Pollution by the Pound?, Washington Post, Aug. 18, 1987, at A15; Oates, Taxing Pollution: An Idea Whose Time Has Come?, Resources, Spring 1988, at 5; Oates, Pollution Charges As a Source of Public Revenue, RFF Research Digest, Spring 1992. See generally Gaines & Westin, eds., Taxation for Environmental Protection (1991).

²Oates, Taxing Pollution: An Idea Whose Time Has Come?, Resources, Spring 1988, at 7. The pollution tax would work by giving polluters an incentive to develop low-cost pollution control methods; permits specifying treatment technology, for example, would interfere with this incentive. See generally F. Anderson, A. Kneese, P. Reed, S. Taylor, & R. Stevenson, Environmental Improvement Through Economic Incentives (1977).

Indeed, a global issue is the source of what may be the first “tax on pollution.”³ In 1989, Congress enacted the “Excise Tax on Sale of Chemicals Which Deplete the Ozone Layer and of Products Containing Such Chemical.”⁴ Added to the tax code as 26 U.S.C.A. §§ 4681 and 4682, this new provision taxes chlorofluorocarbons and halons at rates that increase from one year to the next. For example, in December 1989, one particular chlorofluorocarbon compound, CFC-11, sold for approximately \$0.80 per pound.⁵ Beginning in January 1990, the tax on CFC-11 is \$1.37 per pound. In January 1992, the tax rises to \$1.67 per pound. In January 1993, it rises to \$2.65 per pound. In January 1995, and every year thereafter, the tax increases \$0.45 per pound per year.⁶

§ 3:36 Using the liability system to impose costs on polluters—The retrospective liability system

All the approaches considered so far address environmental damage by seeking to prevent it. Traditional command and control regulation prohibits the release of more pollutants than authorized by permit, and the methods discussed in § 3:25 for tinkering with command and control regulation never deviate from this strategy. Similarly, the techniques considered in § 3:31 for directly influencing private decisions and those discussed in § 3:34 for giving roles to banks and insurers are largely designed to prevent pollution from becoming a problem. Even the pollution taxes considered in the preceding subsection regulate pollution by creating incentives to make less of it. In short, these methods of pollution control are all *prospectively focused*; that is, they are forward-looking tools to prevent pollution in the first place.

This prospective focus is important, but it is not the only one possible. Indeed, in most areas of law a prospective strategy designed to prevent harm is combined with a *retrospective* strategy designed to remedy harm that is not prevented. For example, while traffic laws prospectively regulate driving to prevent accidents, an elaborate retrospective system of tort law nonetheless is in place to compensate accident victims. Some accidents occur because the prospectively focused traffic laws are violated; compliance is rarely if ever perfect, and tort law provides an important “safety net” for victims of lawbreaking. Other accidents occur even when no traffic laws are violated. In these cases, tort law does more than just catch imperfections in the prospective system of accident prevention. Instead, it independently compensates victims based on its own criteria of liability and harm.

At the same time, the existence of an effective retrospective liability system helps deter some harm.¹ Thus a retrospective system also plays an important role in prospective control. In fact, in many important areas of law there is no direct prospective control to speak of; practically all of the relevant law is retrospective, compensating for harm already done. For example, causes of action for slander and libel retrospectively control harmful speech and writing, even though prospective regulation of such communications is very rare. Remedies for breach of contract are mostly retrospective; the law rarely makes a breach prospectively illegal.

Retrospective relief also has a role to play in environmental law. This relief can be divided into four categories:

- (1) liability to the government to clean up pollution;

³Weisskopf, A Clever Solution for Pollution: Taxes, Wash. Post, Dec. 21, 1989, at A27.

⁴Pub. L. No. 101-239, § 7506, 103 Stat. 2364 (1989).

⁵Weisskopf, A Clever Solution for Pollution: Taxes, Wash. Post, Dec. 21, 1989, at A27.

⁶26 U.S.C.A. § 4681(b).

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¹This deterrent effect is triggered if corporations are sensitive to retrospective lawsuits, and there is anecdotal evidence that indeed they are. See, e.g., Safety First, Fortune, July 4, 1988, at 14.

- (2) liability to the government to pay damages for pollution;
- (3) liability to private parties to clean up pollution; and
- (4) liability to private parties to pay damages for pollution.

Each category is considered in turn below. In general, current law is well-developed in the first category, but has not taken full advantage of the pollution control promise offered by the other three. These three categories seem conceptually ready for expansion.

§ 3:37 Using the liability system to impose costs on polluters—Liability to the government to clean up pollution

Both the common law and modern statutes provide for liability to the government to clean up pollution. Although the common law doctrines in this area are quite broad, there is even more case law under the newer, statutory remedies. Governments have generally relied on statutory remedies when they are available, rather than on preexisting common law causes of action.

The common law has long given the government the power to sue to abate “public nuisances.”¹ Such suits are exercises of the police power, so they may be brought by state governments, but apparently not by the federal government. In the environmental context, the public nuisance doctrine has been applied to waterborne pollutants at a private dam,² vibrations and noise from blasting,³ odors and pests from animals,⁴ and hazardous waste contamination.⁵ A standard of strict liability applies. The government need only show that the public’s exercise of public rights has been obstructed and that the defendant has caused the obstruction.⁶

The crucial question in a public nuisance case is thus whether there is interference with a “public right.” This way of framing the issue is both the nuisance doctrine’s greatest strength and its greatest weakness. It provides enormous flexibility for the government, which is free to allege a “public right” whenever it finds some environmental insult it thinks should be corrected. However, the doctrine’s vagueness also makes its application difficult and unpredictable. What is the scope of a protected “public right,” and how significant must be its invasion before the law will consider it a “nuisance”? Often, it is not obvious where the public right begins and ends, or who is interfering with whom. If a factory produces odors and the government complains of interference with picnicking in a park nearby, is the factory interfering with the park users’ right to picnic, or is the park trying to interfere with the factory’s right to make its products? In general, the label of rights is not helpful until it is given content. As in many areas of the law, courts have applied an ad hoc balancing test weighing various aspects of the issue, including the social value of the polluting activity and the burden on those harmed of avoiding the

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¹This cause of action is not limited to the environmental context; it extends generally to the government’s power to protect “public rights” from private interference. The doctrine has been applied to protection of public morality, for example.

²Halper, *Public Nuisance and Public Plaintiffs: Rediscovering the Common Law*, 16 *Envtl. L. Rep.* (Envtl. L. Inst.) 10292 (1986).

³*Board of Health v. Copcutt*, 140 N.Y. 12, 35 N.E. 443 (1893).

⁴*New York Trap Rock Corp. v. Town of Clarkstown*, 299 N.Y. 77, 85 N.E.2d 873 (1949).

⁵*Town of Mt. Pleasant v. Van Tassell*, 7 Misc. 2d 643, 166 N.Y.S.2d 458 (N.Y. Sup. Ct. 1957), *aff’d*, 6 A.D.2d 880, 177 N.Y.S.2d 1010 (N.Y. App. Div. 1958).

⁶*New York v. Shore Realty Corp.*, 759 F.2d 1032, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20358 (2d Cir. 1985). These and similar cases are discussed more fully in Halper, *Public Nuisance and Public Plaintiffs: Rediscovering the Common Law*, 16 *Envtl. L. Rep.* (Envtl. L. Inst.) 10292 (1986).

harm. The results are often unpredictable and decisions in different cases are often difficult to reconcile.⁷

Another common law doctrine that may apply to environmental cases is that of the public trust. This doctrine holds that the government owns certain resources in trust to benefit the public at large. The public trust and public nuisance doctrines overlap, and in some cases are different labels for the same concept.⁸

The doctrine of *parens patriae* (the king as father of the people) also has occasionally been applied to environmental issues. Originally developed by English courts to allow the king to protect infants, the mentally handicapped, and charities, this concept has been extended by American courts to allow the government to protect the citizenry generally. State governments have typically used the doctrine to sue out-of-state polluters whose contamination is carried into their territory.⁹ The doctrine has not been used often in the environmental area, however; nuisance law on its own seems to have provided governments with a flexible enough cause of action. Moreover, the *parens patriae* doctrine seems not to have developed any independent contours that might inform the nature of the rights protected under nuisance law.¹⁰

At about the time these venerable common law doctrines were called into service against modern environmental problems, legislatures stepped in to create more definite statutory remedies. Federal and state environmental statutes have added a formidable arsenal of statutory causes of action through which the government can seek retrospective remedies for pollution. Most of the federal statutes authorize federal suits in the face of “imminent and substantial endangerment.”¹¹ While not all the statutes use this exact wording, “imminent and substantial endangerment” has come to be treated as a term of art applicable to them all. In general, when an imminent and substantial endangerment is found, the federal government is authorized to seek whatever relief is “appropriate” or “necessary.” This authority is fairly broad, because the courts have interpreted the term “imminent and substantial endangerment” more loosely than a first literal reading might suggest.¹² The relief obtainable ordinarily includes a court order to stop or clean up pollution.

In addition, three statutes authorize the government to implement cleanups and recover their costs from responsible parties. These provisions in CERCLA,¹³ the Federal Water Pollution Control Act (FWPCA),¹⁴ and the Oil Pollution Act.¹⁵ essentially enable the government to seek retrospective liability from polluters by billing them for the cost of cleaning up the pollution.¹⁶ CERCLA cost-recovery actions have become a staple of environmental law.

⁷One commentator calls the variation in the balances reached a “caprice” that is “apparently endemic” to the doctrine. Brion, *An Essay on LULU, NIMBY, and the Problem of Distributive Justice*, 15 B.C. Env'tl. Aff. L. Rev. 437, 461 (1988).

⁸Carlson, *Making CERCLA Natural Resource Damage Regulations Work: The Use of the Public Trust Doctrine and Other State Remedies*, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 10299, 10303 (1988).

⁹*See, e.g., Georgia v. Tennessee Copper Co.*, 206 U.S. 230 (1907); *Missouri v. Illinois*, 180 U.S. 208 (1901).

¹⁰On the *parens patriae* doctrine generally, *see* Curtis, *The Checkered Career of Parens Patriae: The State as Parent or Tyrant*, 25 DePaul L. Rev. 895 (1976), from which the textual discussion draws heavily.

¹¹*See, e.g., RCRA* § 7003, 42 U.S.C.A. § 6973; *CERCLA* § 106, 42 U.S.C.A. § 9606; *FWPCA* § 504, 33 U.S.C.A. § 1364; *Safe Drinking Water Act* § 1431, 42 U.S.C.A. § 300i; and *Clean Air Act* § 303, 42 U.S.C.A. § 7603.

¹²*See* § 14:136.

¹³*CERCLA* § 107, 42 U.S.C.A. § 9607.

¹⁴*FWPCA* § 311, 33 U.S.C.A. § 1321.

¹⁵*Oil Pollution Act of 1990*, Pub. L. No. 101-380, § 1002, 104 Stat. 484 (1990).

¹⁶For more on the CERCLA and FWPCA cost-recovery provisions, *see* §§ 13:143 and 14:139.

§ 3:38 Using the liability system to impose costs on polluters—Liability to the government to pay damages for pollution

The liability considered in the previous subsection is equitable in nature. Either the polluter receives a court order to clean up its pollution, or the government cleans it up and bills the polluter through a cost-recovery action, which is essentially an action for restitution. Legal—as opposed to equitable—remedies also exist in environmental law, though they are less well-developed. This subsection discusses some of those legal remedies.

Five federal statutes create special causes of action for the government to recover damages for injuries to natural resources. The best known of these provisions is in CERCLA, and makes any party who is responsible for the release of hazardous substances liable for these damages.¹ The Oil Pollution Act of 1990 assigns natural resource damage liability to parties responsible for oil spills into United States waters or adjoining shorelines.² The FWPCA creates liability for oil and hazardous substance discharges into navigable waters not already covered by the Oil Pollution Act.³ An untitled statute enacted in 1990, Public Law 101-337, creates liability for any person who injures resources in a national park.⁴ The Marine Protection, Research and Sanctuaries Act (MPRSA) makes any person who injures resources in a federally designated marine sanctuary liable for natural resource damages.⁵

The concept of natural resource damages is a powerful one. It is conceptually different from the forms of retrospective liability previously considered. The common law nuisance doctrine and the imminent and substantial endangerment provisions enable the courts to order a polluter to stop or to clean up pollution. The natural resource damages concept is broader, offering relief to “make the environment whole again,” much as traditional tort damages make the victim whole. The difference between *making the environment whole* and cleaning up the environment is critical. Make-whole relief can go much further.

For example, make-whole relief under a natural resource damages doctrine easily surpasses an injunction merely ordering a polluter to stop polluting, or to move its polluting activity elsewhere. Such an injunction leaves existing harm to the environment unremedied, and only prevents additional harm.

Make-whole relief can also go further than an injunction requiring a polluter to clean up the environment. A polluter is rarely physically or economically able to rid the environment of all traces of its pollution. As a practical matter, the polluter is usually required only to remove pollution down to a regulatory standard, and thus *some* pollution will nearly always be left. In recent years that “some” has often proven to be quite a bit. Many hazardous waste cleanups, for example, cover contamination over but do not destroy it. Natural resource damages are an

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¹CERCLA § 107(a)(4)(C), 42 U.S.C.A. § 9607(a)(4)(C).

²Oil Pollution Act of 1990, Pub. L. No. 101-380, § 1002, 104 Stat. 484 (1990). The Oil Pollution Act replaces two earlier natural resource damage provisions: Deepwater Port Act § 18, 33 U.S.C.A. § 1517(i)(3), and Outer Continental Shelf Lands Act § 303, 43 U.S.C.A. § 1813(a). On the historic development of the natural resource damage provisions, see Breen, *Citizen Suits for Natural Resource Damages: Closing a Gap in Federal Environmental Law*, 24 Wake Forest L. Rev. 851 (1989).

³FWPCA § 311(f)(5), 33 U.S.C.A. § 1321(f)(5). Oil Pollution Act § 2002(a) provides that the FWPCA natural resource damage provision does not apply where liability is established under the Oil Pollution Act.

⁴The statute is codified at 16 U.S.C.A. §§ 19jj to 19jj-4.

⁵Marine Protection, Research and Sanctuaries Act § 312, 16 U.S.C.A. § 1443. A fifth federal statute, the Trans-Alaska Pipeline Authorization Act, makes the pipeline right-of-way holder and vessel owners liable for damages in Alaska. However, the statute is not clear that it encompasses natural resource damages rather than economic damages, and the implementing regulations define damages as *economic* loss.

important category of the residual damages that remain even after the injunctive relief is performed.

Moreover, many years may pass between the polluting incident and the cleanup. The pollution may first go undetected, and then there is often a long period of sampling, monitoring, and investigation to confirm the harm and identify the responsible party. This can be followed by negotiations and enforcement to compel cleanup, and finally actual environmental cleanup, which itself can take years. During all this time, the environment remains unremedied; at best, a temporary containment effort keeps the problem from spreading. In cases like this, the natural resource damages concept can play a critical role in obtaining make-whole relief for the environment by assessing a charge for the environmental values lost while the pollution was uncorrected. Indeed, when polluters argue that cleanup is not necessary because “if we give it enough time the environment will purify itself,” this is often a euphemism for dilution of the contamination into the environment to the point where actual removal is not feasible. When this happens, natural resource damages can be an effective way to make the environment whole.

Finally, the make-whole relief of natural resource damages covers damage to plants and wildlife that is often unaddressed by cleanup of contaminated water and soil. Contamination can persist in the bodies of living things, and so affect the food chain, long after it has been removed from the environment. The natural resource damages doctrine provides a cause of action to compensate for the potential harm done to affected species.

The make-whole relief of natural resource damages does not require that the amount recovered from polluters be spent to clean up the pollution they caused. Rather, natural resource damage recoveries can be used for such direct restoration purposes *or* for making the environment whole by improving it elsewhere. For example, if a wetland has been badly damaged, natural resource managers have the option of restoring it or using the same money to improve another wetland in the region, or even to create a new wetland entirely if one is needed and practicable.

At first, the power of the natural resource damages concept was undercut by miserly regulations prepared by the Interior Department to implement the natural resource damage provisions of CERCLA and the FWPCA.⁶ These regulations were generally biased towards underassessing the damage done. They provided that government natural resource trustees would measure damage by choosing the *lesser* of two alternative yardsticks: the cost of physically restoring the injured resource or the “lost-use value” of the resource. Lost-use value is an economic construct that attempts to measure how much the uses of the lost resources were worth; under the Interior Department regulations, it is based on the resources’ market value whenever possible. As a practical matter, however, market value rarely captures all of the environmental benefits of natural resources, and the cost of physical restoration will usually be much higher than the lost-use value as defined in the regulations. A far more preferable yardstick would be the cost of physical restoration *plus* the lost-use value for the time that the resources remained unrestored and thus unavailable to the public and other parts of the ecosystem.

While trustees’ use of the Interior Department natural resource damage regulations is legally only optional, not mandatory, as a practical matter the regulations are of enormous importance. The topic is so conceptually and technically complex that most government agencies need a regulatory roadmap as they prepare natural resource damage cases against polluters. Moreover, CERCLA provides that a natu-

⁶43 C.F.R. § 11. These Interior Department regulations stand in stark contrast to regulations promulgated by the Transportation Department under the natural resource damage provisions of the Outer Continental Shelf Lands Act. The Transportation Department allowed a far more generous recovery, including the full cost of restoring or replacing lost resources as well as some compensation for lost use of resources. 33 C.F.R. §§ 136.213 to 136.217 (1989).

ral resource damage assessment prepared in accordance with the regulations is entitled to a rebuttable presumption of validity.⁷

Fortunately, in 1989, the District of Columbia Circuit Court of Appeals overturned the Interior Department regulations, striking down the requirement that trustees choose the *lesser* of the restoration cost or the lost-use value of the resource.⁸ The court ordered the Interior Department to revise the regulations to provide a “distinct preference” for using the cost of physical restoration as the measure of natural resource damage.⁹ While much depends on how the Department responds to this order, its proposed regulations are encouraging.¹⁰ For now it seems clear that the natural resource damage doctrine has been reinvigorated, and could play a major role in cleaning up pollution and in providing an incentive to avoid polluting in the first place.

Even so, a serious limit on the natural resource damage doctrine remains embedded in federal law. Each of the four statutory provisions allows only government agencies to bring claims for natural resource damages. Thus, under current law, private citizens and environmental groups are not legally authorized to bring such claims, no matter how much they use or depend on the resources.

The Oil Pollution Act provides partial relief for citizens. Under that act, citizens can sue federal officials, asking a court to order the officials to enforce the Oil Pollution Act’s natural resource damage provisions.¹¹ This is an important step forward from CERCLA, the FWPCA, and the MPRSA. But the Oil Pollution Act still falls short of typical citizen suit authority under other environmental provisions, where citizens can sue the federal officials *or* directly sue the polluters.¹² A useful refinement of the citizen suit provisions would amend them to incorporate this full application of the power of citizen suits.¹³

§ 3:39 Using the liability system to impose costs on polluters—Liability to private parties to clean up pollution

The retrospective liabilities considered thus far are liabilities to the government, either as injunctive relief (or cost recovery) or as damages. If environmental law provided remedies only to governments, however, it would be incomplete for two reasons. First, not all pollution damages are inflicted on governments. Pollution often harms individuals and businesses as well. Second, governments are notoriously slow to act, and the environmental area has been no exception.¹

There is thus much room for private enforcement of environmental protection.

⁷CERCLA § 107(f)(2)(C), 42 U.S.C.A. § 9607(f)(2)(C). The rebuttable presumption applies to administrative and judicial proceedings under both CERCLA and the FWPCA.

⁸*Ohio v. United States Dep’t of the Interior*, 880 F.2d 432, 19 *Env’tl. L. Rep.* (Env’tl. L. Inst.) 21099 (D.C. Cir. 1989).

⁹The court observed that the Interior Department still has latitude in revising the regulations, and hinted that the court would approve limiting restoration cost to three times the lost-use value, and that lost-use value would be an appropriate measure of damages when physical restoration is not feasible. *Ohio v. United States Dep’t of the Interior*, 880 F.2d 432, 443–44 n.7, 19 *Env’tl. L. Rep.* (Env’tl. L. Inst.) 21099 n.7 (D.C. Cir. 1989).

¹⁰56 *Fed. Reg.* 19752 (Apr. 29, 1991).

¹¹Oil Pollution Act, Pub. L. No. 101-380, § 1006(g), 104 Stat. 484 (1990).

¹²*See* § 3:26 and § 3:39.

¹³Breen, *Citizen Suits for Natural Resource Damages: Closing a Gap in Federal Environmental Law*, 24 *Wake Forest L. Rev.* 851 (1989).

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¹There is both statistical and anecdotal evidence that government often acts at a snail’s pace in the environmental area. On the statistical side, a recent study evaluated EPA compliance with legally mandated timetables, that is, statutory requirements embodying congressional directives to perform particular acts by particular dates. EPA accomplished only 14 percent of these high-priority tasks on

Under existing law, this enforcement usually takes one of three forms. The first, the citizen suit to enforce standards or permits issued by traditional command and control regulatory agencies, has already been considered.² Such citizen suits are the least intrusive form of private environmental enforcement: they merely compel compliance with requirements already set by government regulators.

The other two forms of private enforcement of environmental protection both give the private enforcer substantially more control. The first is the private suit for injunctive relief, and the second is the private suit for damages. This subsection and the next address these forms of enforcement.

Private suits for injunctive relief are generally difficult to bring. While allowing public authorities to sue to abate public nuisances,³ the common law traditionally has been hostile to private lawsuits against public nuisances. Generally, the courts have given private plaintiffs standing only if they have been uniquely harmed by a public nuisance. The harm must be *qualitatively* different from, not just *quantitatively* greater than, that suffered by members of the public generally.⁴ Similarly, courts have restrictively interpreted the three state statutes that permit private citizens to sue to protect the public trust.⁵

Surprisingly, until very recently Congress has not been much more hospitable to private suits for injunctive relief. The first provision authorizing such suits was not enacted until the 1984 amendments to the Resource Conservation and Recovery Act. RCRA section 7002⁶ now permits “any person” to sue “any person” “who has contributed or who is contributing” to a hazardous waste or solid waste “imminent and substantial endangerment to health or the environment.” Essentially, this gives “imminent and substantial endangerment” injunctive relief authority under RCRA to private citizens as well as government regulators.⁷ However, this powerful expansion of “imminent and substantial endangerment” authority was not made a part of amendments to the Safe Drinking Water Act in 1986, CERCLA in 1986, the FWPCA in 1987, or the Clean Air Act in 1990.⁸

time. It performed only 55 percent of these priorities, whether on time or late. *See* Environmental and Energy Study Institute & Environmental Law Institute, *Statutory Deadlines in Environmental Legislation: Necessary but Need Improvement* 12-13 (Sept. 1985) (available in the library of the Environmental Law Institute). For an example of anecdotal evidence of government’s slowness in the environmental area, *see* ABA Standing Comm. on the Env’t, Panel Discussion, *Direct Governmental Review, Restriction, and Prohibition of Private Sector Transactions and Property Transfers*, 18 *Envtl. L. Rep. (Envtl. L. Inst.)* 10374, 10374–75 (1988).

²*See* § 3:25.

³*See* § 3:36.

⁴*See generally* Prosser and Keeton on the Law of Torts p 586–88. *See also* An Ounce of Prevention: Rehabilitating the Anticipatory Nuisance Doctrine, 15 *B.C. Env’t. Aff. L. Rev.* 627 (1988).

⁵The states with such statutes are Michigan, Minnesota, and Connecticut. *See* Gionfriddo, *Sealing Pandora’s Box: Judicial Doctrines Restricting Public Trust Environmental Citizen Suits*, 13 *B.C. Env’t. Aff. L. Rev.* 439 (1986).

⁶42 U.S.C.A. § 6972.

⁷*See* § 3:36.

⁸Congress contemplated adding such a provision to CERCLA, but concluded that the cases it would cover could already be brought under the RCRA provision. *See* Atkeson, Goldberg, Ellrod, & Connors, *An Annotated Legislative History of the Superfund Amendments and Reauthorization Act of 1986*, 16 *Env’t. L. Rep. (Envtl. L. Inst.)* 10360, 10409 (1986).

§ 3:40 Using the liability system to impose costs on polluters—Liability to private parties to pay damages for pollution

Common law has long recognized a private cause of action to recover for personal injury or property damage resulting from pollution. Actions brought under this tort doctrine form a large body of law.¹

Probably the largest hurdle for toxic tort victims is marshalling scientific evidence linking their injuries to particular pollutants, and these pollutants to particular polluters. Proving causation requires substantial sophistication and expense, and it is probable that many deserving victims have been unable to make their cases. Some recent federal legislation offers promise in this regard: CERCLA provides for federal studies of the relationship between particular injuries and particular pollutants, and the Emergency Planning and Community Right-to-Know Act requires polluters to publicly report their discharges of particular pollutants. These measures should ease victims' burdens of demonstrating causation. While there is no federal cause of action for toxic tort victims, most states recognize strict liability and similarly favorable legal theories.

Toxic tort actions play an important role in compensating victims of pollution, and they help deter pollution by making it costly for polluters. However, they have thus far been inadequate tools for protecting the environment because they only compensate for *personally suffered* damages. Pollution-caused disease, loss of property value, and pain and suffering are all compensable, but do not include losses to the *environment* separate from those to the plaintiff. For example, homeowners who sue a polluter for causing groundwater contamination can recover for their physical symptoms of contamination, for reduction in their homes' resale value, and for pain and suffering caused by their injuries, but they cannot recover for the effects of the contamination on the environment at large. Occasionally punitive damages are awarded that exceed the amount necessary to compensate for an individual's injuries. However, punitive damages are awarded to the plaintiff, not the environment, and there is no systematic correlation between punitive damages and otherwise uncompensated damage to the environment.

Consequently, some commentators have suggested that the environment itself ought to have standing to sue in tort. This concept has received some acceptance in the Supreme Court, though never as part of a majority opinion.² The next subsection considers this expansion of liability.

§ 3:41 Liability to the environment itself

The concept that the environment itself may have some legal rights has been most fully articulated in the works of Professor Christopher Stone.¹ One could imagine many sorts of environmental rights; one common formulation would grant an environmental entity, such as a river, a forest, or the atmosphere, the right to recover for damage done to it. That is, polluting an environmental entity would give that entity a cause of action in tort for injunctive relief (an order to the polluter to

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¹This body of law is the subject of another entire book in this series. M. Dore, *Law of Toxic Torts: Litigation/Defense/Insurance* (West Group Environmental Law Series).

²See *Sierra Club v. Morton*, 405 U.S. 727, 2 Env'tl. L. Rep. (Env'tl. L. Inst.) 20192 (1972) (Douglas, J., dissenting).

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¹The seminal article in the field is Stone, *Should Trees Have Standing?—Toward Legal Rights for Natural Objects*, 45 S. Cal. L. Rev. 450 (1972). Professor Stone has more recently expanded his reasoning in a book-length treatment of the issue, *Earth and Other Ethics* (1987). See also Zak, *Ethics and Animals*, *The Atlantic Monthly*, Mar. 1989, at 69 (advocating legal rights for animals).

stop or to clean up) or for damages (payments to remedy the pollution directly or to foster development of another environmental entity similar to the one damaged).

Of course, the environment cannot speak for itself and cannot make its own decisions; this would be done by guardians, appointed much as guardians are appointed to protect the legal rights of children or the mentally handicapped. The guardians could be environmental advocacy groups or court-appointed lawyers competent in the field. Their advocacy would be guided by a set of preferences imputed to the environment, including, for example, a preference for maintaining ecosystems' physical integrity and undisturbed natural cycles.

A system providing rights to the environment would not end human exploitation of the environment, but would require some compensation for that exploitation. It would therefore make development more costly. Indeed, such a system is attractive partly because it would make market prices capture more of the true costs of human activities.

Our current system does not recognize as a cost the loss to the ecosystem and to society of environmental amenities previously provided by resources used for development. When we want to use part of the ecosystem for our own ends we pay only what it is worth to the owner, not what it is worth to all of us, although we all rely on it for the basic necessities of life. Each time a forest is cut to build a resort, for example, the developer pays for bricks, mortar, labor, and other factors of production, but not for the loss of the forest to the ecosystem as a whole. But the forest is gone just the same, and the birds that had made their habitat there, the groundwater that had been recharged there, and the carbon dioxide that had been converted to oxygen there are all displaced. Some of the environment is usually lost in the process; there are fewer birds, less groundwater recharge, and less carbon dioxide conversion. Society gains whatever economic benefits the resort generates, but loses the amount by which the true value of the forest exceeded the amount the developer paid for it. In general, one would expect too much development when the economic and legal system does not impose costs on developers commensurate with losses to the ecosystem.

There is thus much reason to favor a system granting rights to the environment. But development of such a system will require sophisticated answers to a set of complex questions.

One difficulty is deciding what level of the environment should have legal rights. Should each individual tree have rights, or all trees of a particular forest, or all trees globally? Should salmon have rights of their own, or only as part of a coastal and riverine ecosystem? Answers to such questions can be important when a particular species is arguably interfering with the ecological balance: should killer bees migrating into the United States from Central America have rights? Answers to questions such as this can also be important even when the ecosystem is in balance: do wolves and caribou have separate rights to be separately protected, or only the right to continue their mutual antagonism free from human intervention?²

Perhaps the problem of assigning environmental rights is really the symptom of a more fundamental question: *why* give rights to the environment? There are at least three possible rationales that in some cases yield different results. First, rights can be assigned to the environment as proxies for the unasserted rights of people who use the environment, but whose individual rights are too small to defend. This makes the environment a sort of proxy for a class action suit. It is an effort to correct procedural flaws in the operations of markets and courts, not to change the underlying philosophies of the existing economic and legal systems. Alternatively, one could assign rights to the environment as a legacy to generations yet unborn. Existing markets and courts protect those who are now living; people destined to be

²See also § 10:58.

born many decades from now are not represented. Finally, one could grant rights to the environment because on moral grounds one thinks that nonhumans should have rights.

The last approach is not necessarily the most enlightened one. What happens when the rights of a nonhuman conflict with those of a human? Who should give way? Frequently, the humans who most need the help that would come from increased development are the poor. Prohibiting further environmental encroachment without redistributing the benefits of existing uses of the environment could freeze the existing social order. In that case, advocating rights for the environment would sound very much like the rich saying, “I’ve got mine, but you can’t have yours.”

In short, the question of whether to recognize environmental rights cannot simply be answered with a “yes.” That answer only opens the door for a whole set of linedrawing issues.

§ 3:42 New tools for effectively achieving environmental goals: A choice of practicalities and values

Environmental protection turns out to be a far subtler field than it might at first appear. The prescriptive approach of command and control regulation overlooks important tools that may supplement or replace that approach to better achieve environmental ends. The tools to choose depend on the environmental problem and the nature of the threat. This is a tactical question, to be answered based on what works as a practical matter. In general, many promising but underutilized tools would “privatize” environmental regulation by increasing the private sector’s incentives for environmental protection.

At the same time, the choice of tools can also depend on one’s view of why we protect the environment in the first place: for ourselves, for our descendants, or for the environment itself. This is at least partly a moral question, informed by fundamental views of the world and the human role in it. The question underlies many of the issues environmental law must resolve. The way society resolves environmental issues reveals much about its underlying moral structure, and can teach us much about ourselves if only we pay attention.

§ 3:43 Gridlock and its implications: A progressive response to the conservative agenda for reforming environmental law¹

In the aftermath of September 11, 2001, most of the nation’s domestic agenda has receded into the background of the public’s attention, eclipsed by news of the war on terrorism, the war’s effect on the economy, and-in fits and starts—the corporate scandals typified by Enron’s, Global Crossing’s, and WorldCom’s collapses. Environmental policymaking, in its routine form difficult for the popular media to master, sits in the last row of side-lined issues. Only such spectacles as polar bears

[Section 3:43]

¹Rena I. Steinzor. [Author’s note: I spent my sabbatical year, 2001-2002, at the Natural Resources Defense Council (NRDC). Although I accept full responsibility for the views expressed here, I must acknowledge my debt to my colleagues who participated in a May 2001 workshop sponsored by NRDC in order to define a progressive agenda for environmental law reform and a subsequent meeting with NRDC staff convened to discuss trading policy. I am especially indebted to NRDC staff members Linda Greer, Erik Olson, David Hawkins, Nancy Stoner, Jon Devine, Sharon Buccino, Wesley Warren, and John Walke for several productive discussions on the issues addressed here. Many of the academic participants in May 2001 workshop recently formed the Center for Progressive Regulation, and I am also grateful to them, especially Thomas McGarity, Eileen Gauna, and Clifford Rechtschaffen, who read and commented on this discussion, and to Sid Shapiro, Lisa Heinzerling, Frank Ackerman, Christopher Schroeder, and John Applegate for helping me to develop these ideas.]

running from oil rigs nudge these problems into the foreground, and then, only temporarily.²

Out of sight, of course, does not mean out of mind. Below the “water line” of politically visible debate, mid-level bureaucrats and regulated industries are actively engaged in efforts to change the rules of law and economics that determine whether the government intervenes in pollution-producing commerce. Talk of enacting so-called “second generation” legislation has subsided to a murmur. But at the administrative level, the debate over how best to streamline the system and eliminate distasteful regulatory requirements proceeds with unchecked vigor and enthusiasm.

Remarkable as it may seem for a set of initiatives with such profound implications, there is no readily accessible anthology of principles that respond to the conservative agenda from a progressive perspective. This Article is intended to fill that gap. To set the stage, the discussion explains the state of play in federal and state policymaking, although readers should not expect a comprehensive summary of pertinent developments. Its footnotes suggest a bibliography of additional sources for those who wish to pursue these ideas.

The most prevalent trend in reinvented environmental regulation is the adoption of “market-based” trading systems for air and water emissions. Federal and state trading regimes are multiplying rapidly regardless of the possibility that some need new statutory authority to be legal.³ The U.S. EPA and its state counterparts lead the development of these programs.

Other major conservative initiatives fall into three broad categories: (1) “sound” science and its implications for risk assessment; (2) the quality of the data used to support regulatory decisions; and (3) the role of cost/benefit analysis in shaping environmental programs. The Office of Management and Budget (OMB) leads the development of such “cross-cutting” policies, seeking to apply them government-wide, although EPA is clearly the agency everyone has in mind as most in need of rehabilitation. A final, very important area of reform, devolving additional authority to poorly funded and unevenly competent state and local governments, will not be addressed here for space reasons and because I have already written about it extensively.⁴

Why should anyone care to listen to these ideas? After all, from a conservative perspective, environmental activism is what spawned the existing generation of economically inefficient laws. Conservatives undoubtedly believe that it is time for different constituencies to dominate the debate over statutory and administrative design.

Or, to put the matter in crass political terms, at times it appears that the American people have all but forgotten those tense days in Florida in the winter of 2000. In the wishful thinking of conservative commentators, President George W. Bush’s post-September 11 extraordinarily high ratings in public opinion polls ratify the

²In a development that made front-page news, the U.S. Senate voted, 54 to 46, to defeat an effort to allow drilling for oil in the Arctic National Wildlife Refuge. *See* Hosler, *Senate Rejects Drilling in Refuge*; Long, *Heated Debate Pitted Need for Fuel Supply vs. Protection of Alaska Area*, *Balt. Sun*, April 19, 2002, at 1A.

³*See, e.g.*, the Draft 2002 Watershed Trading Policy issued by EPA’s Office of Water, available at <http://www.epa.gov/owow/watershed/trading/trading.policy.html>. The Clean Water Act does not recognize trading as a legal alternative to compliance by point sources with effluent discharge limits.

⁴*See, e.g.*, Steinzor, *Devolution and the Public Health*, 24 *Harv. Envtl. L. Rev.* 351 (2000); Steinzor, *EPA and Its Sisters*, at 30: *Devolution, Revolution, or Reform?*, 31 *Envtl. L. Rep. (Envtl. L. Inst.)* 11068 (Sept. 2001).

quiet revolution his senior political appointees are pursuing, making marginal—at best—those who fight a losing battle to preserve existing law.⁵

Embedded in this disdain for the progressive perspective is a conviction that, despite the myriad of polls finding broad support for environmental protection,⁶ the public does not really understand the scope or magnitude of the risks we face and supports stronger regulation on the basis of irrational phobias and lack of information about the true costs of environmental protection. Some conservatives have even gone so far as to characterize a clean environment as a “luxury good” that should be affordable only by the affluent.⁷ When this disdain for average citizens is taken to its logical extreme, reforms accomplished out of public view are absolutely justified lest public hysteria block achievement of a more rational and economically efficient system.

Such arguments rise to the level of dogmatic belief for those that espouse them, yet are so patently elitist that they are rarely articulated by politicians of any ideology. But it is crucial to recognize their importance as the foundation of other, apparently less offensive, conservative pronouncements. For example, the idea that costly regulation means that people have less money to spend on life’s essentials (food, clothing, housing, or medical care) is based on the assumption that consumer purchasing power is fixed and that environmental quality is something people must decide whether to buy, as opposed to placing other expenditures (the military, corporate subsidies, the tax rate imposed on America’s wealthiest people) on a par with safeguarding the natural environment. Indeed, comparative risk assessment is based on the notion that environmental quality is a matter of individual consumer preference as opposed to an imperative of civilized society as a whole.

Of course, progressives reject not just the notion that environmental protection is a luxury good, but the underlying assumption that this notion has any viability in

⁵There are already signs that this approval rating does not extend to domestic controversies and may not be as lasting as some hope. *See, e.g.*, Greene, President Warns Firms Against and Goes on Defensive about His Past; Seen as Potential Election Issue, *Balt. Sun*, July 14, 2002, at 1A.

⁶Just a few recent examples of polling results indicating unwavering public support for environmental protection, even if it costs more, include: Najor, Energy, Senate Proposal to Combat Crisis Finds Compromise on GOP, Democratic Interests, 32 *Env’t Rep. (BNA)* 874 (May 4, 2001) (reporting that the Sierra Club and the Melman Group had released a public opinion poll on April 26, 2002, finding that “by a 2 to 1 margin Americans prefer to solve our energy shortages by reducing demand rather than increasing supply”); Cook, General Policy, Groups Launch TV Ad Campaign Against Bush Environmental Policies, 32 *Env’t Rep. (BNA)* 768 (April 20, 2001) (reporting that a CBS survey of 660 adults, with a margin of error of four percent, found that “Americans by a 59-29 percent margin oppose [President] Bush’s decision not to seek carbon dioxide emissions reductions from power plants,” although a second poll conducted by Gallup found that only 34% of respondents thought Bush would weaken environmental protection. The Gallup poll, which involved 1,025 adults and has a 3% margin of error, also found that “81 percent support setting higher emissions standards on industry” and “77 percent support strong enforcement of federal environmental regulations.”); Najor, General Policy, Coalition Blasts Nomination of Norton, Warns Senate of Danger to Public Lands, 32 *Env’t Rep. (BNA)* 137 (Jan. 19, 2001) (reporting that a poll by bipartisan polling firms conducted shortly after the 2000 national elections found that “71 percent of voters said that issues involving clean air, clean water, and open space were primary factors in their voting decisions”); and Mobile Sources: U.S. Motorists Willing to Pay More for Cleaner Gasoline, *ALA Survey Says*, 29 *Env’t Rep. (BNA)* 1794 (Jan. 15, 1999) (“A survey of 1,000 people found 69 percent willing to pay” up to five cents extra per gallon to reduce air pollution.).

⁷The belief that a clean environment is a luxury good has been articulated by several prominent conservative commentators. *See, e.g.*, P.J. O’Rourke, *All the Trouble in the World* 201 (1994) (“Neither is a ‘clean environment’ a political right of humans. Rights must be free. . . You have the right to bear arms. You don’t have the right to take a gun without paying for it. Pollution control is not free. . . The environment turns out to be the “luxury good” that Cato Institute’s Jerry Taylor said it was.”). *See also* Making the Poor Pay for Pollution, *Wash. Times*, Sept. 20, 1993, at A22 (“A squeaky-clean environment is something of a luxury, one that is hard for the poor and minorities to afford.”); Kinsley, *Twilight Zones*, *New Republic*, May 25, 1992, at 6 (“There is actually a serious argument that protections for health, safety, and the environment are luxury goods that poor people should have less of.”).

America's pluralistic and democratic society. Justifying the sale of this "commodity" only to those who can afford it conflicts with the core American value that all human lives are equally valuable and worth saving. Far from an expendable enhancement of the enjoyment of life at the margins, pollution threatens public health at the most basic level, literally making it difficult for inner city children to breathe. The problem at the moment is not that the concept of environmental quality as a luxury good is compelling, but rather that the best antidote to this elitist view is the light of day. In the aftermath of September 11, which provoked the reemergence of America's preoccupation with foreign enemies to levels not seen since the disintegration of the Soviet Republic, leveraging public outrage in support of health, safety, and environmental regulation is far more difficult.

Three additional realities threaten conservatives' urge to marginalize progressive views. The first is the fact that the backlash predicted by progressives has followed every similar period of stealth reform, beginning with President Ronald Reagan's appointment of Anne Gorsuch Burford and James Watt to his Administration's leading environmental posts. As Republican pollsters have reminded their clients on previous occasions, environmental policy is a "third rail" and only the foolish tamper with it regularly.⁸ The 104th Congress led by Newt Gingrich (R-GA) was forced to back off similar reforms; the chief difference today is that, for the moment, they are being pursued out of the public view that compelled the demise of the antiregulatory provisions of the Contract with America.

Second, in a larger sense, environmental policy is in "equilibrium" at the moment with neither the right nor the left able to vanquish the other side. By equilibrium, I mean that, despite strong differences among affected constituencies, little has changed in the big picture. Neither the right nor the left ends of the political spectrum has accomplished its stated goal of fundamental, structural reform. So long as statutes constructed by environmental activists remain on the books, Congress remains gridlocked,⁹ and conservatives dominate the administrative process, lasting and profound change will prove very difficult to accomplish without finding some measure of common ground. For anyone actually committed to permanent reform, efforts to tune out the opposition can only prove self-defeating, precisely because it is so much more difficult to rewrite the law than it is to undermine implementation.

Finally, if something goes visibly wrong—for example, air pollution in America's largest cities gets significantly worse, nutrient loading of surface waters causes intense "red tides" and fish kills, or the weather persuades the public that the climate has already changed irrevocably for the worse—the Bush Administration will be held politically accountable, putting environmentalists back in the game in a way that even the most committed conservatives cannot ignore.

The discussion begins with a short explication of unifying beliefs that shape the progressive attitude toward environmental law reform. It then applies those principles to a consideration of emissions trading, the premier market-based remedy. The section next turns to the cross-cutting initiatives launched by OMB, explaining the progressive view on sound science, data quality, and cost/benefit analysis.

Unifying principles

Obviously, I was already in trouble when I began with the goal of describing a

⁸See, e.g., Lee, *GOP Is Warned of Backlash on Environment, Rolling Back Legal Safeguards, Cutting Funds Could Cost the Party Votes, National Poll Indicates*, Wash. Post, Jan. 24, 1996, at A6 ("Attacking the [EPA] is a non-starter," concluded a report by leading GOP pollster Linda DiVall.')

⁹Congress appears to be gridlocked on every piece of environmental legislation that does not enjoy such broad support as to be politically failsafe. The only two major environmental laws reauthorized in the last decade were the Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C.A. §§ 136-136(y), ELR Stat. FIFRA §§ 2-34 as amended by Pub. L. No. 104-170, 110 Stat. 1489 (1996), and the Safe Drinking Water Act, 42 U.S.C.A. §§ 300f to 300j-26, ELR Stat. SDWA §§ 1401 to 1465 (1994) as amended by Pub. L. No. 104-182, 110 Stat. 888 (1996). Both were passed only after the negotiation of bipartisan compromises.

“progressive” agenda, without defining what views or positions might qualify as “progressive,” a controversial undertaking in and of itself. In a fit of what undoubtedly boils down to *hubris*, I will forge ahead, suggesting the threshold principles that are embraced by those I mean to cover with this simplistic label. (You know who you are.) I intend for these ideas to be applied in a flexible manner, as opposed to hardening into a precise “litmus test” for screening worthy adherents to a fixed political ideology.

A progressive agenda rests on the premise that the public’s health—regardless of class, race, ethnicity, gender, or age—must be protected from the consequences of industrial and agricultural activity. A clean environment is in the nature of a birth right and not a luxury good affordable only by the wealthy, as postulated by some conservatives. Further, this birth right extends to the natural world, whether or not the human activity at issue compromises public health, because those resources belong to future generations as much as they do to those of us fortunate to inhabit the earth at present.

*Government is the institution best suited to protect and restore this birth right because the “tragedy of the commons” is so powerful.*¹⁰ Corporations and other institutions are organized around different values and should not be expected to counteract the damaging effects of their activities without some compulsion from government. Progressives also reject the newly chic notion that the government must entice industry to cooperate voluntarily to protect the environment, as opposed to prescribing behavior. We do not see convincing evidence that voluntary measures have ever worked as well as enforceable mandates.

In the same vein, progressives believe that polluters should be required to internalize the costs of their pollution to the maximum extent practicable, an idea that is consistent with free market theory even if reasonable people could disagree about whether this outcome will happen on its own, without government intervention. Paradoxically, “polluter pays” is among the most embattled maxims of environmentalism these days. Conservatives are making significant progress with the argument that the left harbors a deep, nearly psychotic hatred of corporations. Thus, they charge, much of our motivation is to punish rather than to protect. If progressives wish to be more effective, we must be wary of enhancing these allegations with poorly chosen rhetoric.

Although progressives favor government action that results in the internalization of costs by the entities that cause harm to public health and the environment, we firmly reject the related notion that all other effects of regulation can and should be translated into numerical terms, or “monetized” in the lexicon of cost/benefit analysis. Of course, costs and benefits are very important considerations, and people have an irresistible temptation to express them in mathematical terms. The fatal mistake is to step across the line between asking decision-makers to weigh those factors and requiring them to achieve the bogus goal of ensuring that benefits, to the dollar, always outweigh costs, with this artificial equation the sum total of what determines final decision.

As just one example of cost/benefit analysis taken to a ludicrous extreme, consider the latest device conceived by the Administration’s chief enforcer against economically inefficient regulation. John Graham, former head of the Harvard Center for Risk Analysis and now the director of the OMB’s Office of Information and Regulatory Affairs (OIRA), has mounted a concerted campaign to expand the use of monetized cost/benefit analysis, including the use of the concept of “quality-adjusted

¹⁰The theory of the “tragedy of the commons” posits that each individual citizen has such a small stake in the health of the environment that these common resources will be squandered unless extraordinary steps are taken to preserve them. Hardin, *The Tragedy of the Commons*, 168 *Sci.* 1243 (1968).

life years saved,” or QALYs.¹¹ This approach considers the quality of life experienced by the human being who is exposed to the risk; generally toxic chemical exposure, downgrading the benefits of sparing them those risks in terms of whether their quality of life is otherwise good or bad from a supposedly objective perspective. Or, in other words, a year in the life of a grandmother with asthma, arthritis, or cerebral palsy is worth significantly less than a year in the life of a healthy, twenty-something investment banker who attends aerobic class daily. Thus, QALYs empower bureaucrats to engage in an elaborate, pseudo-scientific triage of various sub-populations.

A final notable anomaly in the spectrum of today’s political debate is the agreement of both sides that reliable information is an important component of wise policymaking. Conservatives and progressives approach this fundamental truth from different directions, reaching diametrically opposed conclusions about what should be done when this information is missing.

In general, progressives believe we should take regulatory action in the face of such uncertainty when failing to act poses a risk to the environment and, especially, public health. Commonly referred to as the “precautionary principle,” this preference for protective action is grounded at least in part in our cynicism about the government’s ability—and industry’s will—to close the knowledge gaps that plague us. We are disturbed by the weakness of our scientific understanding of the consequences of exposure to common pollutants, both with respect to people and as experienced by complex ecosystems, but we do not believe we can afford to wait until these data gaps are filled to take protective action.

Conservatives dispute this principle, arguing that it is a transparent excuse for regulating without meeting even a minimal “burden of proof.” They maintain that unimpeded “free” markets should be the presumptive norm and contend that government intervention is inappropriate for so long as information remains incomplete and uncertain, citing, again, the costs to the individual citizen of wasting money on excessive regulation.

Progressives believe that public health and natural resources are endangered by inaction to control pollution, especially in such areas as climate change, unhealthy air quality, and nutrient and toxic loadings in surface water. We reject the argument that the bureaucracy has run amok, over-regulating to the point that costs dwarf benefits.

Progressives are also extremely reluctant to embrace any of the new “silver bullets” advanced by conservatives for addressing what we think is a dramatically exaggerated problem of over-regulation. Whether couched as ensuring the use of sounder science, enhancing the quality of the data used by government, or expanding the application of cost/benefit analysis, we are convinced that these initiatives represent a thinly-veiled effort to stifle even the scant activity we see from health and safety regulatory agencies.

Progressives recognize that the regulatory process is a chaotic, time-consuming, ossified blend of policy, power politics, science, popular imagery, misguided perception, anxiety, fact, and common sense. By the time a rule crawls, belly down, across the finish line, those responsible for writing it have heard every fact, opinion, and threat that a large army of outside, especially industrial, constituencies can think to make. The sheer messiness of this process is inefficient, to be sure but is also unlikely to lead to precipitous, unwarranted action.

¹¹For explanations and critiques of QALYs, see Comments submitted by the Center for Progressive Regulation on the Draft 2002 Report to Congress on the Costs and Benefits of Federal Regulations, May 28, 2002, at 11-12, available at: <http://www.ombwatch.org/regs/2002/cprcomments>; Statement of Alan Krupnik, March 29, 2002, available at: <http://www.rff.org/news/newsarticles/keyeconomisurges.htm>; Nord, Cost-Value Analysis in Health Care: Making Sense Out of QALYs (1999).

Too often, our argument that government is not doing enough is characterized as a blanket endorsement of everything government has done. Well aware of the body blow this allegation administers to progressives' credibility, I hasten to add that we can see many examples of silly rules on the books. My personal favorite is the endlessly complex regulatory regime established to control hazardous waste that, cumulatively, applies to only a small fraction of the truly dangerous wastes that the nation generates. But to concede that there are silly rules—and even to agree to work on repealing them—gets us nowhere in an atmosphere where the ills of the system are overstated so harshly. The best way to demonstrate that we are willing to engage in the debate over reform is to apply the principles articulated above to four central ideas of the conservative agenda.

Toward better bubbles: A taxonomy of trading systems

In theory, trading systems enable sources with high compliance costs to pay those with lower costs to accomplish required reductions, thereby achieving the most economically efficient pollution control. Panacea to their proponents and anathema to their critics, trading systems share a few central characteristics. Covered sources receive an initial allocation of “credits” or “allowances” that constitute mini-licenses to emit a specified amount of pollution over a specified period; for example, one ton over a single year. Sources with “surplus” or “excess” allowances—that is, more tons of paper “permission slips” than they need to cover the emissions or discharges produced by their normal operations—may sell those allowances to sources with too few.

The legal status of allowances was considered when they were first introduced at the national level. Title IV of the 1990 Clean Air Act (CAA) Amendments states explicitly that allowances to emit sulfur dioxide from plants do not constitute a “property right” vested in the entity that receives them initially or purchases them on the open market.¹² This approach has evolved into an assumption that trading, including the award of allowances, is a regulatory approach that the government may cancel at will. To the extent that federal and state legislatures omit such language and establish trading as a corporate entitlement program, they run the risk that failing trading systems will become inordinately expensive to cancel.

Although allowances do not constitute property rights as a legal matter, the ground rules for allocating them can have major economic implications. The aggregate number of allowances allocated to all covered sources is referred to as a “cap,” and defines the environmental benefits of the trading regime. Caps are typically designed to decline, achieving continuous improvements in environmental quality.

Caps are generally viewed as an indispensable feature of trading systems. However, some industry representatives and state regulators have advocated so-called “open market trading” systems that do not impose a cap on total emissions, but instead rely on *allowable* limits in individual permits to allocate allowances. These systems authorize unrestricted trading of emission reductions that have already been accomplished.¹³ Under the Clinton Administration, EPA abandoned efforts to issue a federal regulation that would facilitate such programs.¹⁴ But the Agency recognized the validity of the approach in its 2001 *Guidance for Improving Air Quality Using Economic Incentive Programs*.¹⁵ Environmentalists have called for

¹²42 U.S.C.A. § 7651b(f), ELR Stat. CAA § 403(f).

¹³Air Pollution: Advantages of Open-Market Trading Touted in Report by Trading Demonstration Project, 27 Env't. Rep. (BNA) 907 (1996).

¹⁴Zacaroli, Emissions Trading: House Commerce Chair Seeks Answers on Fate of EPA Open Market Trading Rule, 28 Env't Rep. (BNA) 2290 (1998).

¹⁵U.S. EPA, 2001 Guidance for Improving Air Quality Using Economic Incentive Programs, available at: <http://www.epa.gov/ttn/oarpg/t1main.html>.

a moratorium on such programs¹⁶ and have strenuously opposed EPA proposals to approve open market programs in Illinois, Michigan, New Hampshire, and New Jersey, asserting that such initiatives are a “polluter’s dream.”¹⁷ As this [Article] goes to press, EPA had not yet made decisions on those approvals.

The initial distribution of allowances is the focus of intense jockeying among participants. This allocation process is known as establishing a “baseline.” Sources receive allowances according to the amount of emissions or discharges they produced in a given baseline period (usually a year). Because production and resulting pollution fluctuates for both market-wide and facility-specific reasons, defining baselines in relationship to a single “representative” year may impose hardship on sources with abnormally low levels of production during the period or on sources planning to expand production. Inevitably, covered sources attempt to negotiate exceptions to the baseline chosen, increasing their initial allocations.¹⁸ This process can be quite useful politically, giving legislators and regulators currency to buy support for the overall scheme, so long as such concessions do not become secret additions to the overall cap on emissions.

Another, related allocation issue is whether allowances should be based on the “actual” emissions or discharges produced in a given period, as opposed to the “allowable” emissions or discharges authorized in the participant’s facility-specific permit or the applicable CAA state implementation plan.¹⁹ Regulated entities offered an opportunity to either add a trading scheme to their compliance options or to substitute trading for regulatory requirements are likely to argue that permit limits represent “acceptable” levels of pollution and that baselines should be set on the basis of allowable—not actual—emissions or discharges. Because state air and water permitting systems are under-funded and erratic, producing requirements that are outdated and overly lenient, allowable permit levels are often considerably higher than what sources have actually achieved in practice. Basing allocations on allowable permit levels or on levels of emissions or discharges that occurred several years ago, at a time of extraordinarily high production, can result in allocations that introduce significant increases in both overall and localized emissions.

Industry representatives might respond to this concern by pointing out that the leeway provided by using allowable permit levels enables future expansion of facilities and economic development. Yet it makes no difference from a public health perspective whether those additional pollution loadings result under a traditional regulatory system or a trading regime. Embedding the decision to allow them in the relatively obscure question of how many allowances to allocate initially can have the result of avoiding an important debate over whether new sources should be sited at that location or whether the cumulative burden is already too high.

Last but not least, no taxonomy of trading would be complete without an explanation of the traditional forms of regulation that provide a back-drop, safety net, or

¹⁶Cook, *Emission Trading: Coalition Calls for EPA Moratorium on Open Market Emissions Trading*, 32 *Env’t Rep.* (BNA) 1125 (2001).

¹⁷Cook, *Implementation Plans, Environmental Groups Attack EPA Approval of New Jersey Open-Market Emission Trading*, 32 *Env’t Rep.* (BNA) 529 (2001) (reporting on the controversy surrounding proposals in New Jersey, Illinois, Michigan, and New Hampshire).

¹⁸The acid rain title of the 1990 CAA Amendments was the product of years of such maneuvering and represented the best in old-fashioned political log-rolling and compromise, as the baseline was modified for the constituents of particularly powerful utilities. *See* 42 U.S.C.A. § 7651c, ELR Stat. CAA § 404(c) (allocating allowances to individual facilities and on the basis of a series of complicated rules).

¹⁹The CAA requires states to develop budgets for specific categories of emissions in order to meet national ambient air quality standards. 42 U.S.C.A. § 7410, ELR Stat. CAA § 110.

alternative to such regimes.²⁰ Traditional regulation may be employed as a “floor” for trading regimes that promise additional environmental benefits. Trading may be used as a substitute for traditional regulation that is already in place. Or trading may be applied to pollution problems that are not yet regulated, in lieu of traditional regulation.

The first category of traditional regulation is the establishment of “health-based standards” that define levels of ambient pollution that will not impose intolerable adverse effects on the public health. It is hard to imagine a politically viable proposal to allow trading with a cap set deliberately higher than health-based levels. Rather, the problem is that there is a dearth of such standards because EPA and the states have had such grave difficulties in developing them. EPA has promulgated six, health-based national ambient air quality standards (NAAQS), for example, covering carbon monoxide, nitrogen dioxide, ozone, lead, sulfur dioxide (SO₂), and particulates.²¹

The clearest alternative to health-based rules is the application of “technology-based standards,” which have been the remedy of choice under the Clean Water Act (CWA) for three decades. Technology-based standards select the most effective pollution control devices that are available at a reasonable price, calculate the levels of emissions that are achieved by sources using such equipment, and require that all sources install them. In essence, this approach rests on the rationale that we must do the best we can to protect the environment, as opposed to doing what is necessary to achieve “safe” ambient levels of pollution.

Technology-based standards are much maligned by conservative scholars because they require all sources to install the same controls even though some sources could reduce emissions or discharges for a significantly lower cost and regardless of the absorption capacity of the receiving media. Thus, these commentators argue, it is far more efficient to allow such sources to assume the burden of reducing for everyone.²² Because trading allows sources with the lowest compliance costs to achieve reductions on behalf of everyone else, it is typically offered as a far preferable, economically efficient alternative to technology-based regulation. Or, in other words, trading in theory achieves the same improvements without forcing the sources confronting the highest retrofit costs to waste their money.

The fly in this particular ointment, however, is the real world problem of imperfect information that once again confounds what supposedly is an easy choice. The beauty of technology-based standards is that, unlike the implementation of health-based standards, they do not require extensive analysis of complete data about ambient conditions. Ordering sources to install the best available control technologies is relatively easy from a regulators’ perspective because the only questions in a subsequent enforcement action are whether the equipment was in fact installed and was operated correctly, sparing regulators the complex task of determining whether ambient conditions are acceptable. In contrast, establishing declining caps without reference to reductions achieved by specific control devices involves considerably more guesswork.

Conservatives would respond that trading creates incentives for technological innovation that are smothered by mindless technology-based standards. Again, this observation is theoretically true, provided that allowances are scarce or, in other words, that caps are set low enough. In those circumstances, the dirtiest sources among regulated industries cannot escape the system’s demands by buying plentiful

²⁰There are other forms of regulation—*e.g.*, the imposition of liability or information disclosure requirements—that are not considered alternatives to trading regimes.

²¹For an insightful discussion of why EPA has found it so difficult to set NAAQS, see Percival et al., *Environmental Regulation: Law, Science and Policy* 551-70 (3d ed. 2000).

²²*See, e.g.*, Ackerman & Stewart, *Reforming Environmental Law*, 37 *Stan. L. Rev.* 1333 (1985).

and cheap allowances, and all sources have adequate incentives to develop ways to reduce their emissions. In the absence of the right design, trading is not any more likely to produce more innovation than a traditional technology-based system, and both their advocates and their opponents should recognize that threshold fact.

The ethics of trading

Despite their settled legal status, from an ethical perspective, there is a difference between having the government award sources a legally-sanctioned opportunity to pollute and having the government use its authority to impose limits on pollution. Trading conflicts with the moral precept that environmental quality belongs to the public at large and is not for sale. Whether or not allowances rise to the level of a preexisting “right,” they are traded for money. Therefore, they are premised on the notion that the government not only is entitled to place an economic value on the public interest in natural resources, but remains free to sanction the buying and selling of those resources.

For the same reasons, trading confounds the idea that we hold the earth in trust for our children.²³ From this perspective, the government controlled by today’s adults has no moral authority to sanction economic transactions involving compromises in environmental quality over a period beyond our expected life span.

Of course, these ideas also apply to more traditional approaches to controlling pollution. In that context, we also tolerate the degradation of nature, in effect appropriating our children’s interest in environmental quality, because we do not wish to pay—or we have not been able to find a way—to clean up our own mess. Still, the government’s active participation in facilitating the buying and selling of such compromises can be viewed as a significant ethical departure from traditional regulation, which at least recognizes that pollution should be controlled, as opposed to traded like any other commodity.

Advocates of trading might well respond that these arguments are as sentimental as they are theoretical. In fact, they would argue, such lofty moral principles represent a distinction without a difference when it comes to evaluating the actual impact of either form of intervention in the real world. Both traditional regulation and trading schemes result in more or less pollution depending on how they are implemented. Because trading schemes are more palatable to regulated industries, as well as more efficient, they may achieve greater reductions than traditional regulatory approaches. Fretting over abstract ethical distinctions is an enterprise for under-employed law professors and should matter little to anyone else.

Arguing that trading is a more economically efficient way to achieve better environmental quality is reasonable. However, going so far as to suggest that regulated entities are entitled to be governed by less expensive systems is problematic for the same reasons that it is difficult to reject an appropriately structured, well-run trading system solely on ethical grounds. Trading may well be a reasonable solution in some circumstances. But regulated industries do not have any ethically principled reason to insist on the establishment of trading. Rather, the full spectrum of affected constituencies must make a judgment whether trading is a “good deal” in any particular context.

Activists, particularly those attuned to the environmental justice implications of trading, protest such schemes on moral grounds, implicitly claiming that trading marks a significantly worse approach to controlling pollution than traditional regulation.²⁴ I do not think that this argument is the best one to make because trad-

²³As Lester Brown, founder of Worldwatch, once wrote: “We have not inherited the earth from our fathers, we are borrowing it from our children.” Lester Brown, *Building a Sustainable Society* (1982).

²⁴See, e.g., Drury et al., *Pollution Trading and Environmental Injustice: Los Angeles’ Failed Experiment in Air Quality Policy*, 9 *Duke Envtl. L. & Pol’y F.* 231, 268-72 (1999) (quoting Chief

ing is no more—or less—objectionable ethically as setting limits on emissions through reference to such perverse cost/benefit methodologies as the discounting of future lives.

Nevertheless, I understand fully why their objections are couched in these terms. As the next section explaining California's experiences with trading illustrates, trading schemes have proved vulnerable to abuse that results in absolutely unacceptable concentrations of life-threatening pollutants in areas where large numbers of people of color live. Given this history and the foreseeable distributional inequities that can result from trading, activists believe that they must frame their opposition to trading in moral terms, rather than engaging in a nice, dry debate over the details of designing trading schemes to avoid those outcomes. Activists are undoubtedly right to wonder whether they can be successful in achieving a trading scheme that has sufficient safeguards and, even if they can, whether trading advocates will accept their specific design prerequisites.²⁵ As long as trading has such a mixed reputation and conservatives pursue it with such zeal, the perception that it is immoral on some fundamental level will persist.

Field tests of trading

As the two most prominent field tests illustrate, trading systems have been most successful when a single pollutant is involved; the pollutant does not pose a risk to public health except at extraordinarily high levels but does have a cumulative, long-term impact on the environment; sufficient methodologies exist to document actual emissions and therefore to count allowances accurately; and the market for trading is large enough—and the cap on total emissions low enough—to achieve adequate incentives for a critical mass of sources to reduce their emissions voluntarily. Trading is especially useful in solving environmental problems like greenhouse gases and acid rain because it sets up a situation where industry's enthusiasm for "compliance flexibility" is leveraged to break political deadlocks that forestall any other kind of regulatory action.

For the most part, the acid rain program has worked as expected, achieving expected reductions in sulfur dioxide emissions. One can certainly question whether the cap was low enough. But no one has stepped forward with credible evidence that these reductions have not occurred. Even more important, the use of trading produced a political miracle, moving a comprehensive reauthorization of the CAA forward after 13 years of gridlock. Affected parties fought over how to cut up the pie, rather than whether to bake one in the first place.

On the other hand, trading has failed catastrophically when caps are set too high to motivate pollution reductions; there are no effective mechanisms to count allowances, track trades, and prevent fraud; and trading is applied to toxic substances without effective limits on localized concentrations of emissions, or "hot spots." Two efforts by California's South Coast Air Quality Management District (SCAQMD) to reduce smog in Los Angeles are poster children for such fiascos, setting back progress in achieving environmental quality and awarding an unjustifiable windfall to industry.²⁶

In the mid-1990s, SCAQMD launched the RECLAIM program, which allowed utilities and other major stationary sources to trade SO₂ and nitrogen oxide (NO_x)

Seattle: "What is it that the white man wishes to buy, my people ask me? The idea is strange to us. How can you buy or sell the sky, the warmth of the land, the swiftness of antelope? How can we sell these things to you and how can you buy them?")

²⁵For a thoughtful discussion of the concerns of environmental justice advocates, see Gauna, EPA, at 30: Fairness in Environmental Protection, 31 *Envtl. L. Rep. (Envtl. L. Inst.)* 10528 (May 2001).

²⁶For an excellent explanation of all these developments and their implications, see Drury et al., *Pollution Trading and Environmental Injustice: Los Angeles' Failed Experiment in Air Quality Policy*, 9 *Duke Env'tl. L. & Pol'y F.* 231, 268-72 (1999).

credits under a cap on total emissions,²⁷ and the Rule 1610 “Car Scrapping” program, which allowed operators of large stationary sources to buy their way out of compliance with CAA controls by paying owners of old, dirty cars about \$600 per vehicle to take them off the road.²⁸ The failure of both programs is directly attributable to fundamental flaws in their design.

The RECLAIM program’s cap was set too high, in part, because it based initial allocations of credits on *historically higher* levels of pollution for covered sources, as opposed to the *lower* levels of *actual* emissions at the time the program began.²⁹ Compounding this error, the program *supplanted*, as opposed to *supplementing* existing technology-based requirements, leaving no “safety net” to prevent excessive emissions from individual sources.³⁰ As a result of these threshold errors, in the first three years of its operation, the program resulted in a decrease in *actual* emissions that was very modest—about 3%.³¹

Because the initial cap did not create enough of a sufficient scarcity of allowances to motivate covered plants to install pollution controls, few sources installed pollution controls that would enable them to generate additional allowances as the cap declined. Apparently, most owners and operators concluded that they could purchase credits later, as the cap declined. In fact, at one point, NO_x allowances were so plentiful that sources gave 85% of them away for free.³² Eventually, SCAQMD was forced to admit that the “cross-over point” when the demand for allowances would exceed the supply allocated to sources would not occur until 1999 for NO_x (six years after the program began) and 2001 for SO₂ (eight years later).³³

The ultimate calamity for the system came in the spring of 2001, when a short supply pushed the price of NO_x allowances as high as \$45,000/ton.³⁴ In the midst of the hysteria provoked by the California energy crisis, SCAQMD hastily pulled utilities from the system, giving them a three-year grace period to return to compliance with traditional regulatory requirements. SCAQMD insists that the peaks in emissions produced by these developments will be short-lived, and it is forcing the utilities to pay \$7.50 per ton of excess emissions into a “mitigation fund” to be used to fund air quality improvements.

Because RECLAIM cratered in the midst of the California energy crisis, trading enthusiasts generally ignore the experience, wrongly attributing its failure to those unusual circumstances. But the program’s demise was predictable from the day the cap was set, and would have happened regardless of the energy crisis, which involved problems with pricing and supply, as opposed to a sudden spike in demand that would have required significantly increased production levels.

The SCAQMD car scrapping program contained similarly fundamental flaws in design, placing no limits on the amount of allowances stationary sources were able

²⁷Drury et al., Pollution Trading and Environmental Injustice: Los Angeles’ Failed Experiment in Air Quality Policy, 9 Duke Env’t. L. & Pol’y F. 231, 247-50 (1999) (describing RECLAIM).

²⁸Drury et al., Pollution Trading and Environmental Injustice: Los Angeles’ Failed Experiment in Air Quality Policy, 9 Duke Env’t. L. & Pol’y F. 231, 246-47 (1999) (describing the Rule 1610 program).

²⁹Drury et al., Pollution Trading and Environmental Injustice: Los Angeles’ Failed Experiment in Air Quality Policy, 9 Duke Env’t. L. & Pol’y F. 231, 263-64 (1999).

³⁰Drury et al., Pollution Trading and Environmental Injustice: Los Angeles’ Failed Experiment in Air Quality Policy, 9 Duke Env’t. L. & Pol’y F. 231, 263-64 (1999).

³¹Drury et al., Pollution Trading and Environmental Injustice: Los Angeles’ Failed Experiment in Air Quality Policy, 9 Duke Env’t. L. & Pol’y F. 231, 263-64 (1999).

³²Drury et al., Pollution Trading and Environmental Injustice: Los Angeles’ Failed Experiment in Air Quality Policy, 9 Duke Env’t. L. & Pol’y F. 231, 266 (1999).

³³Drury et al., Pollution Trading and Environmental Injustice: Los Angeles’ Failed Experiment in Air Quality Policy, 9 Duke Env’t. L. & Pol’y F. 231, 267 (1999).

³⁴Whetzel, California: South Coast District Air Regulators Change NO_x Program Due to Energy Crisis, 32 Env’t Rep. (BNA) 985 (May 18, 2001).

to purchase and failing to supervise the retirement of the cars that supposedly generated emissions reductions.³⁵ The predictable result was the creation of extreme toxic hot spots containing intolerably high levels of pollution in the vicinity of four marine terminals owned by Unocal, Chevron, Ultramar, and GATX. Exposure to these hot spots resulted in a cancer risk greater than 150 in 1,000,000 for the “maximum exposed individual.”³⁶ The neighborhoods around the terminals range from 75-90% people of color, compared to an overall people of color population of 36% throughout the South Coast district covered by the car scrapping rule, making the program one of the most egregious examples of environmental injustice in memory.³⁷

Compounding these problems, SCAQMD auditors found rampant fraud in the program because owners of old vehicles were paid to retire their vehicles, the bodies of the cars were scrapped, but the engines were transferred into other vehicles that kept on running.³⁸ Further, stationary sources appear to have underreported their emissions significantly, in order to save money by purchasing fewer allowances.³⁹ Sham trading not only deprives the public of the immediate benefits promised by such programs, but illustrates how difficult *and* expensive it can be for the government to run properly administered trading programs. To use a term popularized by conservative commentators, there is “no free lunch” here, just as there is not in the arena of traditional regulation.

No thoughtful observer of the existing regulatory system could deny that the gap between paper rules and practical applications is increasing exponentially as states fall further and further behind in their struggle to implement the law. Most states cannot even manage to keep stationary source permits current, much less take the systematic enforcement actions necessary to serve as a deterrent for further violations.⁴⁰ Industry has a point in arguing that environmentalists too seldom acknowledge that the existing system is crippled in many places.

On the other hand, one of the most disconcerting aspects of the growing popularity of trading these days is the absence of any acknowledgment that the California experiments were such spectacular failures. Acid rain is invoked as a kind of mantra to prove that trading will work in virtually any context. Trading enthusiasts sideline environmentalists and other public interest representatives who might raise these problems as much as possible.⁴¹ The upshot is an important, lost opportunity to learn from the mistakes of the immediate past, advancing trading cautiously, not as a miracle cure but as a system, like any other, that fails when it is designed improperly.

Progressive principles for the design of trading regimes address four discrete

³⁵Drury et al., Pollution Trading and Environmental Injustice: Los Angeles’ Failed Experiment in Air Quality Policy, 9 Duke Env’tl. L. & Pol’y F. 231, 258-263 (1999).

³⁶Drury et al., Pollution Trading and Environmental Injustice: Los Angeles’ Failed Experiment in Air Quality Policy, 9 Duke Env’tl. L. & Pol’y F. 231, 253 (1999).

³⁷Drury et al., Pollution Trading and Environmental Injustice: Los Angeles’ Failed Experiment in Air Quality Policy, 9 Duke Env’tl. L. & Pol’y F. 231, 254 (1999).

³⁸Drury et al., Pollution Trading and Environmental Injustice: Los Angeles’ Failed Experiment in Air Quality Policy, 9 Duke Env’tl. L. & Pol’y F. 231, 261 (1999).

³⁹Drury et al., Pollution Trading and Environmental Injustice: Los Angeles’ Failed Experiment in Air Quality Policy, 9 Duke Env’tl. L. & Pol’y F. 231, 260 (1999).

⁴⁰For a fuller discussion of these issues, see Steinzor, EPA and Its Sisters, at 30: Devolution, Revolution, or Reform?, 31 Env’tl. L. Rep. (Env’tl. L. Inst.) 11068 (Sept. 2001).

⁴¹One concrete example of this disturbing phenomenon is that on June 13, 2002, I was invited to testify before the U.S. House of Representatives’ Subcommittee on Water Resources and the Environment at a hearing entitled “Water Quality Trading: An Innovative Approach to Achieving Water Quality Goals on a Watershed Basis.” Out of seven witnesses, I was the only one who could be described as anything but an enthusiastic booster of trading, in general and in this specific context.

issues: (1) whether trading produces results that are at least equivalent to other regulatory alternatives; (2) whether trading produces continuous, enforceable improvement of environmental quality; (3) prevention of the formation of hot spots posing a threat to human health and the environment; and (4) the elimination of “sham” trading and other forms of waste, fraud, and abuse.

First and foremost: Do no harm

At the threshold, trading systems should do no harm, either with respect to the overall condition of the ambient environment or with respect to localized concentrations of pollution. Such a straightforward statement is likely to be greeted with impatience by trading advocates, who are convinced that trading, by definition, produces cleaner, and not just cheaper, results. Yet achievement of this presumably noncontroversial principle turns out to be far easier said than done.

In order to verify the absence of harm we must understand—and continue to monitor—the conditions of the ambient environment that will be affected by trading. To prevent sham trading, we must also have a reliable method for counting—and continuing to track—the emissions or discharges produced by covered sources. If we cannot gauge the impact of trading through both of these methods, the system flies blind and is likely not only to make things worse from an environmental perspective, but to award an unjustifiable windfall to at least one party in the trade. Unfortunately, in most situations, we lack either requisite. When federal and state regulators adopt trading regimes in the face of such ignorance, they run the risk not only that trading will fail, but that it will cause worsening environmental degradation.

For some sense of the deficit we face with respect to information about the condition of the ambient environment, consider EPA’s *1998 Report to Congress* entitled *The Quality of Our Nation’s Waters* reporting that states, territories, tribes, and interstate commissions have assessed only 23% of the nation’s 3.6 million miles of rivers and streams, rating 55% “good,” 10% “good but threatened,” and 35% “impaired.”⁴² States and other jurisdictions assessed only 42% of the nation’s 41.6 million acres of lakes, reservoirs, and ponds, reporting that 46% are rated “good,” 9% “good but threatened,” and 45% “impaired.”⁴³ According to the Agency, the scope of monitoring had increased only “slightly” since the previous 1996 Report.⁴⁴

Equally as discouraging, the U.S. General Accounting Office (GAO) studied state sampling programs and discovered that such programs fail to follow consistent procedures that would make sampling statistically valid.⁴⁵ In other words, states and other local authorities assess a minority of water-bodies without giving us any reason for confidence that the sampling correctly reflects the existing conditions of those bodies of water, much less the large majority that are never assessed.

The status of air quality monitoring is better, at least with respect to the six “criteria” pollutants covered by NAAQS, which are monitored to ascertain whether areas are “attainment” or “nonattainment” under the CAA⁴⁶ But the regulation of toxic emissions only began in earnest in 1990, and we have many years to go before we can claim any real progress in characterizing ambient conditions with respect to those pollutants.

⁴²U.S. EPA, *The Quality of Our Nation’s Waters, A Summary of the National Water Quality Inventory: 1998 Report to Congress 6* (June 2000) (EPA 841-S-00-001).

⁴³U.S. EPA, *The Quality of Our Nation’s Waters, A Summary of the National Water Quality Inventory: 1998 Report to Congress 7* (June 2000) (EPA 841-S-00-001).

⁴⁴U.S. EPA, *The Quality of Our Nation’s Waters, A Summary of the National Water Quality Inventory: 1998 Report to Congress 3* (June 2000) (EPA 841-S-00-001).

⁴⁵U.S. GAO, *Water Quality, Key EPA and State Decisions Limited by Inconsistent and Incomplete Data* (Mar. 2000) (GAO/RCED-00-54).

⁴⁶42 U.S.C.A. §§ 7470 to 7479, ELR Stat. CAA §§ 160 to 169 (attainment); 42 U.S.C.A. §§ 7501 to 7515, ELR Stat. CAA §§ 171 to 193 (nonattainment).

As for the thorny problem of counting emissions or discharges accurately, the acid rain program represents one end of the spectrum of such methodologies, and the prospect of trading allowances for non-point sources of water discharges represents the other. Acid rain “counting” is based on a relatively simple and relatively reliable methodology that calculates sulfur dioxide emissions on the basis of the sulfur content of the fuel and the temperature at which it is burned. Those figures can be confirmed by continuous emissions monitoring that is required for most power plants. On the other hand, counting the amount of the varied pollutants that are washed into nearby surface water when rain washes over a parking lot, pesticide-laden field, or lagoon storing animal waste is, as yet, both complex and difficult, provoking some participants in the debate to press for “trading ratios” that require more allowances from uncertain reductions (*e.g.*, from strategies that attempt to control nonpoint run-off) in trade for fewer allowances from more reliably quantified reductions (*e.g.*, treatment technologies at publicly-owned treatment works).⁴⁷

The difficulty and expense of improving the monitoring of ambient environmental conditions and developing adequate methodologies for quantifying emissions or discharges cannot be underestimated. The quality of these particular data sets must be a threshold and preeminent concern for regulators, industry, and public interest representatives.

Who should pay to improve such information is another crucial question. The approach that seems the fairest, and is also the one most likely to produce results, is to impose these costs on those who will benefit from the adoption of a trading scheme. Whether through fees paid to the government to support research and monitoring, or through requirements that individual sources enhance their own monitoring, development of data to ensure the efficacy of the system must be a condition precedent.

A do-no-harm rule is indispensable when trading *supplants* existing, more traditional regulation. Obviously, we would not want to take one step forward for the sake of reducing compliance costs, only to take two steps back in achieving environmental quality.

A do-no-harm rule is also important where trading is used to *supplement* the reductions achieved by an underlying regulatory scheme that continues to apply to individual sources because trading can produce local hot spots. Even though the existing scheme is based on compliance with so-called “health-based standards,” or standards that define levels of pollution that are “safe,” evaluations of compliance with those requirements too often occur with respect to a larger area than the local neighborhoods afflicted by hot spots.

As for situations where trading is used to make the first reductions of previously unregulated emissions or discharges, the do-no-harm principle should set up a direct comparison between what we would expect to achieve through traditional regulation and what advantages trading promises in our reduction efforts.

Continuous improvement: Setting the cap

Open market or “cap-less” trading, by definition, does not allow continuous improvement of the environment, as anticipated by all the major environmental statutes, until and unless regulators modify the individual permit limits upon which such systems rely.⁴⁸ Consequently, such systems are no more than a convenience for regulated entities. While it is conceivable that trading without caps—known as

⁴⁷Letter from the Chesapeake Bay Foundation, Clean Water Action, Coast Alliance, Natural Resources Defense Council, Ocean Conservancy, & Sierra Club, to G. Tracy Mehan, III, Asst. Administrator for Water, U.S. EPA 6 (Apr. 18, 2002) (copy on file with author).

⁴⁸For a description of open market trading systems, see this section notes 13-15 and accompanying text.

“open market” systems—could be designed with sufficient safeguards to avoid sham trading and prevent the formation of hot spots, progressives believe that the resources required to avoid such risk proposals are not worth spending, especially in comparison to the resources required to take advantage of other opportunities for environmental improvement through economically efficient regulation. This position is unlikely to change unless industry proponents of such approaches volunteer to assume all the expenses of operating a reliable trading regime that does no harm to the environment and has some mechanism for lowering emissions gradually.

Fortunately, trading programs that incorporate declining caps are far more prevalent than open market proposals. The task of setting the initial and declining levels of applicable caps becomes relatively straightforward assuming that we have a reliable count of existing emissions and discharges or sufficient monitoring to characterize ambient environmental conditions. If we are lucky enough to have in place a comprehensive regulatory regime, especially one based on health-based standards, establishing such levels becomes even easier.

In the end, all such decisions are likely to evolve into subjective policy judgments, mixed with a heavy dose of politics, rather than a conclusion based on definitive science. Presumably, if we had definitive science, we would already have used it to impose health-based standards, a situation that is rare, as discussed above. But acknowledging the subjectivity of such judgments should not lessen their importance. Ultimately, they depend on the answers to three questions. First, what are our goals for improving environmental quality and how low must we set the cap to meet them, both initially and over time, since we should have as an ultimate value continuous environmental improvement? Second, how many reductions can we achieve without imposing a ruinous compliance burden on important industries? Third, what initial levels and rates of decline will create sufficient scarcity to enable the market to operate? Progressives would push the envelope toward lower numbers from all three vantage points.

Needless to say, the process of answering the three questions can provoke intense confrontations. To cite the most prominent example of the day, the clash between environmentalists and their allies in Congress over President Bush’s “Clear Skies Initiative” boils down to a tense disagreement over the appropriate level of the caps needed to address climate change, as well as whether to include carbon dioxide in the universe of pollutants addressed by a new system.⁴⁹ However vicious, such disputes are preferable to other arguments over trading design because they are more transparent and therefore understandable to policy makers and the public. More esoteric issues, such as the formation of hot spots and the danger of sham trading, are more difficult to document and to understand.

Before leaving the subject of setting a trading system’s overall caps, we should consider the issue of whether trading needs to deliver results that are superior to traditional regulation, as consistently urged by the environmental community. Environmentalists take this position for two related reasons. First, the conservative assault on environmental regulation that reached great intensity after Republicans achieved control of the House of Representatives in 1994 has left the public interest community little choice but to establish a defensive perimeter around traditional regulatory programs. Conservatives appear so relentless that environmentalists believe they cannot acknowledge the flaws in traditional regulation without creating gaping holes in that perimeter. Second, because they still have considerable power to stop affirmative conservative initiatives, environmental groups have little incen-

⁴⁹For a flavor of this debate, *compare* Press Release, U.S. EPA, New EPA Data Shows Dramatic Air Quality Improvements from Clear Skies Initiative, July 1, 2002, available at: http://www.epa.gov/pahome/headline_070102.htm with Testimony presented before the U.S. Senate Committee on Environment & Public Works by David Hawkins, June 12, 2002, Director of NRDC’s Climate Center, available at: <http://www.nrdc.org/globalwarming/tdh0602.asp>.

tive to give away something for nothing, which is how they perceive the substitution of “flexible” trading schemes for traditional regulation.

In the last two or three years, it has become clear that there is a fundamental problem with this reasoning. Conservatives are no longer trying to scale or otherwise overcome the environmentalists’ defenses, but rather have begun to walk around them, heading right for the state agencies that dominate the implementation of environmental laws. By resisting trading systems as the tool of the devil, as opposed to a regulatory approach that can either be effective or subverted depending on their structure and ground rules, environmentalists may do a better job of sidelining themselves than their opponents could ever hope to achieve.

Further, unnecessary compliance costs presumably are a problem for the entire economy, hurting consumers as well as captains of industry. Environmentalists who go to extremes in dismissing society’s interest in minimizing such costs play into the hands of those who seek to discredit them as a marginal, anti-corporate elite.

From a purely pragmatic perspective, the resources that public interest representatives must commit to working through the issues raised by trading schemes are greater than the resources they just commit to participation in more familiar, traditional regulatory processes. Further, regulators must commit significant resources to developing and policing the system. Both may well need the incentive of superior performance to undertake the negotiations that produce a trading scheme.

Preventing hot spots

Under normal conditions, pollution is distributed over a broad geographical area based on admittedly erratic and environmentally insensitive land use decisions. Trading redistributes pollution and, if trading systems are poorly designed, can do so on a grand scale. This phenomenon, sometimes referred to as “localized concentrations of emissions” in the sanitized language preferred by trading advocates, is a central problem with trading from a progressive perspective.

The academic literature on environmental justice has sponsored a vigorous debate between those who believe stationary sources gravitate to certain urban and rural neighborhoods because people of color live there and those who insist that the migration itself begins as a racially neutral decision, but the facilities run down the neighborhoods, making them magnets for low income people who are disproportionately people of color.⁵⁰ Whichever version of this “chicken versus egg” story one finds more credible, the irrefutable fact remains that industrial facilities are overwhelmingly located in places inhabited by people who cannot afford to move to cleaner surroundings. Allowing these sources to purchase allowances in a market-based system in order to avoid the cost of retrofitting their plants with pollution control devices will cause spikes in the levels of pollution in the vicinity of the plant. The neighborhoods affected by those spikes typically contain a disproportionate number of people who cannot afford health care or the best diets, compounding the adverse health effects caused by such pollution. This unacceptable outcome has already occurred during California’s noteworthy experiments with trading⁵¹ and is bound to recur given EPA’s phlegmatic approach to the issue and the states’ apparent inability to come to grips with it.

⁵⁰For a concise description of these different views, see Percival et al., *Environmental Regulation: Law, Science and Policy* 21-24 (3d ed. 2000).

⁵¹For an explanation of what happened in California, see this section note 35 and accompanying text.

When considered in this context, the provocative declarations that a clean environment is a luxury good affordable only by the wealthy⁵² take on a sinister tone, and trading assumes the identity of an efficient vehicle for redistributing pollution loading on the grounds of race, ethnicity, and class. The exacerbation of environmental injustice need not be deliberate, or even understood by trading advocates. It is enough that they do not acknowledge the possibility that hot spots will form as a crucial, threshold problem that must be addressed when trading schemes are designed.

The easiest and most direct way to reduce, and even eliminate, hot spot problems is to limit trading to pollutants that do not pose an acute or chronic risk to public health. Barring trading of toxics, as defined either by law or common sense, means excluding large and powerful point sources from such regimes. Discretion in this case may well be the better part of valor, however, given the arduous efforts that must be made to prevent hot spots when trading encompasses such pollutants.

To the extent that trading schemes include pollutants that cause chronic adverse health effects, the progressive agenda for market-based remedies would require analysis of the demographics of the trading “zone” during the first phase of designing the system. The zone should include the entire area where allowances are to be used. Once such problematic areas are identified, a range of solutions are available to prevent the problem.

First, trading schemes that allow trading of toxics must also employ comprehensive *ambient* monitoring to ensure that pollution is not pooling around specific facilities located near population centers, especially where there is no underlying health-based standard that is incorporated in a site-specific permit that remains in effect. If monitoring detects a problem, regulators must have authority to stop trading immediately until the hot spot is eliminated. Continuous monitoring is especially important in situations where emissions involve persistent substances (*e.g.*, lead, mercury, dioxin) and sources are capable of producing short-term spikes that have lasting consequences.

Second, trading schemes that are susceptible to hot spot formation should sharply limit the periods during which sources can “bank” allowances for sale or use in subsequent years. Banking produces unpredictable levels of pollution unless the system also imposes elaborate controls on who may bank what, when.

Third, sanctioning “cross-pollutant” and “cross-media” trades, as was done in the context of the Clinton Administration’s Project XL (for “eXcellence in Leadership”), also has potential to cause and exacerbate hot spot problems. “Cross-pollutant” trading involves exchanges of allowances covering chemicals within broad categories (*e.g.*, one ton of one type of volatile organic compound (VOC) for one ton of another type of VOC). Cross-media trades involve exchanges of air emission allowances for water discharge allowances. These expansions of traditional trading can result in exchanges of markedly more benign chemicals for their far more toxic cousins, as well as the substitution of poorly characterized pollution in one medium for pollution in another medium the effects of which are better understood. They should not be included in a trading program involving toxics, unless there is definitive evidence that the exchanges are neutral in terms of adverse environmental and public health impacts.

Fourth, if trading is permitted with respect to toxic pollutants within areas designated as communities at risk, even if monitoring is also employed to determine whether hot spots have formed, regulators should adopt an offset policy that would create reductions to serve as a kind of safety net for unanticipated hot spot formation, or hot spot formation that cannot be remedied immediately. This concept is

⁵²See this section note 6 for quotations from prominent conservative commentators making precisely this point.

analogous to the idea of establishing ratios for trades involving allowances that are counted with less-than-ideal methodologies. For example, as mentioned earlier, environmentalists have suggested imposing a two-to-one ratio on trades involving run-off from non-point sources because it is so difficult to be sure that such reductions have actually occurred. Obviously, ratios must be high enough to have the desired result and should not be employed as a form of window dressing for clearly dubious trading schemes.

Preventing waste, fraud, and abuse

As explained earlier, inspectors assigned to verify compliance with the California Rule 1610 trading program discovered that “licensed car scrappers” had sold old, polluting car engines for re-use, rather than taking them off the road and eliminating their emissions.⁵³ This type of fraud is obvious and arguably should have been anticipated by those who designed the program. It is also the kind of abuse that requires significant resources to detect and eliminate.

More subtle, even more problematic, examples of sham trading involve mistaken or deliberately falsified counting of allowances that remain undetected by the system. These miscounts could occur as a result of flawed methodologies for quantifying the emission or discharge reductions achieved by certain pollution controls. Or they could result from deliberate or inadvertent distortion of baseline allocations. If allowances are worth significant sums of money—and this goal, after all, is an indispensable foundation of trading schemes—failure to verify allocations and track trades not only discredits trading, but directly rewards those guilty of the fraud. The importance of an enforcement component is rarely mentioned by trading advocates who are prone to exaggerated claims that trading has very low costs for the government.⁵⁴

Big money is at stake in the choice of a baseline, with the struggle over the selection setting up virulent competitive tensions among industrial sectors that magnify the incentives to cheat the systems. In addition to enforcement, solutions to this dilemma might include: (1) giving facilities an opportunity to apply for a different baseline rate periodically, beginning only *after* a cap and trade system is adopted; (2) setting a slower decline in the allocations that are awarded to deeply cyclical industries; or (3) awarding additional credits that are offset by steeper declines in the out-years.

Bunk science

As the debate over trading indicates, among the most important themes dividing progressives and conservatives is whether we have enough information to make decisions, what we should do when we do not have information, and who should have the burden of generating it. Despite the overriding importance of the information question to both ends of the political spectrum, anyone seeking pristine consistency in the ebbs and flows of this debate is likely to search in vain. Thus, in the context of emissions trading, progressives insist on waiting for better information, including monitoring to detect hot spots and reliable methodologies for counting and tracking emissions or discharges. Conservatives insist that trading can and should proceed without such data. On the other hand, on issues like the appropriate levels for

⁵³See Drury et al., *Pollution Trading and Environmental Injustice: Los Angeles' Failed Experiment in Air Quality Policy*, 9 *Duke Envtl. L. & Pol'y F.* 231, 260-61 (1999).

⁵⁴See, e.g., Elliott & Charnley, *Toward Bigger Bubbles*, F. for Applied Research & Pub. Pol'y, Winter 1998, at 45, 48 (“It is not generally as well understood that bubbling—at least when it works properly—also radically decreases the administrative burdens of regulating. It is much more efficient for the government to set up a market and police its operation than to plan and administer each individual exchange.”) As the California car scrapping program demonstrates, however, policing the actual buying and selling of allowances is only the tip of the iceberg in making sure that trading programs are not subject to fraud. See this section note 37 and accompanying text.

ambient air quality standards, conservatives resist taking action until “sound science” is developed, a term that typically means something pretty close to scientific certainty, while progressives accept uncertainty as a fact of life and advocate application of the precautionary principle to prompt regulatory action.

Are there principles that underlie what seem like positions crafted to use the ends to justify the means? Or is dearth of information invoked opportunistically to justify whatever outcome either side desires?

Industry capture

Within the arena of health and safety regulation in general, and EPA in particular, progressives view scientific information as a commodity controlled primarily by those who produce, use, or manage chemicals and other potentially hazardous substances. Clearly, the law—in either its regulatory or civil liability formats—has failed to give the private sector adequate incentives to generate even basic information about the risks posed by its products. The gaps in our basic knowledge about the toxicological effects of common chemicals are shocking. In the context of this almost unimaginable ignorance, and the completely inadequate efforts to address the gaps in our knowledge, demands by industry and others that regulatory action stop until scientific certainty is achieved sounds like a recipe for interminable gridlock in the absence of a large influx of government money for scientific research, a development that is highly unlikely to occur.

For example, in a report covering 2,863 organic chemicals produced or imported in amount above one million pounds annually, EPA concluded that there is no toxicity information available for 43% of such chemicals and that a full set of basic toxicity information is available for only 7%.⁵⁵ The American Chemistry Council (ACC) finds this situation sufficiently troubling that it volunteered in 1999 to conduct tests of some of those chemicals. The total budget for this testing program is \$67 million, with annual spending reaching a peak of \$25 million.⁵⁶ In June 2002, the Council announced that it has decided to launch a new advertising campaign to improve the public image of the chemical industry. The price tag of that effort will reach \$50 million during the peak year of the campaign, and a total of \$86 million will be spent overall.⁵⁷

Meanwhile, there is little compelling evidence that the problem with EPA science is that it is developed by misguided and incompetent bureaucrats who are independent from regulated entities, as implied by the conservative allegation that EPA does not use “sound” science.⁵⁸ Regulated industries may believe that EPA acts without enough information, but industry has strong, even overwhelming, influence over what information is available, as well as the Agency’s scientific processes for considering it.

As documented in a piece written by Linda Greer and I and published by ELR’s sister journal, *Environmental Forum*, industry scientists and technical experts are powerful enough to have achieved the following in just the last couple of years: (1) persuaded EPA to downgrade the toxicity of the notorious chemical vinyl chloride by 20-fold; (2) stifled the release of a 10-year study showing that dioxin is even more dangerous to public health than originally thought; and (3) until pre-September 11 media exposés, badgered EPA Administrator Christine Todd Whitman to withhold a rule toughening standards for arsenic in drinking water despite extraordinarily

⁵⁵EPA Analysis of Test Data Availability for HPV Chemicals, 22 Chem. Reg. Rep. 261 (1998).

⁵⁶McMeen, Chemical Safety: Manufacturers to Pay \$67 Million to Fund Research on Health, Environmental Effects, 29 Env’t Rep. (BNA) 2058 (Feb. 12, 1999).

⁵⁷American Chemistry Council’s New Initiative, 80 Chem. & Eng’g News 18 (June 17, 2002).

⁵⁸Clarke, Let’s Ensure Science Conflicts Are Over Facts, Not Factions, Risk Policy Rep., Aug. 20, 2001.

persuasive scientific evidence that existing, 50-year-old standards were far too weak.⁵⁹ In a similar vein, the GAO concluded in June 2001 that the Science Advisory Board (SAB) routinely neglected to obtain information from candidates for peer review panels that would enable screening for conflicts of interest and bias.⁶⁰ As just one example of the implications of this negligence, GAO found that two of the panelists who participated in a decision *not* to upgrade butadiene to a “known” human carcinogen in fact owned stock in companies that marketed the chemical.⁶¹

Putting aside for the moment how much information is enough to trigger action, these outcomes are possible because the Agency’s process for considering science generated by the private sector (or anyone else for that matter) is not sufficiently transparent; peer review by its SAB is frequently biased; and it staggers under its workload to such a great extent that it feels it has no choice but to contract with industry-sponsored scientific outfits to get fundamental work done. In sum, while the problem may well be science that is unsound, the solution cannot be to generate more unsound science, a result that is inevitable without procedural reforms.

Transparency

To restore its credibility, EPA must adopt a threshold rule that it will not, under any circumstances, rely upon studies or other scientific information when the sponsor of the study refuses to turn over all of the underlying data justifying the conclusions it has reached, except when confidentiality of portions of the data is necessary to protect the privacy of participants in the study. This principle is so basic to both law and science that it would be remarkable if anyone had the temerity to challenge it. Consider the tremendous weight of the administrative law precedents requiring disclosure on the record of all information used by agencies or departments in order to guarantee final agency decisions that are both fair and wise. And then consider the fundamental scientific principle that the methodology and data generated by experiments must be disclosed so that other scientists can try to replicate the work. To argue otherwise is to suggest that EPA should delegate its authority to review data to sponsors of the study, an outcome that should be unacceptable no matter what the sponsor’s identity.

Bias

Transparency in the consideration of outside studies will go a long way towards stabilizing EPA science but must be accompanied by fundamental changes in the methods for accomplishing peer review by the SAB. Two distinct problems are manifest here—conflict of interest and bias. Often, these discrete issues are lumped together, confusing the discussion and making it easier to reach “quick fix” solutions that do not get to the heart of the threat to objective and incisive peer review.

Conflict of interest is a relatively small subset of bias and generally much easier to resolve. A conflict arises when there is a possibility that a participant in a peer review panel will *personally* benefit financially from a pending decision by, for example, holding stock in a company that manufactures the chemical under scrutiny, as opposed to merely working for the company that might benefit as an institution as a result of the decision. Conflicts of interest should disqualify scientists from serving on panels in all but extremely unusual circumstances, such as the inability to find anyone else with comparable expertise. Even then, the conflict should

⁵⁹Greer & Steinzor, *Bad Science*, *Envtl. F.*, Jan./Feb. 2002, at 28. For a second, incisive presentation of the progressive view on these issues, see Devine, Jr., *Has There Been a Corporate Takeover of EPA Science?*, *Risk Policy Rep.*, Nov. 12, 2001, at 35.

⁶⁰U.S. GAO, *EPA’s Science Advisory Board Panels, Improved Policies and Procedures Needed to Ensure Independence and Balance* (June 2001) (GAO-01-536).

⁶¹U.S. GAO, *EPA’s Science Advisory Board Panels, Improved Policies and Procedures Needed to Ensure Independence and Balance* 29 (June 2001) (GAO-01-536).

be waived only in a separate, thorough process to determine that the waiver is absolutely necessary. Once again, it is difficult to imagine anyone disagreeing with this straightforward rule, which is similar to the rules we apply to judges and other officials responsible for making important decisions.

Despite its importance and obvious application, the SAB has had difficulty executing conflict of interest rules, although its problems in this area are probably more attributable to negligence than any confusion about the rule's content. Hopefully, it will not risk another embarrassing report from the GAO or another auditor and will not only collect, but also study, routine financial disclosure forms before panelists are appointed.

In comparison, defining bias is a far more challenging task, in part because industry representatives do not concede that it poses a problem for peer review. By bias, I mean possessing a strong opinion about the nature and scope of a problem under study. Most scientists are biased or, to put the problem another way, scientists who are absolutely neutral in the area of their expertise are either inexperienced or very difficult to find. In fact, by definition, if one gathers a group of well-known and well-informed scientific experts together, one should expect a heated exchange of very strong views. Being biased does not mean being closed-minded, nor does it mean being incapable of compromise.

At its best, peer review should involve convening a lively group of well-informed and opinionated people and having them quarrel with each other until they manage to develop a middle ground with respect to the question they have been asked to address. Even if no consensus forms, the statement of their common views, as well as their divergent opinions, would be useful to decision makers. The indispensable cornerstone of this process is to ensure that a full range of opinions is offered. Without balance, the entire process not only lacks the appearance of being credible, but is unlikely to be an effective search for the best scientific result.

Achieving genuine balance requires more than simply adding a token scientist from a national environmental organization to a panel, where the person must endure relentless pressure from her industry-oriented colleagues to drop valid objections. Rather, balance must mean adequate representation of a wide range of views, with no single block of experts having the capacity to impose its will on the others.

Bias in SAB peer review arises from four circumstances. First, industry scientists react with rote sensitivity to the charge that they have captured the scientific process at EPA and that its scientific output is therefore suspect. Each time the issue of bias is raised, industry representatives on the SAB insist that just because a scientist earns her living working for a company or trade association does not mean she is a bad scientist. I would be the first to concede that this statement may be true, depending on the qualifications and skills of any given, individual scientist. It is also beside the point. Presumably, scientists who work for chemical manufacturers are going to have bias that is consistent with their employers' central mission—whether that be to develop new chemicals or advocate on behalf of a given product's safety and efficacy. Qualified industry scientists, with those biases, should sit on peer review panels but their views must be balanced by people of other perspectives.

In fact, if industry scientists are right that affiliation or employment does not produce bias, and that people can be perfectly credible experts entrusted with making balanced judgments regardless of such connections, there would be no problem in delegating peer review to panels comprised entirely of scientists employed by environmental organizations. Since it is difficult to imagine any industry group accepting such an outcome, it is past time for industry to reconsider its efforts to obfuscate the debate over bias—and balance—in peer review.

Second, until recently, EPA staff supporting the work of the SAB did not investigate prospective members of review panels to discover information that

might demonstrate the content of their bias and therefore were not in the position to balance panels with members of opposing points of view.⁶² Such groundwork is especially necessary in the case of people who list academic affiliations. The vast majority of academic scientists must obtain grants to support their work, and knowing who the grantors are and what inquiries they funded is essential in evaluating bias.

Third, compounding these errors, the SAB has refused to require the disclosure of information about panel members' biases to the public, eliminating a form of accountability that is crucial in keeping the system honest. At times, EPA staff have cited the federal Privacy Act, which admittedly bars the government from releasing information contained in certain individual disclosure forms without obtaining the applicant's consent.⁶³ This rationale is inappropriate, however, because EPA could simply condition service on a peer review panel on the candidate's consent to the disclosure. If the Agency distinguished appropriately between bias and conflict of interest, it could maintain the confidentiality of personal financial information but disclose professional affiliations, including privately sponsored research that should be a matter of public record. In fact, confusing the two may be a convenient way for some SAB members to avoid the explicit consideration of bias, using the Privacy Act as an excuse.

Fourth, EPA staff and members of the SAB have failed to recruit prospective panel members who do not have an industry bias. As mentioned earlier, people serve on the SAB for honor, not money, unless the time they spend is part of the job description crafted by their employers. At the moment, honor is compromised given the bad press the SAB has received as a result of the GAO report. Anecdotal evidence suggests that independent academics who do not receive funding from industry are persuaded to serve on the SAB once, but are extremely reluctant to repeat the experience, finding that their views are given short shrift in an ad hoc and chaotic process dominated by panel chairs with industry-oriented biases.⁶⁴ Clearly, the SAB must clean house procedurally as a component of making service on its panels more attractive.

Workload

Last but not least, there is the problem of workload. Embarrassed by the slow pace of its review of toxicological profiles generated under the EPA Integrated Risk Information System (IRIS), EPA has crossed another line, between the nuances of detecting and balancing bias to tolerating outright capture of its basic functions. These assessments are used to formulate environmental policy nationally and internationally because they summarize available information on a chemical's toxicity. The assessments proceed in four stages: (1) compiling toxicological and epidemiological studies; (2) analyzing the studies in order to identify adverse health effects and estimate unsafe exposure levels; (3) setting quantitative "potency factors" that indicate the degree the chemical's toxicity and crafting a statement describing the scientific "consensus" that justifies the numbers; and (4) subjecting the draft assessment to peer review.

In recent years, EPA has entered into agreements with industry groups to conduct these reviews and submit draft reports—stages one through three of the process. Although EPA also accepts other information as part of a general request for data,

⁶²U.S. GAO, EPA's Science Advisory Board Panels, Improved Policies and Procedures Needed to Ensure Independence and Balance (June 2001) (GAO-01-536).

⁶³5 U.S.C.A. § 552a(b) ("No agency shall disclose any record. . . except pursuant to a written request by, or with the prior written consent of, the individual to whom the record pertains.").

⁶⁴Personal Communication with Dr. Linda Greer, senior scientist at NRDC and member of the SAB Executive Committee (July 10, 2002).

industry-funded scientists hold the pen right up until peer review.⁶⁵ For instance, a Chemical Manufacturing Association (since renamed the ACC) committee oversaw and paid for the toxicological reviews for vinyl chloride and ethylene oxide and the Styrene Information and Research Center did the same for styrene.⁶⁶ In the review of ethylene oxide, EPA proposed the creation of a “joint steering committee” composed of EPA personnel and members of CMA’s Ethylene Oxide Industry Council to oversee the toxicological review that CMA proposed to fund.

These kinds of arrangements go far beyond insensitivity to bias and cannot help but create the impression that the capture of EPA science is complete. It is worth noting that a dozen internationally renowned medical journals recently issued a series of policies designed to forestall exactly this kind of capture and undisclosed bias with respect to the articles they publish, demonstrating how far EPA has strayed from the mainstream ethics of the larger scientific community.

Burden shifting and the precautionary principle

To return to the question posed at the outset of this analysis, is it possible to find a principled rationale for the apparently inconsistent positions espoused by progressives and conservatives on how the government should react to situations where it lacks reliable information? However unsatisfying, this fault line is grounded in the harm that each end of the political spectrum believes will flow from acting or failing to act. Progressives believe that potentially harmful action should not proceed without adequate information, but that action that may protect public health and the environment must proceed despite imperfect information. Conservatives believe that economically productive action should be allowed to proceed in the absence of adequate information proving harm is likely to result.

Some of the information at stake is attainable immediately, but would require a significant investment of resources. For example, we can test chemicals to discover their toxicity. We do not have the results of such testing because government research has been de-funded to an alarming degree and industry lacks adequate incentives to build the case against its own products.

Remedies such as California’s Proposition 65 seek to resolve this dilemma by reversing the burden of producing information.⁶⁷ That program, which progressives regard as highly successful, presented an ultimatum to manufacturers of potentially toxic products: attach a warning label or disprove the chemical’s toxicity. The progressive agenda for environmental reform would adopt this approach wherever we *could* know more about chemicals if only we did more testing.

Not all information is immediately knowable, however, even given a larger influx of resources. Scientists have tried to understand the biological mechanisms that cause cancer for decades, and have yet to eke out the truth. The sciences that inform environmental decision-making are also complex and unresolved. To list just a few examples, we do not know enough about: (1) the fate and transport of chemicals through the environment; (2) the adverse health and environmental effects produced by synergistic interactions between common pollutants; or (3) how cumulative exposures affect living organisms. These questions may be answerable at some point but depend on the resolution of larger scientific questions that are likely to take many years to achieve.

Because virtually any specific regulatory decision depends on a complex brew of the known, the knowable, and the unknowable, progressives believe that, at bottom,

⁶⁵See, e.g., 66 Fed. Reg. 11165 (Feb. 22, 2001).

⁶⁶Devine, Jr., Has There Been a Corporate Takeover of EPA Science?, Risk Policy Rep., Nov. 12, 2001, at 35, 36.

⁶⁷See, e.g., Roe, Toxic Chemical Control Policy: Three Unabsorbed Facts, 32 Env’tl. L. Rep. (Env’tl. L. Inst.) 10232 (Feb. 2002).

choices must be informed by science but ultimately made on the basis of policy judgments. Those judgments should give great weight to the possibility that if we do not act, irrevocable harm may occur and that our short-term economic interests are likely to conflict with our long-term obligations to preserve natural resources for future generations. We must honor those longer-term obligations, which provide a compelling rationale for precaution over risking harm.

From this perspective, it is as impossible to give a noncontextual answer to the question “how much information is enough?” as it is to reduce choices to objective, scientific bottom lines. Decisions that apply precaution must be made with respect to specific bodies of information, by technical experts who are informed by democratically enacted laws, preferably under the watchful eye of well-informed representatives of *all* the affected constituencies, including the public at large. What makes the current situation so dangerous from a progressive point of view is that this system of checks and balances has broken down in many respects. The statutes are ignored without being amended; decisions made on the basis of flawed and imperfect information are characterized as objective products of scientific truth; and the process for conferring that facade of precision and certainty is opaque precisely because it would not survive public scrutiny.

To put the matter, once again, in crass political terms, it is one thing for conservatives to argue that they won the White House and are not about to break stride in implementing their view of the world. It is quite another for the system to be changed in the name of objective science, out of the public view. President Bush will face the voters regarding his decision to walk away from the Kyoto Treaty.⁶⁸ But the reforms realized by OIRA chief John Graham have yet to reach the light of day. The first area of those reforms—safeguarding the “quality” of data used in regulatory decisions—advances the mistaken impression that the conservative agenda is about nothing more than ensuring objective decision-making, while the second area—drastically expanded cost/benefit analysis—seeks to reduce controversial and unpopular policy judgments to misleadingly irrefutable numerical calculations.

Data quality

The Data Quality Act exemplifies potentially radical policy change made out of public view. Beginning from the non-controversial premises that government should not disseminate information that is unreliable and, conversely, should only use reliable data when making important decisions, the statute was enacted as a brief amendment to a piece of appropriations legislation and appears merely hortatory on its face.⁶⁹ It does not specify what agencies must do to implement this vague guidance, and it omits the judicial review provisions contained in other pieces of legislation that were enacted to advance similar, “good government” principles.⁷⁰

Undaunted by these statutory shortcomings, industry lobby ists, led by the Center for Regulatory Effectiveness, have since explained to anyone who will listen that, in fact, Congress intended the Act’s sparse language to provoke a revolution in how decisions get made, forcing agencies and departments into court at any stage in the rulemaking process if potentially affected entities believe unreliable information has come into play.⁷¹ One way to view such litigation is as an enforcement program for the conservative position that action must not proceed until harm is documented with scientific certainty.

⁶⁸See, e.g., Hall, Green Backlash Hits White House; Anger Over Environment Worries Some Republicans, USA Today, Apr. 5, 2001, at 3A.

⁶⁹Revkin, Law Revises Standards for Scientific Study, Agencies to Face Challenges on Health and Environment Research, N.Y. Times, Mar. 21, 2002, at A30.

⁷⁰See, e.g., the Unfunded Mandate Reform Act, 2 U.S.C.A. § 1571 (judicial review provision).

⁷¹See Revkin, Law Revises Standards for Scientific Study, Agencies to Face Challenges on Health and Environment Research, N.Y. Times, Mar. 21, 2002, at A30. For a flavor of what the Center is and does, a visit to its web site is also instructive: <http://www.thecre.com>.

It is mildly amusing to imagine how the proverbial men and women in the black robes are likely to react when confronted with a series of lawsuits arguing in the most arcane terms over the soundness of various pieces of highly technical information. One early indication is the D.C. Circuit's opinion in *Tozzi v. U.S. Department of Health and Human Services*,⁷² in which Judge David Tatel, writing for a panel that included Judges Williams and Silberman, refused to second guess a decision by the National Toxicology Program to upgrade the toxicity rating of dioxin from a "reasonably anticipated" to a "known" human carcinogen. The Center for Regulatory Effectiveness was the plaintiff in that case, but, with apparently senseless cheerfulness, it claims to have snatched victory from the jaws of defeat because it at least persuaded the court to consider its case, supposedly forging a path for similar future litigation.⁷³

Unfortunately, it may not matter in the long-run whether judges refuse to second-guess agencies on information policy if the agencies think that judges might do so and engage in preemptive self-censorship. The danger posed by the Data Quality Act is that agencies will become even more timid and rulemaking even more congealed, exacerbating the deep-seated problem that the statutes mandate action but the bureaucracy finds itself unable to act.

As this Article goes to press, OMB is reviewing the guidelines published by relevant federal agencies and departments to determine their consistency with OMB's own interpretation of the Act. OMB has not taken an official position on the data quality question, although Dr. Graham has opined that he thinks it inevitable that the courts will get into the business of policing data disputes.⁷⁴ OMB's tacit endorsement of this interpretation of the Act, partnered with its failure to advise agencies that they should not overreact to the litigation threat, will probably fuel agency over-reactions, although, as previous administrations have learned, it is very difficult to force a diverse bureaucracy to march in lockstep toward a goal that would undercut its core mission so fundamentally.

As the battle lines are drawn, progressives are likely to have two strategic reactions to the Act. First, we will argue in all appropriate fora that this relatively benign congressional enactment cannot possibly be read in the extreme way advocated by conservatives. Second, if and when industry information cases proceed to court, we will search for our own challenges to decisions that are based on bad data generated by regulated industries, demonstrating the "double-edged sword" created by the Act.

Future wars over data quality will waste considerable time and money and slow regulatory action, perhaps to a standstill in some agencies. But they are unlikely to disturb the equilibrium we face in the larger arena of environmental policymaking. Regardless of such disputes, Congress will remain gridlocked, refusing to tamper with laws written in an era when public outrage over the poor condition of the environment was palpable for fear of re-awakening the voters' anxiety and sense of vengeance.

⁷²*Tozzi v. HHS*, 271 F.3d 301, 32 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20335 (D.C. Cir. 2001).

⁷³*See, e.g., Stam & Roeder, Toxic Substances, Federal Court Affirms HHS Classification of Dioxin as "Known" Human Carcinogen*, *Daily Env't Rep. (BNA)*, Nov. 26, 2001, at A-1 (quoting Tozzi as saying he was "disappointed with the court's decision on the merits" but believes the case is a "very positive precedent for the Data Quality Law").

⁷⁴Dr. Graham made these remarks during a workshop on the Act's implementation held at the National Academy of Sciences on March 21, 2002:

Lawsuits against agencies are certainly another possibility and, quite frankly, there are as many legal theories about how these issues can be litigated as there are lawyers. My personal hope is that the courts will stay out of the picture except in cases of egregious agency mismanagement.

National Academy of Sciences, *Transcript of Workshop #1, Ensuring the Quality of Data Disseminated by the Federal Government*, March 21, 2002, at 22. Dr. Graham is a Ph.D. political scientist, not a lawyer, but as head of OMB's Office of Information and Regulatory Affairs, has influence over how the law is interpreted.

The same cannot be said about the next and last topic on both the conservative and progressive agendas, which seeks to change the fundamental premises upon which decisions are based, rendering many statutory mandates dead letters over the short-term.

Monetizing regulatory benefits and the quality of human life

The final step in the effort to disguise controversial policy judgments as objective, scientifically determined outcomes is the rampant spread of cost/benefit analysis. OMB has announced that regardless of the content of statutory mandates, such analyses must accompany major rules.⁷⁵ Combined with other OMB policies—for example, the reinstatement and repeated use of the “return letter” for regulations it does not like⁷⁶ and the open invitation asking the private sector to nominate existing regulations for reevaluation⁷⁷—the expanding influence of cost/benefit analyses has reinstated the domination of health and safety regulatory policy by conservative economic assumptions without the balance that an activist Congress contributed in the Reagan years.

Contrary to what many conservatives believe, progressives do not object to this state of affairs because we believe costs are irrelevant to regulatory decisions but are too embarrassed to confess to our extreme and dogmatic views. We accept that costs must be a major factor, both because we are realists and because we have faith in the use of government resources for other pressing needs on the domestic agenda, from rehabilitation of inner cities to the extension of Medicaid coverage to millions of uninsured children.⁷⁸

Rather, what deeply troubles us is the notion that instead of a complex weighing of a variety of factors in an extended, at times messy, hopefully transparent, and always pluralistic decision-making process, we end up with a pseudo-precise monetization not just of costs, but also of benefits. The irresistible upshot of this sanitized analysis is that one set of numbers is offset against the other.

It is by now old news that progressives fear that the benefits of reducing pollution are understated, for the same reasons that we decry the data gaps that undermine our understanding of pollution’s effects. If we do not know about the toxicity of the *majority* of chemicals circulated in high volumes in commerce, and we do not understand their cumulative and synergistic effects, how can we possibly reduce to a simple number the advantages of reducing the opportunities for exposure of people and the environment? We also believe that what scientific research does exist myopically focuses on cancer and has yet to discover a wide range of equally devastating health effects, from neurotoxicity to mutagenicity to teratogenicity. Lastly, we are deeply concerned that chronic ailments that sharply diminish the quality of life—for example, the epidemic in asthma among certain populations⁷⁹—are grossly down-played in assessing benefits and ignored in monetizing them. So,

⁷⁵See, e.g., Memorandum for the President’s Management Council, from John D. Graham, Administrator, regarding Presidential Review of Agency Rulemakings by OIRA, Sept. 20, 2001, available at: http://www.whitehouse.gov/omb/infoereg/oira__review-process.html.

⁷⁶For more information about the return letter policy and how it has been implemented, see http://www.whitehouse.gov/omb/infoereg/return__letter.html.

⁷⁷This invitation was issued most recently in OMB’s draft Making Sense of Regulation: 2001 Report to Congress on the Costs and Benefits of Regulations and Unfunded Mandates on State, Local, and Tribal Entities (2001), available at: http://www.whitehouse.gov/omb/regpol-reports__congress.html.

⁷⁸For more extensive and thoughtful explanations of the progressive position on these issues, see Comments submitted by the Center for Progressive Regulation on the Draft 2002 Report to Congress on the Costs and Benefits of Federal Regulations, May 28, 2002, at 11-12, available at: <http://www.ombwatch.org/reggs/2002/cprcomments>; Heinzerling & Ackerman, Pricing the Priceless: Cost Benefit Analysis of Environmental Protection (Georgetown Env’tl. L. & Pol’y Inst. 2002).

⁷⁹Asthma afflicts fifteen million Americans, including five million children; 5,000 people die from the disease each year. Epidemiology: U.S. Said Asthma Cases Up 75 Percent Since 1980, Health Letter

at the threshold, progressives oppose the way benefits are catalogued. When this incomplete catalogue is assigned a monetary value, our objections are amplified and compounded.

Apart from the complaint that benefits are omitted or understated, do we object to assigning a dollar value to human life? After all, many of us come from a legal tradition that accepts this approach as a necessary prerequisite to compensating people for injuries caused by another's negligence. How can we suddenly turn squeamish about saying that a life is worth \$6 million, or even \$500,000 or \$20 million, when we so readily accept that approach in the context of tort cases?

Tort damages are a relatively crude effort to achieve justice in the near-term. They typically involve transfers of money between, at most, three generations of human beings. Without monetizing the value of life, the injured would probably receive less and might well receive nothing. Accepting the concept in that limited context is very different from accepting its rigid application in the far larger and longer context of taking steps that affect the status of the natural world. For these reasons, progressives oppose assigning a specific dollar value to a human life in the context of making such profound decisions because we believe that the very act of monetizing a short-term benefit by definition allows policy-makers to avoid the long-term consequences of their decisions. Numbers must come into play, as a surrogate for the severity of the problem and the cost of the remedy, but they should never be assigned on a per capita basis.

Having staked out this moral high ground, however, progressives realize that, for the foreseeable future, monetization is here to stay. We will not get far refusing to engage on the issue, however repugnant we believe the practice is as a whole. Three aspects of monetization policy exemplify the reasons why we think the current OMB approach is so severely misguided: (1) the crippling flaws in the methodologies used for evaluating people's willingness-to-pay to avoid risks; (2) subsequent "discounting" of the aggregate value extrapolated from these garbled and unreliable willingness-to-pay figures; and (3) the recent effort to develop figures reflecting the quality of life years saved (QALYs).

When economists monetize the value of a life in the context of health and safety regulation, they operate on an aggregate scale, dealing with a diverse population composed of people from all walks of life and economic circumstances. Therefore, they cannot hope to be as precise as a plaintiff's lawyer in an individual damage action, projecting what a specific person would have contributed to the world had she lived or remained uninjured. Instead, economists begin by quantifying how much people would be "willing to pay" to avoid a risk.

As documented by Professors Lisa Heinzerling and Frank Ackerman, these figures are derived from studies that are ludicrously out-of-date, depend on distorted assumptions, and have little relevance to people's response to present environmental risks. Thus, for example, any willingness to pay studies involve how much extra workers were paid to do higher risk jobs—such as working with hazardous chemicals—20 years ago.⁸⁰ Economists assume that this "premium" reflects what people would ordinarily pay to avoid the risk of chemical exposure.

Let us put aside for the moment the flood of questions that this approach raises about the original studies (Were the workers really aware of the risks? What were the risks? What other jobs were available with lower risk? Did the workers know about those other jobs?). Even accepting that these 20-year-old numbers say

on the CDC, May 4, 1998, at 1. Five million asthmatic children means that seven percent of the Americans between the ages of 5 and 14 suffer from the disease.

⁸⁰Heinzerling & Ackerman, *Pricing the Priceless: Cost Benefit Analysis of Environmental Protection* 11-26 (Georgetown Env'tl. L. & Pol'y Inst. 2002) (discussing issues related to worker studies, willingness to pay, and ability to pay, as they affect monetization of benefits).

something that is still valid about the way *able-bodied adults* view the world, would any rational person accept such a cold-blooded analytic approach to the evaluation of the value of the lives of his children? What about his grandchildren? From its inception, then, the initial valuation of life depends on the supposed free choice exercised many years ago by workers under many economic pressures, as opposed to what people who are thoroughly informed about costs and benefits (assuming that outcome was even possible to achieve) would react when asked how much should be spent to avoid risk to their children.

Compounding the grossly erroneous “flat” value of life produced by these threshold assumptions, economists then apply a “discount rate” to determine how much it is worth to save the life, not now, but two or three decades in the future. The going rate is between 6% and 7%. Discounting is ostensibly necessary because people generally do not die right away as a result of environmental exposures, but rather contract long-latency diseases that take many years to manifest themselves. The question becomes how much one would have to invest today to arrive at the aggregate figure assigned to the value of life some 20 or 30 years hence? As one can intuit without doing the math, the numbers that result are sharply deflated. For example, using a discount rate of five percent, which is similar to the ones now used by OMB, the death of one person today would be worth as much as the death of one billion people 500 years from today.⁸¹

Progressives oppose this particular aspect of monetization policy because it rests on the erroneous assumption that from the moment of exposure, until the moment one discovers the disease, no harm occurs. Even assuming that the value of life can be quantified; we can assign a dollar value to what we should pay to avoid illness in the *current* population; and we are willing to ignore the effects of pollution on future generations, we disagree with the embedded assumption that nothing bad happens until the person learns she has cancer.

But we are not done yet. The final phase of monetization recently introduced by the economists at OMB involves parsing the value of life even more finely, or from a progressive perspective, in effect building a turret on a sand castle that reaches to the sky. Under this approach, rather than aggregate the value of life, economists examine on an *annual* basis whether various segments of the population have a quality of life worth saving. Under this quality of life years, or QALYs, approach, the annual existence of a bed-ridden grandmother would be worth significantly less than the value of a healthy young adult.

QALYs are justified as a crude method for enhancing the value of life when the harm is a long-latency disease. Or, in other words, exposing a grandmother to a toxic chemical is less upsetting than exposing a child because the grandmother has only a short time to live and probably is not enjoying life much anyway. To put it most charitably, having created the anomaly of ignoring the impact of pollution on future generations, conservative economists now attempt to dig themselves out of the hole by stacking an already loaded deck with modest special treatment for today's children.

I would be willing to bet that many of the people who read this analysis will not only have difficulty believing that my description of the state of affairs is accurate, but will be very surprised if they are persuaded that I am right. Of course, there is an extensive body of literature documenting everything I have said, and adding greatly to the elegance of the analysis.⁸² The real point is that these fevered calcula-

⁸¹Heinzerling & Ackerman, *Pricing the Priceless: Cost Benefit Analysis of Environmental Protection 21* (Georgetown Env'tl. L. & Pol'y Inst. 2002).

⁸²In addition to Heinzerling & Ackerman, *Pricing the Priceless: Cost Benefit Analysis of Environmental Protection 11-26* (Georgetown Env'tl. L. & Pol'y Inst. 2002), see Heinzerling & Ackerman, *The Humbugs of the Anti-Regulatory Movement*, 87 *Cornell L. Rev.* 648 (2002); Heinzerling, *The*

tions, the assumptions on which they are based, and the energy with which they are pursued are so obscure that even many of the relatively well-informed readers of a specialty journal cannot help but find them bizarre and alienating.

Prospects for reform

Professor Laurence Tribe of Harvard Law School is widely perceived as an intellectual icon of what I have dubbed the “progressive” school of thought. Ironically, to the immense frustration of those of us who share his larger views but have spent our professional lives focusing on environmental policy, he has appeared on the conservative side of at least two prominent environmental disputes recently, coauthoring a brief urging the U.S. Supreme Court to overturn EPA’s ozone and particulate rules⁸³ and appearing as counsel in a challenge to the constitutionality of Superfund.⁸⁴ In the Supreme Court case particularly, he argued that delegating broad rulemaking authority to the EPA bureaucracy was antidemocratic. His arguments fell on deaf ears across the spectrum of justices, who issued a unanimous opinion dismissing the nondelegation doctrine arguments.

In an ostensibly different context, Professor Tribe has presented to us a lengthy retrospective on the trauma of the 2000 election, arguing, in essence, that the Court’s interference in that situation reflected an elitist discomfort with the procedures used in a democracy to resolve such disputes.⁸⁵ His condemnation of the Court’s majority was merciless, amounting to an accusation that it had undermined the fundamental tenets of the American system of government by interfering with the political process on the grounds that the justices know what is best for the people and must save us from ourselves.

In essence, I have argued here that the same phenomenon has emerged in the formulation of environmental policy under the Bush Administration. Rather than step into the political arena and have a fair and public fight, conservatives have decided that they too know what is best for the people and must save us from ourselves. If progressives are right, the implications of the growing “technocratization” of environmental policy reach far beyond the impact of any given decision and could put us on a road that threatens democratic process itself.

However Prof. Tribe rationalizes his own intervention in industry challenges to EPA’s decisions on ozone and particulates, those decisions, as they evolved at the administrative level and in the courts, at least exemplify a public and therefore “fair” fight. Carol Browner did not have the luxury of making those decisions in a public relations vacuum. Instead, she was assaulted in the media for proposing to deprive people of their back-yard barbecues and worse.⁸⁶ Even assuming Administrator Whitman could muster the will to make a similar proposal, by the time it had emerged from arcane disputes over the soundness of the science that supported it,

Temporal Dimension in Environmental Law, 31 *Envtl. L. Rep.* (Envtl. L. Inst.) 11055 (Sept. 2001); Heinzerling, *The Rights of Statistical People*, 24 *Harv. Env'tl. L. Rev.* 189 (2000); Heinzerling, *Discounting Life*, 108 *Yale L.J.* 1911 (1999); Heinzerling, *Environmental Law and the Present Future*, 87 *Geo. L.J.* 2205 (1999); Heinzerling, *The Perils of Precision*, *Env'tl. F.*, Sept./Oct. 1998, at 38; Heinzerling, *Regulatory Costs of Mythic Proportions*, 107 *Yale L.J.* 1981 (1998).

⁸³In the Supreme Court of the United States, *Carol M. Browner, Administrator of U.S. EPA, et al. v. American Trucking Ass'ns, Inc., et al.*, Brief of Amicus Curiae the General Elec. Co. in Support of Respondents, No. 99-1257 (9-11-00) (copy on file with author).

⁸⁴U.S. District Court for the District of Columbia, *General Elec. Co. v. Christine Todd Whitman, Administrator, U.S. EPA*, Plaintiff General Electric Company’s Memorandum in Opposition to Defendants’ Motion to Dismiss the Amended Complaint or, in the Alternative, Motion for Summary Judgment, Civ. No. 1:00CV02855 (RWR) (6-29-01) (copy on file with author).

⁸⁵Tribe, *eroG v. hsuB and Its Disguises: Freeing Bush v. Gore from Its Hall of Mirrors*, 115 *Harv. L. Rev.* 170 (2001).

⁸⁶Warrick, *Clean Air Standards Opponents Circle the Backyard Barbecue: Both Sides Escalate Debate as Hill Fight Looms*, *Wash. Post*, Jan. 24, 1997, at A1.

data quality, and whether its monetized benefits outweigh its costs, the public would be mystified at best about the decision's true implications.

History teaches us that however muddy the waters get, in the end the system returns to pluralism, whether in response to an immediate crisis (*e.g.*, the Cuyahoga River on fire and even the Enron et al. scandals) or the voters' intuitive sense that it is best to divide power between the parties. Genuine reform will be possible when that balance is restored, and it is no longer possible to hide the implications of complex policy changes from a distracted populace.

Chapter 4

Administrative Agencies and Procedures*

I. THE ENVIRONMENTAL PROTECTION AGENCY

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- § 4:2 Headquarters
- § 4:3 Regional and field offices

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APPENDIX 4A. Principal EPA Offices

APPENDIX 4B. EPA Regions

APPENDIX 4C. EPA Organizational Chart

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I. THE ENVIRONMENTAL PROTECTION AGENCY

§ 4:1 Introduction

The United States Environmental Protection Agency (EPA) was not created by Congress, but by an executive order in 1970.¹ It is the only major regulatory agency that lacks a statutory charter. EPA is headed by an administrator, who serves at the President's pleasure. Contrary to a common misapprehension, therefore, EPA is not an independent regulatory agency, but is firmly under the President's supervision. The Administrator does not have cabinet rank, however.²

*§ 4:1 by **Sheldon M. Novick**; § 4:4 by **William F. Pedersen**; updates by **Jacqueline M. McNamara**, **Lynn Vendinello**, and **Jon Cannon**

[Section 4:1]

¹Reorg. Plan No. 3 of 1970, 35 Fed. Reg. 15623 (1970), *reprinted in* 5 U.S.C.A. app. at 1132 (1982), *and in* 84 Stat. 2086 (1970).

²Congress has attempted to elevate the Agency to cabinet-level status several times, without success. For a description of the efforts of the 103d Congress in this regard, *see* James E. Satterfield, *High Hopes and Failed Expectations: The Environmental Record of the 103d Congress*, 25 *Envtl. L. Rep. (Envtl. L. Inst.)* 10089, 10098 (Feb. 1995).

One result of EPA's being assembled by executive order is that it lacks an overall charter.³ Another is that the Agency is made up of offices and laboratories scattered around the country that were parts of other agencies with different missions. The air pollution program had long been part of the Public Health Service; the water pollution control program was moved bodily from the Department of Interior; and pesticide regulation from the Department of Agriculture. Laboratory facilities and some radiation control staff were taken from the old Atomic Energy Commission.

This hasty origin has left its marks. Even after over twenty-five years, the separate agency programs are still physically and culturally separate to some degree. The air program's staff of scientists and health professionals have a corporate character very different from the water program, which is staffed by sanitary engineers and construction managers, which differs again from the pesticide program in Crystal City, Virginia, staffed with veterans of the Agriculture Department who have a very different history of relationships with the regulated community from the other parts of EPA.⁴

From its earliest years, EPA has been a highly decentralized agency that operates through its ten regional offices.

§ 4:2 Headquarters

Each of the subagencies brought together within EPA is headed by an assistant administrator, a Presidential appointee confirmed by the Senate. The Agency has grown by acquiring new programs, and with each it has acquired a new assistant administrator. EPA began with five assistant administrators: for research; enforcement; planning and management; air and water pollution control; and "categorical programs"—miscellaneous radiation, pesticide, and solid waste programs.

Two assistant administrators were added by statute in 1976. The Toxic Substances Control Act established the position of assistant administrator for toxic substances (who now also supervises the pesticide program); the Resource Conservation and Recovery Act created an assistant administrator for solid waste (who now also supervises the Superfund "emergency response" program).¹ In 1978, EPA, like all other federal agencies, was given an inspector general, by the Inspector General Act, one element of the Carter Administration's reform of the civil service.²

In 1981, Anne Burford (then Anne Gorsuch) drastically reorganized the Agency.³ In 1983, William Ruckelshaus undid some of Gorsuch's changes and made new changes of his own. Under Ruckelshaus, the General Counsel was elevated to assistant administrator rank, and two associate administrator positions—which do not require congressional action—were created.⁴

In 1993, Clinton-appointed EPA Administrator Carol M. Browner announced that

³See Ch 2.

⁴See Ch 2.

[Section 4:2]

¹Toxic Substances Control Act § 26(g), 15 U.S.C.A. § 2625(g); Resource Conservation and Recovery Act § 2001(a), 42 U.S.C.A. § 6911(a). An Office of Noise Abatement was established by the Clean Air Act of 1970, and a budget authorized by the Noise Control Act, but both were allowed to lapse for lack of funding in the Reagan Administration.

²See 5 U.S.C.A. app III, § 1.

³See A. Burford, *Are You Tough Enough?* 89-99 (1986); J. Lash, K. Gillman & D. Sheridan, *A Season of Spoils* 30-62 (1984).

⁴Burford had reorganized the management and planning offices and the enforcement function; Ruckelshaus separated management and planning, assigning each to new assistant administrators. He separated the enforcement and legal counsel offices, which Burford had combined, but left intact her decentralization of the enforcement function. See Pub. L. No. 98-80, 97 Stat. 485, *codified at* 42 U.S.C.A. § 4370(a); S. Rep. No. 196, 98th Cong., 1st Sess. (1983), *reprinted in* United States Code Congressional and Administrative News p 909. The Burford reorganization of enforcement work was

the Office of Enforcement would be reorganized and renamed the Office of Enforcement and Compliance Assurance (OECA).⁵ In June 1994, EPA formed the OECA, which is divided into the Office of Compliance (OC); the Office of Regulatory Enforcement (ORE); the Office of Site Remediation and Enforcement (OSRE); the Office of Criminal Enforcement, Forensics, and Training (OCFT); and the Office of Federal Activities (OFA).

The OC has responsibility for strategic planning, and includes an enforcement planning, targeting, and data division. It also contains three sector-based divisions: a Chemical, Commercial Services, and Municipal Division; a Manufacturing, Energy, and Transportation Division; and an Agriculture and Ecosystems Division. Through this "sector approach," EPA intends to target particular sectors of regulated industry that are in need of compliance assistance.

The ORE, which is responsible for enforcement case review and support, houses a multi-media enforcement division, while retaining separate divisions for water, pesticides and toxics, air, and RCRA. This structure enables the ORE to continue the use of media-specific approaches to EPA's rulemaking and litigation activities.

In consolidating responsibilities formerly shared among five different programs under one Assistant Administrator, the reorganization will reverse the fragmentation that occurred under the Reagan Administration.

EPA's reorganization provides for the creation of two new deputy assistant administrator positions in the Assistant Administrator's Office. A Regional Impacts Task Force was formed to assess whether corresponding structural changes in EPA's regional offices are necessary. Based on the work of the Task Force, EPA Administrator Browner decided that each region must create an Enforcement and Compliance Assurance (ECA) Coordinating Office that reports directly to the Deputy Regional Administrator, as well as distinct ECA units within the current regulatory media program divisions to house all divisional enforcement and compliance assurance functions. The divisions themselves will maintain all of their current media program responsibilities, including implementation of the ECA program. At its option, any region may go beyond this approach and create a consolidated ECA Division, from which the Superfund program would be kept separate. The regions would also have the flexibility to determine whether inspection resources should be housed in the ECA Division, the Environmental Services Division, or both.

The Agency has also reorganized its planning, budgeting, and accountability functions, as part of its response to recommendations for reforms and its implementation of the Government Performance and Results Act (GPRA). Previously, the positions of Chief Financial Officer and Assistant Administrator for Administration and Resource Management (OARM) were held by the same presidential appointee. Budgeting functions were carried out by OARM; planning and accountability reviews were the responsibility of the Assistant Administrator for Policy, Planning and Evaluation (OPPE). On March 30, 1997, the Agency created a new Office of the Chief Financial Officer, separate from OARM, and brought to that office both the budgeting function that had previously been in OARM and key planning and accountability functions that had previously been in OPPE. This reorganization was accompanied by creation of a new goal-based planning, budgeting, and accountability system administered through the new office.

followed by a dramatic decline in EPA enforcement suits, and the reorganization was thought to reflect the administrator's hostility to federal enforcement. *See* J. Lash, K. Gillman & D. Sheridan, *A Season of Spoils*, 45-53 (1984). From 1982 onward, enforcement litigation returned to traditional levels, but the reorganization has probably had some effect on the way the Agency uses the enforcement function. *See* § 4:3.

⁵EPA Press Release, EPA Administrator Details Design of Reorganized Enforcement Office, p.1 (Oct. 13, 1993); *see also* Memorandum from Carol M. Browner, EPA Administrator, to All EPA Employees (Oct. 12, 1993).

The General Counsel appoints and supervises the legal work of EPA lawyers at headquarters and in the regional offices.⁶

In addition to its dozen Assistant Administrators (counting the Inspector General, the General Counsel, and the Chief Financial Officer), the Agency now has three Associate Administrators—one for congressional and intergovernmental relations, another for communications, education, and public affairs, and a third for reinvention, a post recently created to reflect the importance of reform efforts within the Agency.⁷

Also reporting directly to the Administrator are the ten regional offices of EPA, which are the Agency's operating units and which are discussed more fully below, a number of staff offices,⁸ and the Administrator's own immediate aides.

The Administrator therefore nominally supervises about fifty senior staff directly, which would be a difficult task even if the Administrator were not required to spend a large portion of his or her time in congressional offices, hearing rooms, and meeting with constituent groups. This work is shared with the Deputy Administrator, who generally takes significant responsibility for internal management of the Agency, and by the Administrator's Chief of Staff. To further ease the management burden for both, many of the communications with the ten regions flow through the Regional Operation's staff.

Because this large group of senior managers are almost all political appointees, tenure in the positions is short, and each administration begins with an entirely new set of senior managers. Each administration therefore typically spends a great deal of time relearning what its predecessors painfully learned. In recent years, to provide a reservoir of experienced management at senior levels, EPA has appointed career civil servant deputies for the assistant administrators; these deputies are expected to remain with the Agency and to provide continuity from administrator to administrator. They have considerable independent authority.

§ 4:3 Regional and field offices

At the time of EPA's creation, the Nixon Administration had embarked on the New Federalism, which included, among other things, decentralizing the management of the federal government into regional offices. EPA was divided between a headquarters and ten regional offices scattered across the United States. These presumably were better able to deal with state and local programs than the vast bureaucracy in Washington.

EPA's operating programs have remained decentralized in the regions to a large, even surprising, degree. Generally speaking, headquarters sets policy and makes general rules; the regional offices carry out the programs. This decentralization has worked well. Pollution control programs are primarily state programs, and the Agency's ability to deal with the myriad of local environments is limited. Many of its programs operate at even lower levels of government—both air pollution control and water pollution control programs are often operated by municipal or county governments. And, of course, the environment itself and its requirements vary greatly from place to place.

People who deal with the Agency are regularly surprised, and not always pleased, by the large degree of autonomy which the regional offices have, especially in enforcement and permitting. Regional offices also disburse grant funds to state agencies, and to local governments for sewage treatment works. It is always wise to

⁶The Department of Justice, through the U.S. Attorney's Offices, represents the Agency in much civil litigation and in all criminal prosecutions.

⁷See Appendix 4C.

⁸*E.g.*, Science Advisory Board, Office of Civil Rights, Office of Administrative Law Judges, Office of Cooperative Environmental Management, Regional Operation's staff, and Office of Children's Health Protection. See Appendix 4C.

begin with a regional office if there is a question about any of these matters. Roughly half the Agency's personnel are in the regional offices.

Each regional office is headed by a regional administrator, who is a political appointee but not a Presidential appointee. This appointment is usually made in consultation with the senior senator and governor of the state which is host to the regional office. The regional administrator is responsible for seeing that the work of the Agency in that region is carried out. The work itself is defined by the national program managers—the assistant administrators in Washington—who issue policies and set goals for performance. Joint planning and budgeting exercises and frequent consultations between the regional administrators and the assistant administrators and their staffs seek to ensure consistency between national policies and regional implementation.

EPA views the state governments as the “operating units” of the federal system, and much of the regional offices' work is supervision or support of state programs, for which they provide financial and some technical assistance. Regional offices pass on to the states, as well as they can, the policies and requirements that are issued in Washington. The regional offices sign program-specific formal agreements with each state, which include criteria for enforcement, and for other conditions of financial assistance.¹ Where state programs are inadequate, or where the states have chosen not to assume responsibility, EPA regional offices must be prepared to step in and issue permits and enforce them directly.²

The Agency's large research program is also decentralized, but in a different way. Research is organizationally within the headquarters unit, under the Assistant Administrator of Research and Development, but it is actually carried on in a series of laboratories inherited from other agencies—the Department of Interior, the Public Health Service, and the old Atomic Energy Commission—that are scattered around the country. The facility in Las Vegas, for instance, is a legacy of the Atomic Energy Commission's years of study of fallout from bomb testing.

II. EPA'S ADMINISTRATIVE PROCEDURE*

§ 4:4 In general

Environmental law—or, to state it more accurately, the law of EPA—is primarily built around eight statutes that can conveniently be grouped into four sets of two. First, there are the Clean Air Act¹ and the Clean Water Act,² two major “old line” regulatory statutes with very similar general architecture. Second come the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA),³ under which pesticides are licensed and regulated, and a parallel statute with a more up-to-date design, the Toxic Substances Control Act (TSCA),⁴ under which other chemicals are regulated in a somewhat analogous way. Third, there are the Solid Waste Disposal Act (RCRA)⁵

[Section 4:3]

¹See Ch 7.

²See §§ 9:42, 9:43.

*By **William F. Pedersen**

[Section 4:4]

¹42 U.S.C.A. §§ 7401 to 7671q.

²Federal Water Pollution Control Act, 33 U.S.C.A. §§ 1251 to 1387.

³7 U.S.C.A. §§ 136 to 136y.

⁴15 U.S.C.A. §§ 2601 to 2692.

⁵42 U.S.C.A. §§ 6901 to 6992k.

and “Superfund” (also called CERCLA),⁶ which regulate hazardous waste in a significantly overlapping manner. Finally, there are two minor statutes dealing with the water cycle: the Safe Drinking Water Act⁷ and the Marine Protection, Research and Sanctuaries Act (the “Ocean Dumping Act”).⁸ A ninth statute, the Pollution Prevention Act of 1990, authorizes establishment of a program to help prevent or reduce the generation of pollution.⁹

Despite the tremendous variety of programs and procedures that arise under these statutes, which we will explore in some more detail below, three common threads tend to run through all of them.

First, with some exceptions, the dominant vehicle for action under each of them is a notice-and-comment procedure—generally, but not always, rulemaking of different forms. Indeed, the evolution of the programs under these statutes has accounted for much of the development of modern administrative law.

Corresponding to this stress on notice and comment is a bias against formal, trial-type hearings. Those who designed the statutes by and large thought such procedures obsolete, as did the Agency’s first administrator, and over the years most of his successors have agreed. EPA has consistently tried to minimize reliance on such hearings.

Finally, the statutes embody a great many imaginative approaches to enlisting the judicial process in regulatory tasks. Though these may not be part of administrative procedure *per se*, they will be touched on briefly below.

§ 4:5 Rulemaking

When EPA was created in 1970, most important agency decisions were still made by formal trial-type hearings before an Administrative Law Judge (ALJ). Though academic interest in rulemaking was growing, it was not yet generally used to state the specific commands of major regulatory programs. Even when rulemaking was used, it was generally to set the boundaries and structure the issues for formal hearings, not to issue commands that would themselves be reviewed in court directly.

The Administrative Procedure Act (APA) provisions on rulemaking, enacted in 1946, reflect this relative lack of past significance. All they say is that an agency that wishes to issue a rule must publish a notice in the *Federal Register* giving either the text of the rule or a description of the “subjects and issues involved,” must receive comments, and must then issue a final rule together with a response to the comments received.¹ Even this is not required for “interpretive” rules, “general statements of policy,” or substantive rules in a number of specific categories,² of which the most relevant to EPA has been the one involving “public property, loans, grants, benefits, or contracts.”³

Enactment of the Clean Air and Clean Water Acts placed a great strain on this historically somewhat undeveloped system. Under these two statutes, numerous vitally important commands were to be issued as rules and complied with under

⁶42 U.S.C.A. §§ 9601 to 9675.

⁷42 U.S.C.A. §§ 300f to 300–26.

⁸33 U.S.C.A. §§ 1401 to 1445. We might also add the Emergency Planning and Community Right-to-Know Act, 42 U.S.C.A. § 11001 to 11050, which requires facilities to report the presence and environmental releases of various toxic chemicals to regulatory authorities.

⁹42 U.S.C.A. §§ 13101 to 13109.

[Section 4:5]

¹5 U.S.C.A. § 553.

²5 U.S.C.A. § 553(a).

³5 U.S.C.A. § 553(a)(2).

heavy penalties in a few years. This development, which was paralleled to a somewhat lesser extent in other agencies, raised two questions.

The first was how to structure the somewhat minimal APA procedures to provide a responsible forum for decisionmaking that could also yield a record for judicial review. The solution, which is now universally accepted, is to use the rulemaking process to frame a written dialogue in which all interested persons are required to contribute the full range of their information and arguments before the final agency decision. So, when the agency issues its proposal, it must support it with a full discussion of the facts, analytical methods, and policy issues involved. This done, the burden shifts to the public to support their views in comparable detail. Finally, the agency, when it takes final action, must respond to the comments and update the analysis in the light of the information it has received.

This approach to rulemaking was first set out by the late Judge Leventhal in an EPA case.⁴ It was then discussed in a law review article by an EPA employee,⁵ and was eventually written in detail into the Clean Air Act.⁶

The second question raised by the increased importance of rulemaking was whether new hearing procedures that move rulemaking somewhat more toward the form of a trial should be adopted in view of the increased importance of the issues involved.

Some early EPA cases suggested that this might be done,⁷ but, like all other expressions of this nature, they were terminated by the Supreme Court's emphatic disapproval in *Vermont Yankee*.⁸ That case, of course, did not prevent Congress from requiring such procedures if it so chose. Although provisions in EPA statutes for a legislative, public meeting-type hearing in connection with rulemaking are common,⁹ the only EPA rulemaking provision that moves even a little way toward the courtroom model is section 6 of Toxic Substances Control Act.¹⁰

Accordingly, these developments have run their course with very little change in the statutory standards for rulemaking with which EPA began in 1970. The Clean Water Act, FIFRA, RCRA, CERCLA, the Ocean Dumping Act, and the Safe Drinking Water Act all adopt without qualification the APA procedures for agency rulemaking. TSCA has a number of finely adjusted rulemaking procedures of its own, but the sum total of their deviations from the old model is modest.

The "legislative veto"—a congressional veto of regulations—was also much discussed in these years, but CERCLA and FIFRA are the only EPA statutes where attempts to insert any form of a legislative veto were successful.¹¹ Those vetoes have now become inoperative since the Supreme Court disapproved all such enactments in *Chadha*.¹²

With this first set of issues now essentially settled and the basic framework for

⁴*Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 3 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20642 (D.C. Cir. 1973).

⁵Pedersen, *Formal Records and Informal Rulemaking*, 85 *Yale L.J.* 38 (1975).

⁶Clean Air Act § 307(d), 42 U.S.C.A. § 7607(d).

⁷*International Harvester Co. v. EPA*, 478 F.2d 615, 3 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20133 (D.C. Cir. 1973); *Appalachian Power Co. v. Ruckelshaus*, 477 F.2d 495, 3 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20310 (4th Cir. 1973).

⁸*Vermont Yankee Nuclear Power Corp. v. Natural Res. Def. Council, Inc.*, 435 U.S. 519, 8 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20288 (1978).

⁹*See, e.g.*, RCRA §§ 3001(a), 3002(a), 3003(a) & 3004(a), 42 U.S.C.A. §§ 6921(a), 6922(a), 6923(a) & 6924(a) (almost all major RCRA regulations must be promulgated after "opportunity for public hearings").

¹⁰15 U.S.C.A. § 2605.

¹¹FIFRA § 25, 7 U.S.C.A. § 136w; CERCLA § 305, 42 U.S.C.A. § 9655.

¹²*Immigration and Naturalization Serv. v. Chadha*, 462 U.S. 919, 13 *Env'tl. L. Rep.* (Env'tl. L.

rulemaking established, current attention has turned to the interaction of that structure with the informal conduct that of necessity must surround it. The questions here fall into two broad categories.

The first concerns the role in rulemaking of conversations that are not written down. Conversations within the agency have never given rise to significant legal issues—they are considered “merged” in the agency’s final policy decisions. However, discussions with persons outside the Executive Branch and with officials at the Office of Management and Budget (OMB) or the White House have continued to generate lively controversy.

The definitive *judicial* pronouncement on both these issues is contained in the D.C. Circuit’s opinion in *Sierra Club v. Costle*.¹³ There, the court required only that if non-Executive Branch persons contributed significant new facts to the rulemaking in oral comments, these should be recorded in a memo to the file so that the record would be complete.¹⁴ Where conversations with White House officials were concerned, the court left somewhat open the question whether even this much would be required.¹⁵

Despite this strong judicial language, contacts of both types continue to have a significant potential for both legal and political controversy.

Even on the purely legal level, one can argue that any unformalized meetings between an agency and a nonfederally approved outside group violate the Federal Advisory Committee Act. The Act prohibits contact with any “advisory committee,” which is very broadly defined, unless it has been formally chartered by the government and its meetings made open and advertised in the *Federal Register*.¹⁶ Although EPA does not take such a conservative view of the law, which itself could well be questioned as violating First Amendment rights to free speech and to petition the government, it does acknowledge that any course of meetings with one group that could be construed as adopting that group as a preferential source of advice might well be subject to legal challenge. Accordingly, a long line of EPA policy announcements has said that, although meetings in rulemaking are not at all discouraged, they must be balanced among the various interest groups involved so that no one group receives preference. In addition, though there is no set and predictable practice, it is entirely possible that a memo to the file will be prepared after any one of these meetings, regardless of the true importance of the comments.

The question of White House involvement, or, more frequently these days, OMB involvement, is not so much legally as politically controversial. The controversy rests on a fear that these central bodies will displace the Agency’s decisionmaking power as vested in it by Congress. In reaction to that concern EPA has adopted a policy of placing in the public record all written communications between itself and OMB. (The same requirement was inserted into the Clean Air Act in 1977 as a reaction to the centralized review practices of the Nixon and Ford Administrations.)¹⁷ However, the significance of this practice should not be exaggerated, since typically there is very little written documentation of dealings between EPA and OMB.

Second, new developments reflect a fear that even these new procedures, born of a

Inst.) 20663 (1983).

¹³*Sierra Club v. Costle*, 657 F.2d 298, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20455 (D.C. Cir. 1981).

¹⁴*Sierra Club v. Costle*, 657 F.2d 298, 400–04, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20455 (D.C. Cir. 1981).

¹⁵*Sierra Club v. Costle*, 657 F.2d 298, 404–08 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20455 (D.C. Cir. 1981).

¹⁶Pub. L. No. 92-463, § (3)2, 86 Stat. 770 (codified at 5 U.S.C.A. App. 2). Its requirements apply to any group “established or utilized by one or more agencies in the interest of obtaining advice and recommendations”).

¹⁷Clean Air Act § 307(d)(4)(B)(ii), 42 U.S.C.A. § 7607(d)(4)(B)(ii).

fear that formal hearings had grown too difficult for the agency to operate or too adversarial, have themselves become too easy for the agency to operate or too adversarial and must themselves be reformed once again. The first set of such reforms (apart from the departed legislative veto) embody requirements in specific statutes that EPA complete certain studies, or consult certain definite groups, or satisfy demanding *substantive* regulatory tests, before regulating (or not regulating) in certain areas.¹⁸ The second is a new interest in framing rules by a process of negotiation among those interested rather than by formalized legal procedures.¹⁹ “Regulatory negotiation” has played a role in the agency’s efforts to implement the 1990 amendments to the Clean Air Act.

Over time, EPA has also begun to explore the possibilities of “interpretive” rules, which have the advantage—for EPA—of not requiring preissuance notice and comment, and has used them as vehicles for some very important statements on the legal meaning of new statutes.²⁰

§ 4:6 Licensing

Licensing—the requirement that prior governmental permission be obtained in order to do something¹—takes several different forms at EPA. Most importantly, new pesticides, like new drugs, must be approved before they can be marketed.² Hazardous waste management facilities must have permits,³ and those who discharge into the water must also have permits for that discharge.⁴ “Major” new sources of air pollution must have a permit to be constructed,⁵ while the 1990 Clean Air Act amendments require “operating permits” for all such sources.⁶

In prior times, analogous licensing decisions were the domain of formal hearings. Although to some extent that is also true at EPA, what is striking is how much that inherited approach has lost ground in an area in which the magnitude of the public and private interests and investments at issue might have been thought to create great pressures for its retention. Moreover, even where these procedures have been retained, they have been qualified in various ways that move them more toward the rulemaking model.

§ 4:7 Licensing—Product licensing

The regulatory program for new and existing pesticides under FIFRA, for example, is a licensing program of many years standing very similar to the program of new

¹⁸For an example of the first approach, see RCRA § 3001(b)(3)(A), 42 U.S.C.A. § 6921(b)(3)(A) (mining wastes may not be regulated under RCRA prior to completion of study); of the second, see FIFRA § 25(a)(2), 7 U.S.C.A. § 136w(a)(2) (FIFRA regulations must be specially transmitted to the Secretary of Agriculture for comment); of the third, see RCRA § 3004(g), 42 U.S.C.A. § 6924(g) (land disposal of wastes permitted only if EPA finds they will not migrate off site).

¹⁹EPA has used the method of “regulatory negotiation” in setting air pollution standards for wood stoves, coke ovens, and reformulated gasoline.

²⁰So, for example, many of EPA’s views on the legal meaning of the 1984 RCRA amendments were set forth in a “codification rule” issued without notice and comment. See 50 Fed. Reg. 28702 (1985).

[Section 4:6]

¹The term “license” is defined at 5 U.S.C.A. § 551(8), which contains the definitions for the Administrative Procedure Act.

²FIFRA § 12, 7 U.S.C.A. § 136(j).

³RCRA § 3005(a), 42 U.S.C.A. § 6925(a).

⁴Clean Water Act §§ 301 and 402, 33 U.S.C.A. §§ 1311 and 1342.

⁵Clean Air Act §§ 165 and 173, 42 U.S.C.A. §§ 7475 and 7503.

⁶See 42 U.S.C.A. §§ 7661 to 7661f.

drug licensing under the Food, Drug and Cosmetic Act.¹ Any “registrant” or potential registrant of a pesticide is entitled to a full formal trial-type hearing in order to challenge any agency decision to deny initial clearance to its product or take it off the market. In practice, these hearings are too long and expensive to be used to challenge an agency decision not to approve a new pesticide. There, the burden of delay works against the private applicant, and the chances of final success are probably small. However, there have been a number of proceedings where EPA sought to remove an existing pesticide from the market. Here, the pesticides tend to remain on the market during the administrative proceeding, thus casting the burden of delay on the Agency. Some of these hearings went on for several years.

EPA now attempts to structure these proceedings by providing that, except in emergencies, existing pesticides will be reviewed through an informal, rulemaking-type procedure before any decision whether to start a hearing to remove them from the market is reached.² Attempts some years ago by EPA to splice this procedure formally into the hearing so as to diminish the importance of the traditional tools of advocacy proved intensely controversial and were eventually abandoned.³ However, simply through its existence, this administrative review process has reduced the importance of the hearing in reaching the decisions that EPA actually does make, and has increased the frequency of voluntary settlement between the Agency and registrant.

It would have been easy for Congress in enacting FIFRA’s sister statute, the Toxic Substances Control Act, to duplicate this product licensing scheme. But instead, Congress chose a course that requires EPA to act affirmatively to bar a new chemical from the market rather than making Agency inaction itself a bar, as with a new pesticide. TSCA compensates for that by greatly reducing the procedural burdens that attend exercise of that power. New chemicals, unlike new pesticides, *do not* require formal EPA approval before they can be marketed. Instead, they must be run by EPA for a specified review period.⁴ If the Agency thinks that the chemical is suspect in some way, it can block it from the market by relatively informal means.⁵ However, if it takes no action, the chemical is automatically approved.

§ 4:8 Licensing—Facility licensing

A similar procedural evolution has taken place where EPA licensing of individual sources of pollution or potential pollution—“facility licensing”—is concerned. The first major EPA program of this nature was the water pollution discharge permit program under the Clean Water Act, formally known as the National Pollutant Discharge Elimination System (NPDES) program.¹ Here, the courts originally read an ambiguous statute as requiring a formal APA hearing before a Clean Water Act permit can be amended or denied. However, after the Supreme Court’s *Chevron* decision instructed courts to grant more deference to agency legal interpretations, EPA revised its Clean Water Act regulations to eliminate the right to a formal hearing.² The courts have upheld this elimination.³ (For permits for discharging dredged or fill materials in wetlands or other waters, the test is somewhat different.

[Section 4:7]

¹See 21 U.S.C.A. § 355.

²See 40 C.F.R. pt. 154.

³45 Fed. Reg. 52628 (1980).

⁴TSCA § 5, 15 U.S.C.A. § 2604.

⁵TSCA § 5, 15 U.S.C.A. § 2604.

[Section 4:8]

¹See Clean Water Act §§ 301, 402, 33 U.S.C.A. §§ 1311, 1342.

²See 65 Fed. Reg. 30866 (May 15, 2000).

The Army Corps of Engineers issues these permits through an informal hearing process,⁴ subject to an EPA veto if the Agency disagrees sufficiently strongly with the decision reached.)⁵

When Congress amended the solid waste laws to provide a separate permit program for hazardous waste facilities,⁶ it did not require the grant or denial of those permits to be attended by such legal formalities at all. Instead, it accepted EPA's intention to make these decisions by a notice and comment process, and added only that a permit could only be *revoked* through a trial-type hearing,⁷ and that the hearing on the *grant* of any such permit would have to be extensively advertised in the locality involved.⁸

For permits under the Clean Air Act even less is required. Here, the statute simply says that a decision shall be made—generally by a state. All EPA requires when it is the issuing authority is a moderate notice and comment opportunity, analogous to rulemaking.⁹ EPA has adopted the same rule for the issuance of Clean Air Act operating permits.¹⁰ Likewise, only informal hearings are required for permits to inject fluids into wells under the Safe Drinking Water Act.¹¹ (Permits under the Ocean Dumping Act, however, require an opportunity for a formal hearing.)¹²

§ 4:9 State program approval

Two separate categories of EPA action, little studied by academics in spite of their major importance, concern the relations between EPA and the states in administering pollution control programs. Both fall in an intermediate area between rulemaking and adjudication.

Under the Clean Water Act, RCRA, and the Safe Drinking Water Act, EPA administers the regulatory program required by the statute unless it finds that a state has a comprehensive alternative program that would be at least as protective. Upon such a finding, EPA can cease its efforts and allow the state instead to run the program within its boundaries. If EPA finds that the state is no longer performing acceptably, it can revoke its approval and resume the program itself.¹

EPA approval decisions, as a formal matter, are made through rulemaking-type notice and comment processes, though these are generally only the culmination of months or years of informal negotiation. The question of how much procedure must be afforded in order to revoke this approval in a state is debatable, and has never been resolved since EPA has never in fact revoked an approval. Strong arguments can be made that an adjudicatory hearing is required.

Under the Clean Air Act, a state wishing to run the control program—or part of it—can adopt individual regulations and submit them to EPA for approval. The

³See *Dominion Energy Brayton Point, LLC v. Johnston*, 443 F.3d 12 (1st Cir. 2006).

⁴33 C.F.R. pt. 325.

⁵Clean Water Act § 404(c), 33 U.S.C.A. § 1344(c).

⁶RCRA § 3005, 42 U.S.C.A. § 6925. This provision was added to the statute in 1976 and took effect when its implementing regulations became binding in the early 1980s.

⁷RCRA §§ 3008(a) to (b), 42 U.S.C.A. §§ 6928(a) to (b).

⁸RCRA § 7004(b)(2), 42 U.S.C.A. § 6974(b)(2).

⁹40 C.F.R. pt. 124 (subparts A & C).

¹⁰See 40 C.F.R. pt. 70; 57 Fed. Reg. 32250 (July 21, 1992).

¹¹40 C.F.R. § 145.11.

¹²40 C.F.R. pt. 223.

[Section 4:9]

¹See Clean Water Act § 402, 33 U.S.C.A. § 1342(a); RCRA § 3006, 42 U.S.C.A. § 6926; Safe Drinking Water Act § 1422, 42 U.S.C.A. § 300h-1.

courts have required these approvals to take place through formal notice and comment procedures.² Because of the procedural burdens such an automatic requirement entails, EPA has adopted a number of procedural devices for getting around it in individual cases.³

Mindful of the difficulty of making an all-or-nothing decision such as a program disapproval, the Clean Water Act provides that EPA can “veto” any state permit issued under an approved program simply by lodging a disapproval notice.⁴ EPA then becomes the issuing authority for that permit. The Clean Air Act permit program contains a similar provision.⁵ Paradoxically, Congress did not provide any parallel authority where the far more sensitive issue of licensing hazardous waste management facilities was concerned. However, EPA has attempted to repair that gap by regulation.⁶

§ 4:10 Judicial review

The classic form of judicial review—passing on challenges to agency action—has continuously received a high degree of attention over EPA’s history. The needs of judicial review helped frame the rulemaking procedures described above. In addition, the courts played an important role in insisting, in EPA’s early days, that EPA had to discuss the technical questions it faced in acceptable technical detail if it wanted its rules sustained in court.¹ However, once that discussion had been provided, the rules would generally be upheld regardless of the policy choices EPA had made. In recent years the trends of deference to final agency decisions has grown increasingly stronger, not just where factual judgments or policy choices are concerned, but for legal interpretations as well.² Despite these pro-agency changes in the general legal matrix, the first years of the 21st century have seen a dramatic EPA losing streak in the federal courts of appeals, with the opinions often couched in stinging language.³

Judicial decisions also implement the “action forcing” provisions of the EPA laws. Congress, when it designed the EPA statutes, feared that EPA might simply not act at all in any finite time to carry out the statutory commands. Accordingly, Congress generally provided deadlines for long lists of EPA actions, and likewise provided that citizens could sue the administrator to compel him to perform a “non-discretionary duty.”⁴ Environmental groups have taken full advantage of these provisions to sue EPA to promulgate a long list of statutorily-required regulations. EPA

²For a full discussion, see Pedersen, *Why the Clean Air Act Works Badly*, 129 U. Pa. L. Rev. 1059, 1078 n.66 (1981).

³So, for example, EPA omits the notice and comment period for rules that it thinks will not be controversial, but only on condition that no adverse comments are received. If such comments are received (which they rarely are), it recycles the rule for full notice and comment. Alternatively, EPA approves “generic” rules under which all changes that can be described by simple mathematical formulas are approved in advance.

⁴Clean Water Act § 402(d), 33 U.S.C.A. § 1342(d).

⁵42 U.S.C.A. § 7661d(b).

⁶40 C.F.R. § 271.19.

[Section 4:10]

¹See *Portland Cement Ass’n v. Ruckelshaus*, 486 F.2d 375, 3 Env’tl. L. Rep. (Env’tl. L. Inst.) 20642 (D.C. Cir. 1973); *International Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 3 Env’tl. L. Rep. (Env’tl. L. Inst.) 20133 (D.C. Cir. 1973).

²*Chemical Mfrs. Ass’n v. Natural Res. Def. Council, Inc.*, 470 U.S. 116, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20230 (1985); *Chevron U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20507 (1984).

³See, e.g., *Natural Resources Defense Council v. EPA*, 489 F.3d 1250 (D.C. Cir. 2007).

⁴Clean Air Act § 304, 42 U.S.C.A. § 7604; Clean Water Act § 505, 33 U.S.C.A. § 1365; RCRA § 7002, 42 U.S.C.A. § 6972; TSCA § 20, 15 U.S.C.A. § 2619.

has never won such a deadline suit where the statute provided a definite time for acting. Although the courts have not held EPA literally to the deadlines in the law, which in any case are generally long past by the time the suit is brought, they have been decidedly unsympathetic to EPA's views of what might be an equitable time for acting. Accordingly, EPA increasingly attempts to settle such cases with environmental groups, since experience has proved that there is little to be gained by litigation.

In recent statutes—primarily the 1984 RCRA Amendments—Congress has gone a step beyond the mechanism of “action forcing” through citizen suits, and has specified so-called “hammer” provisions. Under these provisions, if EPA does not promulgate rules by a certain date, a Congressionally defined regulatory scheme—which is probably far more onerous than any likely rule—automatically comes into effect.⁵ Of course, this is an even more effective mechanism for forcing EPA to get regulations out on schedule than the citizen suit provision.

Where no deadline is expressed in the statute, attempts to force EPA to act by litigation have generally been unsuccessful. Indeed, EPA has had a good record of defending against such actions in district court with the argument that they do not involve a “nondiscretionary” duty. Instead, EPA generally requires such requests for nondiscretionary action to be presented to it as a petition. It acknowledges that it has a duty to act on that petition, and asserts that any final ruling on it constitutes a “final agency action,” which is generally reviewable in the court of appeals, and in any event, is reviewable only on the administrative record that the Agency has created.⁶

The particular framework of EPA litigation has also helped encourage an increased interest in settling disputes by negotiation, in which EPA attempts to bargain out its deadline duties under citizen suits. On one past occasion, this led to a long and intricate consent decree that has been widely criticized as impermissibly binding the Agency so as to bar it from changing its mind on discretionary matters in future rulemakings.⁷ However, the far more common form of a consent decree simply requires the Agency to propose and promulgate the statutorily required rules by a date certain, without saying much about their content or imposing any further dates.

§ 4:11 Public participation

Many features of the EPA statutes can be traced back to the concern for broadening “public participation” in agency proceedings that arose at the same time these statutes were being written. The Clean Water Act and RCRA state as one of their “guiding policies” that public participation in agency decisionmaking shall be encouraged.¹ Other statutes lack this overarching statement, but contain their own public participation encouragement measures.

⁵See, e.g., RCRA §§ 3004(d) to (h), 42 U.S.C.A. §§ 6924(d) to (h).

⁶This framework was first set out in *Oljato Chapter of the Navajo Tribe v. Train*, 515 F.2d 654, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20481 (D.C. Cir. 1975).

Its most dramatic application to date, and probably forever, was to set up the decision that EPA had no power to regulate greenhouse gases, which the Supreme Court reversed in *Massachusetts v. EPA*, 127 S. Ct. 1438 (2007).

⁷*Citizens for a Better Env't v. Gorsuch*, 718 F.2d 1117, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20975 (D.C. Cir. 1983).

[Section 4:11]

¹CWA § 101(e), 33 U.S.C.A. § 1251; RCRA § 7004(a), 42 U.S.C.A. § 6974(a).

By all odds the most common are those requirements discussed earlier that call for a “public hearing” in connection with an agency decision.² RCRA takes this normal procedure a step further and requires any hearing on a RCRA permit to be advertised on local radio stations.³ Some statutes establish specific procedures by which members of the public can petition for rulemaking.⁴

Provisions that deny “trade secret” status to environmental information provided by industry are of the same nature. These typically say that no information about environmental effects, or about the nature of what is discharged into the environment, can qualify for “trade secret” protection.⁵

Finally, the Toxic Substances Control Act, unique among EPA statutes, provides for a program of “public funding” for impecunious rulemaking participants, though that provision has now become a dead letter in practice.⁶

§ 4:12 Enforcement

Enforcement *per se* is discussed elsewhere in this treatise.¹ However, it is worth devoting a word here to the administrative procedure aspects of this topic. A number of the EPA statutes allow EPA to assess civil penalties—sometimes quite large—against violators outside the federal court system by hearings held before an Administrative Law Judge (ALJ).² Most of these cases are settled, and the hearings, when they occur, are of the standard courtroom variety and take place under standard courtroom-type rules.³

In addition, an increasing number of EPA statutes allow more minor penalties to be assessed by even less formal hearings.⁴

With these exceptions, judicial proceedings are the backbone of EPA’s enforcement actions. However, even these proceedings have become “proceduralized” in two small ways and one big one.

First, some statutes explicitly require EPA to give Agency notice to a company before it may refer a case for prosecution. This is designed to give the Agency and the alleged violator time to work out their differences.⁵

²See RCRA §§ 3001(a), 3002(a), 3003(a), and 3004(a), 42 U.S.C.A. §§ 6921(a), 6922(a), 6923(a) and 42 U.S.C.A. §§ 6921(a), 6922(a), 6923(a) and 6924(a) (almost all major RCRA regulations must be promulgated after “opportunity for public hearings”).

³RCRA § 7004(b), 42 U.S.C.A. § 6974(b).

⁴TSCA § 21, 15 U.S.C.A. § 2620; RCRA § 7004(b), 42 U.S.C.A. § 6974(b).

⁵Clean Air Act § 114, 42 U.S.C.A. § 7414 (“emissions data” may not be a trade secret); Clean Water Act § 308, 33 U.S.C.A. § 1318 (“effluent data” may not be a trade secret); TSCA § 14(b), 15 U.S.C.A. § 2613(b) (health and safety studies may not be a trade secret); FIFRA § 10, 7 U.S.C.A. § 136(h) (data on health and environmental effects cannot be a trade secret).

⁶TSCA § 6(c)(4); 15 U.S.C.A. § 2605(c)(4).

[Section 4:12]

¹See Ch 9.

²Clean Air Act § 120, 42 U.S.C.A. § 7420; RCRA §§ 3008(a) to (b), 42 U.S.C.A. §§ 6928(a) to (b); TSCA § 16, 15 U.S.C.A. § 2615; FIFRA § 14(a); 7 U.S.C.A. § 1361; Ocean Dumping Act § 105(a), 33 U.S.C.A. § 1415(a).

³The procedures for hearings under each of these statutory provisions are contained at 40 C.F.R. § 22.

⁴See, e.g., 42 U.S.C.A. § 7413(d) (Clean Air Act), 33 U.S.C.A. §§ 1319(g) and 1321(b) (Clean Water Act), and 42 U.S.C.A. § 11045 (EPCTRA).

⁵See § 9:5.

Second, at the other end of the enforcement process, the Department of Justice follows the policy originally adopted in antitrust cases of making available all consent decrees for public comment before they are lodged with the court.⁶

The big exception concerns proceedings under Superfund. This statute has been a difficult object for EPA, which is basically a rulemaking and licensing agency, to digest. Essentially, it has required EPA to begin hundreds of lawsuits and then placed it under pressure to settle each one as best it can. The settlement process in turn—often to the distress of the parties—has taken on some of the features of a regulatory proceeding.

⁶28 C.F.R. § 50.7.

APPENDIX 4A

Principal EPA Offices

Washington, D.C.

Ariel Rios Building
1200 Pennsylvania Avenue
Washington, D.C. 20460
Information: 202-260-2090
Office of the Administrator: 202-260-4700
Office of General Counsel: 202-260-8040

Region I

One Congress Street, Suite 1100
Boston, MA 02114-2023
Regional Administrator: 617-918-1010
Regional Counsel: 617-918-1091

Region II

290 Broadway
26th Floor
New York, NY 10007-1866
Regional Administrator: 212-637-5000
Regional Counsel: 212-637-3113

Region III

1650 Arch Street
Philadelphia, PA 19103
Regional Administrator: 215-814-2900
Regional Counsel: 215-814-2626

Region IV

Sam Nunn
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, GA 30303-3104
Regional Administrator: 404-562-8357
Regional Counsel: 404-562-9655

Region V

77 W. Jackson Boulevard
Chicago, IL 60604-3507
Regional Administrator: 312-886-3000
Regional Counsel: 312-886-1308

Region VI

1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733
Regional Administrator: 214-665-2100
Regional Counsel: 214-655-2110

Region VII

901 N. 5th St.
 Kansas City, KS 66101
 Regional Administrator: 913-551-7006
 Regional Counsel: 913-551-7246

Region VIII

999 18th Street
 Suite 200
 Denver, CO 80202-2466
 Regional Administrator: 303-312-6308
 Regional Counsel: 303-312-7100

Region IX

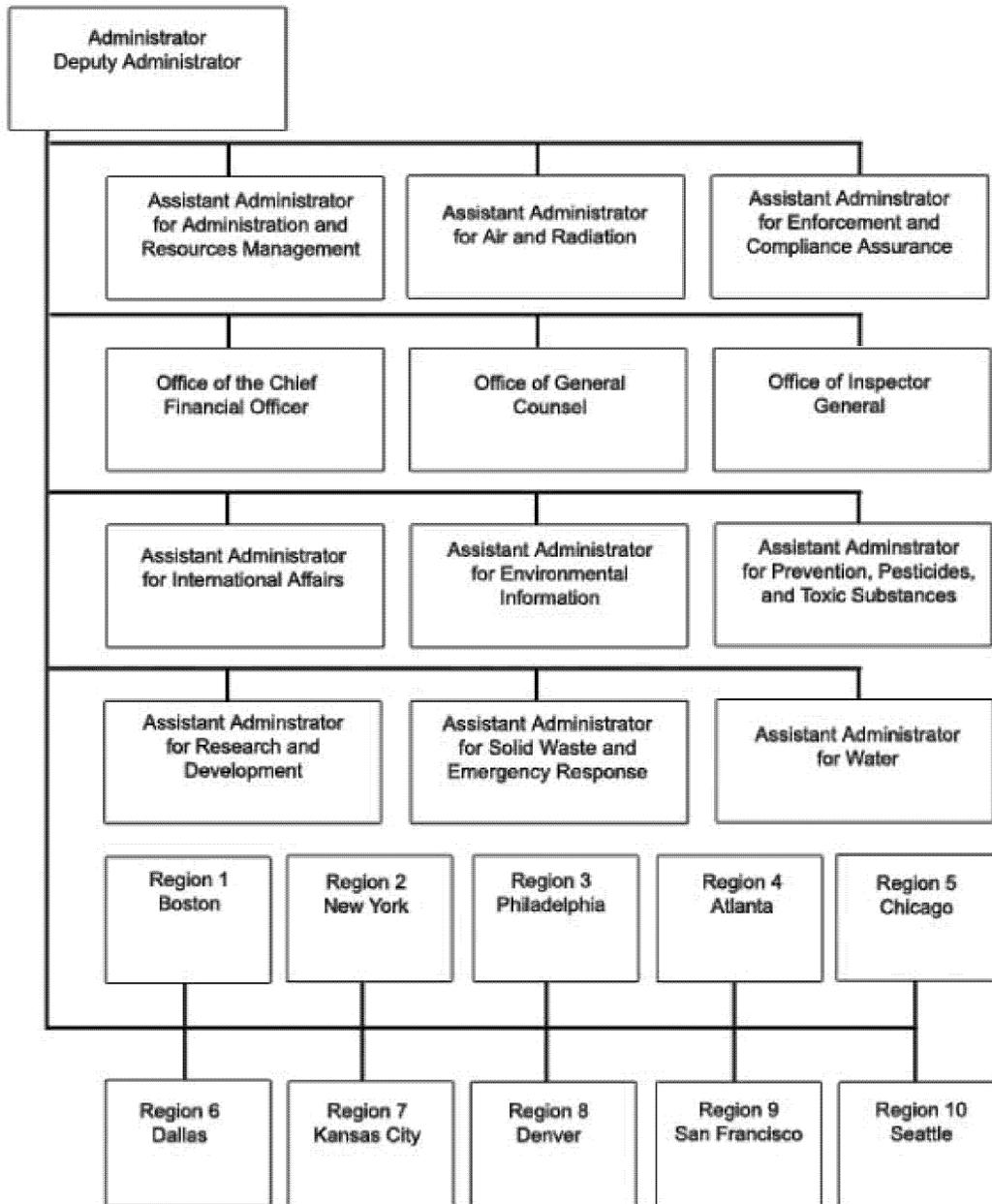
75 Hawthorne Street
 San Francisco, CA 94105
 Regional Administrator: 415-947-8702
 Regional Counsel: 415-947-8705

Region X

1200 Sixth Avenue
 Seattle, WA 98101
 Regional Administrator: 206-553-1234
 Regional Counsel: 206-553-6695
 National Response Center for Oil and Hazardous Material Spills 800-424-8802

APPENDIX 4C

EPA Organizational Chart



Chapter 5

Ethical and Economic Principles*

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*By Mark Sagoff

§ 5:29 The concept of an ecological nuisance

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I. INTRODUCTION**§ 5:1 In general**

In environmental law, as in other forms of social regulation, there are those who interpret legislation as an expression of public values and ethical principles and those who, instead, view legislation as a means to promote economic efficiency by regulating markets. This chapter describes these two approaches to pollution control legislation and analyzes the conflict between them.

This chapter proposes that these two approaches cannot be “balanced” in particular instances by weighing economic efficiency and ethical concerns, such as equity, for efficiency has no merit or worth against which any ethical principle or value can be balanced or weighed. The importance of the economic approach, however, lies in helping policymakers take account of important constraints and realities, so that the ideal environment to which we aspire does not become a formidable enemy of the good environment we may actually achieve.

This chapter first considers the ethical and economic principles of pollution-control law. Statutes that limit or control pollution have been justified in two distinct ways. First, many legal analysts interpret pollution-control policy in terms of common-law protections of the rights of person and property against assault and trespass. Second, many economists analyze pollution-control policy in terms of attempts to make markets efficient by “internalizing” the social (or “external”) costs of pollution into the prices of goods that pollute. The first approach sees pollution as an evil—albeit in some ways a necessary evil—to be minimized. The second approach conceptualizes pollution as a cost or diseconomy to be optimized. The first sections of this chapter compare these very different and in some ways conflicting views principles of environmental law.

The chapter moves from examining the overall moral foundations (and economic theory) of pollution-control law to consider the basis for “regulatory review” at the Office of Management and Budget at the White House. Typically Congress delegates to the heads of the regulatory agencies authority to promulgate rules that interpret and implement the statutes. The president, however, has many reasons to provide a “second opinion” on major rulemakings, to coordinate agency actions, and to bring regulatory policies within his or her political agenda insofar as the law allows. The principles that justify and limit White House review of regulations have been the subject of much discussion in during the first months of the Obama administration.

This chapter then considers the ethical grounds for policies intended to reduce “greenhouse” gases, particularly carbon dioxide, to reduce or limit the effects of global climate change. These gases are not pollutants in the conventional sense that they directly impair human health or damage property. Insofar as these gases do not themselves invade people or their property, they may not be subject to the familiar kinds of constraints that common law places on the emission of toxic and hazardous pollutants. On the other hand, calls for international efforts to reduce greenhouse emissions draw of prudential concerns as well as principles of justice. This chapter will review arguments that appeal to conceptions of social justice as grounds for reductions in greenhouse gas emissions as well as for allocating responsibility to make those reductions.

This chapter concludes by considering those aspects of environmental law, many

of which are now emerging, that seek to protect not human health or welfare but the integrity of the natural environment. Pollution-control statutes, insofar as they attempt to protect citizens from dangers that lurk in the air and water, may be said to protect people from the environment, while statutes such as the Endangered Species Act (1973) seek to protect the natural environment from people. The final section of this chapter examines the values and principles that may justify the attempt to keep nature “natural” or ecosystems “intact.” This section asks whether and why public policy should regard the natural environment itself an object of protection other than to protect the health or promote the welfare of human beings.

§ 5:2 A grand vision

“Environmentalism at its inception was a grand vision,” William Ruckelshaus wrote in 1985, “one that nearly all Americans shared. Somehow, that vision of the essential unity of nature and of the need for bringing industrial society into harmony with it has been lost among the parts per billion, and with it we have lost the capacity to reach social consensus on environmental policy.”¹ Americans continue to support the consensus and share the “grand vision” of the 1960s and the 1970s concerning environmental legislation.² They differ and disagree about the policies needed to achieve it. One problem may be that the nation, through “agency-forcing”³ and “technology-forcing”⁴ legislation, has made the easiest and least expensive gains.⁵ Environmental lawyers and professionals, therefore, have generally turned their at-

[Section 5:2]

¹Ruckelshaus, *Risk, Science, and Democracy*, Issues Sci. & Tech., Spring 1985, at 30.

²For a survey of public opinion polls, see Mitchell, *Public Opinion and Environmental Politics*, in *Environmental Policy in the 1980s: Reagan's New Agenda* 51 (N. Vig & M. Kraft eds. 1984). Relevant polls are also reported in U.S. Council on Environmental Quality, *Public Opinion on National Environmental Issues* (1980).

³Many Americans at the time believed that the coming technological revolution (computers and biotechnology) would make pollution obsolete so that only temporary solutions—pollution control technologies—would be necessary. Thus, Gene Bylinsky, commenting in 1969 on the euphoric expectations of the day, wrote:

To judge by the pronouncements from Washington, we can start looking forward to cleaner rather than ever dirtier rivers. The Administration has declared a “war” on pollution, and the Secretary of the Interior Walter J. Hickel says, “We do not intend to lose.” Adds Murray Stein, enforcement chief of the Federal Water Pollution Control Administration: “I think we are on the verge of a tremendous cleanup.”

Bylinsky, *The Limited War on Pollution*, in *The Environment: A National Mission for the Seventies* 19 (Editors of *Fortune* eds. 1970). Senator Muskie stated that the 1970 Clean Air Act, which he sponsored, would achieve clean air goals by directing officials to take specific actions by specific deadlines. 116 Cong. Rec. 32902 (1970) (remarks of Sen. Muskie).

⁴The Clean Air Act is described as “agency-forcing” in Ackerman & Hassler, *Beyond the New Deal: Coal and Clean Air Act*, 89 *Yale L.J.* 1466, 1470 (1980). Shoenbrod described the 1970 Act as “in the first instance, a law that regulates government rather than sources of pollution. It requires government—both federal and state—to take certain actions by certain dates.” Shoenbrod, *Goals Statutes or Rules Statutes*, 30 *UCLA L. Rev.* 740, 742 (1983). The term “agency forcing” is applied, for example, to the National Environmental Policy Act (NEPA) in *United States v. Students Challenging Regulatory Agency Procedures (SCRAP)*, 412 U.S. 669, 707 n.3, 3 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 20536, 20545 n.3 (Douglas, J., dissenting) (quoting Sen. Jackson); see also L. Caldwell, *Environment: A Challenge to Modern Society* 219 (1970).

⁵The Clean Air Act instructs EPA to set technology-based emission limits for new stationary sources and modifications of existing sources. 42 U.S.C.A. § 7411. These limitations in turn reflect “the degree of emission reduction achievable through the application of the best system of continuous emission reduction.” 42 U.S.C.A. § 7411(a)(1)(C). The Federal Water Pollution Control Act requires technology-based standards for new sources, 33 U.S.C.A. § 1316, and old sources. 33 U.S.C.A. § 1311. After 1977, existing sources were required to meet standards reflecting the “best practicable control technology currently available.” 33 U.S.C.A. § 1311(b)(1)(A). After 1983, the requirement rose to a level reflecting the “best available technology economically achievable.” 33 U.S.C.A. § 1311(b)(2)(A). A standard determined by reference to the “best available demonstrated control technology” was imposed on new sources. 33 U.S.C.A. § 1316(a)(1).

tention from the principles and purposes underlying pollution control law, which they may take for granted or may even regard as boiler-plate,⁶ to the controversial and contested policies intended, sometimes obliquely, to carry them out.

The “grand vision” which underlies pollution control law comprises two basic approaches or attitudes which have become so familiar and gained such general acceptance that discussion of environmental legislation must begin with them. The first attitude is ethical and cultural; the second is prudential and economic.

Those who take the first approach resent pollution as an illegitimate form of exploitation of individuals and of the environment. They regard pollution with horror and distaste and call for a new environmental ethic to bring the nation into greater harmony with nature. Among those who call for regulation on ethical as opposed to economic grounds, Libertarians decry pollution as a kind of coercion. They regard pollution as a form of assault or trespass an invasion of the rights of person and property. To be sure, society cannot eliminate all pollution without bringing the economy to a screeching halt. Nevertheless, the most ordinary concern for the rights of person and property requires that social policy seek to eliminate pollution down to de minimis levels or to the point at which the costs of further control—even with the best technology—become prohibitive.

Those who take the second approach regard pollution not as an invasion, trespass, or tort, but as an ordinary fact of life in an industrial technology. The goal for public policy, according to this economic perspective, is to make sure pollution “pays its way” by providing benefits that offset its costs. On this approach, the government should force polluters to reduce their effluents and emissions just to the point that the cost of the next reduction would not equal the benefits. The determination of costs and benefits, of course, requires a great deal of expertise and may be challenged in court. This may add to the overall costs of regulation.

Each of these two attitudes is important and both have legitimate roles to play in the formation and justification of environmental policy. Both are found in the law. The conflicts of policies within environmental legislation can often be traced to the relative successes and failures these two sides have had in various legislative battles. Our purpose here is not to retrace these legislative engagements; rather, it is to describe the contribution each point of view may make to the interpretation and implementation of federal pollution control law.

During the 1970s, Congress, responding to moral and cultural attitudes which had coalesced into a political consensus, enacted a series of major pollution control statutes. Those who demanded these statutes argued that, without them, corporations would neither develop nor install adequate pollution control technology. Pollution control statutes were intended in part, then, to improve corporate behavior as well as environmental quality, public safety, and health.

Americans blamed themselves, however, and not merely corporations for pollu-

For a study of judicial review of the technology-forcing aspects of pollution control law, see J. Bonine & T. McGarity, *The Law of Environmental Protection* 337-72 & 476, 482-3 (1984) (Clean Air Act; Clean Water Act). For criticisms, mostly from an economic perspective, of technology-forcing provisions, see Dewees, *The Costs and Technology of Pollution Abatement*, in *Approaches to Controlling Air Pollution* 291 (A. Friedlander ed. 1978); La Pierre, *Technology-Forcing and Federal Environmental Protection Statutes*, 62 *Iowa L. Rev.* 771 (1977); Margat, *The Effects of Environmental Regulation on Innovation*, 43 *Law & Contemp. Probs.* 4 (1979); Note, *Technology-Based Emission and Effluent Standards and the Achievement of Ambient Environmental Objectives*, 91 *Yale L.J.* 91 (1982).

⁶See generally Henderson & Pearson, *Implementing Federal Environmental Policies: The Limits of Aspirational Commands*, 78 *Colum. L. Rev.* 1429 (1978). See also National Research Council, *Committee on Environmental Decision Making, Decision Making in the Environmental Agency* 5 (1977) (“Even the most ringing declaration of Congressional purpose to defend, maintain, and enhance environmental values must be read with caution. It is common legislative practice to include such declarations, but to impede their implementation with restrictive statutory language or procedures that make enforcement more difficult.”).

tion; it was commonplace to quote *Pogo* to the effect that we are our own worst enemy. Editorial opinion, political rhetoric, and expert testimony condemned pollution as a symbol of national irresponsibility for which we would later dearly pay. The selfish, short-sighted, and greedy emphasis Americans placed on personal consumption, according to this perspective, had led the nation to trade its magnificent natural heritage for a mess of consumer porridge. Students of American history may hear in the rhetoric of the 1970s echoes of the jeremiads in which religious and political leaders in the past, speaking at awakenings and revivals, inveighed against the nation's declension from its traditional moral and religious ideals and condemned the national pursuit of material things.⁷

A prominent scientist, writing in 1970, expressed "the certainty that . . . all over the world, technological civilization is threatening the elements of nature that are essential to human life, and the values that make it worth living."⁸ Another observer of the environmental "bandwagon" in 1971 commented that "[t]he environmental hysteria is, in essence, a symbolic protest of men against the encroaching grip of technology on the quality of individual life, a swing of the pendulum from the euphoric decades when science and technology were matters of national pride and utilitarian hope."⁹

Those who adopt an economic approach, in contrast, argue that "as important as technology, politics, law, and ethics are to the pollution question, all such approaches are bound to have disappointing results, for they ignore the primary fact that pollution is an economic problem."¹⁰ According to this view, the primary cause of pollution and the key to its control lie in the divergence between the social and private costs of production—the ability of polluters to "pass on" the costs of pollution to society as a whole, rather than themselves being forced to pay for and, therefore, to reflect those costs in the prices charged for what is produced. On this approach, if the costs of pollution could be "internalized" in markets and not "externalized" to society as a whole, pollution would not generally be a problem; polluters would have an incentive to reduce pollutants to levels at which any further reduction would cost more than it would benefit society as a whole. It is not our "unethical" reliance on markets, then, but the failure of markets to function properly which makes wasteful practices more profitable than responsible stewardship of the earth's limited resources.¹¹

The following pages explore analytically these two approaches to pollution control law. Each has strengths and limitations; each may make an important contribution to regulatory policy; but neither suffices by itself as a conceptual basis for it. This chapter will suggest how the strengths of both attitudes may be combined into a unified description of pollution control statutes and into a unified strategy for

⁷For a description and a history of these jeremiads, see P. Miller, *Nature's Nation* 15-59, 90-133 (1967). The idea that the lust for material profit and prosperity has lured us from our basic ethical principles and brought us to the brink of disaster is at least as old as Calvinism and has been a staple of the environmental movement. Thus, a prominent Congregationalist minister told an Earth Day crowd that "[e]nvironmental rape is a fact of our national life only because it is more profitable than responsible stewardship of the earth's limited resources." *Earth Day—The Beginning* 74 (National Staff of Environmental Action ed. 1970) (quoting Channing Phillips).

⁸Dubos, *The Human Landscape*, *Bull. Atom. Scientists*, Mar. 1970, at 31.

⁹King, *The Environmental Bandwagon*, in *Ecocide—And Thoughts Toward Survival* 189, 190 (C. Faidman & J. White eds. 1971).

¹⁰Ruff, *The Economic Common Sense of Pollution*, in *Pollution, Resources, and the Environment* 37 (A. Enthoven & A. Freeman eds. 1973).

¹¹For a description of this approach, see generally W. Baumol & W. Oats, *The Theory of Environmental Policy* (1985); J. Dales, *Pollution, Property, and Prices* (1968); A. Freeman, R. Haveman & A. Kneese, *The Economics of Environmental Policy* (1973). For a good annotated bibliography of the literature, see Fisher & Peterson, *The Environment in Economics: A Survey*, 14 *J. Econ. Literature* 1 (1976).

interpreting and implementing them. It shall also seek to provide a conceptual framework in which we may understand statutes and with which we may review specific policy proposals intended to carry them out.

Accordingly, this chapter is divided into five parts. The first analyzes the ethical basis for pollution control law; the second discusses the economic basis for controlling pollution; the third explores the relationship between the two attitudes, and suggests a way of reconciling them. This section takes up the debate over the principles that justify regulatory review at the Office of Management and Budget—principles (as of this writing) now under reconsideration by the Obama administration. The fourth section of this chapter considers the strengths and weaknesses of arguments centered on social justice for making and allocating reductions in greenhouse gas emissions. The final section explores those aspects of environmental law that are directed to the preservation of nature rather than simply to the protection of public health, safety, and welfare. The chapter as a whole argues that, while we are deeply of two minds about environmental protection, we can reconcile the important differences and, therefore, continue to share the “grand vision” on which federal environmental legislation rests.

II. THE MORAL BASIS OF POLLUTION CONTROL LAW

§ 5:3 In general

Senator Muskie, writing in 1969, captured the popular mood of the time:

We are confronted with a terrible prospect that the American dream of the good life may turn out to be a nightmare. Our efforts to improve our lives have created hazards from which there is no escape. From this time forward we must devote as much energy and ingenuity to the elimination of man-made hazards to man as we have to the expansion of his ability to harness energy and materials to his desires.¹

Americans agonized over rivers catching fire, species becoming extinct, wildlife disappearing, oil spills, fish kills, detergents foaming in rivers and lakes, beach closings, and any number of horrors which led them to regard pollution as a menace gone out of control.² Moreover, when the astronauts returned from the moon with pictures showing North America covered with clouds of pollution, Americans felt ashamed as well as afraid. Titles of the books popular at the time reflected the ominous mood: *Silent Spring*,³ *Vanishing Air*,⁴ *This Endangered Planet*,⁵ *The Closing Circle*,⁶ *The Darkening Land*,⁷ *The Coming Dark Age*,⁸ *The Population Bomb*,⁹ *Fam-*

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¹Senator E. Muskie, Statement, in *The Environment: A National Mission for the Seventies* 15, 16 (Editors of *Fortune* eds. 1970).

²See Erskine, *The Polls: Pollution and its Costs*, 36 *Pub. Opinion Q.* 120 (1972); see also Sills, *The Environmental Movement and its Critics*, 3 *Hum. Ecology* 1 (1975).

³R. Carson, *Silent Spring* (1962).

⁴J. Esposito, *Vanishing Air* (1970).

⁵R. Falk, *This Endangered Planet: Prospects and Proposals for Human Survival* (1972).

⁶B. Commoner, *The Closing Circle* (1971).

⁷W. Longgood, *The Darkening Land* (1972).

⁸R. Vacca, *The Coming Dark Age* (1973).

⁹P. Ehrlich, *The Population Bomb* (1968).

ine 1975,¹⁰ *Eco-Catastrophe*,¹¹ *Ecocide*,¹² *Murder of the Ecosystem and Suicide of Man*,¹³ and many others.¹⁴

The events of Earth Day, April 22, 1970, suggested the extent to which Americans engaged in political action and public demonstrations aimed at making the federal government control pollution and protect the quality of the natural environment. “The spontaneity, size, and intensity evident in the thousands of demonstrations across the land,” John Quarles wrote, “left no doubt that Americans were gripped by a new concern.”¹⁵ According to John Whittaker, “there is still only one word, *hysteria*, to describe the Washington mood on the environment in the fall of 1969. The words *pollution* and *environment* were on every politician’s lips.”¹⁶

Between 1969 and 1978, Congress enacted eight major pollution control statutes as part of a wave of environmental and civil rights legislation. These statutes answer to the moral aspirations of American society. “Only a Scrooge or a misanthrope,” Murray Weidenbaum observed,

would quarrel with the intent of the new wave of federal regulation—safer working conditions, better products for the consumer, elimination of discrimination in employment, reduction of environmental pollution, and so forth. And we must remember that the programs were deliberately established by Congress in response to a surge of rising public expectations about corporate performance.¹⁷

Public expectations have centered on four normative issues. The first springs from popular sympathy for or empathy with the victim of pollution—the worker, neighbor, homemaker, or child who is injured or dies as a result of exposure to a toxic substance in the workplace or in the environment.

The second concerns the protection of rights. Traditional forms of private law protection—tort remedies, for example—do not work in many cases involving injury and death caused by pollution.¹⁸ These private law remedies must therefore be supplemented, but not supplanted, by public law.¹⁹

Third, Americans are concerned about pollution for cultural and patriotic reasons

¹⁰W. Paddock & P. Paddock, *Famine 1975: America’s Decision, Who Will Survive?* (1975).

¹¹*Eco-Catastrophe* (Editors of Ramparts eds. 1970).

¹²King, *The Environmental Bandwagon*, in *Ecocide—And Thoughts Toward Survival* 189 (C. Faidman & J. White eds. 1971).

¹³P. Anderson, *Murder of the Ecosystem and Suicide of Man* (1971).

¹⁴Other examples include M. Bernarde, *Our Precious Habitat* (1970); G. Borgstrom, *The Hungry Planet: The Modern World at the Edge of Famine* (1967); J. Dorst, *Before Nature Dies* (1971); D. Meadows, J. Randers & W. Behrens, *The Limits of Growth* (1972); P. Ehrlich, *The End of Affluence* (1974). This literature prompted a significant backlash. *See, e.g.,* J. Maddox, *The Doomsday Syndrome* (1972); P. Beckman, *Eco-Hysterics and the Technophobes* (1973); C. Adler, *Ecological Fantasies: Death By Falling Watermelons* (1975).

¹⁵J. Quarles, *Cleaning Up America: An Insider’s View of the Environmental Protection Agency* 12-13 (1976).

¹⁶J. Whittaker, *Striking a Balance: Environmental and Natural Resources Policy in the Nixon-Ford Years* 27 (1976).

¹⁷M. Weidenbaum, *Business, Government, and the Public* 21 (2d ed. 1981).

¹⁸In many cases, however, they work well; tort law remains the primary defense individuals have against hazardous pollutants in the environment. *See* P. Broder, *Outrageous Misconduct* (1985).

¹⁹Eads and Reuter conclude from their study of corporate responses to liability law and regulation that “product liability has the greatest influence on product design decisions.” G. Eads & P. Reuter, *Designing Safer Products: Corporate Responses to Product Liability Law and Regulation* vii (1983). Commenting on industries subject only to moderate regulatory pressure, specifically only to regulation by the Consumer Product Safety Commission, these authors state that “regulatory actions . . . may be perceived as important or unimportant depending primarily on their impact on a firm’s liability exposure.” G. Eads & P. Reuter, *Designing Safer Products: Corporate Responses to Product Liability Law and Regulation* vii (1983). The relationship between tort and public regulation of pollution is examined in § 5:8.

quite apart from the dangers which, from a scientific point of view, pollutants may pose to individuals. Americans are committed to the idea that America is and ought to remain beautiful: Smog filled air, polluted rivers, dead lakes, and fouled land offend our cultural values and our sense of national dignity and pride.

Fourth, while markets may help consumers to form and to satisfy personal preferences, democratic political institutions allow citizens to deliberate together to choose common goals and aspirations that they could not achieve or even imagine alone. Efforts to preserve our natural heritage and to reduce environmental pollution provide ways, both actual and symbolic, to build and to express a sense of national community without in the least ways infringing on the freedom of each individual to pursue his own pleasures and live his own life.

This chapter now critically examines each of these ways of understanding the moral basis of federal pollution control law. We shall then turn to examine the alternative economic or market-based approach regulating pollution.

§ 5:4 Compassion for the individual victim of pollution

Since the time of the abolition movement, reformers in the United States have used federal law as a force for social improvement. Congress has ended child labor, improved unconscionable conditions in sweat shops, company towns, and mines, set a maximum workday and a minimum wage, relieved the suffering of the very poor, provided some form of public health care, and established other programs which may vindicate a nation's claim to being a caring, compassionate community concerned about the health, safety, and well-being of the individual citizen. There is, however, always more to do; nevertheless, pollution control takes its place in the history of legislation intended to improve the background conditions against which people make choices and live their lives. Pollution control statutes, therefore, taken in their most general terms, belong to a long tradition of humanitarian legislation intended to ameliorate man's inhumanity to man.

The National Environmental Policy Act of 1969 (NEPA) sets forth a national policy to "assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings."¹ In a series of pollution control statutes enacted during the 1970s, Congress attempted to make this policy operational and especially to protect the health and safety of individuals.

In 1970, Congress amended the Clean Air Act to require that the Administrator of the Environmental Protection Agency (EPA) set standards for air pollutants to assure an "adequate margin of safety" to protect the public health.² With respect to "hazardous" pollutants, Congress required an "ample" margin of safety.³ The Senate Subcommittee on Air and Water Pollution made it clear in its Report that EPA should protect the health of each American, including those in the most sensitive group.⁴ Congress has repeated this "margin of safety" requirement in other safety and health legislation.⁵

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¹42 U.S.C.A. § 4331(b)(2).

²42 U.S.C.A. § 7409(b)(1).

³42 U.S.C.A. § 7412(b)(1)(B).

⁴The Senate Committee emphasized that "persons whose health should be protected by the ambient standard are particularly sensitive citizens such as bronchial asthmatics and emphysematics who in the normal course of daily activity are exposed to the ambient environment" are included in this group. Accordingly, "[i]n establishing an ambient standard necessary to protect the health of these persons, reference should be made to a representative sample of persons comprising the sensitive group." S. Rep. No. 1196, 91st Cong., 2d Sess. 10 (1970), *reprinted in* 1 Senate Comm. on Pub. Works,

Legislators soon became aware—they may have been aware from the start—that safe “threshold” levels cannot be determined for many important pollutants.⁶ Accordingly, society must determine how safe is “safe enough.” But the statutes by and large either ignore or paper over this problem. The Clean Water Act, for example, delegates the problem to EPA officials by requiring “a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.”⁷

Even if it is sometimes difficult, perhaps impossible, to determine “safe” levels for certain pollutants, however, it is often all too easy to determine that existing levels are unsafe.⁸ In 1975, for example, officials found twenty-four cases of angiosarcoma among vinyl chloride workers.⁹ Since this rare liver cancer is associated primarily with exposure to vinyl chloride, these workers knew how and where they had been

A Legislative History of the Clean Air Amendments of 1970, S. Rep. No. 18, 93d Cong., 2d Sess. 410 (1974) [hereinafter cited as Clean Air Act Legislative History].

For an overview of the relation of sensitive groups and pollution control policy, see R. Friedman, *Sensitive Populations and Environmental Standards* (1981).

⁵42 U.S.C.A. §§ 1381 to 1431 (supplemental security income); 21 U.S.C.A. § 349 (food additives). Critics often complain that the Clean Air Act, in its concern with the safety of every individual, appears “cost-oblivious.” Rogers, *Benefits, Costs, and Risks: Oversight of Health and Environmental Decisionmaking*, 4 Harv. Envtl. L. Rev. 191, 201 (1980). The Act also appears to preclude a cost-benefit test of air quality standards. See R. Crandall, *Controlling Industrial Pollution: The Economics and Politics of Clean Air 8-18 & 133-35* (1983); J. Krier & E. Ursin, *Pollution and Policy* 321-45 (1977); L. Lave & G. Omenn, *Clearing the Air; Reforming the Clean Air Act* 45-46 (1981); Currie, *Relaxation of Implementation Plans Under the 1977 Clean Air Act Amendments*, 78 Mich. L. Rev. 155, 158 (1979); Currie, *Direct Federal Regulation of Statutory Sources Under the Clean Air Act*, 128 U. Pa. L. Rev. 1389, 1460-63 (1980) (arguing that “[t]he statutory requirement of absolute health protection through source controls ought to be modified. The Agency should be authorized to take cost into consideration under Section 112(b)”).

⁶Apparently, Congress knew when it passed the Clean Air Act that “safe” thresholds may be impossible to determine, but it nevertheless used the “margin of safety” language, and delegated to others the problem of making that language operational. Looking back seven years later on the events of 1970, Senator Muskie testified:

Our public health scientists and doctors have told us there is no threshold, that any air pollution is harmful. The Clean Air Act is based on the assumption, although we knew at the time it was inaccurate, that there is a threshold. We set standards, we understood that below the standard there would still be health effects. The standard we picked was simply the best judgment we had on the basis of the available evidence as to what the unacceptable health effects in terms of the country as a whole would be.

Clean Air Act Amendments of 1977: Hearing Before the Subcomm. on Environmental Pollution of the Senate Comm. on Environment and Public Works (pt. 3), 95th Cong., 1st Sess. 8 (1977).

⁷33 U.S.C.A. § 1313(d)(1)(C).

⁸We may better grasp both the fundamental purpose and the fundamental problem of the Clean Air, Clean Water, and Safe Drinking Water Acts if we compare them to a statute such as the Federal Coal Mine Health and Safety Act of 1969, Pub. L. No. 91-173, 83 Stat. 742 (codified as amended at 30 U.S.C.A. §§ 801 to 960). That statute requires that “every hoist . . . shall be equipped with . . . hoisting cable adequately strong to sustain the fully loaded platform, cage or other device; and have a proper margin of safety.” 30 U.S.C.A. § 874(a) (subchapter labeled an “Interim Mandatory Safety Standard,” but still in effect). The Mine Safety Act resembles pollution control legislation in that it intends to protect the health and safety of all those affected by its provisions—in this instance, those who operate hoists or work on or under hoisted platforms. The crucial difference which makes the Mine Safety Act so much easier to implement than the Clean Air Act is that it is possible to compute threshold levels at which cables will break under given loads; it is also easy and not very costly to manufacture cables to meet those requirements. Safe thresholds for pollutants are hardly as easy to determine, however, and they are certainly more costly to achieve. The Clean Air and Mine Safety Acts are alike in their principle and purpose: both seek to protect the safety of the individual. These laws differ primarily in the contingent problems which make it much more difficult to set and to satisfy safety standards for pollutants than for rope and cables. For a history of the “margin of safety” concept in federal legislation, see Thompson, *Margin of Safety as a Risk Management Concept in Environmental Legislation*, 6 Colum. J. Envtl. L. 1 (1979).

⁹J. Quarles, *Cleaning Up America: An Insider’s View of the Environmental Protection Agency* 12-13 (1976); Novick, *In Defense of Irrational Laws*, 3 Envtl. Forum, July 1984, at 10, 11.

injured. The public became concerned, first, because it could sympathize with these workers and their families; the victim might have been a neighbor, husband, or friend. Second, since vinyl chloride escaped into the environment and was also used as an aerosol in many consumer products, the public feared as well for itself. Public agencies, including EPA, quickly moved to control vinyl chloride exposure in the workplace and in the environment and took the dangerous products from grocery store shelves.¹⁰

When dozens, scores, or hundreds of people die as a direct and provable result of exposure to particular substances, such as asbestos and vinyl chloride, we have a clear consensus about the course to take. EPA and other agencies entrusted with protecting public health have no choice but to regulate the known causes of specific cancers in identifiable human beings. Besides, personal injury lawyers—common-law liability claims of the sort celebrated in Jonathan Harr's *A Civil Action* (1996)—have concentrated the mind of industry. The list of corporations bankrupted as a result of damage awards—from Johns Manville to W.R. Grace—is truly impressive. To some extent, then, pollution-control law can be seen as the method statutory law uses to accomplish in a general and thus more effective way what private or common law might accomplish more haltingly, case-by-case, over the long run. Indeed, Libertarians see in this connection between public and private law—between the statutory mandate and the private action—a basis on which to legitimate legislative power with respect to controlling pollution.

When we are uncertain of the degree of the hazard—when no safe threshold can be determined—we are no longer sure what to do. We wish to act as a caring, compassionate society, but we have no clear consensus about what that requires in this context. Several important books have considered quite deeply the extent to which virtues and principles, such as compassion and justice, extend to “statistical” lives rather than to identifiable individuals.¹¹ It makes some sense to think that insofar as it is a goal of environmental and other health-and-safety agencies to save lives, then these agencies should save the greatest number at the lowest cost. As a general rule, as economists will argue, agencies should equalize the marginal cost of saving a statistical life—the expense society incurs to save the “next” or “incremental” life—across programs and projects to maximize lives saved per dollars spent.¹² A given program may deviate from this general maximizing rule, but if so, this requires an explanation.

When we consider pollutants which are not related to identifiable and peculiar diseases, we tend to speak in statistical terms; of percentages, not persons, of differences among populations, and not between individuals. We may ponder on representations of weighted hierarchical stepwise regressions and Ames microbial mutagenesis assays. Conversely, the image of a school child with asbestosis engages our moral conscience; a statistical increase in the incidence of the disease may not. We know what to do about asbestos and the school child, namely, to protect her or him and other children by eliminating the hazard. But our moral intuitions wobble

¹⁰EPA set a 10 ppm limit on vinyl chloride emissions; at these levels, the risks are arguably *de minimis*. 40 Fed. Reg. 59432, 59535–36 (1975). Since no safe threshold for vinyl chloride has been determined, however, the 10 ppm standard would appear to violate the “margin of safety” requirement of the law. Under pressure from an Environmental Defense Fund suit, EPA proposed to make the standard increasingly more stringent. 42 Fed. Reg. 28154 (1977). Under pressure from industry, however, it reinstated the 10 ppm standard. See 40 C.F.R. § 61.63.

¹¹Three important books are: Frank Ackerman and Lisa Heinzerling, *Priceless: On Knowing the Price of Everything and the Value of Nothing* (New York: New Press, 2004); Cass Sunstein, *Risk and Reason: Safety, Law, and the Environment* (New York: Cambridge University Press, 2004); and Sheila Jasanoff, *Designs on Nature: Science and Democracy in Europe and the United States* (Princeton: Princeton University Press, 2005).

¹²See, e.g., Kip Viscusi, *Fatal Tradeoffs: Public and Private Responsibilities for Risk* (Oxford: Oxford University Press, 1992).

when we are told, for example, that various studies show, while other studies fail to show, an association between trihalomethanes in drinking water and an increased incidence of cancers of the colon and bladder.¹³

Finally our moral intuitions may be conflicted by the knowledge that, in reducing some risks, we increase others.¹⁴ The trihalomethanes or haloforms associated with increased incidence of bladder cancer, for example, result from typical water treatment procedures which protect the public health.¹⁵ The “shutdown of an urban area’s electric service,” as Justice Powell observed, “could have a more serious impact on the health of the public than that created by a decline in ambient air quality.”¹⁶ Vinyl chloride, as the base material for a common plastic, is used in thousands of commercial products. One may wonder if these goods could be produced with materials which pose fewer risks to the public. Questions such as these may inhibit our ability to judge the moral dimensions of pollution at a glance.

We may now summarize what has been said. During the 1960s and 1970s, Americans were moved by the plight of individuals, sometimes neighbors, associates, and friends, who suffered or died as a result of toxic pollutants. Rachel Carson’s *Silent Spring* (1962), among many other studies, described the destruction of wildlife by pesticides and showed the nation how negligent it had become in protecting its natural and ecological heritage. These tragic situations, which engaged the conscience of the nation, led the public, congressional district by congressional district, to demand legislation such as the Clean Air and Clean Water Acts, which are based primarily if not solely on the protection of health and the environment. In refining regulations to deal with less egregious instances of pollution, however, EPA and other agencies found that it is not always possible to take in the moral dimensions of the situation all at once. It might be comparatively easy to determine the right thing to do if “safe” thresholds could be established, if causal pathways could be traced, and if risks could be reliably assessed. Since the world is not that way, however, we have to rely on technical advice rife with uncertainty and to learn from our mistakes before we can say what is ethical and what is not.

This is not to concede that the original social consensus has been lost among the parts per billion—public opinion has not changed—it is just that engaged moral sentiments are insufficient in many instances, and we may need a more detached or theoretical perspective in order to make ethical decisions. Later, we shall consider economic theory as a candidate for supplying this more detached perspective. At present, however, we shall consider the function of pollution control legislation in protecting the rights and defending the entitlements of individuals.

¹³Cantor, Hoover & Mason, Association of Cancer Mortality with Halomethanes in Drinking Water, 61 J. Nat’l Cancer Inst. 979 (1978); Hogan, Chi & Heel, Association Between Chloroform Levels in Finished Drinking Water Supplies and Various Site-Specific Cancer Mortality Rates, 2 J. Env’t, Pathology, Toxicology & Oncology 873 (1979).

¹⁴This point is emphasized in Huber, Exorcists vs. Gatekeepers in Risk Regulation, Nov.-Dec. 1983, at 23. “The paradox of risk regulation is that too much of it makes life more dangerous. Not just more expensive but more dangerous.” Exorcists vs. Gatekeepers in Risk Regulation, Nov.-Dec. 1983, at 28. See also Huber, Safety and the Second Best: The Hazards of Public Risk Management in the Courts, 85 Colum. L. Rev. 2277 (1985).

¹⁵Rook, Formation of Haloforms During Chlorination of Natural Waters, 23 Soc’y Water Treatment & Examination J. 234 (1985).

¹⁶Union Elec. Co. v. EPA, 427 U.S. 246, 272, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20570, 20576 (1976) (Powell, J., concurring). Justice Powell’s concurrence continued:

The result apparently required by this legislation [the Clean Air Act] in its present form could sacrifice the well-being of a large metropolitan area through the imposition of inflexible demands that may be technologically impossible to meet and indeed may no longer be necessary to the attainment of the goal of clean air. I believe that Congress, if fully aware of this draconian possibility, would strike a different balance.

§ 5:5 Rights and entitlements

For centuries, common law courts have protected individuals from injuries of the sort typically caused by pollution. If the wastes from a person's privy percolate through his wall and into his neighbor's cellar, for example, common law will require him to cease and repair the nuisance, for as an English court found in 1705, he is "bound of common right to keep his wall so his filth would not damnify his neighbor."¹ In thousands of cases, some of which law students study in their first year, courts have enjoined and awarded damages for all sorts of nuisances and other torts involving pollution.

It might be argued that factories are likewise bound of common right to maintain their walls, scrubbers, filters, liners, drums, and stacks so that their emissions and effluents do not damage or harm their neighbors or the public. This seems to be a truism. The question arises, then, why private law does not suffice to protect the rights in question. What rights must public law protect because they are not protected in tort?

In the sizeable literature addressing this question, commentators have argued that many practical problems prevent common law from dealing adequately with large scale and long range wastes and pollutants.² First, a good deal of pollution, from automobiles, for example, affects millions of people, many of whom may feel aggrieved at this invasion of their person. The exhaust from any car, however, may not injure any individual enough to give him a cause of action against its owner. Moreover, the costs attendant to a suit are likely to prevent any individual from bringing a tort action against automobile owners or manufacturers, even if in the aggregate the damage automobile pollution inflicts on society as a whole is very high. What is more, many or most of us might be defendants and plaintiffs at the same time. Defendants, in this instance, may include everyone who drives; plaintiffs may include everyone who breathes. Accordingly, legislatures have enacted pollution control laws to clean up the air and water, in part because plaintiffs and defendants are too many and the injury any single individual causes the other is too small to allow progress to be made on a case-by-case rather than on an aggregate basis.

Second, notorious and hazardous pollutants—one thinks of places like Love Canal and Three Mile Island and of agents like radon gas and dioxin—may affect the environment of large numbers of people, some of whom may be injured as a result, while other people who are also exposed may suffer the same kind of injury, but as a consequence of other causes.³ The synergistic effects of many sources of danger—the greater likelihood that someone who smokes may have less resistance to the

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¹Tenant v. Goldwin, 91 Eng. Rep. 314, 1 Salk 360 (1705).

²See, e.g., Rosenberg, The Causal Connection in Mass Exposure Cases: A "Public Law" Vision of the Tort System, 97 Harv. L. Rev. 849 (1984); Ginsberg & Weiss, Common Law for Toxic Torts: A Phantom Remedy, 9 Hofstra L. Rev. 859 (1981); Milhollin, Long-Term Liability for Environmental Harm, 41 U. Pitt. L. Rev. 1 (1979); Note, Hazardous Waste Disposal: Is There a Role for Common Law?, 18 Tulsa L. Rev. 448 (1983); Note, The Inapplicability of Traditional Tort Analysis to Environmental Risks: The Example of Toxic Tort Victim Compensation, 35 Stan. L. Rev. 575 (1983); Note, Environmental Health: An Analysis of Available and Proposed Remedies for Victims of Toxic Waste Contamination, 7 Am. J. L. & Med. 61 (1981).

³Since courts attend to the importance of the right that is alleged to be violated and not simply to the extent of the damage that is complained of, plaintiffs who can show only a slight degree of injury may nevertheless obtain standing to sue. In *United States v. Students Challenging Regulatory Agency Procedures (SCRAP)*, 412 U.S. 669, 688–89, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20536, 20549–50 (1973), the Supreme Court found that the plaintiffs, a group of law students who used environmental resources (parks), to have asserted the "specific and perceptible harm" needed to distinguish them from purely ideological plaintiffs, even though the Court noted the "attenuated line of causation to the eventual injury of which [they] complained." *United States v. Students Challenging Regulatory Agency*

carcinogenic effects of certain chemicals, for example—also muddles attempts to draw clear lines between causes and effects. “The question that plagues mass exposure cases,” one writer observed, “is specific causation: where there are alternative sources of the plaintiff’s injury, which source is actually responsible?”⁴ In some respects, tort law has expanded from the A’s-privy-damnifies-B’s-cellar model to accommodate cases in which a plaintiff cannot show a “but for” cause. In DES cases, for example, plaintiffs have been able to sue all DES manufacturers even if it cannot be shown which manufacturer caused their particular injury.⁵ In these cases, however, it is the defendant that is indeterminate. In toxic tort cases involving environmental hazards it is generally the plaintiffs who are indeterminate. We may know that a pollutant increased the incidence of cancer among the population exposed to it, without knowing which individuals in that population contracted cancer as a result of their exposure.

Third, statutes of limitations permit individuals only for a few years, at most, to sue in tort, but it often takes longer for toxic substances to migrate from where they are dumped to where they cause damage, for the exposure to manifest itself, for example, as a cancer, or for a person to acquire the information he needs to understand the nature of his injury. Moreover, by the time a victim becomes aware of his injury many potential defendants may have gone out of business or become insolvent. The insurer at the time of exposure may not be the insurer when the injury manifests itself. Even when a solvent defendant may be found, he may avoid paying damages by litigating the technical issues to the point of exhausting the plaintiff financially, or by declaring bankruptcy.

Fourth, when technological advance is swift, even revolutionary, it will create hazards and fears with which common law cannot keep pace; political action is therefore required to protect individuals and their property from harm. Large scale environmental and technological risks, such as were involved at Three Mile Island, are not comparable to the usual defendant’s-privy-damnifies-neighbor’s cellar situation.⁶ Where the harm is catastrophic and irreversible, but the probability of the harm is hard to measure and invites estimates that tend to be subjective, and especially where radioactive emissions from nuclear power plants are involved, po-

Procedures (SCRAP), 412 U.S. 669, 688, 3 *Envtl. L. Rep.* (Envtl. L. Inst.) 20536, 20540 (1973). The Court did caution, however, that “pleading must be something more than an ingenious academic exercise in the conceivable.” *United States v. Students Challenging Regulatory Agency Procedures* (SCRAP), 412 U.S. 669, 688, 3 *Envtl. L. Rep.* (Envtl. L. Inst.) 20536, 20540 (1973).

In *Sierra Club v. Morton*, 405 U.S. 727, 2 *Envtl. L. Rep.* (Envtl. L. Inst.) 20192 (1972), the Supreme Court validated environmental injury as a basis for standing, establishing that “[a]esthetic and environmental well-being, like economic well-being, are important ingredients of the quality of life in our society, and the fact that particular environmental interests are shared by the many rather than by the few does not make them less deserving of legal protection through the judicial process.” *Sierra Club v. Morton*, 405 U.S. 727, 734, 2 *Envtl. L. Rep.* (Envtl. L. Inst.) 20192 (1972). In that case, the Court apparently attributed plaintiff’s calculated refusal to allege an injury, for example, its use of the Mineral King Valley, as an attempt to obtain a license to represent and defend the environment wherever threatened. *Sierra Club v. Morton*, 405 U.S. 727, 735-36 n.8, 2 *Envtl. L. Rep.* (Envtl. L. Inst.) 20192 (1972).

⁴Rosenberg, *The Causal Connection in Mass Exposure Cases: A “Public Law” Vision of the Tort System*, 97 *Harv. L. Rev.* 849, 855 (1984). The problem of establishing causal connections vexes attempts to establish interstate comity with regard to the airborne transport of pollutants, especially sulfur dioxide, across state lines. One issue is the inadequacy, not to say uselessness, of air transport models and the inadequacy of data. *See Reed, Jefferson County’s Lament: Clean Air Act Offers No Relief for Interstate Pollution*, 14 *Envtl. L. Rep.* (Envtl. L. Inst.) 10298, 10299 (1984).

⁵*Sindell v. Abbott Laboratories*, 26 Cal. 3d 588, 163 Cal. Rptr. 132, 607 P.2d 924, 2 A.L.R.4th 1061 (1980). *See also Delgado, Beyond Sindell, Relation of Cause-In-Fact Rules for Indeterminate Plaintiffs*, 70 *Calif. L. Rev.* 881 (1982).

⁶For a discussion of “environmental risks” posed by novel technologies, *see Page, A Generic View of Toxic Chemicals and Similar Risks*, 7 *Ecology L.Q.* 207, 208-214 (1978).

litical and technical questions arise which can hardly be settled by the incremental wisdom of common law courts.

Finally, even traditional environmental nuisances such as smoke and dust may raise political and technical issues which strain the resources of the common law. An often cited case, *Boomer v. Atlantic Cement Company*,⁷ illustrates this point. There plaintiffs sought to enjoin a cement company “from emitting dust and raw materials” in the course of operating their plant.⁸ The trial judge found that Atlantic “created a nuisance insofar as the lands of the plaintiffs [were] concerned,” but refused to grant an injunction, noting the “defendant’s immense investment in the Hudson River Valley, its contribution to the Capital District’s economy,” as well as other tangible benefits generated by the existence of the cement plant.⁹ The trial court emphasized that the “company installed at great expense the most efficient devices available to prevent the discharge of dust and polluted air into the atmosphere,”¹⁰ and on that basis allowed the plaintiffs damages rather than the requested injunctive relief. An appellate tribunal, in upholding the lower court, also observed as a “relevant factor”¹¹ the company’s use of the “most modern and efficient devices to prevent offensive emissions and discharges.”¹² Atlantic had done all it technologically could to minimize the noxious effects of its industry while providing important economic benefits to the surrounding community. Common law precepts, so the judge reasoned, could demand no more.

During the 1960s and 1970s, the public became concerned about the general effect of pollution on public health and the environment. It worried that pollution could reach intolerable overall levels even when industries, under threat of tort action, installed the “most efficient devices available” to control emissions. These devices, in other words, were not good enough for the public even if they were good enough for the courts.¹³ Accordingly, public pollution control legislation tends to be technology-based and technology-forcing; it encourages industry to develop and install better-than-currently-available control technology for existing plants and to develop and install nonpolluting production technologies in new plants.¹⁴ In this way, a legislative insistence on technological improvement was needed to change the equation by which equities are balanced in common law courts.

By emphasizing safety and forcing the development of technology intended to minimize and eventually to eliminate hazardous pollution, public law, like private

⁷*Boomer v. Atlantic Cement Co.*, 55 Misc. 2d 1023, 287 N.Y.S.2d 112 (1967), aff’d, 30 A.D.2d 480, 294 N.Y.S.2d 452 (1968), order rev’d, 26 N.Y.2d 219, 309 N.Y.S.2d 312, 257 N.E.2d 870, 40 A.L.R.3d 590 (1970).

⁸*Boomer v. Atlantic Cement Co.*, 55 Misc. 2d 1023, 1024, 287 N.Y.S.2d 112, 113 (1967), aff’d, 30 A.D.2d 480, 294 N.Y.S.2d 452 (1968), order rev’d, 26 N.Y.2d 219, 309 N.Y.S.2d 312, 257 N.E.2d 870, 40 A.L.R.3d 590 (1970).

⁹*Boomer v. Atlantic Cement Co.*, 55 Misc. 2d 1023, 1025, 287 N.Y.S.2d 112, 114 (1967), aff’d, 30 A.D.2d 480, 294 N.Y.S.2d 452 (1968), order rev’d, 26 N.Y.2d 219, 309 N.Y.S.2d 312, 257 N.E.2d 870, 40 A.L.R.3d 590 (1970).

¹⁰*Boomer v. Atlantic Cement Co.*, 55 Misc. 2d 1023, 1024, 287 N.Y.S.2d 112, 113 (1967), aff’d, 30 A.D.2d 480, 294 N.Y.S.2d 452 (1968), order rev’d, 26 N.Y.2d 219, 309 N.Y.S.2d 312, 257 N.E.2d 870, 40 A.L.R.3d 590 (1970).

¹¹*Boomer v. Atlantic Cement Co.*, 30 A.D.2d 480, 482, 294 N.Y.S.2d 452, 453 (1968), order rev’d, 26 N.Y.2d 219, 309 N.Y.S.2d 312, 257 N.E.2d 870, 40 A.L.R.3d 590 (1970).

¹²*Boomer v. Atlantic Cement Co.*, 30 A.D.2d 480, 482, 294 N.Y.S.2d 452, 453 (1968), order rev’d, 26 N.Y.2d 219, 309 N.Y.S.2d 312, 257 N.E.2d 870, 40 A.L.R.3d 590 (1970).

¹³See J. Bonine, *The Evolution of “Technology-Forcing” in the Clean Air Act* (BNA Env’t Rep. Monograph No. 21, 1975).

¹⁴The Court of Appeals for the District of Columbia Circuit praised this “technology-forcing” strategy as evidence of EPA’s “commitment to the development of sound guidelines.” *Natural Resources Defense Council v. Train*, 510 F.2d 692, 712 n.105, 5 Env’tl. L. Rep. (Env’tl. L. Inst.) 20046, 20057 n.105 (D.C. Cir. 1974).

law, serves to prevent one person simply for his own advantage from harming or exploiting another. It does so, however, not by awarding compensation after the injury has occurred but by seeking to prevent the injury before it happens. Pollution control law, then, does not replace tort—it is not to be construed as an attempt to limit the rights of individuals to make claims—but is supplementary. Pollution control law attempts, in part, to eliminate or at least to reduce the sorts of harms to individuals and to their property that private law fails or may fail to deter.¹⁵ Thus, the insistence of public law on reducing risk may be seen as an extension of private law protections of the rights, dignity, and integrity of persons.¹⁶

Nevertheless, neither public nor private law can “concern itself with trifles, or seek to remedy all of the petty annoyances of everyday life in a civilized community.”¹⁷ Rather, the standard set should protect “the ordinary comfort of human existence as understood by the American people in their present state of enlightenment.”¹⁸ Public pollution control law expresses the “present state of enlightenment” concerning the importance of the safety and health of the individual as against the importance of registering new pesticides or expanding the nuclear power industry. The question with which society constantly wrestles is that of finding a moral basis for standards that stop short of preventing all but de minimis risk. It is fine as a matter of principle to analogize pollution—especially hazardous pollution—to trespass or assault and thus to call for its near elimination. This aspiration is consistent with some of the more precatory language of the laws. Nevertheless, society cannot provide injunctive relief for every nuisance—or prohibit all emissions—without bringing the economy to a halt. The forced closure of a cement company that provides jobs and anchors public welfare, for example, may cause far worse health effects than are associated with a modest amount of dust and fumes. What are the principles that tell us when a nuisance is to be tolerated, reduced, or enjoined?

Commentators on the history of nuisance law may cite Justice Scalia’s opinion for

¹⁵It is a commonplace criticism of utilitarian approaches to public policy that they do not treat individuals as persons but as locations at which preferences which then may be aggregated in the general social calculus. This objection, which goes back at least to F. Bradley, *Ethical Studies* 68, 160 (2d ed. 1927), has been forcefully argued in both Hart, *Between Utility and Rights*, 79 *Colum. L. Rev.* 828 (1979), and Sen & Williams, *Introduction*, in *Utilitarianism and Beyond* 1-2 (A. Sen & B. Williams eds. 1982) [hereinafter cited as *Utilitarianism and Beyond*]. “Essentially utilitarianism sees persons as locations of their respective utilities—as the sites at which such activities as desiring and having pleasure and pain take place . . . Persons do not count as individuals in this any more than individual petrol tanks in the analysis of the national consumption of petroleum.” Sen & Williams, *Introduction*, in *Utilitarianism and Beyond* 2 (A. Sen & B. Williams eds. 1982).

¹⁶Libertarians argue from this premise for a complete proscription of pollution. Rothbard, for example, wrote:

From the beginnings of modern air pollution, the courts made a conscious effort not to protect, for example, the orchards of farmers from the smoke of nearby factories or locomotives. They said, in effect, to the farmers: Yes. Your private property is being invaded by this smoke, but we hold that “public policy” is more important than private property, and public policy holds factories and locomotives to be good things. These goods were allowed to override the defense of property rights—with our consequent headlong rush into pollution disaster. The remedy is both “radical” and crystal clear, and it has nothing to do with multibillion dollar palliative programs at the expense of taxpayers which do not even meet the real issue. The remedy is simply to enjoin anyone from injecting pollutants into the air, and thereby invading the rights of persons and property. Period. The argument that such an injunction would add to the costs of industrial pollution is as reprehensible as the pre-Civil War argument that the abolition of slavery would add to the costs of growing cotton, and therefore should not take place. For this means that the polluters are able to impose high costs of pollution upon those whose property rights they are allowed to invade with impunity.

Rothbard, *The Great Ecology Issue*, in 2 *The Individualist* 5 (1970). See also Hospers, *What Libertarianism Is*, in *The Libertarian Alternative: Essays in Political Philosophy* 15 (T. Machan ed. 1974); Machan, *Pollution and Political Theory*, in *Earthbound: New Introductory Essays in Environmental Ethics* 74, 97-8 (T. Regan ed. 1984) (showing the incompatibility between libertarian views about property and cost-benefit analysis).

¹⁷Prosser, *Law of Torts*, p. 577 (4th ed. 1971).

¹⁸Prosser, *Law of Torts*, p. 578 (4th ed. 1971) (quoting Joyce, *Nuisances* § 20 (1906)).

the majority in *Lucas v. South Carolina Coastal* (1992) to establish that just because a governmental agency or legislature declares something to be a nuisance does not automatically make it so. In announcing a test to decide whether compensation must be paid to a landowner whose land has lost all its economic value because of a regulation, Scalia declared compensation would be required unless the regulation imposed restrictions already implicit in a state's common law of private and public nuisances and other "background principles" of property law, for example, common expectations about how people ought to behave.¹⁹ As William Fischel points out, "in the ordinary nuisance case there is a more or less obvious 'subnormal behavior,' . . . a condition that ordinary people, *without the aid of the law*, can look at (or smell or listen to) and say, that party is not behaving as he ought to, at least at that place and time."²⁰

As our technology grows more complex and its consequences more diffuse, however, we might honestly disagree about what sorts of precautions are required or risks are acceptable. How do the "background principles" that guide property law respond to social, political, and technological challenges to them? These principles are not static or fixed. Legislation may change cultural values or expectations—or express changes that have taken place—as well as rest on norms that are already established. As society interprets statutes enacted in the 1970s, moreover, it may apply new conceptions of what is permissible and impermissible, socially acceptable and antisocial, reasonable and dangerous. As we shall later see, several professors of environmental law advocate an expansion the concept of a public nuisance to embrace ecological values.²¹ It is unclear to what extent environmental law is meant to reflect public values that are already established and to what extent it may serve as a catalyst to raise public consciousness.²²

§ 5:6 Cultural values

On college campuses during the 1970s, Hans Bethe, the eminent nuclear physicist, and Barry Commoner, the environmental activist, debated issues involved in nuclear power and pollution.¹ In one debate, when Commoner spoke of the depletion of natural resources, Bethe replied that there were no natural resources but only raw materials. This distinction is fundamental to understanding pollution control law.² For Commoner, natural objects come in natural kinds; form determines function. If boundaries are forced or crossed too often, as by an intrusive and incautious use of technology, catastrophe will result. For Bethe, things do not have es-

¹⁹*Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1029 (1992).

²⁰Fischel, "The Law and Economics of Cedar-Apple Rust: State Action and Just Compensation in *Miller v. Schoene*," *Review of Law and Economics*, 3:2 (2007), at 133–95.

²¹*See, for example*, Goldstein & Thompson, Jr., *Property Law: Ownership, Use, and Conservation*, 167–76 (2006). Law casebook coverage is also found, appropriately, in Nagle & Ruhl, *The Law of Biodiversity and Ecosystem Management*, 402–09 (2d ed. 2006).

²²For discussion, *see* Nagle, *Moral Nuisances*, 50 *Emory L.J.* 265 (2001).

[Section 5:6]

¹Debate between Hans Bethe and Barry Commoner, Cornell University, Ithaca, New York (Nov. 1977).

²The distinction is generally more important in applying environmental science to environmental law. Those who regard the environment in terms of natural history think of function as following form and form as being determined by the past. Hence, biology should be committed to describing the essences, taxa, classes, or natural kinds that evolution has produced and to understanding the relations or "equilibria" among them. Those who think of nature in terms of raw materials take a more "reductionist" approach. They argue that biologists should investigate systems and mechanisms with a view to controlling and manipulating them. These two approaches may be found in various sciences; in psychology, for example, Freudian and other therapeutic methodologies contend with Skinnerian behaviorism. For a discussion of these approaches, *see* Rorty, *Method, Science, and Social Hope*, in R. Rorty, *Consequences of Pragmatism* 197 (1982).

sences or forms determining their function. Rather, our cleverness in molding and manipulating materials to meet our needs determines what they are and the value they may have for us. Technology is the key to cornucopia, not the cause of catastrophe.

To understand the difference between “natural resources” and “raw materials,” it is useful to consider an analogy. Most of us divide our homes into various rooms, each with a particular form and function: a kitchen, bathroom, bedroom, or study. When we decorate, we keep these boundaries in mind; we might consider them natural—one place to eat, one to sleep—even though they are largely conventional. Other cultures do things differently, but nearly all societies have rules about how to greet strangers, conduct marriages, bury the dead, and entertain friends. Indeed, to have settled expectations in these matters—to therefore be able to engage in expressive and not simply in practical activity—is to have a culture and to be civilized. It might be said that it is basic to our humanity to have an image of how our surroundings, natural and personal, are to be organized and to conform our behavior to that image.

Now, it is also reasonable to regard nature, as Bethe might, as having no organization and imposing no boundaries other than those which are implied by the laws of chemistry and physics. Those who urge this view might argue that the compound H_2O , in a given quantity with a given force and direction, might serve as the basis of a biological system, as a liquid highway, as a sewer, or as one of many other uses; no particular function is implied by its being called a “river.” The way we traditionally divide nature into rivers, estuaries, meadows, forests, farmland, and so on is, according to this analysis, essentially arbitrary. The boundaries we envision are permeable to science and technology; these boundaries are the accidents of natural history or the artifacts of culture and convention.

What has been said of the way we treat the environment might also be said of the way we conduct ourselves in other areas; for example, the way we decorate our homes, bear and raise the next generation, entertain friends, treat strangers, and bury the dead. There is nothing in the science of sanitation or biochemistry that distinguishes between civilian and military dead, friends and strangers, a chemical occurring naturally and the same substance a corporation has put in the air—yet we commonly make these types of distinctions. Likewise, pollution control legislation relies on the knowledge and the techniques of science and engineering. But the purposes of these laws, the goals they seek to achieve, such as “cleaning up America,” are not all definable in the mathematical languages of science.

One of the great challenges of our time is the invitation presented by various “reductionist” sciences to see ourselves apart from history, culture, and the framework of beliefs we usually rely upon in evaluating social events. According to Mary Douglas:

This is the invitation to full self-consciousness that is offered in our time. We must accept it. But we should do so knowing that the price is William Burrough’s *Naked Lunch*. The day when everyone can see exactly what it is on the end of everyone’s fork, on that

Consider, too, the introduction of bioengineered organisms into the environment. Researchers at the University of Maryland propose to alter bass, flounder, and other species so that they can survive in polluted bays and estuaries. Klausner, University of Maryland Dives Into Biotechnology, *BIO/Technology*, Mar. 1984, at 212, 213. Those who regard nature and the environment in relation to history are likely to oppose these introductions and to argue that we should clean up the nation’s waters, not alter species to make them better able to survive. Those who see ecosystems simply as efficient producers of economically useful materials, however, will argue that estuaries should be understood as mechanisms not as historical artifacts. They are likely to see bioengineering as improving the efficiency of natural systems and not to worry about the “essences” or “authenticity” of species.

day there is no pollution and no purity and nothing edible or inedible, credible or incredible, because all the classifications of social life are gone. There is no more meaning.³

Pollution control law requires standards to be set, insofar as possible, in precise mathematical and scientific terms. And yet the difference between purity and pollution, the edible and the inedible, the decent and the indecent are paradigmatically classifications of social life. The problem is not simply to determine when science is and is not appropriate for assessing and evaluating our environmental concerns. The problem is also to understand that science is many things, and that a careful, sympathetic, and historical understanding of social values and classifications can be scientific.⁴

Cultural factors strongly influence the risks we are willing to take as individuals and as a society. We tend to resent risks associated with pollutants, food additives, pesticides, and other products and by-products of economic activity. At the same time, we readily accept many greater hazards, such as those from naturally occurring substances, for which we may have no one but ourselves or nature to blame.⁵ The magnitude of a risk—the extent of the harm divided by the probability of its occurrence—may be less important than its meaning within a context of social, economic, and political relationships.⁶

We may perceive some hazards as more or less dangerous than they are because of the extent to which we resent or fear them.⁷ As well, we are likely to find some risks more acceptable than others—in spite of the “costs” and “benefits”—if they are assumed “voluntarily,” if the outcome depends on our own skill or care, if the harm will be eventual rather than immediate, or if the hazards are spread equitably over society as a whole.⁸ Moreover, much of the popular resentment of pollution may arise not from a perception of risks and hazards, but from a deep cultural aversion toward wastes and “unnatural” substances in what we breathe, eat, and drink.

To understand this aversion, consider an example. One swallows one’s own saliva all the time, so it cannot be dangerous, yet no one would want to drink a glassful of the stuff kept chilled and sterile in the refrigerator. It does not contribute anything to say that spit is safe—or to pronounce on the safety of some industrial soup poured into a river—if people are disgusted by rather than afraid of it. Disgust can be as strong an emotion as fear, and it can bring us together equally well to support policies to control pollution.

The question then arises as to how we may properly take cultural, aesthetic, and

³M. Douglas, *Implicit Meanings* 247 (1975) (footnote omitted).

⁴See Dretske, *Laws of Nature*, 44 *Phil. Sci.* 248 (1977); Glymour, *Social Science and Social Physics*, 28 *Behav. Sci.* 126 (1983); Scriven, *Explanation and Prediction in Evolutionary Theory*, 120 *Sci.* 477 (1959); see also Rorty, *Method, Science, and Social Hope*, in R. Rorty, *Consequences of Pragmatism* 197 (1982); Hirschman, *Paradigms as a Hindrance to Understanding*, in *Interpretive Social Science* 163 (P. Rabinow & W. Sullivan eds. 1979).

⁵See Ames, *Dietary Carcinogens and Anticarcinogens*, 221 *Sci.* 1249 (1983) (compiling evidence that “naturally” occurring pesticides which no one resents are often far more dangerous than additives which are illegal).

⁶Mary Douglas has developed a theory that the way societies think about pollution helps preserve relationships of power and statutes. See M. Douglas, *Purity and Danger: An Analysis of Concepts of Pollution and Taboo* (1966). In addition, she has written:

Pollution is the black [sic] side of Plato’s good lie on which society must rest: it is the other half of the necessary confidence trick. We should be able to see that we can never ask for a future society in which we can only believe in real, scientifically proved pollution dangers. We must talk threateningly about time, money, God and nature if we hope to get anything done. We must believe in the limitations and boundaries of nature which our community projects.

Douglas, *Environments at Risk*, in *Implicit Meanings* 230, 245-6 (1975).

⁷See Slovic, Fishchhoff & Lichtenstein, *Facts and Fears: Understanding Perceived Risk*, in *Social Risk Assessment: How Safe is Safe Enough?* 181 (R. Schwing & W. Albers eds. 1980).

⁸W. Lowrance, *Of Acceptable Risk*, Ch. 3 (1976).

symbolic factors into account in setting pollution standards. To an extent, current law does this by treating pollution as taboo and calling for its elimination. The alternative, the invitation of our time to “objective” and “value-free” analysis, would be to regulate pollutants simply by assessing the magnitude and severity of the risks they pose, regardless of their social context, symbolic significance, cause, or source. It is conceivable, however, that we might understand ourselves and appreciate our attitudes sufficiently to set priorities taking into account the meaning as well as the magnitude of various environmental hazards. This seems to be the hope expressed by NEPA in directing all agencies of the federal government to “utilize a systematic, interdisciplinary approach which will ensure the integrated use of the natural and social science . . . in planning and decisionmaking which may have an impact on man’s environment.”⁹ No one has been able to explain, however, what constitutes such an integrated, interdisciplinary approach.

Pollution control laws are motivated primarily by our moral principles and sentiments, including compassion and outrage, elicited by events which were all too common during the 1960s and 1970s, when pollution appeared to be a menace gone completely out of control. These laws are also needed to protect well established rights to person and property which, because of practical and other limitations, are not adequately protected in tort. Thus, pollution control statutes serve to meet the requirements of humanity and compassion as well as the demands of justice.

These statutes cannot be fully understood, however, without reference to the cultural background which to a large extent determines the risks we consider acceptable and which defines the boundaries, social and natural, which we may or may not cross. To be sure, the purpose of the laws is largely to protect safety and health. The way we identify threats to safety and health, however, and the relationship between society and the environment we consider appropriate depends to a large extent on the expressive conventions which determine the meanings we attach to events. As Stuart Hampshire observed:

Men are unavoidably born into both a natural order and a cultural order, and sexuality, old age, death, family and friendship are among the natural phenomena which have to be moralised by conventions and customs, within one culture or other, and that means within a very particular and specific set of moral requirements. The one unnatural, and impossible, cry is the consequentialist’s: “Away with convention; anything goes provided that it does not interfere with welfare or with principles of justice.”¹⁰

§ 5:7 A sense of community

The Declaration of Independence emphasizes communitarian commitments—for example, the reference to “one nation” in the first sentence—and also individual rights—for example, rights to life, liberty, and the pursuit of happiness. American political history may be interpreted along similar dimensions: as an attempt to forge a sense of national community while at the same time protecting the ability of individuals to pursue their own conceptions of the good life and of the values that enter that life.¹

Liberal political administrations in America, from Thomas Jefferson to Franklin D. Roosevelt, have favored what has been called the “national idea,” that is, the idea of national unity in pursuing public values and common ideals.² Liberal politi-

⁹National Environmental Policy Act of 1969, § 102(2), 42 U.S.C.A. § 4332(2) (1982).

¹⁰Hampshire, *Morality and Convention*, in *Utilitarianism and Beyond* 145, 156 (A. Sen & B. Williams eds. 1982).

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¹For such an interpretation of American political history, *see, e.g.*, D. Milnar, *Ideas and Politics: The American Experience* (1964).

²Bier, *Liberalism and the National Idea*, 5 *Pub. Int.* 70 (1966).

cal theory, such as that articulated by Rawls, does not rule out such values and ideals by, for example, presupposing an economic conception of the person, a psychology of “possessive individualism,” or a preference-theory of the good.³ It requires only that the common purposes and aspirations contemplated by the laws be respectful of the various conceptions people might have of themselves as persons and the various beliefs they may be committed to in leading their personal lives.⁴

American patriotism is not founded on immemorial ties of blood and history; nor does it depend ultimately on market relationships or the idea of a commercial contract. The underlying principle of American patriotism, as William Sullivan perceived, is “the notion of civic covenant.”⁵ This means “that as citizens we make an unlimited promise to show care and concern for one another.”⁶ The compassion which contributes to the moral basis of pollution control law expresses an analogous sense of mutual trust which is basic to the American civic tradition. It is as familiar in American history as the pledge of loyalty which concludes the Declaration of Independence.

The general goals of pollution control legislation, while expressing mutual trust and loyalty to a common heritage, are at the same time completely consistent with the rights and liberties of individuals: No one, after all, has the right to pollute. The shared aspiration for a cleaner, safer, more “natural” environment, like the national effort to land a man on the moon, builds up a national sense of patriotism and pride while remaining utterly innocuous from the point of view of a liberal theory of rights.

The United States can take pride in its accomplishment in pollution reduction, however haltingly and inefficiently achieved, in over 30 years since the early 1970s. Statutes enacted during the heyday of environmentalism also have had an effect. Rivers no longer stink or catch fire; you can drink the water in the Great Lakes. Air quality has improved remarkably during the past three decades, in spite of eco-

³Some commentators have read Rawls, and the liberal tradition generally, as presupposing the philosophical doctrine that the soul exists apart from or prior to its experiences—a view of the person as Economic Man “possessing” preferences. This reading is inaccurate and creates a straw man which communitarians may then criticize. *See, e.g.,* A. Macintyre, *After Virtue* (1981); M. Sandel, *Liberalism and the Limits of Justice* (1982); R. Unger, *Knowledge and Politics* (1975). For criticism of this “straw man” interpretation of liberalism, *see* Gutmann, *Communitarian Critics of Liberalism*, 14 *Phil. & Pub. Aff.* 308; Sagoff, *The Limits of Justice*, 92 *Yale L.J.* 1065 (1982).

⁴Liberal political theory in America—the tradition which has run from Thomas Jefferson to John Rawls—has not opposed nationalizing ideas and communitarian goals but has only insisted that these collective efforts should be as neutral as possible on what may be called the question of the good life. *See* Dworkin, *Liberalism, in Public and Private Morality* 113 (S. Hampshire ed. 1978). The liberal theory of equality “supposes that the government must be neutral on what might be called the question of the good life [because it] supposes that political decisions must be, so far as possible, independent of any particular conception of the good life, or of what gives value to life.” Dworkin, *Liberalism, in Public and Private Morality* 127 (S. Hampshire ed. 1978).

Jefferson urged the importance of ridding the law of any preference concerning religion “to comprehend, within the mantle of its protection, the Jew and the Gentile, the Christian and the Mahometan, the Hindoo, and Infidel of every description.” T. Jefferson, *The Writings of Thomas Jefferson* 67 (1905). Rawls has extended this exclusion to include not only religious views of the soul but also philosophical conceptions of human nature and the meaning of life. Rawls stressed that modern democratic societies have their origins in social and historical conditions—“in the Wars of Religion following the Reformation and the subsequent development of the principle of toleration” Moreover, “[t]hese conditions profoundly affect the requirements of a workable conception of political justice: such a conception must allow for a diversity of doctrines and the plurality of conflicting, and indeed incommensurable, conceptions of the good affirmed by the members of existing democratic societies.” Rawls, *Justice as Fairness: Political not Metaphysical*, 14 *Phil. & Pub. Aff.* 223 (1985). For a comparison between Jefferson (applying the principle of toleration to religious doctrines) and Rawls (applying the same principle to philosophical doctrines and conceptions), *see* Rorty, *The Priority of Democracy over Philosophy* (unpublished manuscript).

⁵W. Sullivan, *Reconstructing Public Philosophy* 160 (1982).

⁶W. Sullivan, *Reconstructing Public Philosophy* 161 (1982).

economic growth. Gross domestic product increased in the United States by 187 percent between 1970 and 2004; vehicle miles traveled increased by 171 percent; energy consumption went up by 47 percent; and population grew by 40 percent. During the same period, according to an Environmental Protection Agency report, “total emissions of the six principal air pollutants dropped by 54 percent.” These emissions include nitrogen and sulfur dioxide, ozone, particulates, carbon monoxide, and lead. Between 1990 and 1999, emissions of 89 other toxic substances declined on average by 30 percent.⁷ Air pollution has fallen to the lowest level ever recorded in the United States.⁸

Laws such as the Clean Air Act reflect upon our self-respect and virtues as a society while remaining completely neutral on the question of the good life. In showing respect and concern for one another and in protecting the environment, Americans find a unifying political theme; we become more than “an assemblage associated by a common acknowledgement of right and community of interest,” as Cicero described civil society.⁹ The body politic becomes a nation or a people, which is, in Augustine’s phrase, “an assemblage of reasonable beings bound together by the objects of their love.”¹⁰

Controversy concerning pollution control law begins when one moves, to borrow Winston Churchill’s phrase, “from the cloudland of aspiration to the ugly scaffolding of attempt and achievement.”¹¹ When one tries to set specific policy goals and enforce them, as we have seen, moral intuitions which were clear about generalities wobble with respect to specifics, and we look to more technical and theoretical frameworks for help. In the past twenty years, a group of academics, primarily policy analysts and resource economists, have offered one such framework. We shall now consider the extent to which an economic approach to pollution control law can surmount the complexities and settle the controversies involved in social regulation.

III. SHOULD STANDARDS BE EFFICIENT?

§ 5:8 In general

Richard Musgrave, in *The Theory of Public Finance*, recognized three principal reasons which justify governmental intervention in the operation of markets. First, the government may legitimately transfer wealth to achieve greater equity in the distribution of income. Second, it may engage in various macroeconomic policies to even out business cycles, stabilize fluctuations, and otherwise promote prosperity and economic growth. Finally, the government may seek to correct market failures to increase economic efficiency in the allocation of resources.¹ Of these three goals,

⁷U.S. Environmental Protection Agency, Air Trends, “Air Emissions Trends - Continued Progress Through 2004,” available at <http://www.epa.gov/airtrends/2005/econ-emissions.html>; see also EPA’s 2008 Report on the Environment: Highlights of National Trends (ROE Highlights), at 5 (2008), available at http://www.epa.gov/eroeweb1/pdf/roe_hd_layout_508.pdf.

⁸Steven Hayward et al., Index of Leading Environmental Indicators 2005, at 5 (Pacific Research Institute for Public Policy, San Francisco, California and American Enterprise Institute for Public Policy Research, Washington, D.C., April 2005), available at http://www.pacificresearch.org/pub/sab/enviro/05_enviroindex/2005_Enviro_Index.pdf.

⁹St. Augustine ascribed this view to Cicero. See S. Augustine, *The City of God* 61-2 (M. Dods trans. 1950).

¹⁰S. Augustine, *The City of God* 61-2, 706 (M. Dods trans. 1950).

¹¹Ruckelshaus, Risk, Science, and Democracy, *Issues Sci. & Tech.*, Spring 1985, 24 (quoting Winston Churchill).

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¹R. Musgrave, *The Theory of Public Finance* 5 (1959) (discussing the “Three Objectives of Budget Policy”).

still widely recognized in economic theory,² the third appears most relevant to pollution control law and environmental policy.³

The second part of this chapter examines the relevance of the efficiency norm or criterion in relation to environmental protection. It is divided into four sections. The first section takes it as a premise that if clean air and water are treated as scarce resources they are to be allocated, insofar as possible, by free, competitive, fair, and informed markets. We question, however, whether the efficiency criterion, which measures value in terms of willingness to pay, has any relationship to such markets, in which willingness to sell is necessary. Moreover, even if markets are excellent institutions for allocating resources, this gives no argument for the efficiency norm in public policy since market allocations are desirable not necessarily because they allocate resources efficiently, but for other reasons entirely, for example, because they are voluntary or consensual. Arguments for a market allocation, therefore, are not necessarily arguments for an efficient allocation of resources.

The second section argues that the efficiency criterion has no ethical basis in utilitarianism since, first, it is not sufficiently related to any normative goal—such as happiness, pleasure, or prosperity—and, second, because it is concerned with expectations rather than with consequences. There is also no reason to believe, moreover, that the efficiency criterion in public policy, which is based on a particular view of moral psychology, has our “hypothetical” or “counterfactual” consent.

The third section analyzes the concept of risk in the context of economic analysis. The fourth part discusses the standard for “regulatory review” at the Office of Management and Budget. Since 1981, cost-benefit analysis and with it the efficiency standard has been mandated by Executive Order as a test for regulations at least to the extent allowed by law. This final part considers the extent to which cost-benefit analysis (and with it the goal of maximizing net benefits) serves or substitutes for the overall ethical purposes of environmental law.

After briefly reviewing these central issues in economic analysis and pollution policy, we shall be in a position better to understand, in the final parts of this chapter, the relationship between ethical and economic approaches in implementing the goals of federal pollution control law and in responding to the problem of climate change. We shall then consider ethical and economic approaches to the protection of nature or the natural environment—as distinct from human health, safety, and welfare.

§ 5:9 Should markets decide?

The “concept of efficiency,” according to Arthur Okun, “implies that more is bet-

²Musgrave has articulated these goals as follows:

Economists distinguish three criteria for assessing performance: aggregate or macro-efficiency, measured principally in terms of total output, employment and price stability; micro-efficiency, or the degree to which the economic systems meets manifold and constantly changing demands of individuals for public and private goods; and the distribution of income and wealth Most economic and social policies of government are interventions into the workings of the private market in an attempt to improve on one or more of these aspects of performance.

R. Musgrave, *The Theory of Public Finance* 5 (1959) (discussing the “Three Objectives of Budget Policy”).

³A few environmental factors, such as weather, are volatile enough to upset business cycles in, for example, agriculture, but these natural fluctuations are generally not the concern of environmental legislation. While there are many important ethical and cultural reasons for pollution control, none of these seems related in any consistent way to improving equity in the distribution of income or wealth. For discussion of the distributional aspects of pollution control policy, see Krieger, *Six Propositions on the Poor and Pollution*, 1 *Pol’y Sci.* 311 (1970); Peskin, *Environmental Policy and the Distribution of Benefits and Costs*, in *Current Issues in U.S. Environmental Policy* 144 (P. Portney ed. 1978). For an articulation of the argument that environmentalists are often the rich and the privileged attempting to protect their own backyards, see B. Frieden, *The Environmental Protection Hustle* (1979); W. Tucker, *Progress and Privilege* (1982).

ter, insofar as the ‘more’ consists of items that people want to buy.”¹ Many of those who joined the environmental movement of the 1960s and 1970s, however, disputed this claim. They argued that less is better—that “an American life style not based on material growth and consumption . . . would be pleasant and rewarding.”² They spoke of “simplicity” and of the “earlier virtues of frugality, prudence, and valuing people over possessions.”³ And they argued that the convictions and beliefs on which an environmental ethic is based are often incommensurable with the wants and preferences which consumers pursue and which, to a large extent, advertisers create.⁴

During the 1960s and 1970s, Congress, responding to the environmental movement, enacted various pollution control laws which, as the first part of this Chapter suggested, were founded on ethical considerations and were intended to prevent harms and to protect rights. These laws generally refuse to treat air and water simply as resources, like iron ore and petroleum, to be allocated by the market. Rather, these laws tend to view the “ever growing pollution of the air and water” as “an evil that had to be stopped.”⁵

A regulatory agency could implement this approach by adopting a “knee-of-the-curve” strategy to control a given pollutant. To understand this strategy, imagine a graph in which the y-axis represents the cost of controlling pollution and the x-axis represents the amount of pollution-control or reduction. Since the first units of pollution are usually the cheapest to control or eliminate, one can assume that in general the cost of controlling the “next” or “incremental” unit will increase as pollution declines. The idea behind a “knee-of-the-curve” strategy is that society is morally bound to control pollutants to the “knee” of the cost curve, *i.e.*, to the point at which the curve looks as if it could go asymptotic because of the rapidly increasing costs of incremental reductions. The genius of technology-forcing statutes is to encourage industry to innovate in order to push the knee of the cost-curve as far as possible out along the pollution-reduction axis.⁶ At some point, further reductions are not

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¹A. Okun, *Equality and Efficiency* 2 (1975).

²Ehrlich & Ehrlich, *The Beginning of a Better Future*, in *The New Environmental Handbook* 5 (G. De Bell ed. 1980).

³Ehrlich & Ehrlich, *The Beginning of a Better Future*, in *The New Environmental Handbook* 5 (G. De Bell ed. 1980).

⁴For the “incommensurability” of “public” and “private” preference schedules, *see, e.g.*, Maass, *Benefit-Cost Analysis: Its Relevance to Public Investment Decisions*, 80 *Q.J. Econ.* 208, 213–19 (1966); Marglin, *The Social Rate of Discount and the Optimal Rate of Investment*, 77 *Q.J. Econ.* 95, 98 (1963); *see also* E. Scattschneider, *The Semisovereign People* 27 (1960) (arguing that the difference between public values, as represented in legislation, and personal preferences as revealed in markets, is basic to political science). For the view that consumer preferences may be adaptive to advertising and other stimuli rather than expressive of autonomous values, *see* J. Galbraith, *The Affluent Society* ch. 11 (1958). For a more general consideration of the extent to which personal preferences express values which deserve social recognition, *see* Elster, *Sour Grapes—Utilitarianism and the Genesis of Wants*, in *Utilitarianism and Beyond* 1-2 (A. Sen & B. Williams eds. 1982); Gooding, *Laundering Preferences*, in *Foundations of Social Choice Theory* (J. Elster & A. Hylland eds. 1983).

⁵Stewart, *Economics, Environment, and the Limits of Legal Control*, 9 *Harv. Envtl. L. Rev.* 1, 2 (1985).

⁶*See* Sidney A. Shapiro & Thomas O. McGarity, “Not So Paradoxical: The Rationale for Technology-Based Regulation,” 1991 *Duke L.J.* 729, 741-42 (arguing that the “willingness to pay” criterion does not provide the context for understanding the economic rationality of health-based environmental standards).

required, because they would result in increases in the “misery index”—*i.e.*, unemployment and inflation far greater than any good they might do.⁷

Somewhat at cross purposes to the development of the law, a major tradition of academic writing arose which addressed pollution control as a problem in allocating scarce resources.

This approach, as Larry E. Ruff, then an economist at EPA, has written, regards pollution as “an economic problem, which must be understood in economic terms.”⁸ From this standard economic perspective, pollution is to be managed as a misallocation of resources—a failure of the market to allocate resources to those who are willing to pay the most for them and thus (tautologically) a failure to maximize social welfare. There is “a very simple way,” Ruff explained, to bring private costs in line with social costs. “Put a price on pollution.”⁹ According to Ruff, a Pollution Control Board (PCB) should place a tax on emissions. “Under such a system, anyone could emit any amount of pollution so long as he pays the price which the PCB sets to approximate the marginal social cost of pollution.”¹⁰ This “polluter pays” principle appealed to environmentalists. It seemed to enlist economic theory—which they might have assumed to be unfriendly—on their side.

The economic analysis of pollution puts the policy issue not in terms of harms or rights but in terms of correcting the failure of markets to allocate resources to those who are willing to pay the most for their use.¹¹ This economic approach to environmental policy rests on an analogy between clean air and water, on the one hand, and any scarce resource, such as coal or timber, on the other. Society has just so much air to allocate among various uses, so the analogy goes, and the task of allocating it is like that of allocating any other scarce resource. This job of allocation is best done by free, fair, and informed markets. Policy analysts tend to assume, moreover, that a principal reason markets are desirable institutions is that under certain conditions they allocate resources efficiently. These analysts argue, therefore, that the government should often override markets to correct them when they fail to make that sort of allocation.¹²

While there is a strong consensus in this country in favor of using markets in allocating resources, different political groups have different reasons for joining in this consensus. Liberals tend to believe that markets are good things because they

⁷Nicholas A. Ashford, “Understanding Technological Responses of Industrial Firms to Environmental Problems: Implications for Government Policy,” *Environmental Strategies for Industry* 282 (Kurt Fischer & Johan Schot, eds., Washington, DC: Island Press, 1993).

⁸Larry Ruff, “The Economic Common Sense of Pollution,” 19 *The Public Interest* 69-85 (Spring 1970). Reprinted in Robert Dorfman and Nancy F. Dorfman, *Economics of the Environment: Selected Readings* 20-36 (3rd Ed., New York: Norton, 1993).

⁹Larry Ruff, “The Economic Common Sense of Pollution,” 19 *The Public Interest* 69-85 (Spring 1970). Reprinted in Robert Dorfman and Nancy F. Dorfman, *Economics of the Environment: Selected Readings* 29 (3rd Ed., New York: Norton, 1993) (italics omitted).

¹⁰Larry Ruff, “The Economic Common Sense of Pollution,” 19 *The Public Interest* 69-85 (Spring 1970), reprinted in Robert Dorfman and Nancy F. Dorfman, *Economics of the Environment: Selected Readings* 29 (3rd Ed., New York: Norton, 1993).

¹¹“In the economic vision, it is only the prospect of overcoming the market’s failure to capture gains from trade that can justify, from the individual’s standpoint, the risks of exploitation inherent in majoritarian political institutions.” Michelman, *Politics and Values or What’s Really Wrong with Rationality Review?*, 13 *Creighton L. Rev.* 487, 489 (1979). Michelman continued by asking: “Would it not, then, make economic sense to include in the constitution a direction to the courts to nullify any majoritarian intervention which plainly cannot even make a pretense of being a solution to a market-failure problem?” Michelman, *Politics and Values or What’s Really Wrong with Rationality Review?*, 13 *Creighton L. Rev.* 487, 488-99 (1979). *See also* Michelman, *Constitutions, Statutes, and the Theory of Efficient Adjudication*, 9 *J. Legal Stud.* 431 (1980).

¹²*See, e.g.*, W. Baxter, *People or Penguins: The Case of Optimal Pollution* ch. 1 (1974). *See also* Exec. Order No. 12291, 2(b), 3 C.F.R. §§ 127, 128 (1982) (“Regulatory action shall not be undertaken unless the potential benefits to society . . . outweigh the potential costs to society.”).

are neutral among preferences and are in that sense egalitarian.¹³ Libertarians like market because they are consensual. Conservatives tend to believe that markets are good things because they reward traditional virtues, such as thrift and hard work, while punishing vices like insobriety and indolence.¹⁴ Markets arguably preserve autonomy and make individuals responsible for their choices. Nearly everyone agrees that markets are advantageous insofar as they are impersonal and relieve the government of responsibility for the consequences of choices individuals make.¹⁵

If we accept the analogy between clean air or water and other scarce resources, we might then agree that free and fair markets provide the best way by which to allocate these resources among those who compete for their use. As a first step, we might establish property rights in air and water by routinely awarding injunctive relief in nuisance cases. This would force corporations, before disposing of pollutants, to obtain the consent of those whose persons and property might be damaged as a result. Corporate and other polluters could then be allowed to bargain with individuals either to win their consent or to stop polluting.

Economic analysts, however, do not generally recommend letting markets function in this way. They tend to construe pollution not as an invasion of personal or property rights, but as a paradigmatic “spillover” or market “externality”—an uncompensated third-party effect of market transactions. Spillovers of this sort, we may agree, are unjust. It is one thing when an individual agrees to pay a price for a benefit he receives; it is another when a cost is simply imposed upon him and the benefit goes to someone else.¹⁶

There are three different ways we may respond as a society to this injustice. First, we may simply allow one individual to make use of the person or property of another, without his consent, provided this use is efficient overall or the benefits to society as a whole outweigh the costs.¹⁷ Second, we might let markets function by protecting property rights by, for example, systematically giving plaintiffs injunctive relief against polluters. This insistence on protecting property rights is associated not with economic analysis but with the political theory of libertarianism.¹⁸ Third, we may require, as much of our legislation does, that polluters make the fastest

¹³See Dworkin, *Liberalism, in Public and Private Morality* 112, 130 (S. Hampshire ed. 1978) (arguing that a market “may be expected to provide a more egalitarian division” of goods than some alternative arrangement, given an equitable division of wealth).

¹⁴See Posner, *Utilitarianism, Economic and Legal Theory*, 8 *J. Legal Stud.* 103, 124 (arguing that competition “encourages and rewards the traditional virtues (‘Calvinist’ or ‘Protestant’) associated with economic progress”).

¹⁵For a well-reasoned defense of markets as methods of collective choice, see C. Schultze, *The Public Use of Private Interest* (1977).

¹⁶Pollution represents a market “failure” in the sense that personal and property rights have not been protected and for that reason markets have failed to function. It is unclear how a market failure of this kind can be corrected by any means other than that of granting injunctive relief to protect those rights. A market failure of this sort cannot be corrected by taxing polluters to “internalize” the cost of the “externality,” since this does not address the cause of the failure, namely, the protection of the right in question. *But see* discussion of externalization versus internalization of costs as related to property use, *infra* this section.

¹⁷Once the social pie is made as big as possible by maximizing overall social wealth, victims can be compensated or wealth distributed in any way that seems fair. This approach—to allocate resources efficiently and then equitably redistribute wealth—is the approach policy analysts generally take: “Allocation programs include measures to affect relative prices and/or the allocation of resources in an economy, motivated by considerations of economic efficiency. Distribution programs consist of efforts to alter the distribution of incomes in society, motivated by considerations of distributive equity.” E. Gramlich, *Benefit-Cost Analysis of Government Programs* 13 (1981). These analysts generally argue that the two sorts of programs should be kept separate, viz., that fossil fuels should be allocated efficiently and then income redistributed so that poor people can afford heat. See Schelling, *Economic Reasoning and the Ethics of Policy*, 63 *Pub. Interest* 37 (1981).

¹⁸See discussion *infra* this section.

progress that is economically and technologically feasible, achievable, or practicable, toward reducing and eventually eliminating their emissions. It is useful to consider the conceptual relationships which hold among these alternatives.

Let us begin with the idea that the way to deal with pollution is to make sure it “pays its way” from the point of view of society as a whole.¹⁹ The idea has already been touched upon²⁰ that if the private and social costs of production diverge, markets are then unable “to allocate environmental resources efficiently—that is, to price their destructive use appropriately”²¹ from the point of view of the general welfare, as economists understand that concept. The idea is that corporations and others should not be allowed to pollute unless they pay—or at least could pay and remain profitable—to compensate the victims of their pollution.²² If, for example, Belchco, Inc. is able to “externalize” some of its production costs by casting its effluents upon the public while forcing others to contain them, clean them up, or suffer losses, it can undersell its competitor, Cleanco, which disposes of its effluents properly or compensates those to whom they cause harm.

Companies like Belchco, then, will overproduce—and society will overconsume—their products, since the prices these companies charge for the products (private costs) need not reflect the full value to society (social costs) of the resources used to produce them. Companies like Cleanco, moreover, will underproduce their products, which they must sell at a higher price, and the general result will be that society will have a lot more products from Belchco than it wants relative to its desire for Cleanco’s products and for pure air and water.

In the 1960s, economists began to apply to environmental issues the theory of market “externalities,” which had been developed, at least in outline, about thirty years earlier.²³ In 1969, two economists, Robert Ayres and Allen Kneese, argued that the disposal of residuals will constitute a serious technological external

¹⁹The notion that there is such thing as a “point of view of society as a whole” is not a tenet of liberal political theory but belongs to the communitarian theories of the far right and far left. In supporting that there is such a “point of view” contemporary “utilitarianism” adopts a communistic fiction about the oneness of society as the unity of its interest. This theory, in other words, assumes the existence of a common good—the general welfare—and that social policy should be directed toward achieving it. See generally G. Myrdal, *The Political Element in the Development of Economic Theory* 54 (1953). Democratic political theory does not rely on this fiction of the unity of society. It assumes that individuals will pursue incompatible and even incommensurable conceptions of the good but that they may from time to time form shifting majorities to achieve common goals and aspirations which they determine and which are not set beforehand by, for example, a theoretical vision (such as welfare or efficiency) of what the good is. In a liberal democracy, the power of majorities to legislate common goals is severely limited by the rights of individuals and minorities to be protected from the usual excesses of tyranny.

²⁰See W. Baumol & W. Oats, *The Theory of Environmental Policy* (1985); J. Dales, *Pollution, Property, and Prices* (1968); A. Freeman, R. Haveman & A. Kneese, *The Economics of Environmental Policy* (1973). For a good annotated bibliography of the literature, see Fisher & Peterson, *The Environment in Economics: A Survey*, 14 *J. Econ. Literature* 1 (1976) and King, *The Environmental Bandwagon*, in *Ecocide—And Thoughts Toward Survival* 189 (C. Faidman & J. White eds. 1971).

²¹Kneese, *Environmental Policy*, in *The United States in the 1980s* 253, 259 (P. Dugan & A. Rabuska eds. 1980).

²²This is known as the Kaldor-Hicks compensation test for efficiency. Economists generally argue that the problem with this test is that it does not require compensation to be paid; it is only a test of potential, not actual, Pareto improvement. See E. Mishan, *Introduction to Normative Economics* § 41 (1981). It shall be argued here that there is, however, another problem; by setting up a compensation test, Kaldor-Hicks imagines property rights to be backed only by a liability rule. This, therefore, takes them out of the market, even if compensation is paid. The amount of compensation would not be set, as it is in markets, by the price the seller actually demands, but by an “objective” price, presumably set by economists working as consultants for the state.

²³The notion of an “external economy” or an uncompensated third-party effect can be found in the literature of economics as early as 1898. See A. Marshall, *Principles of Economics* 345-400 (4th ed. 1898). The externality concept was apparently first applied to environmental disamenities by Pigou. See A. Pigou, *The Economics of Welfare* 159-161 (1932). Pigou also suggested that as a solution the

diseconomy unless “all inputs are fully converted into outputs, . . . and all final outputs are utterly destroyed in the process of consumption, or . . . property rights are so arranged that all relevant environmental attributes are in private ownership and these rights are exchanged in competitive markets.”²⁴

In order to understand this recommendation,²⁵ we need to ask whether Kneese, Bower, and like-minded resource economists believe that the government should apply a *property* rule or a *liability* rule in protecting privately held entitlements to environmental assets and attributes. There is an important difference. “An entitlement is protected by a property rule,” as Guido Calabresi and A.D. Melamed explain, “to the extent that someone who wishes to remove the entitlement from its holder must buy it from him in a voluntary transaction in which the value of the entitlement is agreed upon by the seller.”²⁶ If Mr. Boomer, for example, held an entitlement backed by a property rule to enjoy his land free of Atlantic’s pollution, the court would have granted him the injunction he sought. Atlantic, then, would have to accommodate Boomer, either by not polluting his property or by paying him the amount he demanded. When an entitlement is backed by a property rule, the buyer meets the seller’s price.

When an entitlement is protected by a liability rule, the result is different. The price is determined not by the seller but usually by a court with the aid of expert testimony. Boomer was forced to accept an amount the court found to be equal to what his property was “objectively” worth. “Whenever someone may destroy the entitlement if he is willing to pay an objectively determined value for it, an entitlement is protected by a liability rule.”²⁷ If the right-holder would rather keep his home or other thing of value, rather than go without it for a price, he does not have that choice in this kind of a “market.” The buyer must pay not the seller’s price but a price determined by, for example, an agency of the state.

Let us suppose that Kneese and like-minded resource economists take free markets and property rights seriously enough to let polluters and pollutees strike their own bargains, rather than having the government, by applying an interest-balancing or cost-benefit test, impose the bargains. What would be the result? Plaintiffs from coast to coast would refuse to take payment for damage to their person and property; they would go to court and get injunctive relief. We can infer

government should place a tax on effluents. This tax would encourage companies to reduce their discharges up to the point at which it is cheaper for them to pollute rather than to pay the tax. The taxes they pay would then be passed on to the consumer, thereby making the private costs of products better reflect their social costs, including the costs of pollution. For a more contemporary development of this concept, see A. Kneese, *Water Pollution: Economic Aspects and Research Needs* (1962).

Analysis of the economic problem of pollution languished for about thirty years until the 1960s, when economists, together with society as a whole, became concerned about the state of the environment. In 1966, a popular article by Kenneth Boulding pointed out that the planet is a closed system in which “the outputs of all parts . . . are linked to the inputs of other parts.” Boulding, *The Economics of Coming Spaceship Earth*, in *Environmental Quality in a Growing Economy 3* (H. Jarrett ed. 1966). This paper focused attention on the idea that residuals or pollutants do not disappear when putatively disposed of, but must instead be properly managed because they remain as part of the overall system.

²⁴Ayres & Kneese, *Production, Consumption, and Externalities*, 59 *Am. Econ. Rev.* 282, 283 (1969).

²⁵Kneese wrote that if markets are competitive and resources and assets fully owned, among other requirements, “the best social solution to the problem of allocating society’s scarce resources is to limit the role of government to deciding questions of equality in income distribution, providing rules of property and exchange, enforcing competition, and allowing the exchange of privately owned assets in markets to proceed freely.” Kneese, *Environmental Policy*, in *The United States in the 1980s* 253, 257 (P. Dugan & A. Rabuska eds. 1980).

²⁶Calabresi & Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 *Harv. L. Rev.* 1089, 1092 (1972).

²⁷Calabresi & Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 *Harv. L. Rev.* 1089, 1092 (1972).

this, first, from “the fact that the great majority of nuisance suits have been in equity, and concerned primarily with the prevention of future damage.”²⁸ Second, environmentalists constitute a strong ideological faction in this country; it is not hard to imagine that they will prefer an injunction to selling out to a polluter at any price.²⁹ Third, surveys suggest that a majority of Americans would refuse “being bought off to permit pollution,” and thus they would set a prohibitively high compensation value for their right to be free of other people’s wastes.³⁰ Finally, the history of urban redevelopment indicates that many people will refuse a money payment when they wish to keep their way of life instead.³¹ When a person has to purchase an entitlement, moreover, he is limited by his budget and therefore may not bid very much for it. When a person is asked to sell that entitlement, however, the sky is the limit, since his ability to receive money vastly exceeds his ability to pay.³²

These arguments lead to the conclusion that if all relevant environmental attributes were fully owned by individuals and freely exchanged in competitive markets, and if these entitlements were backed by a property rule, then polluters would either have to eliminate their effluents entirely or to reduce them to levels so insignificant that they arguably would not violate personal or property rights. If an efficient allocation is any allocation of resources reached by free, voluntary, and informed exchanges in competitive markets, where property rights are backed by property rules, therefore, then no pollution is the efficient solution. This is the same outcome as that envisioned by the more aspirational of our federal pollution control laws.

Those who take the economic approach, however, do not generally advocate a policy of protecting property rights with a property rule so that free, competitive markets can function to set the prices at which people are willing to accept the harm and risk of harm pollution imposes on them. Instead, we may do better, according to this approach, to determine prices for environmental attributes, personal

²⁸Prosser, *Law of Torts*, p. 576 (4th ed. 1971).

²⁹A plurality of respondents to a major *Resources for the Future* poll of the general population thought that environmental protection is too important to consider costs. U.S. Council on Environmental Quality, *Public Opinion on National Environmental Issues* 3 (1980).

³⁰A group of economists from the University of Wyoming asked respondents to their survey how much they would demand in compensation (the “CS” or compensation value) to permit power companies to pollute a pristine area causing a loss of visibility simulated in photographs. These researchers reported:

The CS values . . . put the liability for maintaining visibility with the power companies and presupposes [sic] that the power companies will attempt to buy off consumers rather than cleanse the air. If respondents reject this concept of “being bought off to permit pollution” they might increase their compensation. Strategically, respondents may give large or infinite valuations as an indication that this concept is unacceptable. This is particularly supported in that slightly over one-half of the example required infinite compensation or refused to cooperate with the CS portion of the survey instrument.

Rowe, D’Arge & Brookshire, *An Experiment on the Economic Value of Visibility*, 7 *J. Env’tl. Econ. & Mgmt.* 1, 9 (1980).

³¹M. Anderson, *The Federal Bulldozer: A Critical Analysis of Urban Renewal, 1949-1962* (1964); D. Berman, *Urban Renewal: Bonanza of the Real Estate Business* (1969); B. Frieden, *The Politics of Neglect: Urban Aid from Model Cities to Revenue Sharing* (1975).

³²People are likely to demand much more to surrender than they would pay to acquire possessions. One reason for this is hysteresis—the feeling that things we grow accustomed to and then lose are much more valuable than things we have never had. “Men generally fix their attentions more on what they possess’d of, than on what they never enjoyed: For this reason, it would be greater cruelty to dispossess a man of any thing than not to give it him.” D. Hume, *A Treatise of Human Nature* bk. III, pt. 2, § 1 at 482 (L. Bigge ed. 1978). For a general discussion of hysteresis, see R. Hardin, *Collective Action* 82 (1982).

While there is nothing surprising about the gulfs which separate prices people demand versus prices they would pay to acquire the same rights, economists occasionally express surprise when their surveys reveal this disparity. See, e.g., Kentsch & Sinden, *Willingness to Pay and Compensation Demanded: Experimental Evidence of an Unexpected Disparity in Measures of Value*, 99 *Q.J. Econ.* 508 (1984).

safety, and other values not on the basis of how much people would actually demand to relinquish their entitlements, but on some more “rational” or “objective” basis. For any decision, a cost-benefit analysis might be commissioned, for example, or the kind of interest-bearing techniques which were actually employed by the court in *Boomer* might be used.

The cost-benefit approach to the allocation of environmental resources does not really have to consider property rights at all; economic analysis of this sort has little, if any, conceptual relation to free markets in which the buyer meets the seller’s price. Rather, the analyst needs only to consider how much people in general or in unrelated markets are willing to pay for a marginal improvement in personal safety or environmental quality and compare that to the amount it would cost polluters to provide that much improvement.³³ However rights are distributed—or even if there are no rights and no free markets—those standards, policies, and decisions which passed that cost-benefit test would be deemed “efficient.”³⁴

Free markets have been defended because they are voluntary, autonomous, neutral, reward virtue and punish vice, and for various other reasons. If markets are to function, however, the government must protect rights to person and property; this means, therefore, enjoining violations of those rights. But if individuals could acquire systematic injunctive relief against every polluter, a great deal of important economic activity might come to a halt. This would be too expensive a cost for society as a whole to bear. What, then, may be done? There are two possibilities: One is to implement legislation to move incrementally to reduce or to eliminate pollution; the other is to allocate air and water resources efficiently, viz., to those who are willing to pay the most for their use.

The first alternative, by responding to the pollution in terms of the violation of personal and property rights that make it a problem, remains in touch with the ideals of autonomy and freedom which are often cited as the moral basis of markets. Accordingly, these laws appear justifiable even if, for the sake of argument, we accept the analogy between clean air or water and other scarce resources presupposed by economic analysts.³⁵

The second alternative, which seeks to maximize consumer surplus, virtual profit, social wealth, potential Pareto improvement, or some other theoretical notion, has no obvious relation to property rights or to moral values, such as freedom and autonomy, which make markets attractive institutions of collective choice.³⁶ Insofar as we are concerned with an end state—allocatory efficiency—rather than a fair pro-

³³“In principle, the ultimate measure of environmental quality,” as one basic text in resource economics notes, “is the value people place on these . . . services or their willingness to pay.” A. Freeman, R. Haveman & A. Kneese, *The Economics of Environmental Policy* 23 (1973).

³⁴It is a commonplace criticism that the efficiency norm is meaningless because it is ambiguous between “bid” and “asked” prices: The efficiency approach depends necessarily on the Coasian view that when parties trade to an equilibrium, the same substantive allocation of resources will result, regardless of how property rights are distributed—or who is liable to whom—as long as there are no transaction costs. Coase, *The Problem of Social Cost*, 3 *J.L. & Econ.* 1, 2–8 (1960). The theorem will not hold, however, unless individuals are willing to sell or willing to pay nearly same amounts for the same resources. Since this is not the case—or anything like the case—notions of economic optimality or efficiency are meaningless since they are ambiguous between prices bid and asked. For a further articulation of this criticism, see Kelman, *Consumption Theory, Production Theory, and Ideology in the Coase Theorem*, 52 *S. Cal. L. Rev.* 669 (1979); Baker, *The Ideology of the Economic Analysis of Law*, 5 *J. Phil. & Pub. Aff.* 13 (1975).

³⁵See Slovic, Fishchhoff & Lichtenstein, *Facts and Fears: Understanding Perceived Risk*, in *Social Risk Assessment: How Safe is Safe Enough?* 181 (R. Schwing & W. Albers eds. 1980).

³⁶The objection here is not the one described in note 29. Rather, it is to point out that the arguments in favor of markets are not necessarily arguments in favor of efficiency. To think otherwise is to be taken in by a fallacious argument: (1) markets, when informed and competitive, are desirable methods of collective choices; (2) markets, when informed and competitive, allocate resources efficiently; (3) cost-benefit analysis allocates resources efficiently; (4) cost-benefit analysis is therefore a

cedure, for example, equitable markets, a centralized or planned economy run by cost-benefit analysts might succeed better than a free economy in achieving that state.³⁷

There are many reasons, among them fairness, impersonality, and neutrality, for which we value market transactions as fair procedures, whether or not markets happen to achieve a particular, e.g., an efficient allocation of resources. It is not clear, however, that any of these reasons justifies the government in overriding the functioning of free and fair markets whenever transaction costs or other bargaining problem inhibit the efficiency which a planned economy, run by cost-benefit analysts, might achieve. Accordingly, arguments extolling the virtues of free and equitable markets as instrumentalities of collective choice, no matter how cogent, do not provide a basis for the efficiency norm in environmental policy or for a cost-benefit approach to pollution control law.

The idea that the bureaucrats can arrange an economically superior outcome to free markets is precisely the mistake economists attribute to socialism. Thus, Fred Smith, among others, characterized the Pigouvian approach as centralized planning. "In a world of pervasive externalities—that is, a world where all economic decisions have environmental effects—this analysis demands that all economic decisions be politically managed."³⁸ Two economists agreed: "To counter market failures centralized planning is seen as a way of aggregating information about social benefits in order to maximize the value of natural resources. Decisions based on this aggregated information are to be made by disinterested resource managers whose goal is to maximize social welfare."³⁹

Why efficiency? Why should society hire experts to allocate resources efficiently—or in the way they determine a perfectly competitive market would allocate them? The reason cannot lie in the virtues, such as freedom, consent, accountability, and neutrality that make market exchange a better arrangement than centralized planning. Rather, efficiency must have some separate justification to explain why scientific managers should override market outcomes in its name. We might believe, for example, that efficiency in the allocation of resources promotes the welfare, happiness, or prosperity of society. If the efficiency criterion can be defended on any of these grounds, then we might argue for markets because they allocate resources ef-

desirable method of collective choice. The argument is fallacious because it assumes enthymatically that the reason markets are desirable methods of collective choice is that they allocate resources efficiently. This assumption is false; it is neither required by logic nor validated in practice.

Another fallacy, that of the illicit minor, is involved in this argument: (1) markets which are competitive are desirable; (2) markets which are competitive allocate resources efficiently; therefore (3) allocating resources efficiently is desirable. The error contained in this analysis is aptly demonstrated by the following comparison: (1) beautiful rivers are good; (2) beautiful rivers occasionally drown people; therefore (3) occasional drownings are good. The fallacy in this *reductio* is obvious because we know that drowning people is not a reason that rivers are good. Absent an independent normative basis for allocative efficiency, it cannot be said that markets are good because they allocate resources efficiently.

³⁷The reasons to value markets are generally procedural: markets are voluntary and have other similar attributes. To the contrary, the reasons to adopt a cost-benefit approach have to do with outcomes; namely, allocatory efficiency, insofar as this can be considered desirable. It is a mistake to move from the premise that markets—under theoretical and abstract conditions—will allocate resources efficiently to the conclusion that any method of achieving the same allocation has the same virtues as markets. For an argument against cost-benefit approaches because of its procedural properties (it is dictatorial), see Cuyler, *The Quality of Life and the Limits of Cost-Benefit Analysis*, in *Public Economics and the Quality of Life* 141 (L. Wingo & A. Evans eds. 1977); Tarasovsky, *Cost-Benefit Analysis, Cherished Illusion and Anxiety: An Aspect of the Hickey Effect*, in *Frontiers in Economics* (G. Tullock ed. 1976).

³⁸Fred L. Smith, Jr., *The Market and Nature*, 43(9) *The Freeman* 350, 352 (Sept. 1993).

³⁹Terry Anderson and Donald Leal, *Free Market Environmentalism* 9 (San Francisco: Pacific Research Institute, 1991).

ficiently, rather than vainly trying to argue for efficiency because of some relation it is supposed to have with markets.

§ 5:10 The ethical basis of efficiency

This section considers the supposition that, all other things being equal, a more efficient allocation of resources is better than a less efficient one.¹ We argue, on the contrary, that an efficient allocation, *ceteris paribus*, is not better, for the word “better” has no meaning in this context.

This section covers four topics. First, it denies that the efficiency criterion in public policy can be based in the ethical theory of utilitarianism, since (a) it lacks any demonstrable conceptual or causal connection with “happiness”; and (b) it does not depend on the consequences of transactions, but only on the expectations on which they are based.

Second, we question whether the satisfaction of personal preferences is an important objective of public policy: Having a preference gives the individual who has it a reason to try to satisfy it. We argue, however, that the government—which is in business to protect rights, assure a fair basis for competition, and provide for the common defense—has no responsibility to satisfy personal preferences *per se* without regard to the values these preferences express.

Third, the question arises whether the efficiency criterion is justified by, or merely defined in terms of, “welfare,” “utility,” “better-offness,” and similar notions. We also consider whether any relation holds between microeconomic efficiency and important macroeconomic goals. We look at the limited and uncertain empirical relationship—there is no agreed upon theoretical relationship—between current pollution control legislation and economic prosperity.

Finally, we take up the claim that each of us, if rational, is a maximizer of his own welfare and therefore may be presumed to give a cost-benefit approach in public policy his or her “implicit” or “counterfactual” consent. This section will conclude that the efficiency criterion in regulatory policy has no basis in ethical or in political theory and therefore has no merit against which to weigh values—such as equity—with which it is thought to compete.

§ 5:11 The ethical basis of efficiency—Efficiency and utilitarianism

If the efficiency criterion had a normative basis in the ethical theory of utilitarianism it must (1) have a demonstrable connection with happiness or a related normative conception of the good; and (2) judge the value of actions and decisions according to their consequences. But the efficiency criterion and the theory of welfare economics from which it is developed meet neither of these conditions; therefore they have no justification in the ethical theory of utilitarianism.

Sophisticated economic analysts do not try to connect the efficiency norm with the classical utilitarianism of Bentham, Mill, and Sidgwick or with the goal of maximiz-

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¹A sophisticated defense of preference-satisfaction as a basis for both common law and social policy may be found in R. Posner, *The Economics of Justice* (1983). Posner defines the “wealth” of society as “the aggregate satisfaction of those preferences (the only ones that have an ethical weight in a system of wealth maximization) that are backed up by money, that is, that are registered in a market.” R. Posner, *The Economics of Justice* 61 (1983).

For a good introduction to the concepts of efficiency, welfare, wealth, Pareto optimality, potential Pareto improvement, and other technical terms, see Michelman, *Norms and Normativity in the Economic Theory of Law*, 62 *Minn. L. Rev.* 1015, 1019–21 & 1032–34 (1978); Coleman, *Economics and the Law: A Critical Review of the Foundations of the Economic Approach to Law*, 94 *Ethics* 649 (1984).

ing pleasure or happiness which those philosophers proposed.¹ “The most important thing to bear in mind about the concept of value” in the welfare economist’s sense, as Richard Posner correctly points out, “is that it is based on what people are willing to pay for something rather than the happiness they would derive from having it.”²

If economic value is a function of what people are willing to pay for something rather than the happiness or well-being they would derive from having it, it is unsurprising that those willing to pay the most for goods derive the most economic value from them. The term “economic value” simply coincides with “willingness to pay” (WTP) and with terms such as “welfare” or “utility” that WTP both defines and measures. Those who advocate social efficiency—or maximizing net aggregate benefit—as a goal of environmental policy mean only that resources should flow to those willing to pay the most for them because they are willing to pay the most for those resources. These advocates suppose that this allocation will maximize the well-being or welfare of individuals collectively, *i.e.*, social welfare, only because they have stipulated that “welfare” or “well-being” is whatever WTP measures. The entire argument rests on a tautology—a tiny and trivial circularity. Normative terms such as “benefit,” “welfare,” or “well-being” are defined in terms of WTP and then WTP is used as a criterion for measuring and maximizing benefit, welfare, or well-being.

If one defines and measures benefit or well-being in terms of WTP, it takes neither knowledge of any experience, data from psychology, nor any experiment to show that society can maximize social well-being or benefit by providing the greatest net aggregate of goods and services for which people are willing to pay. If one measures well-being other than in terms of WTP, then it is possible to test whether well-being correlates with it. Is there any relationship between WTP and well-being other than a vacuous because stipulated one? Having a preference one is willing to pay to satisfy may give that person a reason—or at least a motive—to try to satisfy it. Few would question the platitude, moreover, that he or she should be free to pursue that preference under conditions or within institutions that guarantee the same freedom to others. Can one say, however, that it is better for that individual or for society that the preference be satisfied? How could one know without some information about the reasons for that preference, the information on which it is based, and the circumstances in which it arose?

There are some policy analysts who believe that the satisfaction of consumer and other personal preferences has a moral foundation as a policy goal because it leads to or produces satisfaction in the sense of pleasure or happiness.³ This belief rests on nothing more than a pun on the word “satisfaction.” Preferences are satisfied in

[Section 5:11]

¹Sidgwick defines the value to be maximized not as consumer surplus but as “the surplus of pleasure over pain.” H. Sidgwick, *The Methods of Ethics* 413 (7th ed. 1907). No connection between these two concepts, conceptual or empirical, has ever been demonstrated.

For a standard account of the utilitarian basis of welfare economics, *see, e.g.*, I. Little, *A Critique of Welfare Economics* 42 (2d ed. 1957); A. Pigou, *The Economics of Welfare* 20 (4th ed. 1932).

²R. Posner, *The Economics of Justice* 60 (1983). Posner is aware of the familiar objections against utilitarianism as an ethical theory. He believes reasonably that “normative” or welfare economics would benefit if it were not founded on classical utilitarianism. Posner, therefore, proposes economic analysis not as a consequence of utilitarianism but “as an alternative ethical theory.” R. Posner, *The Economics of Justice* 60 (1983).

³W. Baxter, *People or Penguins: The Case of Optimal Pollution*, argues that:

The first and most fundamental step toward the solution of our environmental problems is a clear recognition that our objective is not pure air or water but rather some optimal state of pollution. That step immediately suggests the question: How do we define and attain the level of pollution that will yield the maximum amount of human satisfaction?

W. Baxter, *People or Penguins: The Case of Optimal Pollution* 8–9 (1974).

the sense of being “met” or “fulfilled”; this is also the sense in which conditions and equations are satisfied. “Satisfaction” of this sort has no necessary connection with “satisfaction” in the sense of pleasure or happiness.

Does the satisfaction of preferences promote or cause satisfaction in the sense of happiness? Empirical research confirms what ordinary wisdom suggests:⁴ happiness depends more on the quality of our preferences and on how well we pursue them than on the degree to which they are or are not satisfied.⁵ Moreover, it is useful to recognize that the kind of contemporary “utilitarianism” which current welfare economic theory represents is not a consequentialism; it is not concerned with actual utility or welfare, to wit, the things which happen to people as a result of the choices they make. It is concerned only with the beliefs and expectations revealed in those choices—the amount people are willing to pay for things—not with the actual consequences of those choices.

The ethical theory of utilitarianism is different. Utilitarians are less concerned about the conditions than about the consequences of transactions. Accordingly, utilitarians, to prevent what were unconscionable levels of death and injury, have supported humanitarian legislation to improve unsafe conditions in the nation’s mills and mines. Humanitarian legislation of this kind cannot be justified on an expected utility basis, for whenever workers voluntarily and knowingly take unsafe jobs, which they often do,⁶ the market operates efficiently to that extent, even if they all die as a result.⁷ The efficiency norm in public policy has no connection, other than an historical one, with the ethical theory of utilitarianism. To think otherwise is to confuse the satisfaction of preference, which many economists favor, with the utilitarian’s preference for satisfaction.

⁴That efficiency, wealth, potential Pareto improvement and the like do not lead to happiness but, if anything, to its opposite is the burden of a number of important studies. *See, e.g.*, T. Scitovsky, *The Joyless Economy* (1976); F. Hirsch, *The Social Limits to Growth*; A. Hirschman, *Shifting Involvements: Private Interest and Public Action* (1982). For surveys and other empirical evidence that people do not become happier when they have more of the things they want to buy, but instead are frustrated by rising expectations or dissatisfied by those things, *see* A. Campbell, P. Coverse & W. Rodgers, *The Quality of American Life: Perceptions, Evaluations, and Satisfaction* (1976); Erskine, *The Polls: Some Thoughts About Life and People*, 28 *Pub. Opinion Q.* 517 (1964). These studies confirm the old saw of common wisdom that the way to achieve happiness is to overcome desires rather than to merely satisfy them.

⁵It is possible that the satisfaction of preferences leads often to frustration and disillusionment, as divorce statistics suggest, while the attempt to satisfy desires, as long as they remain unfulfilled, is often satisfying. *See, e.g.*, J. Keats, *Ode on a Grecian Urn*, in *Complete Poems and Selected Letters* 352 (C. Thorpe ed. 1935).

⁶*See* C. Gersuny, *Work Hazards and Industrial Conflict* (1981). “War is safe compared to railroads in this country,” said one railroad worker early this century, when fatalities among railroad workers reached 28 per 10,000 per year and one in ten were seriously injured. C. Gersuny, *Work Hazards and Industrial Conflict* 20 (1981). *See also* L. White, *Human Debris: The Injured Worker in America* (1983).

⁷Kip Viscusi, recognizing that workers are generally aware of the extent of the hazards they face, argued that humanitarian workplace legislation, while “perhaps well intended . . . will necessarily reduce the welfare of the poorer workers in society, as perceived by them.” K. Viscusi, *Risk By Choice: Regulatory Health and Safety in the Workplace* 80 (1983). The welfare of workers “as perceived by them” refers to their expected utility which is determined entirely by their willingness to take the risky job at a particular wage. This kind of “welfare” or “utility” remains the same no matter what actually happens to these workers; according to this view, for example, it remains the same if they all die hideous deaths. This kind of “utility,” since it is determined independently of consequences, has nothing to do with utilitarian ethics.

Thomas Schelling falsely claims that “economic theory evaluates actions by their consequences and the way the consequences are valued by the people who benefit and suffer.” Schelling, *Prices and Regulatory Instruments, in Incentives for Environmental Protection* 3 (T. Schelling ed. 1983). Economic theory evaluates actions according to the preferences people reveal when they act; utilitarianism evaluates actions according to their consequences.

§ 5:12 The ethical basis of efficiency—Should law satisfy personal preferences?

If utilitarianism does not provide a normative basis for economic analysis or for the efficiency criterion, what does? Resource economists generally answer this question by referring to a central value premise. “The value premise is that the personal wants of the individuals in the society should guide the use of resources in production, distribution, and exchange, and those personal wants can most efficiently be met through the seeking of maximum profits by all producers.”¹

The question we need to ask, then, is why the personal wants of individuals should guide and, along with equity considerations, determine government policy with respect to the management of resources. The fact that someone has a preference for something gives him or her a reason to try to satisfy that preference. But why does it give the government a reason to try to satisfy it? Society may privilege some sorts of preferences—those related to basic needs, for example, or to certain kinds of excellent or merit. There are plenty of personal preferences—for narcotics, prostitutes, and gambling, as examples—which the government strives to keep people from satisfying. Why should it generally be the policy of the government, then, to satisfy personal preferences without regard to the values these preferences express?²

In posing this question, we may assume that the government generally should not interfere with the efforts citizens make to satisfy their own preferences, except insofar as necessary to protect the same right or freedom of others. We might insist that the government should guarantee citizens the background conditions of freedom and equality they need to have a fair basis on which to form and to compete to satisfy their personal wants. Freedom, equality of opportunity, autonomy, neutrality, care for children, safety, health—these are all important values. But why is efficiency in the allocation of resources a value? Why should the satisfaction of personal preferences *per se* be recognized as a goal of public policy?³

Environmental law as it stands is based on impersonal values which we have chosen, as a community, through the political process. These values have survived a process of public deliberation; on the merits, they have gained the respect of at least a majority of the legislature. In the political process, partisans offer reasons they suppose to be publicly or intersubjectively valid, they argue for impersonal or public values.⁴ These values, at least formally, address not what *I* want but what *we*

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¹A. Kneese & B. Bower, *Environmental Quality and Residuals Management* 4-5 (1979). This value premise is related to a free market economy only if it is assumed that corporate executives are concerned with maximizing long-run profits rather than, for example, promoting their own short-term personal interests. Were the latter true, a centralized, planned economy—a socialist one—if it makes use of cost-benefit analysis, might conform to the value premise better than would a capitalist economy.

²Those who believe that preference-satisfaction should be a goal of public policy are faced with the problem of ugly preferences, such as those that are racist, vicious, self-destructive, adaptive to circumstances beyond the agent’s control, or simply stupid. To save the general policy goal, analysts have to invent *ad hoc* reasons for discounting or dismissing these various kinds of preferences which plainly do no merit societal respect. See Elster, *Sour Grapes—Utilitarianism and the Genesis of Wants*, in Sen & Williams, *Introduction*, in *Utilitarianism & Beyond* 219 (A. Sen & B. Williams eds. 1982).

³For an additional discussion of this question, see Dworkin, *Is Wealth a Value?*, 9 *J. Legal Stud.* 191 (1980); Dworkin, *Why Efficiency? A Response to Professors Calabresi and Posner*, 8 *Hofstra L. Rev.* 563 (1980).

⁴Public policy is to be argued in public terms—that is, from the point of view of what we stand for, desire, or believe in as a community, not from the point of view of personal wants or preferences. If Charleston Wilson, head of General Motors, said “What’s good for General Motors is good for the country,” even he recognized that public policy must be discussed in public terms, however self-serving the motivation. See E. Schattschneider, *The Semisovereign People* 27 (1960).

should do; they take the community in general as their logical subject.⁵ They are logically different from purely personal preferences, which express only how the individual wants to live his own life, an agenda about which liberals believe the government should be as neutral as possible.⁶

Why should environmental policy strive to satisfy personal preferences rather than respond to these public values?⁷ Having a personal preference gives the individual who has it a reason to satisfy it. But why should the government try to satisfy that preference? One may reply that the government ought to try to satisfy personal preferences because this is what the people who have those preferences want. This reply would start an infinite regress if it were true; it is, however, mistaken. People want their preferences satisfied at the moment they have them, but they constantly reevaluate and revise their preferences and, over the long run, may regret that many were satisfied or be grateful that others were not. Besides, even if people want their preferences satisfied at the moment they have them, it by no means follows that they wish the government to adopt preference-satisfaction as a major policy objective. On the contrary, this goal has achieved credibility with hardly anyone beyond the academics who invented it.⁸

We are left, then, questioning the “value premise . . . that the personal wants of the individuals in the society should guide the use of resources.”⁹ Why is this a *value* premise? Markets, to be sure, are supposed to satisfy these preferences, and the government should guarantee individuals the liberty to pursue the satisfaction of their wants under conditions which are neutral among them and fair to all. It is also reasonable to assume that the government should seek to help people to satisfy certain of their preferences—those involving basic needs (according to a theory of justice), security (according to any political theory), and merit goods (if it wishes). But why should the government itself try to satisfy preferences taken as they come, bound by indifference and ranked by willingness to pay? We have yet to discover an answer to that question.

⁵Kant argued that in making a moral judgment, the individual legislates for all; the individual expresses a view about what any rational being would do in similar circumstances. The idea that moral imperatives distribute over the community as a whole—for Kant, the community of all rational beings—is derived from Rousseau. In environmental policy, the relevant community must be considered to be the nation; law then respects the views individuals defend concerning what we, as a nation, ought to do. This is different from the wants or preferences the individual has for himself and may reveal in markets. For a good discussion of these distinctions in their Kantian context, see W. Seelars, *Science and Metaphysics* § 7 (1968).

⁶For one version of the distinction between personal and impersonal preferences, see Dworkin, *Equality of Welfare*, 10 *Phil. & Pub. Aff.* 185 (1982). “[P]eople have what I shall call impersonal preferences, which are preferences about things other than their own or other people’s lives or situations. Some people care very much about the advance of scientific knowledge, for example, even though it will not be they (or any person they know) who make the advance, while others care deeply about the conservation of certain kinds of beauty they will never see.” Dworkin, *Equality of Welfare*, 10 *Phil. & Pub. Aff.* 192 (1982). Dworkin is correct here in distinguishing environmental values from personal (self-regarding) preferences from distributional considerations. To view all values as either personal preferences or distributional norms is to exclude the community-based or public values on which much of our environmental legislation rests. These values are consistent with a liberal theory of legislation because they concern conceptions of the good society rather than conceptions of the good life, about which liberal policy is to be neutral. See Dworkin, *Neutrality, Equality, and Liberalism*, in *Liberalism Reconsidered* 1, 8 (D. MacLean & C. Mills eds. 1983) (distinguishing between passive and active membership in a community).

⁷There exists immense literature on the distinction between personal (self-regarding) preferences and public (group-regarding) values. See, e.g., Marglin, *The Social Rate of Discount and the Optimal Rate of Investment*, 77 *Q.J. Econ.* 95, 98 (1963); Maass, *Cost-Benefit Analysis: Its Relevance to Public Investment Decisions*, 80 *Q. J. Econ.* 208, 216-17 (1966).

⁸See generally S. Kelman, *What Price Incentives? Economists and the Environment* (1981) (chapter three is especially pertinent to this point).

⁹A. Kneese & B. Bower, *Environmental Quality and Residuals Management* 4-5 (1979).

§ 5:13 The ethical basis of efficiency—What is “welfare”?

It might be stated that the government should try to maximize the satisfaction of personal wants and preferences because this will increase the welfare or utility of those whose preferences they are. This, however, states a definition, not a fact. The concepts of “welfare” and “utility,” as policy analysts use them, are simply defined in terms of the satisfaction of preferences.¹ Thus, according to this approach, we should strive to maximize the satisfaction of personal preferences on a willingness-to-pay basis because this will increase overall social welfare or utility. Overall social welfare or utility in turn, is defined as the satisfaction of personal preferences on a willingness-to-pay basis over society as a whole.

Those who favor the efficiency norm in public policy often make the point that “not just one but both parties to an exchange are better off after the exchange is executed than they were before.”² What this means is that the *expected utility* of both parties is increased; this, again, is tautologically true, since this kind of utility is inferred as a logical consequence from the willingness of the parties to enter into the exchange. To break out of this circle, analysts must explain how satisfying preferences—and thus how allocating resources efficiently—makes people better off in some normative, non-tautological sense. This has never been accomplished.³

When confronted with the idea that markets, when well informed and free of externalities, increase or maximize welfare, we should remember the suffering which miners, railroad workers, and other laborers experienced, for example, in the period before and after the First World War and as late as the 1950s.⁴ We might remember the plight of children “hurrying” coal in the mines at the turn of the century. It is always possible to argue that workplace safety, consumer safety, child labor, and other humanitarian laws *decrease* the “expected” utility of workers,

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¹The underlying Paretian standard holds that a move from state A to state B increases social welfare or utility if at least one person prefers B to A and no one prefers A to B. This standard is generalized to more complex cases by the Kaldor-Hicks principle which holds that A social welfare is increased if those who prefer B can compensate those who want A and still maintain their preference. Thus the notion of social welfare or overall utility is defined strictly in terms of the satisfaction of preferences insofar as these preferences are measured in terms of willingness to pay. It has no independent, normative significance. For a clear discussion of these concepts in relation to current regulatory concerns, see Coleman, *Economics and the Law: A Critical Review of the Foundations of the Economic Approach to Law*, 94 *Ethics* 649 (1984).

²W. Baxter, *People or Penguins: The Case of Optimal Pollution* 19 (1974).

³Contemporary economic theory assumes that if a preference of any individual is satisfied, then that individual, and society as a whole, is to that extent “better off” as a result. This, indeed, is the basis of the concept of a Pareto improvement—a change in social state that at least one person prefers and no one opposes. How is this an improvement in any normative sense? It is an improvement, if at all, from that individual’s point of view. There is no “point of view of society as a whole” from which it can be viewed as a social improvement.

Gunnar Myrdal observed in 1973 that contemporary “utilitarianism” resembles communism in presupposing a “harmony of interest” or a “communistic fiction” about the oneness of society. This fiction “amounts to the assertion that society can be conceived as a single subject” capable of having a single interest, called the general welfare or the common good, and consenting as one person to the policies that serve that interest. G. Myrdal, *The Political Element in the Development of Economic Theory* 53, 194-95 (1953).

⁴See L. White, *Human Debris: The Injured Worker in America* (1983). The periods in question were times of great prosperity, so one cannot argue that markets failed to operate because of some bargaining inequality. For an excellent critique of the use by economists of bargaining inequalities to save the efficiency analysis, see Kennedy, *Distributive and Paternalistic Motives in Contract and Tort Law, with Special Reference to Compulsory Terms and Unequal Bargaining Power*, 41 *Md. L. Rev.* 563 (1982) (arguing that compulsory terms in contract, unwaivable warranties in tort, and various public law constraints on markets, such as margin requirements in security exchanges, are motivated and justified by humanitarian and paternalistic considerations, rather than by efforts to make markets function more equitably by redressing bargaining inequalities).

because these laws prevent them from making free and informed contracts of certain kinds.⁵ The relationship between these laws and real welfare—in other words, actual death and suffering—is a contingent not a conceptual one and must be determined on the basis of empirical evidence.

A large literature stretching from the *Ethics of Competition* (1935) by Frank Knight to *Nudge* (2008) by Richard Thaler and Cass Sunstein have found little reason to favor preference taken as it comes. That people should be free to choose is a platitude; it does not follow, however, that the government is tasked with helping them get whatever it is that they want. On the contrary, the role of public policy is to help people satisfy certain kinds of wants, for example, those associated with basic needs, security, or certain merit goods. The government knowing the common foibles of humanity and aware of the kinds of mistakes we commonly make may try to help us form better more rewarding or less self-destructive desires. According to Knight, “The chief thing which the common sense individual actually wants . . . is not satisfaction of the wants he has, but more, and better wants . . . True achievement is the refinement and elevation of the plane of desire, the refinement of taste.”⁶ Sunstein and Thaler remind us that the laissez-faire approach of a century or more ago produced unconscionable horrors. During the *Lochner* era people were free to contract without the paternalistic catalyst of regulation. It’s not as if the bakers did not know the risks of tending ovens ten hours a day. The role of government may be more to educate and enlighten than to satisfy preference—or perhaps its role is principally to improve the institutional settings in which people form their interests. “The sheer complexity of modern life, and the astounding pace of technological and global change, undermine arguments for rigid government mandates or dogmatic laissez-faire. Emerging developments should strengthen, at once, the principled commitment to freedom of choice and the case for a gentle nudge.”⁷

§ 5:14 The ethical basis of efficiency—Pollution control legislation and prosperity

“The primary justification the Reagan administration gave for . . . regulatory relief,” according to two observers, “was that regulation was one of the principal factors responsible for the nation’s poor economic performance during the 1970s.”¹ Speculations on the amount that governmental regulations “cost” society, of course, are part of political campaigning. In 1975, for example, President Ford, speaking in New Hampshire, declared that “some estimates I have seen place the combined cost to consumers of Government regulation and restrictive practices in the private sector at more than the Federal Government actually collects in personal income taxes each year—or something on the order of \$2,000 per family—unbelievable.”² In the same year, the President’s Council of Economic Advisors announced that precise

⁵Apparently, Viscusi argues that workers (or, perhaps, their parents) should be permitted to make whatever bargains they like, as long as markets are efficient, for this is what will increase their expected utility. That many or even all might become diseased, stunted, or killed as a result seems not to matter, for actual utility has no place in the microeconomic theory. Viscusi’s argument might seem to be an example of the way adherence to a theory can freeze one’s emotions and atrophy one’s normal ethical sentiments and human feelings. See K. Viscusi, *Risk By Choice: Regulatory Health and Safety in the Workplace* 43 (1983).

⁶Knight, *The Ethics of Competition and Other Essays*, 22–23 (1935).

⁷Thaler and Sunstein, *Nudge: Improving Decisions About Health, Wealth, and Happiness*, 253 (2009).

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¹G. Eads & M. Fix, *Relief or Reform: Reagan’s Regulatory Dilemma* 17 (1984).

²White House Conference on Domestic Affairs and Inflation, the President’s Remarks at the Conference in Concord, New Hampshire, 11 Weekly Comp. Pres. Doc. 104 (Apr. 25, 1975) (also speculating that “the real costs are only a fraction of this amount”).

“estimates of the total cost of regulation are not available, but existing evidence suggests that this might range up to 1 percent of the gross national product, or approximately \$66 per person per year.”³

When the Reagan Administration took office, one of its principal economic advisors, Murray Weidenbaum, estimated the then current social cost of governmental regulation, without regard to the benefits, at \$100 billion per year. The substantive accuracy of these estimates must be questioned. What part of the total cost of regulation is associated with the reduction and control of pollution? The question is not whether the benefits are worth the costs, but what the costs actually are.

Pollution control was costly during the first decade when there was the most pollution to control. Serious attempts to estimate the social costs of pollution control regulation, again without regard to the benefits, during the period between 1972 and 1980 were conducted by Chase Econometric Associates (Chase)⁴ and Data Resources Incorporated (DRI).⁵ These studies, according to an analysis of them, “are in agreement as to the apparent size of the impacts of pollution control,” namely that the cost of pollution control contributes between 0.2 and 0.6 percent to the inflation rate.⁶ Both the Chase and the DRI studies found that “the direct price, output, employment, and other macroeconomic effects of pollution control [were] relatively small.”⁷

The results of the Weidenbaum study appear to be roughly consistent with these earlier studies.⁸ Weidenbaum’s \$100 billion estimate covers not simply pollution control but most major areas of regulation, such as consumer, workplace, energy, and financial regulation. For regulation of “energy and the environment,” Weidenbaum estimates administrative costs, in 1976, at \$612 million (the budgets of the relevant agencies) and compliance costs at \$7.7 billion.⁹ The total represents a payment of less than \$40 per American. The total regulatory costs in 1976, on Weidenbaum’s estimate, came to \$66 billion, not the familiar \$100 billion figure.¹⁰ Of this total regulatory cost, paperwork costs accounted for approximately 40 percent.¹¹

The Environmental Protection Agency and the Council for Environmental Quality have sponsored studies of regulatory impact based on large-scale macroeconomic

³Economic Report to the President 159 (1975).

⁴For a detailed analysis of the 1976 Chase study, see Haveman & Smith, *Investment, Inflation, Unemployment, and the Environment*, in *Current Issues in U.S. Environmental Policy* 164 (P. Portney ed. 1978).

⁵Data Resources Inc., *The Macroeconomic Impact of Federal Pollution Control Programs: A 1978 Assessment* (1979) (report submitted to the Environmental Protection Agency and the Council on Environmental Quality).

⁶Portney, *The Macroeconomic Impacts of Federal Environmental Regulation*, in *Environmental Regulation and the U.S. Economy* 25, 47 (H. Pesking, P. Portney & A. Kneese eds. 1981).

⁷Portney, *The Macroeconomic Impacts of Federal Environmental Regulation*, in *Environmental Regulation and the U.S. Economy* 25, 47 (H. Pesking, P. Portney & A. Kneese eds. 1981).

⁸M. Weidenbaum & R. DeFina, *The Cost of Federal Regulation of Economic Activity* (1978).

⁹M. Weidenbaum & R. DeFina, *The Cost of Federal Regulation of Economic Activity* 2 (1978).

¹⁰The familiar \$100 billion figure is reached by an odd method. Weidenbaum notes that administrative costs would increase in 1979 from the 1976 figure and that, in 1976, the ratio between administrative and compliance costs ran roughly 20 to 1. “With administrative costs estimated at 4.8 billion, the estimated total costs of regulation would exceed \$100 billion.” Weidenbaum, *On Estimating Regulatory Costs*, *Regulation*, May-June 1978, at 17.

¹¹Weidenbaum and DeFina rely on figures generated by a Senate subcommittee which had studied paperwork costs in 1972. This figure was then adjusted to \$25 billion in 1976 dollars. M. Weidenbaum & R. DeFina, *The Cost of Federal Regulation of Economic Activity* 2 (1978). This figure suggests that society could save a lot more money by controlling and reducing paperwork than it might gain by cutting back on programs to control pollution. For a discussion of this and other aspects of the Weidenbaum study, see G. Eads & M. Fix, *Relief or Reform: Reagan’s Regulatory Dilemma* § 2 (1984).

models.¹² The results of these studies are generally consistent with one published by the Conservation Foundation in 1982.¹³ It found that pollution control programs, which are labor-intensive, decreased the GNP by a modest 0.2 percent but also decreased unemployment by 0.3 percent. Eads and Fix caution that these large-scale macroeconomic similarities “tell us *either* that regulation has relatively little impact on the variables that most economists watch as indicators of the health of the economy *or* that large-scale macromodels are not sensitive enough to reliably indicate the impact of such complex phenomena as a mass of individual programs that, when lumped together, might be called ‘regulation.’”¹⁴

In understanding these analyses, one should note that allocative efficiency is a microeconomic concept, while various desirable goals, such as growth and prosperity, are macroeconomic concepts. In general, economists recognize that macroeconomic problems have macroeconomic causes and solutions.¹⁵ They understand that there is no clear or straightforward relation between microeconomic efficiency and macroeconomic performance.¹⁶ In general, therefore, policy analysts have not urged prosperity, economic growth, or any such macroeconomic goal as a justification for a cost-benefit approach to public policy. For example, Edward Gramlich, in his basic text on cost-benefit analysis and government programs, acknowledges that “benefit-cost analysis of individual projects will for the most part not involve macroeconomic questions.”¹⁷

All arguments but one supporting efficiency as a goal or criterion in pollution control policy have been considered and found wanting. The final argument, which is discussed in the following section, is not based in economic but in political theory.

§ 5:15 The ethical basis of efficiency—Efficiency and consent

Some analysts, recognizing that the efficiency norm in public policy has no basis in utilitarianism, have argued that normative support may be found in the “hypothetical” or “counterfactual” consent of the community. Richard Posner, for example, proposed that consent “is the operational basis” of the efficiency norm and, therefore,

¹²For a discussion of these, see Portney, *The Macroeconomic Impacts of Federal Environmental Regulation*, in *Environmental Regulation and the U.S. Economy* 25, 39 (H. Pesking, P. Portney & A. Kneese eds. 1981).

¹³See generally *The State of the Environment in 1982: A Report from the Conservation Foundation* (1982).

¹⁴G. Eads & M. Fix, *Relief or Reform: Reagan’s Regulatory Dilemma* 41 (1984).

¹⁵There are two prominent exceptions to this general rule. First, “supply-side” economists, frustrated by the apparent failure of Keynesian demand management to keep down inflation and the apparent failure of monetary policy with respect to unemployment, have argued that microeconomic inefficiencies prevent full employment and maximum productivity. The supply-side argument does not attract many mainstream Ph.D. economists, but it has achieved a good deal of political attention, especially as formulated by George Gilder, who had no formal training in economics. See G. Gilder, *Wealth and Poverty* (1981).

Second, “rational expectations” economists also tie macroeconomic performance to microeconomic efficiency, but unlike the supply-side economists, they believe that markets quickly discount governmental policies, which therefore make little difference. The government therefore cannot really improve matters by implementing a monetary or other policy; indeed, rational expectationists see poor economic performance as caused by random shocks, mistakes, and failures of information which cannot be controlled. See Schoemaker, *The Expected Utility Model: Its Variants, Purposes, And Evidence*, 20 *J. Econ. Literature* 529 (1982) (survey). For a good assessment of these two schools, see L. Thurow, *Dangerous Currents: The State of Economics* §§ 5, 6 (1983).

¹⁶See *Microeconomic Efficiency and Macroeconomic Performance* (D. Shepherd, J. Turk & A. Silberston eds. 1983) (good collection of papers which argue that there is no clear relation between microeconomic efficiency and macroeconomic performance). “As the fundamental theorems point out, . . . Pareto efficiency is a property of equilibrium, not a guide to government intervention.” *Microeconomic Efficiency and Macroeconomic Performance* 3 (D. Shepherd, J. Turk & A. Silberston eds. 1983).

¹⁷E. Gramlich, *Benefit-Cost Analysis of Government Programs* 17 (1981).

“consent to efficient solutions can be assumed.”¹ Likewise, in discussing the regulation of risk, Herman Leonard and Richard Zeckhauser wrote: “Cost-benefit analysis . . . would gain the hypothetical consent of the citizenry. We know of no other mechanism for making [policy] choices which has this ethical underpinning.”²

The argument of these analysts is an ingenious one. First, the truth of a familiar, if metaphysical, view of human nature is assumed: What we are essentially, they believe, are self-interested maximizers intent on satisfying, insofar as possible, our interests and preferences. Leonard and Zeckhauser conclude: “What mechanism for making decisions would individuals choose if they had to contract before they knew their identities in society or the kinds of problems they would confront? Our answer is that, on an expected-utility basis, cost-benefit analysis would serve them best, and hence would be chosen.”³

It is important to separate the theoretical argument from its practical implementation. Leonard and Zeckhauser in the context of this argument bracket the practical issue of whether governmental agents can be wise, knowledgeable, and trustworthy enough to carry out the mind-boggling research needed to determine and weigh everyone’s preferences and find the most efficient way to satisfy them. Ronald Coase argued that when markets fail—when costs of production are “externalized,” for example, so that preference is not efficiently satisfied—it is usually better to let the externality exist than to trust government agencies to find a better allocation. According to Coase, “the costs involved in governmental action make it desirable that the ‘externality’ should continue to exist and that no government intervention should be undertaken to eliminate it.”⁴ Another commentator pointed out that state agencies, to reallocate around transaction costs, would be “obliged to carry out factual investigations of mind-boggling complexity, followed by a series of regulatory measures that would be both hard to enforce and valid only for a particular, brief constellation of economic forces.”⁵

If one puts these practical matters aside, one should recognize that the conclusion of the theoretical argument Leonard and Zeckhauser offer does follow from the premises. A group of persons, who are essentially self-interested maximizers and who do not know what their desires would be, would rationally choose a cost-benefit approach because it promises to maximize the satisfaction of desire across society as a whole. Accordingly, given the truth of this description of the essence or nature of persons, the cost-benefit approach in public policy has our implicit or hypothetical consent.

To see the flaw in this argument, imagine how a religious fundamentalist might alter the basic assumption. In his view, the essential nature of man is to be defined in religious rather than in economic terms. Man is essentially a creature of God meant to praise his Name and comply with His laws. Given this conception of human nature, it is easy to show that society gives its hypothetical or counterfactual

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¹Posner, *The Ethical and Political Basis of the Efficiency Norm in Common Law Adjudication*, 8 Hofstra L. Rev. 488 (1980).

²Leonard & Zeckhauser, *Cost-Benefit Analysis Applied to Risks: Its Philosophy and Legitimacy*, Working Paper, Center for Philosophy and Public Policy, University of Maryland 3 (June 1983) (to appear in *Values at Risk* (D. MacLean ed.) (forthcoming)).

³Leonard & Zeckhauser, *Cost-Benefit Analysis Applied to Risks: Its Philosophy and Legitimacy*, Working Paper, Center for Philosophy and Public Policy, University of Maryland 3 (June 1983) (to appear in *Values at Risk* (D. MacLean ed.) (forthcoming)).

⁴Coase, *The Problem of Social Cost*, *J. of Law and Econ.* 3 (1960): 1–44; quotation at 25–26.

⁵Kennedy, *Cost Benefit Analysis*, *Stan. L. Rev.* 33 (1981): 387–421, quotation at 397.

consent to fundamentalist religious precepts rather than to the principles of microeconomic theory.⁶

Likewise, a Marxist might argue that individuals, were they ignorant of their social identities, would base regulation on the principle “from each according to his abilities; to each according to his needs.” This is because people would recognize their communal nature and assume the truth of dialectical materialism as the accurate metaphysic of history. The Marxist might then argue that the “apparent” will of the citizenry, as expressed by its legitimate political representatives, can be ignored because it is corrupted by bourgeois ideology, irrationality, heresy, or stupidity. The “real” social will is known to those in the forefront of society who have the right philosophy, analysis, religion, social theory, ideology, or understanding of human nature.⁷

The Leonard-Zeckhauser “hypothetical consent” argument had been refuted well before it had been written by John Rawls, whose “veil of ignorance” technique it ironically parodies. The point of *A Theory of Justice*⁸ is that, in liberalism, justice is a political, not a metaphysical concept; it depends on a reflective equilibrium of values we bring to bear in politics partly as a result of our history, experience, and culture. The point of the Rawlsian approach is its independence from and neutrality among competing metaphysical views of history and of the person. Policy analysts, such as Leonard and Zeckhauser, by using the “veil of ignorance” argument as they have, replace a reflective equilibrium among normative principles with a metaphysical theory of the person, and thus they make the same mistake from the right as communitarian critics of Rawls make from the left.⁹

We may conclude that the efficiency criterion in environmental policy has no normative basis. It is a mistake to think that efficiency is to be “balanced” or “traded off” against some other value, such as equity, with which it unfortunately conflicts. Efficiency in the allocation of resources has no worth or merit to begin with against which such a value may be weighed. This is not to deny the commonsensical view that the benefits of any regulation should outweigh its costs to society as a whole. It is only to say that the efficiency criterion fails to measure—much less to maximize—benefits; the latter must be assessed through the political process and cannot be determined on the basis of individual willingness-to-pay. Thus, meaningful cost-

⁶The underlying assumption has to do with how one believes the human being obtains true fulfillment. Many people of faith believe that the best way for humans to live and to obtain salvation is to follow particular laws or practices rooted in a holy scripture. Given this assumption, one can also assume as a corollary that people give their hypothetical or counterfactual consent to conversion even, if necessary, by the sword. Robert H. Nelson in *Reaching for Heaven on Earth: The Theological Meaning of Economics* (1993) has argued that economic theory represents a form of theology that preaches that economic scarcity is the root of all evil and that market efficiency by creating plenty will bring as close the Heaven as we can come. Whether one considers money the root of evil or the source of salvation is one’s own decision. It is another matter, however, to assume the hypothetical consent of everyone else to one’s own faith.

⁷It is to be emphasized that the “hypothetical consent” argument used by Posner and Zeckhauser has no connection whatsoever with the legitimate use of social contract theory found, for example, in J. Rawls, *A Theory of Justice* (1971). Rawls is concerned with establishing the basic structure of institutions within a just society in which rational individuals may legitimately pursue incommensurable conceptions of the good. Rawls, *The Basic Structure as Subject*, 14 *Am. Phil. Q.* 159 (1977). Posner and Zeckhauser, on the contrary, argue that there is a single conception of the good, to wit, preference-satisfaction, wealth-maximization, and so on, which all rational individuals would agree upon. These, therefore, may be assumed to have the hypothetical consent of the community. It is precisely because every ideologue, zealot, and academic-with-a-theory-of-the-common-good believes he is right and, therefore, that any rational and informed agent will necessarily agree with him—or not be rational or informed—that the Rawlsian argument is necessary. It aims at establishing social structures in which all these individuals, each with his own conception of what rationality and morality demand, can live peaceably together and secure the benefits of social cooperation.

⁸Rawls, *The Basic Structure as Subject*, 14 *Am. Phil. Q.* 159 (1977).

⁹See Rawls, *The Basic Structure as Subject*, 14 *Am. Phil. Q.* 159 (1977).

benefit balancing is necessarily a result of, rather than a desideratum in, legislation and the larger political process, in which public officials at various levels deliberate over good and evil, right and wrong. This is a completely different process from anything that could take place within—or be inferred from—the theoretical analysis associated with welfare economics.

§ 5:16 Risks

Although pollution control law includes protections for the environment, its primary purpose is to protect public safety and health. Those who take an economic approach in understanding these statutes, therefore, confront the vexing problem of estimating the value of life in monetary terms. What price should be attached to a life saved or an injury avoided? This question is particularly difficult because life is usually considered as “priceless.” Life does not have a value; rather it is the necessary condition precedent for the value of anything else, since all values, as far as we know, are values of living human beings.

In the 1950s and 1960s, “the most common approach to the evaluation of life in the literature,” one economist wrote, “was the so-called productivity or human capital technique.”¹ This method measured the value of an individual’s life in terms of his “marginal productivity”; the amount he might expect to earn if he lived. This method had two advantages. First, it relied on free, voluntary markets to measure value, in this instance, by distributing income. Second, it was quantitative; it gave policy analysts numbers they could work with—numbers they could derive from markets. It also had drawbacks. Critics questioned the idea that persons, like livestock, should be valued principally for their contribution to the GNP. And the approach was unpopular with retired people, housewives, poor people, poets, philosophers, and other poorly-paid individuals whose lives might have little or even negative worth under this system of evaluation.

In 1969, T.C. Schelling wrote an influential paper which changed economic thinking about the evaluation of life and limb. Instead of trying to place a value on a particular individual’s life by estimating his or her contribution to the GNP, Schelling asked: “What is it worth to reduce the probability of death—the statistical frequency of death—within some identifiable group of people none of whom expects to die except eventually?”² Essentially, Schelling asks us how much we, as a society, are willing to pay to increase safety by a marginal amount necessary to save one life, when we do not know whose life it is. The loss of an actual life—a relative or friend, for example—engages strong moral sentiments, such as were discussed in the first part of this Chapter. By focusing attention instead on statistical lives, Schelling was able to provide a more detached and theoretical context for regulating public safety and health.

According to Martin Bailey, “[t]he most direct evidence of the amount people are willing to pay for their own safety comes from the job market, which offers a variety of working environments with various degrees of personal risk.”³ By dividing the extra annual wage for the risky job by the extra annual risk in the job, analysts have estimated what safety—or an increased chance of avoiding death—is worth to those who take dangerous jobs. “The value-of-life estimates,” Kip Viscusi has written, “range[d] from \$500,000 to \$4 million” in 1980 dollars.⁴ These figures may be

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¹A. Freeman, *The Benefits of Environmental Improvement* 169 (1979).

²Schelling, *The Life you Save May Be Your Own*, in *Problems in Public Expenditure Analysis* 127 (S. Chase ed. 1968).

³M. Bailey, *Reducing Risks to Life: Measurements of the Benefits* 31 (1980).

⁴K. Viscusi, *Risk By Choice: Regulatory Health and Safety in the Workplace* 99, 101 (1983).

compared with the amounts industry spends per-life-saved to comply with federal pollution control legislation. Compliance costs which are far in excess of these averages, insofar as these costs per-life-saved can be determined, would arguably be inefficient. This method of evaluating safety in the workplace and in the environment has the same advantages as the marginal productivity approach since it provides numbers and it derives these numbers from markets. But it has theoretical as well as practical⁵ drawbacks.

First, data derived from labor and other markets do reflect what people pay for safety but this is largely a result of governmental regulation and jury awards in tort.⁶ The value-per-life-saved figure analysts derived from labor markets, for example, increased dramatically after the Occupational Safety and Health Act⁷ took effect.⁸ The derived values may reflect not the worker's willingness to pay for safety, then, but the consequences legislation has had in forcing industry to improve safety conditions.

In order to derive a value-per-life-saved which is not biased by governmental regulation, labor markets as they were at the turn of the century may have to be considered. Railroad workers, miners, and others who labored under hazardous conditions were apparently aware of the risks they took; the dangers they faced, at any event, were part of the folklore which surrounded those jobs. If efficiency is our goal, we should not hesitate to derive value-per-life-saved, however low it may be, from unregulated markets such as these. And, of course, no matter how many workers die as a result, we may congratulate ourselves because their "expected" utility has been increased.⁹

Attitudes toward safety have changed since those early years, of course, but this, too, may largely be the result of governmental intervention.¹⁰ In all cases, however, a value-per-life-saved derived from data taken from labor markets which have long been regulated for safety will not necessarily indicate how to allocate resources more efficiently. Instead, this value will suggest how legislation so far has succeeded in making markets more humane, not more efficient.

Second, policy analysts, following Chauncy Starr,¹¹ generally concede that the "price" attached to an "involuntary" risk should be much higher—perhaps a thousand times higher—than the price attached to the same risk were it "voluntary."

⁵This method of evaluation assumes that workers are aware of the risks they take so that they are able to consciously and knowledgeably "trade" safety for dollars. It cannot be determined that this assumption is satisfied, however, without extensive information about the extent of the risks and the extent of the knowledge, both of which are difficult to determine.

⁶For an excellent study of the effect of regulatory action and tort awards on consumer product safety, *see generally* G. Eads & P. Reuter, *Designing Safer Products: Corporate Response to Product Liability Law and Regulation* (1983). It is apparent that consumer willingness to pay for safety is less influential on product design than tort awards and (to a lesser extent) safety regulation.

⁷Occupational Safety and Health Act of 1970, Pub. L. No. 91-596, §§ 2 to 33, 84 Stat. 1590 to 1620, *codified as amended at* 29 U.S.C.A. §§ 651 to 678 (1982).

⁸Data collected by Thaler and Rosen before major regulations were promulgated by OSHA suggest a value of roughly \$500,000 per-life-saved in 1980 dollars. Thaler & Rosen, *The Value of Saving a Life: Evidence from the Labor Market*, in *Household Production and Consumption* (N. Terleckyj ed. 1973). In studies conducted by Viscusi in 1979 and 1981, in which data reflect the effects of OSHA regulation, the value rises to approximately \$3 and \$4 million in 1980 dollars. *See* K. Viscusi, *Risk By Choice: Regulatory Health and Safety in the Workplace* 99 (1983).

⁹K. Viscusi, *Risk By Choice: Regulatory Health and Safety in the Workplace* 80 (1983).

¹⁰Bernard Kleiman, a negotiator for the United Steel workers, pointed out that OSHA regulations raised the consciousness of both labor and management concerning safety issues: "Safety is a very tough thing to negotiate. There are so many levels of consciousness to it. Both sides have to be hit over the head a good deal before they develop the consciousness that permits them to move." Bureau of National Affairs, OSHA and The Unions: *Bargaining on Job Safety and Health* 15 (1973).

¹¹Starr, *Social Benefit vs. Technological Risk*, 165 *Sci.* 1231, 1238 (1969) (argues that an "involuntary" risk should be priced 1000 times greater than a "voluntary" one).

Yet this distinction has not been successfully explained. Policy analysts concerned with the regulation of safety in the workplace often argue that “market-traded risks are the result of individual choices” and they conclude that if these risks are acceptable to the individual, they should be to society as well.¹² It would follow from this, however, that the government should not regulate any risk a person knowingly and voluntarily takes.

It might be argued that on this principle if you walk into the street aware of the odds that you might be hit by a drunk driver, the government should not be concerned by your death, for you could have stayed at home; the same might be said of the worker who is injured even though he was aware of the risks of employment. We encounter deaths on the highway as voluntarily as we encounter them in the workplace; we know the chances and we take them because we want the benefits and we hope the harm will not happen to us.

We do not, however, possess an analysis which tells us which risks are “voluntary” and which are not. We knowingly take certain risks, for example, when we cross the street. These risks are “voluntary” in the very thin sense that we knowingly take them. Presumably, the conception of “individual choice” and “voluntariness” which distinguishes market transactions is loftier or more meaningful than this. But no analyst has provided an explanation of this more edifying conception of “individual choice.” Until such an analysis is found, the government would seem equally justified in regulating danger in the workplace and in the marketplace as danger in the streets.¹³

Moreover, social and cultural factors, such as the familiarity, controllability, and history of a hazard, influence its acceptability; the social meaning of a risk is often more important to risk-takers than its actual magnitude.¹⁴ There are many distinctions which, like the difference between voluntary and involuntary, lead us to apply a different standard—or attach a different value—to lives saved in different situations and from different hazards and pollutants.

A value-per-life-saved may be a useful figure, however, even if it cannot be applied equally in all situations and to all risks and hazards. Attention to this “value” may help to explain large deviations in the amount spent per-life-saved to control pollution in various industries. Why do we control the risks associated with nuclear power so strictly, while we allow millions to succumb to cancer caused by smoking? We may be justified in demanding more control of insidious and new than of ordinary and familiar risks, for example, but some discrepancies may be baffling. If they cannot be justified, then perhaps the policies attendant to them ought to be changed.

In spite of this modest usefulness as a management tool, the cost-benefit ap-

¹²K. Viscusi, *Risk By Choice: Regulatory Health and Safety in the Workplace* 1 (1983).

¹³It may be replied that there is a common sense distinction to be made between the risk a worker voluntarily takes when he goes down into the mine and the risk a pedestrian takes when he crosses the street. The miner comes to the danger, while in the case of the pedestrian, the danger comes to him. This difference seems coincidental—we can imagine the pedestrian falling into a manhole—but it still may be instructive. Surely pollution involves risks and dangers which come to the victim. Yet the victim might have kept or moved away from the polluter; he might have taken iodine pills or worn a lead frock. Distinguishing which risk is voluntary and which is not is a question central to the analysis. The idea that a plaintiff cannot recover from an injury because he has “come to the nuisance” is not greeted with much in favor; nor, of course, must a person move away from a polluter or keep his doors closed to avoid pollution. *See* Prosser, *Law of Torts*, p. 611 (4th ed. 1971). Likewise, a person may be said to “assume” or “accept” a risk if he or she behaves recklessly, but not simply because he or she encounters a known danger in crossing a street, for example, but acts reasonably in a given situation. Prosser, *Law of Torts*, p. 610 (4th ed. 1971). The concept of “voluntary” and “involuntary” risk, it seems, has to be understood in the context and circumstances to which it is applied; there is no general way of understanding or applying this distinction.

¹⁴*See* Geertz, *Deep Play: Notes on the Balinese Cockfight*, in *Interpretive Social Science: A Reader* 181 (P. Rabinow & W. Sullivan eds. 1979).

proach gives us no help in setting standards. Cost-benefit analysis, in its most acceptable form, cannot help us to determine how safe is “safe enough” because it is an effect or a result, not a condition, of the judgments we make to answer that question. The value to be put on life is not an independent preference, but a complex judgment which itself is the product of reflection and learning prior to regulation. It represents the perspective not so much of the consumer but of the citizen; it is not the expression of a market preference but of a public policy judgment.

This returns us to where we began. How are we to reconcile the ethical demands of the statutes with the practical constraints of the real world? What is the appropriate role of economic analysis in environmental law?

§ 5:17 Regulatory review

On January 30, 2009 (only a few days after assuming office), President Barack Obama issued a “Memorandum on Regulatory Review” in which he called for a reassessment of the methods with which the Office of Information and Regulatory Affairs (OIRA) at the Office of Management and Budget (OMB) had over more than two decades reviewed Federal regulations. While Congress typically delegates authority to interpret and implement the laws to regulatory agencies such as EPA and not to OMB, the need for regulatory review by experts at OMB is obvious and not in dispute. As President Barack Obama wrote in his Memorandum, “While recognizing the expertise and authority of executive branch departments and agencies, I also believe that, if properly conducted, centralized review is both legitimate and appropriate” Regulatory review at OMB is essential “to ensure consistency with Presidential priorities, to coordinate regulatory policy, and to offer a dispassionate and analytical ‘second opinion’ on agency actions.”¹

What are the ethical and economic principles that should govern the review of regulation at OIRA or by the White House? These principles have been the subject of controversy since OIRA was created during the Reagan administration. This controversy reflects a long-standing disagreement about the broader role of government—and the relation between the White House and the administrative agencies—in regulating the economy. Here is the dilemma. On the one hand, most Americans agree with the idea that capitalism—the free market as Adam Smith celebrated it—presents the surest path to social prosperity. From this perspective, the role of government may be limited chiefly to defining and defending rights of person and property and to enabling exchange. Libertarians remind us of a lecture in which Adam Smith (as reported by his biographer Dugald Stewart) said, “Little else is requisite to carry a state to the highest degree of opulence from the lowest barbarism but peace, easy taxes, and a tolerable administration of justice: all the rest being brought about by the natural course of things.”²

On the other hand, reformers have called on the power of government to balance that of laissez-faire markets when they lead to unconscionable results. When the horrors of the industrial revolution challenged the faith in the utopian promise of capitalism, many people in America, Great Britain, and elsewhere demanded more governmental intervention in the economy. The “Progressives,” as the American reformers were called, advocated three different kinds of regulation. These reformers did not abandon the basic faith in “Invisible Hand” capitalism. They argued,

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¹The President, Memorandum of January 30, 2009, Regulatory Review: Memorandum for the Heads of Executive Departments and Agencies, Federal Register (Feb. 3, 2009) (Vol. 74, No. 21) (Presidential Documents), p. 5977.

²Stewart, Account of the Life and Writings of Adam Smith LL.D. (1793), from the Transactions of the Royal Society of Edinburgh, printed in the Collected Works of Dugald Stewart, Vol. 10, pp. 1–98, available at <http://www.adamsmith.org/smith/dugald-stewart-bio.pdf>.

rather, that the government must work together with—and sometimes push against—the private economy to keep that faith.

First, Progressives supported humanitarian laws, for example, to eliminate child labor and to set a maximum workday and a minimum wage. They also called for laws establishing safety standards for foods, drugs, and cosmetics. Laws of this kind, to be sure, constrain the kinds of trades individuals can make in markets and were at first overturned for that reason by the courts. Progressives justified hampering voluntary exchange—or freedom of contract—in this way to direct capitalism more toward humanitarian, utilitarian, or even paternalistic ends.

Second, Americans who associated themselves with Woodrow Wilson's New Freedom believed that the concentration of economic power in industrial and financial monopolies or trusts had perverted competition and betrayed the American Dream. Louis Brandeis and many others called for laws like the Clayton Antitrust Act that sought to abolish what reformers saw as unfair practices that allowed monopolies to subvert competition and to control industry and trade.

Third, Americans who, as Herbert Croly did, supported the New Nationalism of Theodore Roosevelt saw the concentration of economic power as an inevitable result of mass production and technological development. They argued that the government should not try to restore the anachronistic ideal of Jeffersonian individualism but should follow the Hamiltonian course of managing big business in the public interest. "Whether the objective was to regulate monopoly or competition," Arthur M. Schlesinger, Jr., wrote, "the method was to meet the power of business by expanding the power of government. The New Nationalism and the New Freedom alike affirmed the necessity of active intervention in economic life by the state."³

Reformers of the 1930s and 1940s, having lived through the Depression, naturally saw the major national problems as economic—problems in stimulating markets to retrieve the American Dream. The reformers of the 1960s and 1970s, to whom we owe a tide of environmental, health-and-safety, and social regulation, lived, on the contrary, in prosperous times. The problems they addressed were social and political, having to do with segregation, racism, education, technology, armaments, and the environment. Early in the 1960s, protesters pressed for civil rights and environmental legislation to stop moral and societal abuses. The environmental movement did not base its arguments on a theory of markets or on a vision of utopian capitalism. It tried to build a better society by emphasizing the tranquil, the natural, the beautiful, and the very long run.

The generation of the New Frontier and the Great Society differed in outlook and experience from the generation of the New Deal; their political agenda differed as well. Whereas the New Deal had tried to salvage the ideal of utopian capitalism, the later generation largely ignored it. In the 1960s and 1970s, Congress set goals for society and the government to achieve by reforming themselves, for example, through civil rights legislation, rather than by correcting, stimulating, or directing markets. This generation assumed the existence of capitalism as a background condition but did not necessarily regard capitalism as the cause or the cure of our social and political ills.

Insofar as economic, as distinct from ethical and social, goals appeared in the political agenda of the 1960s and 1970s, they formed the basis of economic, not social, regulation. Economists like George Stigler argued persuasively that agencies that administered economic regulations after the New Deal often constrained competition in order to serve the interests of the industries they regulated. Newspapers carried stories about "revolving door" employment and other forms of agency "capture" and collusion. As a result, a political and scholarly consensus formed to cut back on economic regulations and to eliminate some of the agencies that administered them.

³Schlesinger, Jr., *The Crisis of the Old Order: 1919–1933*, p. 33 (1957).

The emphasis Brandeis had placed on restoring competition reasserted itself in the program of economic deregulation that the Ford and Carter administrations pursued actively and successfully (by deregulating the airlines, for example) and that continued during the Reagan administration.

When Ronald Reagan took office in 1981, the speedy and successful pursuit of economic deregulation under his predecessors created high expectations among his supporters that similar results could be achieved in the area of social deregulation. The Reagan administration viewed with alarm the bureaucrats in the Environmental Protection Agency and other regulatory agencies, many of whom had come into office during the Carter years, who drew their authority from very broad, vague, and aspirational statutes, such as the Clean Air Act. The Reagan administration sought to dampen the environmental agenda of the 1960s and 1970s. It followed OMB director David Stockman's calls, in his 1980 "Dunkirk" memo, for a "dramatic, substantial *rescission* of the regulatory burden" and for a major "regulatory ventilation."⁴ In this spirit, President Reagan issued Executive Order 12,291, which established a formal process for White House review of rulemaking and required major regulations to pass a cost-benefit test. "Regulatory action shall not be undertaken unless the potential benefits to society for the regulation outweigh the potential costs to society," the Order stated; "Regulatory objectives shall be chosen to maximize the net benefits to society."⁵

Commentators did not at first regard this requirement as substituting once conception of the purpose of legislation—the goal of social efficiency or welfare defined by WTP and measured by cost-benefit analysis—for the purposes expressed in the statutes, *e.g.*, a cleaner, more natural environment or a safer workplace. This criticism, namely that economists not Congress called for net or aggregate benefit maximization, came soon afterwards. Initially critics charged that cost-benefit analysis (CBA) appeared at first as a pretext or rationale the White House used to tamp down the regulatory agencies without enduring the political embarrassment of sacking an Administrator or Secretary. President Carter had earlier required CBA in order to stall and eventually halt some pork barrel projects he opposed. President Reagan appealed to CBA to add a layer of bureaucracy by which the White House could delay regulation, take *ex parte* comment on it, or simply return to the sender whatever rules it did not like.

The call for regulatory rescission during the Reagan years was more libertarian than utilitarian. It had more to do with limiting the role of government than with improving the efficiency of markets. President Reagan saw CBA cynically but accurately, that is, as a procedural device to slow down or halt the flow of social regulation to make the government more friendly to industry. A widely cited article published in the *Harvard Law Review* during the Reagan years declared that "OMB control imposes costly delays that are paid for through the decreased health and safety of the American public."⁶

During the Reagan years and thereafter, however, CBA began to develop an authority and life of its own. Economists built a philosophy of regulation based on CBA or on the idea that "Regulatory objectives shall be chosen to maximize the net benefits to society." Following an innovative suggestion Paul Krutilla made in 1967 that social scientists could apply WTP to measure the "value" of moral, aesthetic, and political beliefs, which he called "non-use" or "non-consumption" values, economists developed methods of "contingent valuation" to determine WTP for

⁴Stockman, "Avoiding a GOP Economic Dunkirk," at 15 mimeograph (Dec. 1980), quoted in Eads and Fix, *Relief or Reform?: Reagan's Regulatory Dilemma* 1–2 (1984).

⁵Exec. Order No. 12,291; 3 C.F.R. § 127 (1982).

⁶Krutilla, *Conservation Reconsidered*, *Am. Econ. Rev.* 57 (1967): 777–96 (describing environmentalists "and others to whom the loss of a species or the disfigurement of a scenic area causes acute distress and a sense of genuine relative impoverishment" p. 779).

goals, such as environmental protection, that people espoused for reasons other than what they thought would benefit them. In other words, economists argued that by measuring WTP they could assign a welfare-equivalent to values people held for reasons that even they believed had nothing to do with their welfare. Krutilla connected political, moral, or aesthetic commitments to measures of well-being by suggesting that environmentalists are pained when a species becomes extinct or a vista is lost.⁷ Jettisoning a thousand or more years of moral and political philosophy, economists discovered a scientific way to determine right from wrong at least in the area of environmental regulation. They felt the pain of environmentalists and with enormous encouragement from funding agencies developed techniques to “price” it.

The concept of WTP emerged as a criterion for valuation not simply at OMB or OIRA, where it might serve the sometimes necessary function of putting a “reality check” on the aspirations of legislation, but in environmental, natural resource, and other agencies, where the prospects of attaching high WTP to non-use and other “unpriced” values offered apparently scientific arguments for conservation (as Krutilla, a conservationist, had intended). Economists vied with lawyers to change the culture of regulation from one of implementing law to one of correcting markets. Where lawyers regard the courts as the appropriate rein on regulation—Louis Jaffe’s *The Judicial Control of Administrative Action* (1965) remains the classic expression of this reliance—economists see their own constructs, such as Pareto optimality, Kaldor-Hicks efficiency, or market equilibrium, as criteria that provide scientific, objective, and therefore legitimate limits to the administrative state. The battle over the function of CBA in regulatory review and, indeed, in the administrative agencies came to be understood in terms of the clash of two cultures—lawyers vs. economists. This is largely where matters stand today.

§ 5:18 The role of cost-benefit analysis in regulation

Historically, CBA draws on two influential philosophical traditions. The first, the tradition of Utilitarianism, recalls Jeremy Bentham (1748–1832) who argued that the government ought to seek to maximize the aggregate pleasure or happiness of its people. The second, the tradition of Progressivism and positivism, follows Auguste Comte (1798–1857) and Comte de Saint-Simon (1760–1825), who advocated a system of social physics in which experts, primarily economists, would manage society on the basis of their knowledge and authority as scientists.

Today, few would agree with Bentham that experts can develop a “felicific calculus” by which to test the “happiness factor” of any action. With the downfall of the Soviet Union, fewer still would advocate that *apparatchiks* on the basis of a scientific theory of social well-being should occupy the “commanding heights” of government. Yet CBA in principle invokes the authority of science to prescribe an overall societal goal, namely, the maximum or aggregate net satisfaction of preference, preference weighed on the basis of WTP and taken as it comes. When used as a test for regulation, CBA draws on the still influential view that experts may maximize social utility through scientific analysis of societal values. This is the reason that critics of CBA regard it in principle as antagonistic to the deliberative processes of democratic governance and contrary to the constitutional processes that define the structure of our political institutions. This concern becomes especially poignant in relation to White House arrogation of authority that passes under the

⁷Morrison, OMB Interference with Agency Rulemaking: The Wrong Way To Write a Regulation, 99 Harv. L. Rev. 1059, 1064 (1986).

Constitution from Congress to the regulatory agencies without directly involving the president.¹

What role has cost-benefit analysis to play in environmental regulation and, specifically, in regulatory review by the White House? Many economists believe the answer is obvious. The goal of CBA is to tote up—and thus make transparent—the reasons for and against a regulatory proposal. A widely used textbook on CBA introduces the subject with a reference to a letter Benjamin Franklin wrote in 1772 advising a friend faced with a difficult decision to compare all the reasons pro and con a particular choice and see how they match up. The authors of the textbook interpret a weighing of reasons such as Ben Franklin advocated—which makes common sense—to entail “a systematic characterization of impacts as benefits (pros) and costs (cons), valuing in dollars (assigning weights) and then determining the *net benefits* of the proposal.”² By using the methods and techniques of CBA economists respond to President Reagan’s Executive Order, which stated, “Regulatory objectives shall be chosen to maximize the net benefits to society.” The maximization of net benefits—or aggregate WTP, which is the same thing—then becomes the single or at least the most salient reason for regulation.

One might think of many reasons for and against a proposal, for example, to regulate confined animal feedlot operations to keep them from dumping animal wastes in adjacent rivers. One might say, for example, that feedlots have no right to foul neighboring waters—that dumping wastes into public waterways offends the “common right” that requires each person to treat his wastes “so his filth will not damnify his neighbor.” Many people would argue that wild and natural rivers have a kind of sanctity or integrity that we ought to respect for aesthetic, moral, and even religious reasons. And many might believe that polluters—as we have seen in the case of *Boomer v. Atlantic Cement Company*—have a moral duty to employ the best pollution-control technology, even pressing what is economically feasible—rather than to trespass on public or private property. Background principles of property law and conceptions of normal or decent behavior should be taken into account. These are all the kinds of pos and cons that Ben Franklin might have expected policy makers to consider and even to list as reasons for a decision to regulate wastes coming from feedlots.

The approach of CBA, in contrast, considers none of these as reasons for a policy—not background principles of property law, not common expectations about socialized behavior. The purpose of regulation is not to honor any such principle, however basic to common law and social life, but to maximize benefits minus costs. What are “benefits”? Benefits are whatever WTP measures—so the point of environmental regulation or policy, on this approach, is to achieve outcomes for which people are willing in the aggregate to pay the most, whatever their reasons may be. But why maximize this? Why is an outcome right or good insofar as people are willing to pay for it, apart from the reasons that motivate or justify that willingness to pay?

Many economists adopt a “don’t ask, don’t tell” approach to this question. References to “welfare,” “benefit” or “utility,” as we have seen, add nothing to WTP itself, because economists use WTP to define and measure concepts such as these. The approach of CBA is to make the maximization of net WTP—a goal for which no clear reason can be given—the single or at least the most salient purpose of public policy. The term “benefit” sounds as if it has some normative content—it sounds as if it correlates with well-being, happiness, well-offness, or something of that sort. The term “benefit” in CBA, however, means nothing more than WTP itself and as we have

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¹For commentary, see Strauss, *Overseer or ‘The Decider’? The President in Administrative Law*, 75 *Geo. Wash. L. Rev.* 696 (2007).

²Boardman, Greenberg, et al., *Cost-Benefit Analysis: Concepts and Practice* 2 (1996).

seen correlates with no substantive idea of the right or the good. As we have said, for example, WTP (or income used as a surrogate for it) fails to correlate with subjective or felt well-being after basic needs are met. The goal of maximizing net or aggregate “benefit” defined and measured in terms of WTP has no normative basis that might plausibly be used to justify a regulatory policy. The chapter has argued, therefore, that the goal of efficiency has not value against one could balance or “trade off” a moral goal like justice or equity.

§ 5:19 Alternatives to cost-benefit analysis

Nevertheless, as the Obama Memorandum on Regulatory review states, regulatory review at OMB is essential “to ensure consistency with Presidential priorities, to coordinate regulatory policy, and to offer a dispassionate and analytical ‘second opinion’ on agency actions.” One may argue the CBA, at least if practiced humanely, might provide a context for making the reasons for and against regulation more transparent or at least for providing a look before one leaps. For this, however, better alternative methods exist. The alternatives to CBA are so well known and understood that to do more than mention them may try the patience of the reader. An annotated list should suffice.

(1) Cost-effectiveness analysis

In 1980, Michael S. Baram, who was then Director of the Program on Government Regulation at the Franklin Pierce Law Center, Concord, NH, explained the difference between cost-benefit and cost-effectiveness analysis this way. “Cost-benefit analysis . . . is used by the decision-maker to establish societal goals as well as the means for achieving these goals, whereas cost-effectiveness analysis only compares alternative means for achieving ‘given’ goals.”¹ According to Baram, the regulatory use of cost-benefit analysis in practice substitutes net or aggregate preference-satisfaction, whatever that means, for goals mandated by legislation and thus in practice stifles and obstructs legislated health, safety, and environmental objectives. Agencies should engage in cost-effectiveness analysis, which aids in determining the least costly means to designated goals, rather than cost-benefit analysis, which improperly determines regulatory ends as well as means.

(2) Risk-risk analysis

In limiting or preventing one risk, a regulation may produce another that is greater. The dangers that may result from a regulatory decision should be understood and compared with those it is intended to prevent.

(3) A presumptive floor and ceiling (benchmark) for the cost of saving a statistical life or avoiding a statistical injury

If the goal of regulating risk were simply to avoid needless deaths or injuries, then it would make sense to equalize the marginal cost of lives saved or injuries avoided across programs. Because risks differ in their moral and social qualities—some are more dreadful, voluntary, familiar, etc. than others—deviations may be morally explicable or even praiseworthy. Reasons should be given to explain great deviations. As Cass Sunstein has written, “If an agency is going to spend (say) no more than \$500,000 per life saved, or more than \$20 million, it should explain itself.”²

A cost-benefit approach, in contrast, would draw a value per-life-saved or death-

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¹Baram, Cost-Benefit Analysis: An Inadequate Basis for Health, Safety and Environmental Regulatory Decision Making, 8 *Ecol. L. Quarterly* 473–531 (1980), quotation at p. 478.

²Sunstein, Risk and Reason: Safety, Law, and the Environment (2002), quotation at p. 111.

avoided from markets rather than from political reflection and legal practice. The CBA approach essentially returns to the theory that governed regulation a century ago, when workers chose to toil in conditions the dangers of which were known to them. Mining disasters claimed more than 3,000 lives in 1907 alone, but social welfare was maximized in the sense that markets functioned efficiently. Information was available and bargaining costs were low. When civic groups managed to get states to pass laws to regulate working conditions in mines, on railroads, and in sweat shops, the courts often invalidated those laws because they prevented people from contracting freely. Regulations by impeding exchange made markets less efficient; they would therefore fail an efficiency or cost-benefit test no matter how many lives they saved.

It is important to recognize that regulation serves as a social catalyst for change—for raising consciousness about risk—and is not simply a way to make market outcomes more efficient in view of “given” or “exogenous” preferences. Even in 1970, when Congress enacted the Occupational Safety and Health Act, it estimated that 14,000 Americans had died that year from job-related hazards. Almost 400,000 new cases of occupational diseases were reported.³ These horrors resulted from free and efficient markets. Bernard Kleiman, then a negotiator for the Steelworkers argued regulation was needed to make workers and employers more safety conscious. “Both sides have to be hit over the head a good deal before they develop the consciousness that permits them to move,” he said.⁴ The “value” for lives saved economists derive from labor markets today reflect the regulations of yesterday—not the kinds of contracts people would make and have made in the absence of regulation.

(4) Knee-of-the-curve analysis

As we saw in § 5:8, in many contexts, technology-forcing regulation can allow morally acceptable amounts of pollution. In many industries, initial gains to the environment are inexpensive; eventually the cost of controlling the “next” or “incremental” unit of pollution increases. At some given state of technology, one can often find an inflection point or “knee-of-the-curve”—a point at which the cost of controlling the next or marginal unit of pollution increases rapidly and returns to the environment rapidly diminish per dollar spent. One morally acceptable way to allow some pollution (for example, through “cap-and-trade” markets for pollution allowances) is continually to encourage or prod industry to improve its processes and technologies to move the knee of the curve—the point at which costs may go asymptotic—ever farther out along the pollution-control axis. To the extent the government can encourage industries, through incentives and threats, to invent environment-friendly technology it can assure environmental progress while allowing at a given stage of technology a minimum amount of pollution necessary for economic growth.

(5) Economic impact analysis

People care about the effect of regulation on the economy—on jobs, inflation, competitiveness, and the distribution of wealth. Cost-benefit analysis concerns microeconomic efficiency—something that interests welfare economists—but has no clear relation to the performance of the economy. It makes sense to ask how a major regulation will affect the “misery index”—*e.g.*, involuntary unemployment and inflation. The use of CBA relies on microeconomic theory and does not reach the indicators of macroeconomic performance that we have reason to care about.

(6) Heuristic accounting

It may well make sense that OMB ask agencies to provide rich or thick descrip-

³See Smith, *The Occupational Safety and Health Act: Its Goals and Achievements*, Ch. 1 (1976).

⁴Bureau of National Affairs, *OHSA and the Unions: Bargaining on Job Safety and Health* (1973).

tions of the reasons for and against a policy given the alternatives. These explanations will be salutary. CBA in contrast represents a highly professionalized and technical kind of analysis that presupposes only one reason for regulation—the maximization of net benefits where these must be measured by adepts in what has become by now a quite technical—one might even say cabbalistic—science. From a common sense point of view, it seems reasonable to ask agencies to carefully explain the costs and benefits, advantages and disadvantages, of regulations in view of alternatives. The problem is that in the profession of policy analysis “benefits” are construed in terms of WTP and thus to attempt a comparison of benefits and costs is in practice to issue a call to all economists to get on deck as consultants to measure WTP and sink the regulatory ship under the weight of technical and methodological controversies and conundrums.

IV. ETHICAL PRINCIPLES IN CLIMATE CHANGE POLICY

§ 5:20 Climate change is not a collective action problem

As the threat of global climate change worsens, the need to find clear ethical principles for addressing it becomes more urgent. These principles, however, have proven to be elusive. One reason is that greenhouse gases do not easily fit in the same moral category of “pollution” as toxic and hazardous emissions and effluents. It is relatively easy to see that a toxic or hazardous substance creates the kind of danger that one associates with a private nuisance. It is another matter to show that “greenhouse” gases, such as carbon dioxide, which are not dangerous to one’s health in any direct sense, can be considered pollutants. To be sure, the U.S. Supreme Court in *Massachusetts v. Environmental Protection Agency*, decided by a 5-4 majority that the U.S. EPA could regulate carbon dioxide and other greenhouse gases as pollutants.¹ Because the ill effects of climate change may not be felt until decades from today, however, it is difficult to see how anyone today could bring a private action in tort against emitters of greenhouse gases. This would distinguish these emissions from ordinary pollutants that harm people who breathe, drink, or otherwise encounter them.

A difficulty in conceptualizing the moral dimensions of global climate change arises because well understood principles of economic rationality and distributive equity that have been developed in the context of collective action problems such as environmental externalities do not seem to apply as well to the problem of controlling greenhouse emissions. What makes the ethical analysis of climate change policy most difficult, indeed, may be the dissimilarities between traditional collective action problems and the challenge of slowing climate change.

In traditional collective action problems, all members of the affected group, more or less, will jointly benefit from cooperative action which adherence to individual rational self-interest defeats. In 1965, Mancur Olsen in *The Logic of Collective Action* showed that when each individual acts on self-interest, for example, to “free-ride” on the more socially motivated action of others, public goods will not be produced. Olson wrote “Unless the number of individuals in a group is quite small, or unless there is coercion or some other special device to make individuals act in their common interest, rational, self-interested individuals will not act to achieve their common or group interests.”² In a much-cited article popularizing this analysis, Garrett Hardin argued that the rational proclivity of each individual to except him or herself from cooperation (to “free ride” on the rest) made the destruction of public goods, such as a commons on which the graze cattle, the likely result of

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¹Massachusetts v. EPA, 549 U.S. 497 (2007).

²Olsen, *Logic of Collective Action*, p. 2 (1965).

liberty. This path to ruin justifies coercion, according to Hardin. “The only kind of coercion I recommend is mutual coercion, mutually agreed upon by the majority of the people affected” to preserve or provide or manage a public good or resource.³

With global climate change it is different. First, in the typical collective-action problem, for example, managing a commons or preventing defections in a “prisoner’s dilemma” game, everyone will gain from cooperation and lose if each acts in his or her own personal self-interest. In the case of climate change, however, one group, that is, people alive today and through the next generation, will make significant sacrifices, for example, by forgoing the consumption of inexpensive fossil fuels. A completely different group, whom one might call “posterity,” will benefit. The coercion needed to solve a collective action problem is justified by the principle of the mutual reciprocity of advantage, that is, the idea that each person gains more by the restriction of the freedom of others than he or she loses by accepting that same restriction. In the context of climate change, however, the winners are completely different from the losers—so different, in fact, that those who make sacrifices (or accept restrictions on their freedom) may all be long gone before posterity appears to enjoy the fruits of the sacrifices they had made. Policy to protect the global climate aims to mitigate effects in the long run—when, as Lord Keynes famously said, those who exist today are all dead.

Second, people who live in areas that might benefit from global climate change are called upon to make sacrifices for people who will live in areas that will suffer from changes caused by a warming climate. For example, low lying islands and many coastal areas are likely to be flooded as oceans expand. Islands such as the Maldives, seven percent of Bangladesh, and coastal areas in Malaysia and India may be wiped out.⁴ On the other hand, inland areas in Canada, Russia, and the United States may gain as a result of warming particularly in the winter.

The question then arises what justifies—and what motivates—actions that will be necessary to slow or reduce climate when those who must take those actions, primarily in developed countries today, will not benefit from them. On the contrary, future generations in India and Africa, who are predicted to suffer the most from the effects of global climate change, will benefit the most from actions needed to stabilize the climate. One can rely on an appeal to enlightened self-interest to arrange the cooperation needed to solve familiar collection action problems since cooperation benefits everyone. One cannot rely on an appeal to enlightened self-interest—through the mutual reciprocity of advantage—to justify coercive measures to deal with climate change because those who pay the costs today are not those who reap the benefits tomorrow. Indeed, those in wealthy parts of the world today will sacrifice the most income for benefits that will accrue largely to those in the least economically developed or poorest nations decades from today.

§ 5:21 Corrective and distributive justice

If one cannot appeal to a principle of enlightened self-interest (as one may in collective action problems) to justify an allocation of sacrifice to fend off climate change, perhaps one can appeal to a principle of justice. Some commentators have argued that a principle of corrective or retributive justice requires that those who owe their wealth in large part to emissions past ought to sacrifice the most wealth to avoid or reduce emissions in the future. Those of us today and in the past who have contributed to climate change by depending on fossil fuels stand accused of “conducting a gigantic scientific experiment with the planet, and the consequences could be

³Hardin, “The Tragedy of the Commons,” *Science* 162 (1968):1243–48.

⁴Intergovernmental Panel on Climate Change, Working Group 1, *Climate Change 1995—The Science of Climate Change* (1996).

disastrous.”¹ Although the United States has slowed its relative contribution to the “stock” of greenhouse gases in the atmosphere—China now emits more, for example—it has been the largest source in the past. Does the past performance or responsibility of the United States in causing the global climate problem lend credence to the idea that the United States should make the greatest sacrifices to abate global warming?

The intuition that the United States is more culpable for causing climate change and, therefore, more responsible for solving the problem encounters difficulties. First, those who produced energy by burning coal to support the economy through most of the Twentieth Century could not be accused of negligence since a scientific consensus about the problem of climate change did not emerge and gain public attention until the end of that century. Second, many Americans immigrated to the United States in recent years; they would seem to have little connection with what might have happened in the past century. Third, even if we limit our attention to the children or grandchildren of those who benefited from the industrialization of the United States, it is unclear that they are responsible for the “sins” of their fathers. On the contrary, those alive today are responsible only for the emissions they cause. As Eric Posner and Cass Sunstein have written, “The basic problem for corrective justice is that dead wrongdoers cannot be punished or held responsible for their behavior, or forced to compensate those they have harmed. Holding American today responsible for the activities of their ancestors is not fair or reasonable on corrective action grounds because current Americans are not the relevant wrongdoers; they are not responsible for the harm.”²

One might argue that American today benefit from the polluting activities that accompanied the industrialization of the United States and thus may be liable in some way to make greater reductions than others in their current emissions. Yet the industrialization of the United States did not equally benefit all Americans alive today; it did benefit many people in other countries. For example, in fighting and defeating Nazism, Communism, and fascism in Europe and Japanese imperialism in Asia, the United States in the twentieth century no doubt emitted a great deal of carbon dioxide as well as other greenhouse gases. It would be impossible, however, to apportion the benefits of these emissions in any meaningful way.

Because a principle of corrective justice seems so difficult to apply in allocating responsibility for abating emissions, it is tempting to appeal to a principle of distributive justice instead. One could argue that since wealthy nations are wealthy—since they have the greatest means to take action or limit their emissions—they should bear most of the cost of abating emissions. After all, the emissions associated with production in America may provide luxury goods, like gas-guzzling SUVs, while emissions associated activities in developing countries, such as burning forests for agricultural land or swidden farming, while a big source of carbon loadings, may support subsistence.³ A principle of distributive justice that requires the rich to give to the poor might suggest that wealthier nations bear the burden of curtailing their emissions and of helping developing countries emit less.

To appeal to a principle of distributive justice—roughly the idea that the rich

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¹“Climate Change,” Earth Action Briefing (Sept. 1997), available at <http://www.earthaction.org/pr-event-climate-change.html>.

²Posner and Sunstein, “Global Warming and Social Justice,” pp. 14–20 (Spring 2008), quotation at p. 18. For a fuller discussion, see Posner and Sunstein, *Climate Change Justice*, Univ. of Chicago Law & Economics (Aug. 2007), Olin Working Paper No. 354; Univ. of Chicago, Public Law Working Paper No. 177, available at <http://ssrn.com/abstract=1008958>.

³For discussion, see Shue, *Subsistence Emissions and Luxury Emissions*, 15 *Law & Pol’y* 39 (1993).

should help the poor—in the context of climate change, however, is puzzling. First, people who live in wealthy countries today are asked to make sacrifices (by forgoing some of their income) to benefit people who will exist generations from now in developing countries in Africa and the Indian subcontinent where climate change is predicted to have the severest impacts. Yet even if the world continues on a business-as-usual path, the people who live in these countries may be better off than they are now. Advances in medical, agricultural, communications, and many other technologies may improve the quality of life in the future in ways that far outweigh the consequences of climate change. Thomas Schelling, a Nobel economist, has written, “If both the developed and the developing worlds continue to grow in per capita consumption as they have done for the past 40 years, people in most countries are likely to be much better off in material welfare 50, 75 or 100 years from now than they are now.” By then diseases like malaria and polio—perhaps even many common forms of cancer—will be eliminated, for example. One could argue with equal merit that our great grandparents, who endured the scourge of smallpox and other plagues and could expect to live (if they survived childhood) little more than forty years, should have made sacrifices for us. As Schelling notes, advances in technology are likely to make people generations from now substantially better off than we are. “What we ought to feel we owe them is not the kind of ethical issue we have much practice with, because we are not used to thinking about making our own sacrifices, or imposing sacrifices on our contemporaries, for the benefit of those who are substantially better off.”⁴

If we accept the principle that the rich should help the poor, moreover, a sacrifice of income to slow global warming would seem an odd way to act on that principle. There are plenty of ways today for the rich to help the poor both at home and abroad, for example, through programs to improve access to education, public health, and agricultural and other technologies. One could plausibly argue that the best way to equip people in vulnerable countries to cope with global climate change is not to use available income today to reduce emissions. It would be to equip people with the education, technology, and social organization they need to improve their lives today and in the future even if they must adapt to climate change. As Schelling points out, helping hypothetical people who are distant in time may compete with or serve as a substitute for helping actual people who are distant in space. If we take a principle of distributive justice seriously, we might feel obligated to use the income we can spare to help people who are now in need. It is unclear that we have a greater obligation to spend that income on abating climate change in order to benefit people who will exist far in the future.

§ 5:22 The Parfit paradox

Philosopher Derek Parfit has constructed an argument that comes to a paradoxical conclusion, namely, that whatever policy we adopt to deal with climate change will be the best possible policy—the most efficient and the most equitable—for future generations. The reason is that the policy will populate the future, that is, it will decide who exactly will be born and thus who will live. The reason is that conception is determined by a plethora of contingent accidents having to do with historical events. Which sperm meets which egg, in other words, is the result of who meets whom and under what conditions. Almost any major historical decision sends off cascades of consequences that will result in different conceptions and thus different people than some other historical decision.

Parfit argues that any policy we adopt today will make people born in the future better off than they would have been had we made some other decision. The reason

⁴Schelling, “Intergenerational Discounting,” *Energy Policy* 23 (4/5), pp. 395–401, quotations at p. 398.

is that these people would not even exist and, therefore, could not be better off, had we made the other choice.

To show this, Parfit describes two policies, which he calls “High Consumption” and “Low Consumption.” He then writes:

If we choose High rather than Low Consumption, the standard of living will be higher over the next century. . . . Given the effects of . . . such policies on the details of our lives, different marriages would increasingly be made. More simply, even in the same marriages, the children would increasingly be conceived at different times . . . this would in fact be enough to make them different children.

Return next to the moral question. If we choose High Consumption, the quality of life will be lower more than a century from now. But the particular people who will then live would never have existed if instead we had chosen Low Consumption. Is our choice of High Consumption worse for these people? Only if it is against their interests to have been born We can suppose that it would not go as far as this. We can conclude that, if we choose High Consumption, our choice will be worse for no one.¹

The idea is that whichever policy we choose, future generations will have nothing to complain about because but for that choice, different marriages would have been made and different children conceived. Whatever policy decision we make, therefore, determines who shall exist, and thus the policy we choose is better for those who will be born than any other policy would have been. Because these people will be all who exist, our choice will make no one worse off. Most people would agree that a policy that is the very best for all those it affects, and that makes no one worse off, is satisfactory from the point of view of distributive justice and efficiency. Thus, whichever policy we choose will be just and efficient with respect to the generations that come after us.

This argument leads to the repugnant conclusion that any policy we adopt toward global climate change will be responsible for creating the people who come after us and thus will be the best possible policy for them, since they could not have existed otherwise. This seems to rid us of any obligation to future generations beyond making life barely tolerable for them. Although nobody—certainly not Parfit—accepts this conclusion, it follows from premises we do accept or at least have to acknowledge to be true. Philosophers have not yet found a way out of this argument and indeed have shown. it has other disturbing and perplexing consequences.²

V. INTEGRATING ETHICAL AND ECONOMIC APPROACHES TO ENVIRONMENTAL LAW

§ 5:23 In general

Regulation succeeds most easily when its purposes are either plainly economic or plainly ethical. Examples of economic regulations abound. The Federal Communications Commission, for example, has for years regulated the electromagnetic spectrum to prevent the ruinous competition which might otherwise destroy a common resource. Likewise, the Federal Deposit Insurance Corporation insures bank deposits, and the Federal Reserve Bank oversees interest rates. These regulatory activities are economic in nature and the values they involve may be adequately understood in purely economic terms.

Examples of ethical regulations are also easily located. Earlier in this century,

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¹Parfit, “Energy Policy and the Further Future,” working paper (Center for Philosophy and Public Policy, University of Maryland, Feb. 23, 1981). A slightly different version of the passage cited appears in Parfit, “Energy Policy and the Further Future: The Identity Problem,” *Energy and the Future* (1983), pp. 167–179, especially p. 173.

²For example, see Velleman, *The Identity Problem*, *Philosophy and Public Affairs*, 36 (2008), at 221–44, available at <http://ssrn.com/abstract=1032446>.

nearly a million children worked in the nation's sweatshops and mines. Laws prohibiting child labor and statutes establishing a maximum workday and a minimum wage did not correct market failures, since the transactions involved arguably were informed and voluntary. These laws had an ethical, not an economic purpose; they intended not to make markets more efficient but more humane. Likewise, Title VII of the Civil Rights Act prohibits unions, employment agencies, and employers from discriminating on the basis of race, sex, or national origin. These statutes answer to basic moral principles, aesthetic norms, and cultural concerns which underlie our identity as a nation. Those who approve and disapprove of these statutes offer arguments *pro* and *con*; they do not simply reveal preferences. The laws are in principle the subject of ethical deliberation on the merits in Congress, not of marginal pricing on a willingness-to-pay basis in markets.

Pollution control statutes, unlike laws prohibiting child labor, however, stop short of giving the government a clear mandate to go after an acknowledged evil and quickly eliminate it. This is true because pollution—unlike slavery, child labor, discrimination, segregation, poverty, illiteracy, etc.—is not simply an evil. It is a necessary evil, one which must be tolerated, at least to some extent, if the economic activity we depend on is to continue and to flourish. The law of the land must be respected, but in controlling pollution, we must also recognize the law of diminishing returns. Pollution cannot, in the foreseeable future, be prohibited entirely—as was child labor—if our industrial economy is to comply and survive. By necessity, economic factors enter into the ethical equation; the costs must be taken into account. How is this to be done? How much purity can we afford? How safe is safe enough?

The balance of this chapter, which is divided into three sections, will discuss the relevance of economic factors in implementing and in determining pollution control goals and standards. The first section evaluates the distinction many commentators have emphasized between the ends declared in legislation and the means necessary to achieve those ends. On this approach the objective of pollution control law, like child labor law, is the elimination of an evil; it is an ethical objective which is not to be compromised by economic considerations. Regulators may take economic factors into account, however, in promulgating policies, setting deadlines, and signing consent decrees in order to incrementally achieve the objectives set out in legislation.

The second section argues that means and ends in environmental law, from the point of view of moral deliberation, have a more complex relationship than is sometimes acknowledged. The section argues that to some extent the means and ends of environmental law must be decided together, for “what is deliberation except weighing of various . . . end terms of the conditions that are the means of their execution, and which, as means, determine the consequences actually arrived at?”¹ Both means and ends should be deliberated over together, lest the goals become morally supererogatory given the resources we can commit to achieve them. The best may then become the formidable foe of the good, and the environmental utopia of our aspirations may become an obstacle to the morally adequate environment we may otherwise achieve in fact.

The third and final section explores goals of environmental policy that are not directly justified in terms of human health, safety, or welfare. These include the preservation of species, the restoration of wild and scenic rivers, the maintenance of wetlands, and the protection of less definable environmental goods, such as the “health” or “integrity” of ecosystems.

§ 5:24 Ends and means in pollution control law

The Clean Air Act, the Clean Water Act, and other pollution control statutes

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¹J. Dewey, *Theory of Valuation* 23 (1939).

resemble laws that prohibit child labor, prevent discrimination, and combat poverty and illiteracy; environmental statutes, in short, stand squarely in the tradition of legislation that seeks to control and eliminate moral evils.¹ The Clean Air Act, for example, puts an ethical concern with public safety and health ahead of economic and commercial interests: It “does not allow economic growth to be accommodated at the expense of public health.”² The courts have concurred that the protection of public health is the “paramount consideration” of the Act.³ “It is generally accepted that the Clean Air Act mandates a safety-first approach to investment in air quality.”⁴

Many of those who are concerned with the application of environmental law assimilate the distinction between the economic and the ethical, broadly speaking, to the difference between ends and means.⁵ On this view, pollution control legislation states categorical ethical ends, to wit, that pollution be controlled and reduced to levels at which the most sensitive groups are protected with an adequate margin of safety.⁶ It is then up to the relevant agency to take the costs into account and to otherwise balance economic factors by promulgating standards and rules on a problem-by-problem basis which will eventually achieve the overall ethical objectives of the law.⁷

In this way, pollution control statutes invite and sometimes require an interpretation which distinguishes between congressionally mandated goals—which are not to be compromised, at least over the long run, to accommodate economic or technologi-

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¹The primary purpose of the Clean Air Act, “to protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare,” 42 U.S.C.A. § 7401(b)(1) (1982), is plainly moral both in a broad utilitarian sense and in the deontological sense of protecting safety as a matter of right. *Compare* 42 U.S.C.A. § 7401(b)(1) (1982) with Clean Water Act § 101(a), 33 U.S.C.A. § 1251(a) (1982) (“The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”). The Clean Air Act resists the introduction of economic and even technological factors as bars to pollution control. “After surveying the relevant provisions of the Clean Air Amendments of 1970 and their legislative history, we agree that Congress intended claims of economic and technological infeasibility to be wholly foreign to the Administrator’s consideration of a state implementation plan.” *Union Elec. Co. v. EPA*, 427 U.S. 246, 255, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20570, 20573 (1976).

²41 *Fed. Reg.* 55527 (1976).

³*Union Elec. Co. v. EPA*, 427 U.S. 246, 272, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20570, 20576 (1976) (Powell, J., concurring).

⁴Barnes, *Back Door Cost-Benefit Analysis Under Safety First Clean Air Act*, 23 *Nat. Resources J.* 827, 828 (1983).

⁵For an apt discussion of “ends and means in environmental law,” see B. Ackerman & W. Hassler, *Clean Coal/Dirty Air* 121 (1981) (“‘ends-oriented’ agency-forcing does not require Congress to indulge in instrumental judgments beyond its capacity. Instead, it generates a process by which the ultimate aims of environmental policy can be clarified over time”).

⁶The Clean Air Act only once mentions the protection of sensitive populations in relation to national ambient air quality standards. 42 U.S.C.A. § 7408(f)(1)(C) (1982). The legislative history, however, does contain an oft-cited commentary by the Senate Committee on Public Works which states that primary air quality standards must be strict enough to protect more susceptible groups. S. Rep. No. 1196, 91st Cong., 2d Sess. 11 (1970), *reprinted in* 1 *Senate Comm. on Pub. Works, A Legislative History of the Clean Air Amendments of 1970* 411, S. Rep. No. 18, 93d Cong., 2d Sess. 410 (1974). For discussion of sensitive populations and environmental protection, see R. Friedman, *Sensitive Populations and Environmental Standards* (1981).

⁷For an expression of this general position, see Novick, *In Defense of Irrational Laws*, 3 *Envtl. Forum*, July 1984, at 10. Novick pushes the analysis further:

When concern for the individual is given first priority, therefore, costs should be weighed, but only as the limit on the speed with which goals can be attained. Any delay in reaching the goal of zero pollution means lives will be lost, yet the government cannot simply leap across the intervening ground. Once the paramount concern for the injured person is acknowledged, other considerations must be consulted. How quickly can EPA achieve that person’s protection?

Novick, *In Defense of Irrational Laws*, 3 *Envtl. Forum*, July 1984, at 15.

cal factors—and administrative policies which are to take these factors into account in attaining those goals. The Clean Air Act, for example, requires EPA to consider economic and technological feasibility in setting new stationary source⁸ and new automobile emissions standards.⁹ Economic and technological feasibility, however, are not allowed to affect the overall goals of the Act. Feasibility may “affect *when* the goals are met. The Act thus tries to use time to avoid either compromising its ideals or ignoring feasibility.”¹⁰

It is not surprising that many who are concerned with the environment view pollution control legislation in terms of a robust distinction between ethical ends and practical means envisioned by the law. First, this view generally conforms with legislative history.¹¹ Second, it provides an apparently strong—or at least an initially uncompromised—legal position with which corporations may reckon.¹² Senator Griffin described this aspect of the Clean Air Act as “the concept of brinksmanship.”¹³ Speaking on the subject of automobile emissions, he stated: “An industry pivotal to the U.S. economy is to be required by statute to meet standards which the committee itself acknowledges cannot be met with existing technology.”¹⁴

Third, a sharp distinction between means and ends preserves the ethical dimension of pollution control statutes while permitting economic constraints to enter at a different level. Environmentalists generally would exclude cost-benefit analysis as a technique of social policymaking since it substitutes a nonnormative goal—allocatory efficiency—for the ethical goals Congress has legislated. Yet, environmentalists may show their reasonableness by tolerating cost-effectiveness analysis at the level of implementation.¹⁵ “Cost-benefit analysis,” as Michael Baram pointed out, “is used by the decisionmaker to establish societal goals as well as the means for achieving these goals, whereas cost-effectiveness analysis only compares alternative means for achieving ‘given’ goals.”¹⁶

The principal reason those concerned with environmental quality distinguish sharply between the ethical concerns involved in setting goals and the economic and other constraints involved in implementing them, however, may be as follows: To

⁸Clean Air Act § 111(a)(1), 42 U.S.C.A. § 7411(a)(1)(C) (1982).

⁹Clean Air Act § 202(a)(2), 42 U.S.C.A. § 7521(a)(2) (1982).

¹⁰Schoenbrod, *Goals Statutes or Rules Statutes: The Case of the Clean Air Act*, 30 UCLA L. Rev. 740, 759 (1983) (footnotes omitted).

¹¹The 90 percent reduction requirements for automobile emissions under the Clean Air Act, 42 U.S.C.A. § 7521(a)(3)(A)(ii)(I) (1982), for example, represent what Congress believed necessary to protect the public health, not what it thought was economically or technologically feasible. See Grube, *The Clean Air Act and Mobile-Source Pollution Control*, 4 Ecology L.Q. 523, 526–28 (1975).

¹²The sponsors of the Clean Air Act considered the nonincremental aspect of the legislation an advantage. Thus, when Senator Griffin accused the sponsors of playing “economic roulette with millions of jobs in the automobile industry,” Senator Muskie replied, “I would rather play Russian roulette with automobile companies than with the trapped inhabitants of urban America. Their health is involved.” 116 Cong. Rec. 16097 (1970).

¹³116 Cong. Rec. 32080 (1970). Former EPA Administrator Ruckelshaus, speaking in 1974, recalled his use of brinksmanship in the early days of the agency:

I started out with a fairly arbitrary stance that must have appeared to be very unreasonable, if not irrational, to a lot of people I was regulating . . . [I]f some of the things I said struck them as just a little bit irrational, I thought that would stimulate them more than anything else I could do. So, I would purposely from time to time make statements that went over the edge.

Henderson & Pearson, *Implementing Federal Environmental Policies: The Limits of Aspirational Commands*, 78 Colum. L. Rev. 1429, 1459 (1978).

¹⁴116 Cong. Rec. 32080 (1970).

¹⁵For a discussion of the distinction between cost-benefit and cost-effectiveness analysis in water pollution control law, see Zener, *The Federal Law of Water Pollution Control*, in *Federal Environmental Law* 682, 696-702 (E. Dolgin & T. Guilbert eds. 1974).

¹⁶Baram, *Cost-Benefit Analysis: An Inadequate Basis for Health, Safety, and Environmental Regulatory Decisionmaking*, 8 Ecology L.Q. 473 (1980).

think of the legislature as involved in principled moral deliberation, and therefore as setting the virtual elimination of pollution as a national goal, is to recognize that Congress does not simply balance interests, but considers public values and aspirations on their merits and on their own terms. By differentiating legislative and administrative activities in this manner, environmentalists connect public values with public policy and make unambiguous the rights and principles upon which pollution control legislation is ultimately based.¹⁷

The sharp dichotomy between moral ends and prudential or expedient means, however, has the unfortunate result of permitting greater and greater distance to develop between legislated goals and the policies promulgated to implement them.¹⁸ As this distance increases and becomes more and more evident—when inadequate implementation plans are approved, deadlines are allowed to slip, violations are left unmonitored, compromising consent decrees are signed, harmful pollutants are not listed, standards are set partly on economic grounds, scientific evidence is scanty and uncertain, and everything is held up indefinitely in litigation—the law itself, for all of its aspirational language, begins to lose touch with reality.¹⁹ Articles appear accurately describing the “deflation,”²⁰ “relaxation,”²¹ and “erosion”²² of the Clean Air Act and “back-door cost-benefit analysis” in safety-first legislation.²³ Critics often contend that pollution control legislation has eroded because it has overdelegated authority to the agencies to make the important regulatory decisions. “The problem with the goals statutes that broadly delegate decision-making authority is that they leave the key value choices to low visibility decisionmakers fearful of making controversial choices.”²⁴

Substantially the same point may be made, however, without embarking on the dark and stormy seas of the overdelegation argument.²⁵ It may be sufficient to say that when the ends of legislation are determined independently of the means of

¹⁷Larry Wade observed that “politics is more than a struggle over the distribution of material values. It is also social process through which symbolic values, representing needs for self-esteem, dignity, and personal rectitude are distributed and validated.” L. Wade, *The Elements of Public Policy* 14 (1972).

¹⁸Early in the 1970s, critics of pollution control legislation argued that the statutes should be more incremental and less revolutionary since, however revolutionary they may be, they can be implemented only incrementally. *See, e.g.*, Schulman, *Nonincremental Policy Making: Notes Toward an Alternative Paradigm*, 69 *Am. Pol. Sci. Rev.* 1354 (1975); *see also* J. Pressman & A. Wildavsky, *Implementation: How Great Expectations in Washington Are Dashed in Oakland* (1973).

¹⁹Consent decrees worked out by EPA and industry reveal this general problem. These decrees typically contain two sections: the “Whereas” section, which refers to statutory requirements and the nature of the alleged violation, and the “Therefore” section, which lists steps which an emitter agrees to take to reduce or control its emissions. Anyone who reads a number of these documents may come away with the impression that the steps described in the second section are so tenuously related to the goals stated in the first that the word “Therefore,” traditional in these decrees, should be routinely changed to “Nevertheless.” These decrees sometimes represent, on a case by case basis, however, the best progress that can be expected at a particular time, given the difficulties of enforcing deadlines, determining compliance, and litigating agency actions.

²⁰Schoenbrod, *Goals Statutes or Rules Statutes: The Case of the Clean Air Act*, 30 *UCLA L. Rev.* 740, 766 (1983).

²¹Currie, *Relaxation of Implementation Plans Under the 1977 Clean Air Act Amendments*, 78 *Mich. L. Rev.* 155 (1979).

²²Walker & Storper, *Erosion of the Clean Air Act of 1970: A Study in the Failure of Government Regulation and Planning*, 7 *Envtl. Aff.* 189 (1978).

²³Barnes, *Back Door Cost-Benefit Analysis Under Safety First Clean Air Act*, 23 *Nat. Resources J.* 827, 828 (1983).

²⁴Schoenbrod, *Goals Statutes or Rules Statutes: The Case of the Clean Air Act*, 30 *UCLA L. Rev.* 740, 753-54 (1983).

²⁵For an indication of the difficulties and perplexities which surround this issue, *see* *Industrial Union, AFL-CIO v. American Petroleum Inst.*, 448 U.S. 607, 10 *Envtl. L. Rep.* 20489 (1980) (commonly known as the *Benzene* case). An especially instructive analysis of this issue is contained in Justice

achieving them, the ends recede from attention, and all interest centers on specific administrative actions. As then-EPA Administrator Costle remarked in 1980, “the system is so cumbersome and problematical that it almost literally forces us to focus on the trees instead of the forest.”²⁶

The tendency of individual regulatory trees to obscure the legislative forest can be illustrated in many ways. Consider, for example, the National Ambient Air Quality Standards (NAAQS) called for by the Clean Air Act.²⁷ The goal of the Clean Air Act is not to promulgate these standards but “to protect the public health and welfare by improving the quality of the nation’s air.”²⁸ When considered in the context of the statute as a whole, as one commentator observed, “it becomes apparent that the NAAQS are not goals, with emissions control programs [the] means of implementing them; instead both the NAAQS and the emissions control programs are instruments for achieving the broader goal of controlling air pollution.”²⁹ In practice, however, the health, safety, and welfare goals of the Clean Air Act tend to get lost amid the byzantine negotiations—involving EPA, the states, corporations, and the courts—over the enforcement of the NAAQS.³⁰ “In this complex and politically explosive negotiating process,” George Eads wrote, “the NAAQS have, in fact, taken on a life of their own and, in doing so, have become very much like goals” of legislation.³¹

It may not be true that the NAAQS have become surrogate statutory goals; the situation may be worse than that. An array of particular decisions, such as whom to penalize for violations caused in part by the interstate transport of pollution, have

Rehnquist’s concurrence. *Industrial Union, AFL-CIO v. American Petroleum Inst.*, 448 U.S. 607, 688, 10 *Env’tl. L. Rep.* 20489, 20510 (1980) (Rehnquist, J., concurring). For analysis of the overdelegation doctrine in the light of *Whitman v. American Trucking Ass’n*, 531 U.S. 457, 121 S. Ct. 903 (2001), see Mark Sagoff, *Price Principle, and the Environment* 118-20 (2004).

²⁶Schoenbrod, *Goals Statutes or Rules Statutes: The Case of the Clean Air Act*, 30 *UCLA L. Rev.* 740, 749 (1983) (quoting EPA Administrator Costle’s remarks on June 23, 1980, at the Meeting of the Air Pollution Control Association in Montreal, Canada).

²⁷42 U.S.C.A. § 7409(b)(1) (primary air quality standards); 42 U.S.C.A. § 7409(b)(2) (secondary standards).

²⁸*American Petroleum Inst. v. Costle*, 665 F.2d 1176, 1179 (1981) (citing 42 U.S.C.A. § 7401(b)), cert. denied, 455 U.S. 1034 (1982).

²⁹Eads, *The Confusion of Goals and Instruments: The Explicit Consideration of Cost in Setting National Ambient Air Quality Standards*, in *To Breathe Freely: Risk, Consent, and Air* 222, 226 (M. Gibson ed. 1985). This view contradicts that stated by Schoenbrod: “The goal is the attainment of the ambient standards.” Schoenbrod, *Goals Statutes or Rules Statutes: The Case of the Clean Air Act*, 30 *UCLA L. Rev.* 740, 785 (1983) (footnote omitted).

The difference between the NAAQS and the goals of the Clean Air Act was clear to the framers of the statute. “The establishment alone of air quality standards,” as the Senate Report noted, “has little effect on air quality. Standards are only the reference point for the analysis of factors contributing to air pollution and the imposition of control strategies and tactics.” S. Rep. No. 1196, 91st Cong., 2d Sess. 11–12 (1970), *reprinted in* 1 Senate Comm. on Pub. Works, *A Legislative History of the Clean Air Amendments of 1970*, 410-11, S. Rep. No. 18, 93d Cong., 2d Sess. 410 (1974). The NAAQS, in other words, were not to function as surrogate goals but as important referents for implementation plans intended to attain the goals of legislation. S. Rep. No. 1196, 91st Cong., 2d Sess. 12 (1970), 1 Senate Comm. on Pub. Works, *A Legislative History of the Clean Air Amendments of 1970*, 411, S. Rep. No. 18, 93d Cong., 2d Sess. 410 (1974).

³⁰Then-EPA administrator Douglas Costle explained:

The air program is probably the most intellectually thin program we’ve got and it is the most overbuilt in terms of the law and the structure and the size . . . That’s a program that really has a church history problem. Every single congressional battle and staff battle is relevant to understanding why you’re at the point you are now.

R. Melnick, *Regulation And the Court: The Case of the Clean Air Act* 24 (1983) (quoting EPA Administrator Costle).

³¹Eads, *The Confusion of Goals and Instruments: The Explicit Consideration of Cost in Setting National Ambient Air Quality Standards*, in *To Breathe Freely: Risk, Consent, and Air* 222, 227 (M. Gibson ed. 1985).

become the central intellectual and regulatory foci presented by the Clean Air Act. Is it good or bad for public health that EPA require Indiana to change its implementation plan so that Pennsylvania can increase its pollution without violating NAAQS? Nobody asks—and no one could answer—this question.³² The connection between regulatory disputes and human health, safety, and welfare has in many instances become hard to trace.

Insofar as students of environmental law emphasize the distinction between moral legislative ends and pragmatic regulatory means for achieving them, they must nevertheless be able to demonstrate a causal connection between administrative decisions and the protection of public safety and health. As regulatory deadlines are missed, draconian penalties not assessed, and pollutants not listed—all in the name of taking costs into account—this connection becomes harder and harder to describe.³³ The question arises whether we might not make more progress toward cleaning up the environment if the goals set by legislation had taken economic and related factors into account in the first instance.³⁴

Precisely because the economic and technological factors which were excluded from the purposes of the Clean Air Act have been so thoroughly accommodated in their implementation, the Act itself, according to Eads, “thus becomes what I would term a ‘policy fiction,’ and arguments, intense though they may be, about changing the structure of the act to reflect these accommodations become arguments, at least in part, over the value of maintaining this policy fiction.”³⁵ Many analysts and commentators who share this view argue that environmental quality could be improved more quickly and at less cost if the laws were more realistic, if the statutes set more attainable goals, or simply prescribed rules of conduct and behavior.³⁶

Certain aspects of some pollution control statutes have attained the status of fictions which may not be useful to maintain. The Clean Water Act, for example,

³²The problems of connecting the NAAQS to safety and health are overwhelming in themselves, given the lack of sound epidemiological evidence and the precarious usefulness of animal studies. *See, e.g.,* Mantel & Schneidernman, Estimating “Safe” Levels, A Hazardous Undertaking, 35 *Cancer Research* 1379 (1978); McGarity, Substantive and Procedural Discretion in Administrative Resolution of Science Policy Questions: Regulating Carcinogens in EPA and OSHA, 67 *Geo. L.J.* 729, 734 (1979); Schneiderman, Mantel & Brown From Mouse to Man—Or How to Get from the Laboratory to Park Avenue and 59th Street, 246 *Annals N.Y. Acad. Sci.* 237, 241 (1975).

³³The problem is not that an administration unsympathetic to environmental goals now administers pollution control statutes. The same difficulties of enforcement plagued pro-environment administrations:

Measures needed to achieve ambient air standards within the statutory time table included cutting gasoline use in the Los Angeles area by over 80%, eliminating 30-40% of the parking in the business areas of Manhattan, and prohibiting the construction of new plants whose emissions would cause or contribute to violations of the ambient air standards, even if the new plants would meet the New Source Performance Standards.

Schoenbrod, Goals Statutes or Rules Statutes: The Case of the Clean Air Act, 30 *UCLA L. Rev.* 740, 762 (1983) (footnotes omitted). The reason the law was not enforced in these and many other respects has, therefore, little to do with the political persuasion of the President.

³⁴*See* § 5:16.

³⁵Eads, The Confusion of Goals and Instruments: The Explicit Consideration of Cost in Setting National Ambient Air Quality Standards, in *To Breathe Freely: Risk, Consent, and Air* 222, 229 (M. Gibson ed. 1985).

³⁶*See* Schoenbrod, Goals Statutes or Rules Statutes: The Case of the Clean Air Act, 30 *UCLA L. Rev.* 740, 759 (1983) (footnotes omitted). “Statutes must be judged not only by the theoretical desirability of the duties they would impose, but also by the costs, feasibility, and fairness of the process for converting statutory language into enforced duties. Stating rules of conduct in the statute itself forces the legislature to make key decisions.” Schoenbrod, Goals Statutes or Rules Statutes: The Case of the Clean Air Act, 30 *UCLA L. Rev.* 740, 743-44 (1983). *See also* B. Ackerman & W. Hassler, Clean Coal/Dirty Air 121 (1981); L. Lave & G. Omenn, Cleaning The Air: Reforming The Clean Air Act (1981); Currie, Relaxation of Implementation Plans Under the 1977 Clean Air Act Amendments, 78 *Mich. L. Rev.* 155 (1979); Henderson & Peterson, Implementing Federal Environmental Policies: The Limits of Aspirational Commands, 78 *Colum. L. Rev.* 1429 (1978); Orloff, Rethinking Environmental Law, *N.Y. Times*, May 10, 1981, at F3, col. 1.

declares “the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985.”³⁷ Similarly, the Marine Protection, Research and Sanctuaries Act (Ocean Dumping Act) of 1972 indicates that Congress hoped all dumping would be minimized or ended by 1977.³⁸ These directives have evaporated into vague aspirations which may attract less respect than scorn to the law.

Conversely, draconian aspirational directives in the law sometimes give administrators the ammunition they need to confront corporate developers and polluters. This kind of “brinksmanship” has worked very well, for example, in the Endangered Species Act,³⁹ particularly in helping agency decisions survive court challenges.⁴⁰ The 1978 Amendments to the Endangered Species Act⁴¹ set up a high-level administrative review process with power to grant exceptions. This structure has served to resolve conflicts of interests through attempts to mitigate the effects of proposed projects.⁴²

Does “brinksmanship” work under the Clean Air Act? The answer, since it involves speculation on what might have otherwise been achieved, is unclear and depends upon the particular interpretation given to events. Generally, critics cite the imposition of emission controls on automobiles as an instance in which brinksmanship has not worked very well.⁴³ On the other hand, the uncompromising goals of the Clean Air Act have allowed the EPA, in refusing to relax the ozone standard any more than it did, to use “the threat of litigation by environmentalist groups to strengthen its position against opposition from within the executive branch.”⁴⁴

Environmentalists may have a very different reason, however, for favoring the idea that minimum health and safety requirements should be determined without consideration of their economic impact. They may point out that Congress wrote legislation this way “because of a moral judgment that efficiency considerations are inappropriate in some areas of regulation.”⁴⁵ An innocent man is not to be hanged for crimes he did not commit, after all, even if this would serve the public interest by deterring other crimes. Similarly, individuals are not to be condemned to die because the overall benefits of polluting activities exceed the costs. Moreover, environmentalists may hold to this position because they fear what might become of pollution control legislation if minimal health and safety requirements were explicitly made to be sensitive to costs. It is simple enough to write laws that

³⁷33 U.S.C.A. § 1251(a)(1) (1982).

³⁸The Act states that “[t]he Secretary of Commerce shall conduct . . . research, investigations, surveys, and studies for the purpose of determining means of minimizing or ending all dumping of materials within five years of the effective date of this Act.” Marine Protection, Research, and Sanctuaries Act of 1972, Pub. L. No. 92-532, § 203, 86 Stat. 1061. Congress extended the deadline to “as soon as possible after October 6, 1980.” 33 U.S.C.A. § 1443 (1982).

³⁹16 U.S.C.A. § 1536 (1982).

⁴⁰The directive of the Act is so clear that between 1973 and 1978 only four cases were litigated under it. *See Tennessee Valley Authority v. Hill*, 437 U.S. 153, 8 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20513 (1978); *Cappaert v. United States*, 426 U.S. 128, 6 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20540 (1976); *Sierra Club v. Froehlke*, 534 F.2d 1289, 6 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20448 (8th Cir. 1976); *National Wildlife Fed’n v. Coleman*, 529 F.2d 359, 6 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20344 (5th Cir. 1976), cert. denied, 429 U.S. 979 (1976).

⁴¹Endangered Species Act Amendments of 1978, Pub. L. No. 95-632, 92 Stat. 3751 (codified as amended at 16 U.S.C.A. §§ 1532 to 1541 (1982)).

⁴²For a discussion of the activities of the Endangered Species Committee, *see Liner*, *The Endangered Species Act Amendments of 1978: Congress Responds to Tennessee Valley Authority v. Hill*, 25 *Wayne L. Rev.* 1327, 1339 (1979).

⁴³*See, e.g.*, R. Goodson, *Federal Regulation of Motor Vehicles: A Summary and Analysis* (1977); L. White, *The Regulation of Air Pollution Emissions From Motor Vehicles* (1982).

⁴⁴R. Melnick, *Regulation and the Courts: The Case of the Clean Air Act* 293 (1983).

⁴⁵Rodgers, *Benefits, Costs, and Risks: Oversight of Health and Environmental Decisionmaking*, 4 *Harv. Envtl. L. Rev.* 191, 202 (1980).

instruct agencies to set “technologically feasible and economically practicable” goals and targets.⁴⁶ Yet agencies and even the courts are likely to interpret this vague language, *faute de mieux*, as mandating or permitting a cost-benefit test.⁴⁷

How can economic and other realities be taken into account in setting the goals of environmental law without thereby changing those goals from ethical into economic ones? The problem is that if legislated goals are to take costs into account—whether this “balancing” is performed by Congress or delegated to the agencies—the importance of the goal must somehow be compared to the costs involved in achieving it. How else may this comparison be made but in economic terms? The goal—human safety and health—may then be measured in terms of “benefits, such as risk reductions for which individuals are willing to pay. This amount will then be compared to the societal costs of controlling pollution.”⁴⁸ As a result, however, sight of the moral purposes of public law may be lost and allocatory efficiency may instead be legislated—a microeconomic concern which has no discernible ethical meaning or normative basis.

The problem may be put another way: Public law, arrived at through an open, deliberative political process, at least in theory represents the beliefs, aspirations, or will of the community, and not necessarily the wants and preferences of the sort individuals reveal and attempt to satisfy in markets.⁴⁹ Environmental law, in particular, may express what one court described as “the public conscience.”⁵⁰ To approach moral principles and public convictions as if these were “benefits” for which individuals are willing to pay is not comprehensible in this scheme; it is like thinking of the square root of two in terms of its color. The problem is not that attempts to “price” moral, aesthetic, and other principles as benefits may “dwarf soft variables,”⁵¹ but that such attempts commit a category mistake.⁵² Accordingly, environmentalists and others concerned with environmental policy are not necessarily opposed in principle to taking costs into account in determining the goals of environmental law. They tend to reject, however, the presumption that it is not the environment or public safety and health we care about, but allocatory efficiency or the maximization of benefits over costs. By making legislation cost-oblivious, what we do care about is kept in sight. To consider costs in setting pollution-control objectives, while not necessarily wrong in itself, is frightening because it allows the nose of the camel under the tent.

⁴⁶See, e.g., 42 U.S.C.A. § 6344(b)(2) (1982) (Energy Policy and Conservation).

⁴⁷This also happened with respect to the Energy Policy and Conservation Act. See Rodgers, Benefits, Costs, and Risks: Oversight of Health and Environmental Decisionmaking, 4 Harv. Envtl. L. Rev. 191, 208 (1980). Rogers notes that courts generally have held that cost-sensitive statutes do not require formal cost-benefit analysis. “But vague statutory criteria for consideration of costs have yielded notable differences of interpretation of identical statutory clauses.” Rodgers, Benefits, Costs, and Risks: Oversight of Health and Environmental Decisionmaking, 4 Harv. Envtl. L. Rev. 191, 209 (1980) (footnotes omitted).

⁴⁸The original ethical purposes of the statute might reappear as “citizen preferences” or “soft variables” to be assigned a “shadow price.” For criticism of this inventive method of treating moral and political concerns as data for economic science, see Kennedy, Cost-Benefit Analysis of Entitlement Problems: A Critique, 33 Stan. L. Rev. 387 (1981).

⁴⁹For a good study of the relationship between private preferences and public values in American political life, see A. Hirschman, *Shifting Involvements: Private Interest and Public Action* (1982).

⁵⁰Hill v. Tennessee Valley Authority, 549 F.2d 1064, 1074, 7 Envtl. L. Rep. (Envtl. L. Inst.) 20172, 20176 (6th Cir. 1977), *aff’d sub nom.* Tennessee Valley Auth. v. Hill, 437 U.S. 153, 8 Envtl. L. Rep. (Envtl. L. Inst.) 20513 (1978).

⁵¹Tribe, Technology Assessment and the Fourth Discontinuity: The Limits of Instrumental Rationality, 46 Calif. L. Rev. 617, 630-31 (1973).

⁵²One commits a mistake of this sort when one treats facts or concepts which belong to one logical type of category as though they belonged to another. For a technical explanation of this kind of error, see Ryle, Categories, in *Essays on Logic and Language* 65 (A. Flew ed. 1953). For a less technical account, see G. Ryle, *The Concept of Mind* 16-18 (1966).

In order to properly take costs into account in determining long-term regulatory goals, it is necessary to employ a different conceptual framework than that which academic theories of welfare economics can provide. Moral problems must be deliberated in moral terms. The next section of this chapter offers a conceptual framework drawn from ethical theory in which it is appropriate to consider means—including costs—in determining the ends of legislation. What we seek to discover, on the approach proposed here, is the line that distinguishes between policies which duty requires of us in controlling pollution and policies which can reasonably be construed as supererogatory.

The next section concludes by arguing that there are strong ethical reasons for revising the Clean Air Act and other pollution control laws to make their goals less draconian, and therefore more achievable, or at least so that they at once contemplate environmental goals together with the means necessary and available to achieve them. Three reasons will be offered. First, all moral deliberation which rises above the level of mere incantation does consider and appraise ends in relation to the means by which they can be implemented. Second, if the goals set by current pollution control statutes are supererogatory, as they sometimes appear to be, it is morally permissible to relax them. Third, by continuing the “policy fiction” of a pollution free environment as our ultimate goal, the utopian environment to which we aspire may become the enemy of the good environment we can achieve in fact.

§ 5:25 Supererogation in pollution control law

Cleaning up America—like building the transcontinental railway and going to the moon—is a national effort. It is a project which involves citizens as citizens, not simply as individuals. The environment concerns us collectively, and in protecting it, we protect part of our history, part of our identity, and part of our idea of ourselves as a nation. The national ideal in public policy, as the late Sam Beer has written, is a doctrine of nation-building. “Its imperative is to use the power of the nation as a whole not only to promote social improvement and individual excellence, but also to make the nation more solidary, more cohesive, more interdependent in its growing diversity; in short, to make the nation more of a nation.”¹

There is an important difference between pollution control and other “nation-building” activities, such as the space program. People had a general idea of what would be necessary to beat the Russians to the moon. The costs were reasonable, the technology available, the political forces in place. When the nation declared a “war against pollution” in the 1960s, however, no one knew exactly what would be required to win. It was a moral crusade in which partisans were not always aware of the political, technological, and economic forces arranged against them.

A review of the battles fought over pollution during the past twenty years evidences how attempts to achieve set goals have been deeply affected, although sometimes unintentionally, by an appraisal of the means necessary to achieve them. Thirty years ago, this appraisal was hard to make, since no one really knew what economic, technological, and political opportunities and obstacles to expect. The mood then was to experiment with innovative methods and to see how far the environmental “revolution” would extend.² Many economic, technological, and political constraints have by now become apparent. Is there a method—within the bound-

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¹See Beer, *Liberalism and the National Idea*, 5 Pub. Int. 70 (1966).

²Speaking of his motives in 1970, Senator Muskie said:

We had a choice: we could continue, and try to improve, past initiatives or we could change course and experiment with innovative methods which might achieve results at a more rapid pace.

We had succeeded only 19 days before Earth Day in 1970 in obtaining enactment of major Federal oil pollution legislation. But that bill was lost in the fervor of environmental activism.

aries of ethical deliberation—in which these constraints may be taken into account in revising the goals of pollution control legislation?

There is some reason to believe that we must take these constraints into account, insofar as we are cognizant of them, if we are to engage in ethical deliberation. Deliberation is, after all, the appraisal of ends in relationship to the means we are likely to use to achieve them and which, therefore, will lead to the outcomes we actually produce. To will the end, we must also will the means, and therefore some effort to assess ends in relation to the means required should be made. “There can be no control of the operation of foreseeing consequences (and hence of forming ends-in-view) save in terms of the conditions that operate as the causal conditions of their attainment.”³ Moreover, the problem with values conceived of as intrinsically right or good is that, like all other interests and desires, they are subject to failure and defeat. Saying “we shall not lose” will not alter the fact that we may very well lose; in fact, we often do lose in the battle to abate pollution.

The difference between reasonable and unreasonable purposes and goals, as Dewey recognized, is precisely the difference between those which are formed without “consideration of the conditions that will actually decide the outcome and those which are formed on the basis of existing liabilities and potential resources.”⁴ Our efforts to achieve a cleaner, safer, more beautiful environment are constrained, of course, by economic costs; “ought” implies “can.” What we “can” do—or what we are willing to do—tests the importance of the ethical duty or principle at stake. How important, morally speaking, are duties and principles involved in controlling pollution? How far do we have to go in controlling pollution to remain consistent with those duties and principles?

The relationship proposed here between the ethical and the economic is familiar in the decisions we make both as individuals and as a society. How much shall we give to charity, for example, to relieve hunger in Africa? Economic factors are important. We need to know how much we can afford; one may be expected to give only “until it hurts.” We might try to assess our “fair share” given the ability of others also to help. And it is useful to know which organizations direct contributions most effectively in providing famine relief. Someone may argue, however, that since charity is a virtue, we have a duty to give all we have to those less fortunate than ourselves. Such an argument would be preposterous: There are some duties which are absolute, such as the duty not to murder or enslave others. We must respect the duty not to murder even if, as a result, we forego a great benefit. Yet we are not required to observe the duty of charity to the point of self-impoverishment.

The distinction in ethical theory involved here is traditionally drawn between “perfect” and “imperfect” duties.⁵ A perfect duty, such as the duty not to take an innocent life, does not admit of exceptions in order to accommodate wants, interests,

The Clean Air Act was a second attempt at this approach . . .

The result was dramatic and rewarding. In history there have been few laws as important and far reaching as these. The real reward was in being able to fulfill the mandate imposed to an issue in the public interest and arrive at a result which was considerably more than an accommodation to the accumulated special interests.

Ingram, *The Political Rationality of Innovation: The Clean Air Act Amendments of 1970*, in *Approaches to Controlling Air Pollution* 12, 32 (A. Friedlander ed. 1978).

³J. Dewey, *Theory of Valuation* 23, 25 (1939).

⁴J. Dewey, *Theory of Valuation* 23, 29 (1939). Dewey’s point is that learning from experience is a principal aspect of rationality. Moral reasoning, like other forms of reasoning, is experimental. Experiments with controlling pollution have made us aware of many facts: examples of these include the realization that “safe” thresholds for many pollutants do not exist; that scientific uncertainty surrounds most attempts at risk-assessment; that draconian measures are often unenforceable; and that in reducing some risks, other risks increase. Lessons such as these may—Dewey would say “must”—enter ethical deliberation over the ends of pollution control law.

⁵The distinction was formulated by Kant but probably had its origins in Medieval philosophy. The crucial distinction, as Kant formulated it, is that “[e]thical duties are of wide obligation, whereas

or inclinations. An imperfect duty, such as the duty to rescue a drowning stranger, may be overridden by conditions or constraints, for example, one's own ability or inability to swim. Kant correctly pointed out that imperfect duties, such as acts of benevolence, are duties of virtue, rather than duties of moral obligation or requirement. Actions in accordance with these duties are meritorious; actions not in accord with them are not necessarily wrong but may only lack moral worth.⁶

At this juncture it is appropriate to question whether the principles of pollution control law discussed in the first part of this chapter impose perfect or imperfect obligations. Plainly, polluters have a perfect obligation not to kill people; we are horrified to hear reports that a corporation willfully or even negligently vented toxic substances which killed identifiable individuals. The government, equally plainly, has an obligation to prohibit this sort of serious incident. We have seen, for example, that when deaths due to vinyl chloride were discovered, EPA moved swiftly to reduce exposure to that pollution.⁷ Where definite deaths can be attributed to particular exposures, society must honor the right of innocent individuals not to be killed.

With respect to background hazards and attenuated risks, however, the analysis is different. No one has a right to a completely risk-free environment or to be protected from *de minimis* hazards even when they are anthropogenically caused. The highways, for example, can hardly be perfectly safe, and while each of us has a perfect obligation not to drive recklessly we are not bound to drive at ten miles per hour, even if that would reduce traffic fatalities by many thousands. There is a point at which a duty of obligation shades into a duty of virtue; at that point, safety becomes more a matter of virtue than an ethical requirement.

A perfectly unpolluted environment is meritorious from a moral point of view, and a society acts virtuously in attempting to eliminate pollution, just as it acts virtuously in attempting to eliminate poverty. Yet a society which stops short of committing enormous resources to efforts of this kind does not necessarily violate moral obligations. Rather, such a society simply fails to rescue citizens who, because of a variety of synergistic causes—some of which involve industrial pollution—die before their time. A society that makes it a principle to fail in this way—a society, for example, that adopts an economic rather than a moral basis for policymaking—need not be violating a perfect duty. Its policy, however, has no moral worth.

Conversely, if a society sets out to rescue everyone, then its policy is morally praiseworthy, but as costs mount it goes further and further beyond the demand of duty. One might argue that we should not expect actions from the government which are far more noble and praiseworthy than we might expect of ourselves as individuals. The problem of taking costs into account in setting goals and standards for pollution, then, may be conceived as the problem of determining what we must

juridical duties are of narrow obligation." The latter, being narrow or rigorous (as, for example, the maxim "thou shall not kill") is "perfect" because it "allows no exception in the interest of inclination." The former kind of duty admits of exceptions (as, for example, the duty to rescue is excused when one is an insecure swimmer) and is therefore "imperfect." Kant suggests the relation between this distinction and the concept of supererogation. "Imperfect duties, accordingly, are only duties of virtue. To fulfill them is merit (= + a); but to transgress them is not so much guilt (= - a) as rather mere lack of moral worth (= 0), unless the agent makes it a principle not to submit to these duties." I. Kant, *The Metaphysic of Morals* 49 (M. Gregor trans. 1979).

⁶I. Kant, *The Metaphysic of Morals* 49 (M. Gregor trans. 1979). For further discussion, see Chisholm, *The Ethics of Requirement*, 1 *Am. Phil. Q.* 147 (1964).

⁷EPA set a 10 ppm limit on vinyl chloride emissions; at these levels, the risks are arguably *de minimis*. 40 Fed. Reg. 59432, 59535–36 (1975). Since no safe threshold for vinyl chloride has been determined, however, the 10 ppm standard would appear to violate the "margin of safety" requirement of the law. Under pressure from an Environmental Defense Fund suit, EPA proposed to make the standard increasingly more stringent. 42 Fed. Reg. 28154 (1977). Under pressure from industry, however, it reinstated the 10 ppm standard. See 40 C.F.R. § 61.63 (1985).

do as a matter of duty and what, though it exceeds the call of duty, we may do as a matter of honor or virtue. Acting for moral reasons beyond the strictures of duty is usually described as supererogation.⁸ The degree to which we engage in this kind of activity—for example, donations to charity—depends to a large extent on our circumstances. It may depend on what we can afford to do, the means at our disposal, and how we plan to distribute the costs.

In setting goals and standards in pollution control law, it should be recognized that ending pollution entirely may be so far beyond our means and abilities at this point that it lies well beyond the call of duty. This means that controlling pollution is ethically a good thing—just as rescuing a drowning person is a good thing—but the circumstances may render this action supererogatory. Of course, this does not permit levels of pollution the risks of which we know to be severe and which, as a consequence of exposure, will result in the death of innocent persons. Yet where thresholds are uncertain, risks conjectural, and epidemiological evidence absent, we arguably do not have a perfect duty to prevent deaths. Nonetheless, we are obliged to consider which policies are to be implemented because of their moral worth and which policies we can postpone as supererogatory, given the costs of achieving them.

That progress toward stated goals must be deliberate, but that it need not succeed all at once, is evident in court decisions which recognize that economic “feasibility” is a legitimate factor to be considered in protecting safety and health,⁹ that the law does not protect against insignificant risks,¹⁰ and that EPA need not insist upon every possible reduction if it determines such insistence is counterproductive.¹¹ The fundamental idea is to make progress in view of the circumstances, not to insist uncritically upon perfection.

VI. PROTECTING THE NATURAL WORLD

§ 5:26 In general

Environmental regulation traditionally has sought to protect human beings from the environment—from pollutants and other hazards—rather than to protect the environment from human beings.¹ Since at least the time of John Muir and the founding of the Sierra Club, however, preservationists have challenged the idea that environmental policy should permit all those changes that tame, domesticate, and transform nature for human purposes while minimizing or reducing just those changes in the environment that negatively affect human beings. Historically, the more vigorously Americans have transformed for economic reasons what they considered a natural wilderness, the more vehemently they have called on spiritual

⁸Surprisingly, there is only a relatively small amount of literature on this crucial ethical concept. See, e.g., D. Heyd, *Supererogation* (1982).

⁹See § 5:5.

¹⁰*Industrial Union, AFL-CIO v. American Petroleum Inst.*, 448 U.S. 607, 10 *Envtl. L. Rep.* 20489 (1980).

¹¹*Natural Resources Defense Council v. Gorsuch*, 467 U.S. 837, 14 *Envtl. L. Rep.* 20507 (*Envtl. L. Inst.*) (1984).

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¹A. Dan Tarlock, *Is There a There There in Environmental Law?*, 19 *J. Land Use & Envtl. L.* 213 (2004). Tarlock explains, “Environmental law, as now defined, is primarily a synthesis of pre-environmental era common law rules, [footnote omitted] principles from other areas of law, and post-environmental era statutes which are lightly influenced by the application of concepts derived from ecology and other areas of science, economics, and ethics.” A. Dan Tarlock, *Is There a There There in Environmental Law?*, 19 *J. Land Use & Envtl. L.* 222 (2004).

and ethical grounds for its preservation.² Muir recognized, for example, that damming the beautiful Hetch Hetchy valley made economic sense because there was no other way to supply San Francisco with water. He railed against the project nevertheless for spiritual reasons. “Dam Hetch Hetchy! As well dam for water-tanks the people’s cathedrals and churches, for no holier temple has ever been consecrated by the heart of man.”³

In response to a preservationist ethic, a host of federal laws enacted before the 1970s sought to protect wildlife, scenic areas, antiquities, and wilderness areas to maintain their intrinsic properties rather than primarily to promote human health, safety, or welfare. Even before Earth Day 1970, resource and wildlife law enacted before 1970 provided a great deal of protection to the natural environment.⁴ It is easy as a general matter to defend statutes of this sort by invoking the “the integrity, stability, and beauty of the biotic community,” to quote Aldo Leopold’s famous dictum.⁵ It is much more difficult, however, to explain what concepts such as these mean and to defend them against those who argue in favor of developing natural areas for the sake of the many economic interests to which they may be put.

The importance of maintaining land in its “natural” state was not apparent to the 120 Pilgrims who came to Plymouth in 1620, about half of whom died in their first winter of cold, starvation, and disease.⁶ Ever since then, Americans have found that survival—not just prosperity—required them to dam rivers, plough fields, build highways, plant cities and suburbs, alter genomes, and otherwise tame and domesticate the natural world. What is more, the concept of ecological preservation has proven elusive, since landscapes continually change; indeed change “is the normal course of events for most ecological systems.”⁷ How do we justify the preservation of natural areas, endangered species, and ecological communities as a matter of public policy? Plainly, economic arguments do not favor every and any change to nature, but can one find economic grounds or reasons to preserve—or restore—what may be considered “natural,” “pristine,” or “intact” biological systems? Indeed, can these terms even be defined?

§ 5:27 Ecological regulatory endpoints

In 1990, the Science Advisory Board of the Environmental Protection Agency

²According to Perry Miller, the United States, even as it developed economically “could derive its inspiration from the mountains, the lakes, the forests. There was nothing mean or niggling about these, nothing utilitarian. Thus, superficial appearances to the contrary, America is not crass, materialistic: it is Nature’s nation, possessing a heart that watches and receives.” Perry Miller, *Nature’s Nation* 201 (Cambridge: Harvard UP, 1967).

³John Muir, “Hetch-Hetchy Valley,” *Sierra Club Bulletin*, Jan. 1908, at 220.

⁴For example, the Antiquities Act of 1906, the Migratory Bird Treaty Act of 1918, the National Park Service Organic Act of 1916, the Historic Sites, Buildings and Antiquities Act of 1935, the Bald and Golden Eagle Protection Act of 1940, the Refuge Protection Act of 1962, the Land and Water Conservation Act of 1964, the National Wildlife Refuge Administration Act of 1966, the National Historic Preservation Act of 1966, the Wilderness Act of 1964, and the National Wild and Scenic Rivers Act of 1968. For a discussion of these early statutes, see George C. Coggins and Robert L. Glicksman, *Public Natural Resources Law* Ch. 2.

⁵Aldo Leopold, *A Sand County Almanac with Sketches Here and There* 224-25 (New York: Oxford University Press 1949).

⁶See Benjamin W. Labaree, *Colonial Massachusetts: A History* 34 (1979).

⁷The Report of the Ecological Society of America Committee on the Scientific Basis for Ecosystem Management (1995), at <http://www.sdsc.edu/ESA/ecmtext.htm> (visited Nov. 14, 1996) (citing Joseph H. Connell & Wayne P. Sousa, On the Evidence Needed To Judge Ecological Stability or Persistence, 121 *Am. Naturalist* 789 (1983)). See also William Cronon, *Changes in the Land* (1991) (describing the ecological transformation of New England) and Joseph L. Sax, *Ecosystems and Property Rights in the Greater Yellowstone: The Legal System in Transition*, in *The Greater Yellowstone Ecosystem: Redefining America’s Wilderness Heritage* 77 (Robert B. Keiter & Mark S. Boyce eds. 1991) (providing Western examples).

(EPA) stated, “The value of natural ecosystems is not limited to their immediate utility to humans. They have an intrinsic, moral value that must be measured in its own terms and protected for its own sake.” The Board added with some regret that EPA over its then 20-year history “has considered the protection of public health to be its primary mission, and it has been less concerned about risks posed to ecosystems.”¹ What are “risks posed to ecosystems”? Does EPA or any regulatory agency have an obligation to protect ecosystems from harm or risks? Does its obligation begin and end with the well-being or aggregate utility of human beings?

In its early years, EPA directly confronted the question whether its mission was to safeguard human health, particularly from carcinogenic chemicals, or also to protect from harm the natural world, including fish and birds with no known economic utility. This question arose in the early 1970s with the regulation of pesticides.² Environmentalists in the preservationist tradition argued that EPA had a mission to protect not only human beings but also wildlife and more generally the natural world. In response, William Ruckelshaus, founding administrator of EPA, in 1972 banned DDT and its derivatives aldrin and dieldrin. In the initial announcement, Ruckelshaus emphasized the adverse effects of these pesticides on fish, birds, and other wildlife; he barely referred to the risks that DDT and derivatives posed to human safety and health.³

One can understand why in the early 1970s EPA Administrator Ruckelshaus initially appealed to harms to nature rather than to human health as grounds to ban DDT and related pesticides. The study by Rachel Carson on the effects of insecticides on western grebes had shocked the national conscience.⁴ Critics argued that DDT, whatever its effects on birds, was safe for human beings—safer, anyway, than the insecticides likely to replace it.⁵ The carcinogenic effect of DDT on human beings was widely questioned.⁶

An Appeals Court in reviewing the DDT ban rebuked Ruckelshaus for giving only a cursory mention to the effects of the pesticide on human health and urged the agency to emphasize health risks, stating that “candor compels us to say that when the matter involved is as sensitive and fright-laden as cancer, even a court scrupulous to the point of punctilio in deference to administrative latitude is beset with concern when the cross-reference [to carcinogenicity] is so abbreviated.”⁷ In response, EPA embarked on a course of regulating pesticides in terms of their health effects, primarily carcinogenicity, and of avoiding ecological arguments. In its final and successful DDT brief, EPA listed nine principles by which it tested for carcinogenicity in pesticides. It then relied on these principles—not on ecological considerations—as well in cases against heptachlor, chlordane, and several other chemicals. Environmental historian Edmund Russell has written, “Ironically, pesticide cases that entered the legal process to prevent damage to birds emerged as efforts to protect humans from cancer, reducing EPA’s emphasis on ecological

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¹U.S. EPA SAB (U.S. Environmental Protection Agency Science Advisory Board), *Reducing Risk: Setting Priorities and Strategies for Environmental Protection*, SAB-EC-90-021 (1990), quotation at p. 9, available at [http://yosemite.epa.gov/sab/sabproduct.nsf/28704D9C420FCBC1852573360053C692/\\$File/REDUCING+RISK+++++EC-90-021_90021_5-11-1995_204.pdf](http://yosemite.epa.gov/sab/sabproduct.nsf/28704D9C420FCBC1852573360053C692/$File/REDUCING+RISK+++++EC-90-021_90021_5-11-1995_204.pdf).

²Quarles, *Cleaning Up America: An Insider’s View of the Environmental Protection Agency*.

³Russell, “Lost Among the Parts per Billion: Ecological Protection at the United States Environmental Protection Agency, 1970–1993,” *Environmental History* 2 (Jan.): 29–51.

⁴Cason, *Silent Spring* (1962).

⁵Dunlap, *DDT: Scientists, Citizens, and Public Policy*, p. 223 (1981).

⁶Schmeck, “Study Finds No Link Between Cancer Risk and DDT Exposure,” *New York Times*, Section C, p. 3, col. 1; *Science Desk* (Feb. 14, 1989).

⁷*Environmental Defense Fund v. EPA*, 465 F.2d 528, 538 (D.C. Cir. 1972).

protection.” According to Russell, “Ecological damage and carcinogenicity were both matters of dispute within the scientific community. In the legal community, it had become clear that judges feared human cancer more than dead birds.”⁸

President Ronald Reagan, who has been associated with the statement that trees cause smog, campaigned in part against those whom he called “environmental extremists” who favored “rabbits holes” and “birds nests” over jobs and economic growth.⁹ Anne Gorsuch, Reagan’s appointee to administer EPA, eliminated any program that might concern harm to nature itself rather than to human health or welfare. When Ruckelshaus returned in 1983 as EPA administrator, he continued its human health-and-welfare mission but invited discussion of the “impact of all this chemical loading over the years on the ecological systems in which human culture is embedded.” Ruckelshaus lamented that EPA had not addressed ecological impacts. “Indeed, it is odd how little time is spent at the upper levels of EPA thinking about such things and how much time is spent worrying about tiny increases in the risk of a single human disease [cancer].”¹⁰

Lee Thomas, who succeeded Ruckelshaus, made ecological protection an agency priority. First, he permitted his pesticide offices, under the leadership of Jack Moore and Steve Schatzow, to ban two chemicals, carbofuran and diazinon, on the basis of their effects on wildlife, a case EPA eventually won against the manufacturer, Ciba-Geigy, thus creating a precedent in pesticide litigation for defending nature—not just human health—against harm. The agency still had to traverse a great legal, political, and conceptual distance, however, to move from (1) the protection of particular populations of economic or iconic organisms (*e.g.*, oysters) from contaminants (*e.g.*, the use of tributyltin as an antifoulant on boats) to (2) the protection of ecosystem properties, such as diversity and resilience, from major economic projects, such as power plants and dams.

Second, Thomas convened seventy-five EPA professionals to opine on the goals of the agency. The group issued a report, *Unfinished Business*, that included ecology among the agency’s principal concerns.¹¹ Third, Thomas strengthened a program Ruckelshaus had begun at the Office of Research and Development (ORD) to fund efforts (initiated in 1981 by Glenn W. Suter and Lawrence W. Barnhouse at Oak Ridge National Laboratory) to develop methods of ecological risk assessment. During the 1980s and 1990s, the conceptual framework of risk assessment, first developed as a quantitative science for measuring carcinogenicity and other health effects (as in the “Red Book” prepared by the National Research Council in 1983).¹² was extended in a more qualitative form to ecological concerns, such as declines of populations of fish. Ecological risk assessment promised a way of “estimating the probability or likelihood of undesirable events such as injury, death, or decrease in the mass or productivity of game fish, wildlife, etc.”¹³

According to science historian Stephen Bocking, “For agencies like the EPA, it [ecological risk assessment] promised a means of wrapping its decisions in the clothing of science; as a product of objective science, these decisions were less likely to be

⁸Russell, “Lost Among the Parts per Billion,” p. 37.

⁹Quoted in Kenski, “The President, Congress, and Interest Groups: Environmental Policy in the 97th Congress,” *Public Policy and the Natural Environment*, p. 78 (1985).

¹⁰Ruckelshaus, “Risk, Science, and Democracy,” *Issues in Science and Technology* 1 (1985): 19–38, quotation at pp. 37–38.

¹¹U.S. EPA, “Unfinished Business: A Comparative Assessment of Environmental Problems” (1987).

¹²National Research Council, “Risk assessment in the Federal Government: Managing the Process” (1983).

¹³U.S. EPA, “Hazard Evaluation Division Standard Evaluation Procedure: Ecological Risk Assessment,” EPA-540/9-85-ool, at 1 (1986).

overruled as arbitrary and capricious.”¹⁴ The agency also looked to scientific committees for an objective process to guide political choices among competing uses of the environment. How can one move from the “is” of science to the “ought” of policy? Bocking warned that “developing a strictly scientific basis for action will be insufficient, even counterproductive.”¹⁵

Throughout the 1980s and 1990s, a collaboration between EPA research laboratories, the Oak Ridge National Laboratory of the Department of Energy, and the Risk Assessment Forum comprising agency scientists and academic researchers produced a series of studies to establish the methodology of ecological risk assessment (ERA), including among many related documents a “Framework”¹⁶ and “Guidelines.”¹⁷ In 2003, EPA published its guidance for “deciding which aspects of the environment will be selected for evaluation.” The agency included in its potential “set of generic ecological assessment endpoints” many properties deemed to have value at various scales—for example, at the level of the organism (*e.g.*, “courtship behavior”), the population (*e.g.*, “genetic diversity”), the community (*e.g.*, “trophic structure” “resilience”), and the landscape (*e.g.*, “contiguity or fragmentation”). The guidance document pointed out that environmental laws provided little direction or authority for determining regulatory endpoints. The document states, “Although nearly all environmental statutes refer to the environment as an entity to be protected, and many refer to more specific ecological entities such as fish, wildlife, and estuaries, few indicate an attribute to be protected or even the nature of the entity.”¹⁸ In 2006, EPA issued an “Ecological Benefits Strategic Assessment Plan” in what now seems to be a never-ending search for conceptual and normative ballast to steady ecological risk assessment.¹⁹

A 2006 workshop on ERA supported the warning that biological science will not suffice to determine what qualities of the natural environment are valuable and which should serve as endpoints for assessment and regulation.²⁰ Biologists lamented that they did not know—and did not have authority to determine—which risks to assess. EPA defines an “assessment endpoint” as “an explicit expression of the environmental value to be protected, operationally defined as an ecological entity and its attributes.”²¹ Who can say with authority which ecological entity is to be protected and why? Problems arise because of “the diversity of ecological entities and attributes that might be at risk,” the “remarkable diversity of species, ecological communities, and ecological functions from which to choose and because of statutory ambiguity regarding what is to be protected.”²²

At the 2006 workshop on ERA, participants conceded that assessments, even when carefully done, have had little effect on policy outcomes. Suter has written,

¹⁴Bocking, *Nature’s Experts: Science, Politics, and the Environment* (2004), quotation at p. 141.

¹⁵Bocking, *Nature’s Experts: Science, Politics, and the Environment*, 128 (2004).

¹⁶U.S. EPA, “Framework for Ecological Risk Assessment,” EPA/630/R-92/001 (1992).

¹⁷U.S. EPA, “Guidelines for Ecological Risk Assessment,” EPA/630/R-95/002F (1998). For a contemporary account of these events, see Bocking, *Ecologists and Environmental Politics: A History of Contemporary Ecology* (1997), especially Ch. 5.

¹⁸U.S. EPA, “Generic Ecological Assessment Endpoints (GEAEs) for Ecological Risk Assessment,” EPA/630/P-02/004B, p. 28 (2003).

¹⁹U.S. EPA “Ecological Benefits Assessment: Strategic Plan,” EPA-240-R-06-001 (2006).

²⁰See Biddinger, Newman, et al., “Enhancing the Ecological Risk Assessment Process,” *Integr. Environ. Assess. Man.* 4:306–313 (2008).

²¹U.S. EPA, “Generic Ecological Assessment Endpoints (GEAEs) for Ecological Risk Assessment,” EPA/630/P-02/004B, p. 1 (2003), citing U.S. EPA, “Guidelines for Ecological Risk Assessment,” EPA/630/R-95/002F (1998).

²²U.S. EPA, “Generic Ecological Assessment Endpoints (GEAEs) for Ecological Risk Assessment,” EPA/630/P-02/004B, p. v (2003). See also Suter, “Ecological Risk Assessment in the USEPA: A Historical Overview” *Integr. Environ. Assess. Man.* 4, pp. 285–89 (2008).

“The most important critique of ERA is its relative lack of influence in USEPA decision making.”²³ They noted that “human health risks dominate rule making, remedial actions, and other regulatory decisions.” They editorialized, “Although we are doing good risk assessments using a consistent framework, we have relatively little influence. Even when the effects are large, involve charismatic species, and are clearly related to the contaminants by extensive data and high quality models, decision makers often ignore ecological risk.”²⁴ They concluded that “the future success of ERA will depend more on making it more compelling to decision makers than on making it more technically sophisticated.”²⁵

In their superb study, *Water War in the Klamath Basin: Macho Law, Combat Biology, and Dirty Politics* (2008), Holly Doremus and Dan Tarlock meticulously show how in a dispute that has continued since the early 1990s, political, ideological, and economic forces (as the title of the books suggests) dominate ecological assessment. Interestingly these authors (p. 204) suggest that adaptive ecosystem management emerged as a hoped-for alternative to ecological risk assessment because it had failed to influence policy decisions. The question remains whether ecological risk assessment has failed to influence policy decisions because: (1) the science is inadequate, politicized, and conceptually confused; or (2) the science is good and available but is ignored except when it may be mobilized for a political or partisan purpose.

§ 5:28 Four obstacles to implementing a land ethic

In the United States, those who seek to protect the “the integrity, stability, and beauty of the biotic community” have confronted at least four obstacles to translating this “land ethic” into a legal and moral basis for regulation. First, Under Article III of the Constitution, as construed by the Supreme Court, no citizen has standing—the legal ability—to sue on behalf of the environment or to rectify harm to the environment per se. “The relevant showing for purposes of Article III standing . . . is not injury to the environment but injury to the plaintiff.”¹ Insofar as environmental law is construed as an extension of the common law of nuisance, it protects individuals—and the environment only indirectly—from injury. One commentator notes: “Under this formulation, the environment is relegated to a subordinate role within environmental jurisprudence. . . . The Court’s elevation of the plaintiff at the expense of the environment effectively turns the citizen suit provision into an extension of nuisance law.”²

Unlike the right to due process, the separation of church and state, or freedom of speech, environmental protection has no constitutional basis but must tag along under a broad reading of the Commerce Clause.³ An attempt during the 1970s by legal theorists and philosophers to provide an alternative framework that endows natural objects with legal or moral rights went nowhere; it could not provide a basis

²³Suter, “Ecological Risk Assessment in the USEPA: A Historical Overview,” *Integr. Envir. Assess. Man.* 4, pp. 285–89 (2008), quotation at p. 288.

²⁴Suter and Cormier, “Revitalizing Environmental Assessment,” *Integr. Envir. Assess. Man.* 4, p. 385 (2008).

²⁵Suter and Cormier, “Revitalizing Environmental Assessment,” *Integr. Envir. Assess. Man.* 4, p. 385 (2008).

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¹*Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 181, 120 S. Ct. 693 (2000).

²David N. Cassuto, *The Law of Words: Standing, Environment, and Other Contested Terms*, 28 *Harv. Envtl. L. Rev.* 79, 93–94 (2004).

³For a survey of the extent of judicial willingness to accommodate environmental law by stretching the concept of the regulation of interstate commerce, see, e.g., Sam Saad, *Commerce Clause Jurisprudence: Has There Been a Change?*, 23 *J. Land Resources, & Envtl. L.* 143 (2003).

for making policy or for resolving disputes.⁴ Not since a famous dissent in 1972 by William Douglas has a Supreme Court Justice proposed a legal theory that makes the environment or nature itself an object of protection.⁵ Many commentators suggest that as a result, environmental protection has largely ceased to exist as a distinct field of law, as cases are settled on the basis of principles and precedents found in property, natural resource, wildlife, nuisance, and other areas of jurisprudence.⁶

Second, the concept of “harm to the environment” defies definition. Any change to nature—even changes necessary for human survival—could be said to alter its spontaneous course and in that sense to “harm” it. Environmentalists associated with academic disciplines such as ecological economics, conservation biology, and ecology have sought to identify a level of organization in ecological communities and to argue that a flow of valuable economic services requires the protection of the integrity of these natural systems.⁷ While attributions of economic services to natural systems may argue against developing landscapes in particularly destructive or wasteful ways, they have not yet succeeded in providing a legal or political basis for preserving wild or natural areas.

Third, it seems undeniable that what John Muir wanted to preserve—nature direct from the hand of the Creator—has already been lost, if it even existed. Before Europeans arrived, aboriginal Americans, as environmental historians have shown, had transformed the landscape.⁸ Human-induced global changes, such as global warming and invasive species, have dramatically altered the ecological character of the most protected places. Nature, to be preserved, has to be maintained according to scientific protocols as to what may be “natural”—and this demands that scientists somehow determine which creatures to countenance as “native” and what to do about all the others; whether, when, and how to suppress forest fires, to re-introduce wolves and other predators, to combat invasive species, to manage “wild” populations that exceed carrying capacity, to allow hatchery-based fish, and so on. There may be no ecologically meaningful “baseline” at which the environment is “natural” because it is sufficiently cleansed of human influence.⁹

Fourth, economies develop by transforming the natural world by converting savannas to cities, forests to farms, meadows to malls, fields to factories, Arcadias to arcades, cozy copses to college campuses, dells to delis, and so on. Economic interests

⁴A. Dan Tarlock, *Is There a There There in Environmental Law?*, 19 *J. Land Use & Envtl. L.* 213, 242 (2004), points out, “Even Leopold’s most passionate defenders recognize that the whole ‘project’ of environmental ethics has not succeeded in creating a convincing case for non-human rights and in developing substantive rules which are capable of making the inevitable choices among competing resource use options.”

⁵*Sierra Club v. Morton*, 405 U.S. 727, 741, 92 S. Ct. 1361 (1972) (Douglas, J., dissenting).

⁶“An environmental lawyer is likely to find the most important, most relevant precedent elsewhere, precisely because it is elsewhere.” Richard J. Lazarus, *Thirty Years of Environmental Protection Law in the Supreme Court*, 19 *Pace Envtl. L. Rev.* 619, 633 (2002). In a series of articles, Lazarus shows by a detailed analysis of judicial opinions that the Supreme Court has stripped the concept of the environment from environmental law. *See also* Richard J. Lazarus, *Restoring What’s Environmental About Environmental Law in the Supreme Court*, 47 *UCLA L. Rev.* 703-72 (Feb. 2000).

⁷*See, e.g.*, *Nature’s Services: Societal Dependence on Natural Ecosystems* (Gretchen C. Daily ed., Washington, D.C.: Island Press 1997). *See also* A. Balmford et al., *Economic Reasons for Conserving Wild Nature*, 297 *Science* 950-53 (2002).

⁸*See, e.g.*, William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (20th anniversary edition, Hill & Wang, 2003).

⁹This point has been made many times. *See, e.g.*, G.P. Marsh, *Man and Nature: Or, Physical Geography as Modified by Human Action* (D. Lowenthal ed., Cambridge, MA: Harvard University Press, 1864, 1965); A.M. Riabchikov, *The Changing Face of the Earth: The Structure and Dynamics of the Geosphere, Its Natural Development and the Changes Caused by Man* (John Williams trans., Moscow: Progress Publishers 1975); Bill McKibben, *The End of Nature* (New York: Random House, 1989); Charles Mann, 1491, *The Atlantic Monthly*, Mar. 2000, at 41-53.

in development tend to trump aesthetic and spiritual motives that inspire preservation. As Richard Lazarus has written, “environmental interests are often not economic in character at all, but are instead based on a different moral vision regarding the proper relationship between humankind and the natural environment.”¹⁰ As a result, economic arguments for the protection of nature are often academic, abstract, and pretextual, while real-world economic interests exist contribute to the coffers of those who promote development.

For example, actions undertaken under the Endangered Species Act of 1973 (ESA), while popular in principle, have met ferocious political opposition in practice. Property owners vowed to “shoot, shovel, and shut up”—in other words, quickly to rid their property of endangered species habitat before it could be discovered.¹¹ Rather than to allow the ESA to serve as an incentive to landowners to sanitize their property, the government has often failed to list species and has centered protection on publicly owned lands. Hard political experience led federal officials to design Habitat Conservation Plans to accommodate politically powerful owners of private property.¹²

Unlike the Civil Rights movement, the movement for environmental quality does not draw on a fundamental constitutional set of protections or build on a traditional political theory.¹³ Courts rarely take the aspirations of environmental stewardship seriously. Environmental lawyers often found that the best they could do was to negotiate settlements and “paper” transactions.¹⁴ By rebuffing the Kyoto protocol and other international “green” initiatives, moreover, Republican administrations added to the frustration of environmentalists. The remarkable reversal of political fortunes that came with the 2008 elections at once creates great opportunities for environmentalists to make progress but also great dangers if programs and policies become disruptive and cause a backlash.

§ 5:29 The concept of an ecological nuisance

To revitalize environmental law during the Obama administration—and to make it more relevant to ecological values and risks—many environmental advocates draw an analogy between prohibiting ecological losses, such as the extinction of a

¹⁰Richard J. Lazarus, *The Making of Environmental Law* 40-41 (Chicago: University of Chicago Press, 2004).

¹¹For discussion of the “shoot, shovel, and shut up” phenomenon among other political and constitutional constraints on the ESA, *see, e.g.*, Mark Sagoff, *Muddle or Muddle Through? Takings Jurisprudence Meets the Endangered Species Act*, 38 *Wm. & Mary L. Rev.* 825 (1997).

¹²Interior Bruce Babbitt said, “We will continue to aggressively pursue a variety of reforms to make the [Endangered Species] Act less onerous on private landowners.” Secretary Babbitt Welcomes “Common Sense” Action of Supreme Court Species Ruling; Says It Will Not Alter His Flexibility Push, News Release, U.S. Dep’t of Interior, Office of the Secretary, 1995 WL 386054, at *1 (June 29, 1995) (quoting Secretary Babbitt). For a good survey of federal restraint in applying the ESA on private land, *see* J.B. Ruhl, *Biodiversity Conservation and the Ever-Expanding Web of Federal Laws Regulating Nonfederal Lands: Time for Something Completely Different?*, 66 *U. Colo. L. Rev.* 555 (1995).

¹³“Environmental law lacks a constitutional foundation because the distinctive features of it do not draw upon the philosophical, religious, and jurisprudential bases of the constitution, all of which are rooted in the enhancement of human dignity.” A. Dan Tarlock, *Is There a There There in Environmental Law?*, 19 *J. Land Use & Envtl. L.* 213, 224 (2004).

¹⁴Several analyses have noticed that negotiation and stakeholder negotiation has begun to supplant public law in environmental policy. This may indicate a profound shift from the regulatory to the “contracting” state. *See, e.g.*, Jody Freeman, *The Contracting State*, 28 *Fla. St. U. L. Rev.* 155 (2000); Bradley C. Karkkainen, *Collaborative Ecosystem Governance: Scale, Complexity and Dynamism*, 21 *Va. Envtl. L.J.* 189 (2002). *See generally* Matthew A. Crenson & Benjamin Ginsburg, *Downsizing Democracy: How America Sidelined Its Citizens and Privatized Its Public* (2002).

species, and preventing a public nuisance.¹ (The appeal to the concept of nuisance allows an exception to the demand for compensation for a “regulatory taking” under the Fifth Amendment of the Constitution.)² Professor Oliver Houck, for example, has argued that endangered species are “indicators of the health of the ecosystems that they inhabit.”³ Houck believes “that the protection of these species should trump private property rights in the same way that other indicators of pollution do: No one, no matter what one owns, has the right to go too far.”⁴

More generally, many environmentalists today seek to reinvigorate common law concepts such as that of a public nuisance to strengthen state power to restrict land use not just to preserve endangered species but to protect ecological goods and services more generally. Professor J.B. Ruhl in a recent article asserts his interest “in advancing the broad integration of natural capital and ecosystem service values into environmental decision making, only one implication of which may be to shrink the scope of categorical takings.”⁵ Ruhl observes that a growing interest in attaching economic values to “natural capital” and ecosystem services “has spawned a cottage industry in environmental law circles examining how nuisance and other common law property doctrines might develop toward more ecologically-minded values so as to deflect regulatory takings claims lodged against applications of ecologically-minded statutes.”⁶

Houck and Ruhl among other environmental lawyers seek to build a case for a “public nuisance” approach to the protection of the natural world to create a basis for stringent governmental control of those uses of property that may undermine natural processes but not affect any individual sufficiently to trigger a private action in tort.⁷ The longer than 800-year history of nuisance law provides the most straightforward justification for environmental protection when it aggregates what would otherwise be myriad actions in private law, that is, when the demand for regulation is rooted conceptually in the demands of private litigants rather than the

[Section 5:29]

¹See, e.g., Hunter, An Ecological Perspective on Property: A Call for Judicial Protection of the Public’s Interest in Environmentally Critical Resources, 12 Harv. Envtl. L. Rev. 311, 323–24 (1988).

²See Meltz, Where the Wild Things Are: The Endangered Species Act and Private Property, 24 Envtl. L. 369 (1994); Shaheen, Comment, The Endangered Species Act: Inadequate Species Protection in the Wake of the Destruction of Private Property Rights, 55 Ohio St. L.J. 453 (1994). The Takings Clause states that “private property [shall not] be taken for public use, without just compensation.” U.S. Const. amend. V. The principle behind the nuisance exemption, as Professor Frank Michelman has formulated it “is that compensation is required when the public helps itself to good at private expense, but not when the public simply requires one of its members to stop making a nuisance of himself.” Michelman, Property, Utility, and Fairness: Comments on the Ethical Foundations of ‘Just Compensation’ Law, 80 Harv. L. Rev. 1165, 1196 (1967).

³Houck, Why Do We Protect Endangered Species, and What Does That Say About Whether Restrictions on Private Property To Protect Them Constitute “Takings”?, 80 Iowa L. Rev. 297, 302 (1995).

⁴Houck, Why Do We Protect Endangered Species, and What Does That Say About Whether Restrictions on Private Property To Protect Them Constitute “Takings”?, 80 Iowa L. Rev. 297, 302 (1995).

⁵Ruhl, Common Law Environmental Protection: Making Nuisance Ecological, 58 Case W. Res. 753, 760.

⁶Ruhl, Common Law Environmental Protection: Making Nuisance Ecological, 58 Case W. Res. 753, 760.

⁷The literature discussing a “public nuisance” standard for protecting ecosystem services and natural capital includes Klass, Adverse Possession and Conservation: Expanding Traditional Notions of Use and Possession, 77 U. Colo. L. Rev. 283 (2006) (discussing how adverse possession laws protect conservation practices); Ruhl, Kraft & Lant, The Law and Policy of Ecosystem Services (2007); Ruhl & Salzman, The Law and Policy Beginnings of Ecosystem Services, 22 J. Land Use & Envtl. L. 157 (2007); and Salzman, Symposium: The Ecosystem Approach: New Departures for Land and Water: Review Essay: Valuing Ecosystem Services, 24 Ecology L.Q. 887 (1997).

expertise or authority of lawmakers. As one analyst has written, “private nuisance law raises fewer concerns than public nuisance law because private nuisance law depends upon the harms suffered by discrete landowners while public nuisance law invites speculation into the nature of the rights of the general public.”⁸

A lively debate has arisen between two groups who differ over the ethical basis of laws that protect instrumentally valuable aspects of the natural world—natural capital and ecosystem services—but that might not engage the interests of specific property owners to ground actions of private litigants. On the one side, legal scholars such as Christine Klein and Eric Freyfogle advocate a new theory of nuisance that expands the idea of externality to include a wide range of assaults on the natural world, from filling wetlands to emitting gases that cause global warming.⁹ According to this group of scholars, “The essential premise of much environmental law is . . . that the physical characteristics of the ecosystem generate spatial and temporal spillovers that require restrictions on the private use of natural resources far beyond those contemplated by centuries-old common law tort rules.”¹⁰

On the other side, critics such as James Huffman believe that the economic use of private property reflects a right that is limited by the need to respect the similar right of others—principally, by liability in common law. He argues, “The genius of the common law rests in its derivation from the customs and practices of everyday life, not in the creativity of judges.”¹¹ Similarly, Todd Zywicki voices doubts about regulations that greatly restrict property rights to pursue the latest views of new disciplines such as ecological economics. The requirement that compensation be paid to the landowner functions primarily to preserve liberty. To be sure, liberty must respect social norms and shared expectations about what one person owes another—but these expectations are found in the ongoing cultural order of a society not in any social, ecological, or economic science. In devising a “nuisance” exception to the “just compensation” requirement, “the judge is little more than an expert trained in articulating the tacit beliefs and expectations that undergird the ongoing order of the community.”¹²

Each side in this debate appeals to appeals to the interconnectedness of the “nature” it values, whether it is the integrity of ecological systems or the integrity of personal freedoms and property rights. On the one side, many environmentalists propose that everything in the ecosystem is connected. As Barry Commoner summarized this view, “The more complex the ecosystem, the more successfully it can resist a stress . . . Like a net, in which each knot is connected to others by several strands, such a fabric can resist collapse better than a simple, unbranched circle of threads—which if cut anywhere breaks down as a whole.”¹³ According to this principle, the destruction of habitat on private land injures the public, and thus regulations protecting habitat, natural capital, and ecosystem services may be subsumed under the nuisance exemption to the Takings Clause of the Constitution. Michael Bean, a

⁸Copeland Nagle Symposium: Common Law Environmental Protection: From Swamp Drainage to Wetlands Regulation to Ecological Nuisances to Environmental Ethics, 58 Case W. Res. 787, 801.

⁹Klein, *The New Nuisance: An Antidote to Wetland Loss, Sprawl, and Global Warming*, 48 B. C. L. Rev. 1155 (2007). Freyfogle, *The Land We Share: Private Property and the Common Good* (2003).

¹⁰Lazarus, *The Making of Environmental Law* 121 (2004).

¹¹Huffman, *Background Principles and the Rule of Law: Fifteen Years after Lucas*, 35 Ecology L.Q. 1, 21 (2008).

¹²Zywicki, *A Unanimity-Reinforcing Model of Efficiency in the Common Law: An Institutional Comparison of Common Law and Legislative Solutions to Large-Number Externality Problems*, 46 Case W. Res. L. Rev. 961, 991 (1996).

¹³See Commoner, *The Closing Circle: Nature, Man, and Technology* 44 (1971). Commoner adds [A]ll this results from a simple fact about ecosystems—everything is connected to everything else: the system is stabilized by its dynamic self-compensating properties; that these same properties, if overstressed, can lead to a dramatic collapse; the complexity of the ecological network . . . determine[s] how much it can be stressed . . . without collapsing . . .” (pp. 34–35).

respected authority on wildlife law, has suggested that “restrictions aimed at protecting endangered wildlife are designed to keep the exercise of one property right (the landowner’s) from destroying another property right (the public’s).”¹⁴ Environmentalists are likely to applaud Justice Kennedy’s assertion that the “common law of nuisance is too narrow a confine for the exercise of regulatory power in a complex and interdependent society.”¹⁵

On the other side, many legal and political theorists who represent a Libertarian tradition see the essential problem as that of protecting the integrity of the rights of person and property. For them, the threat posed by the government to the liberty of the individual is far more worrisome than the threat posed by the landowner to the services of the ecosystem. As Richard Epstein has written, liberty and property are naturally inseparable. “A nation in which private property is protected contains independent, decentralized sources of power that can be used against the state, reducing thereby the possibility that any group will be able to seize control over the sources of information or the levers of political power.”¹⁶ Epstein summarized: “Property is defensive, not exploitive.”¹⁷

In asserting that property rights are inextricably connected to civil and political liberties, Epstein follows F.A. Hayek’s view that “the system of private property is the most important guarantee of freedom, not only for those who own property, but scarcely less for those who do not.”¹⁸ From this premise it is supposed to follow as a matter of moral and constitutional principle that when the government, for any purpose other than to prevent a harm that would be considered a nuisance at common law, limits the use of private property, for example, to provide “wildlife habitat or some other ‘public good, compensation should be paid.”¹⁹ Certainly, the government has the power of eminent domain to dedicate private land to public uses,²⁰ such as to maintain a natural commons or a refuge for wildlife. Those like Epstein who take property rights to be continuous with civil liberty generally believe the government must compensate landowners for the economic losses they bear when they lose the right to develop their property in ways that are not anti-social by typically permitted at common law. Which side in the debate one favors may depend on which risk one believes is greater. Those who seek to expand government power to regulate ecological risks as public nuisances see a great danger in the expansion of the economy at the expense of ecological stability and integrity. Those who seek to limit the power of the government to regulate only those risks that have some basis in a conception of private nuisance see a greater danger in the expansion of the government at the expense of personal liberty and autonomy.

Environmental statutes since 1969 have rested largely on the legal foundation of

¹⁴Bean, *Taking Stock: The Endangered Species Act in the Eye of a Growing Storm*, 13 *Pub. Land L. Rev.* 77, 83 (1992) (noting that “[t]o date, American courts have not embraced the view that the Fifth Amendment protects a private right to destroy a publicly owned resource, nor could they without abandoning long settled principles”). Another commentator has described the legal basis of the assertion of public ownership rights in wildlife. Houck, *Why Do We Protect Endangered Species, and What Does That Say About Whether Restrictions on Private Property To Protect Them Constitute “Takings”?*, 80 *Iowa L. Rev.* 297, 311 (1995). Houck has noted that “Supreme Court opinions have characterized state ‘ownership’ of wildlife as a ‘legal fiction’ expressing the ‘importance to its people that a State have power to preserve and regulate the exploitation of an important resource.’” *Id.* (quoting *Douglas v. Seafood Prods., Inc.*, 431 U.S. 265, 284 (1976) (citing *Toomer v. Witsel*, 334 U.S. 385, 402 (1948))).

¹⁵*Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1035 (1992) (Kennedy, J., concurring in the judgment).

¹⁶See Epstein, *Takings: Private Property and the Power of Eminent Domain* 138 (1985).

¹⁷Epstein, *Takings: Private Property and the Power of Eminent Domain* 138 (1985).

¹⁸Hayek, *The Road to Serfdom* 103–04 (15th ed. 1944).

¹⁹Adler, *Property Rights, Regulatory Takings, and Environmental Protection*, *Competitive Enterprise Inst.*, at 12 (Apr. 1996).

²⁰See, e.g., *U.S. v. Jones*, 109 U.S. 513 (1883).

the common law of nuisance. The many successes of environmental regulation have been won primarily by policies of controlling the gross emissions of industrial and municipal polluters and of reducing less visible and often unquantifiable risks, for example, from small amounts of carcinogenic substances. Environmental science could usually identify the causes and consequences of gross emissions and effluents; scientists came to accept the importance of social, ethical, and other judgments in assessing and managing more chronic and less demonstrable dangers. Other areas of environmental law, such as the protection of wildlife, the control of land use to maintain water quality, the preservation of species, and the protection of wild and scenic places came to be understood in terms of distributional problems to be adjudicated under established and familiar precedents in property, land-use, wildlife, and natural resources law. In the first decade of the 21st Century, especially in the shadow of the administration of President G.W. Bush, commentators wrote obituaries for environmentalism.²¹ Legal analysts have argued that environmental law has virtually disappeared as a distinct form of jurisprudence—or of professional interest—and the natural environment per se has lost most of whatever presence it might have had as an object of legal protection.²²

The public celebration that followed the rediscovery in eastern Arkansas of the Ivory-billed Woodpecker in 2005 suggests that Americans may still possess the values that in 1970 led 20 million of them to celebrate the first Earth Day. At the same time, the goal of protecting the natural environment—the “green” rather than “brown” project of environmental policy—remains inchoate. A rebirth of environmentalism will have to identify moral, spiritual, and aesthetic reasons or motives for keeping nature “natural” and for understanding what such a goal might entail at a time when humanity dominates nearly every ecosystem. The problem is to see how the underlying principles of environment law might shape an emerging effort to preserve and restore the spontaneous course of the natural world. The aesthetic, spiritual, ethical, and economic arguments for protecting the environment from human beings are only now being advanced and tested, even as a general consensus has become established about the reasons to protect human beings from the environment.

²¹An influential paper to this effect is Michael Shellenberger and Tom Nordhaus, *The Death of Environmentalism*. *Global Warming Politics in a Post-Environmental World* (Pamphlet published by the Breakthrough Institute 2004), available at http://www.thebreakthrough.org/images/Death_of_Environmentalism.pdf and <http://www.grist.org/news/maindish/2005/01/13/doe-reprint/>.

²²Richard J. Lazarus, *Restoring What’s Environmental About Environmental Law in the Supreme Court*, 47 *UCLA L. Rev.* 703, 706 (2000) (arguing that the Supreme Court regards environmental law as “merely an incidental factual context” and that the justices “have become increasingly skeptical over time” about the environment as a distinct object for protection).

Chapter 6

Basic Economic and Analytical Tools and Their Application in Environmental Analysis*

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- § 6:54 ——Toxicity analysis
- § 6:55 ——Cost causation analysis

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I. INTRODUCTION

§ 6:1 In general

Economic and analytical tools are routinely used to evaluate environmental issues. This chapter examines the basic application of the core set of tools used repeatedly by economists and consultants in the analysis of these issues. It focuses on the application of economic and analytical tools by examining why they are employed, how they work, and how environmental professionals should think about them. A tool is only useful if one knows how to use it, and the goal of this chapter is to provide a framework for thinking about environmental issues that need to be examined in a rigorous manner.

The application of a number of these economic and analytical tools is seen, firsthand, by a potentially responsible party (PRP) at a Superfund site. Each PRP faces the imposition of liability for uncertain, unknown future costs, and, at some

level, PRPs need to be able to estimate the costs of remediating the site in today's dollars—whether for reserving purposes or simply to understand the scope of the problem.

Beyond costs, there is the issue of uncertainty. Remediation is a future event, and its success is uncertain. As a result, its costs are unknown. Whether a party should settle or seek contribution is a calculation that is made in part based on the evaluation of uncertainty in future events. Remedy selection is, at its core, a cost versus benefit analysis—a comparison of alternatives and their ability to meet certain objectives, hopefully in a cost-effective manner. This, again, is a cost question.

Finally, associated with almost any cost question is the issue of allocation. Although some costs are uniquely assignable to individual parties or activities, many costs are common—caused by more than one party or activity. These costs must be rationally allocated across activities or parties in some principled manner—another cost question.

This chapter focuses on the following four basic tools of economic analysis: (a) discounting, or the ability to evaluate future costs in present-day equivalents; (b) decision analysis, which enables the decision-maker to evaluate risk and uncertainty in future events; (c) cost-benefit analysis, a process by which comparative analysis of alternatives can be undertaken; and, finally, (d) cost allocation, the process by which common costs are allocated to activities or parties.

II. DISCOUNTING AND NET PRESENT VALUE

§ 6:2 In general

Decision-makers frequently find themselves examining projects for which costs and benefits accrue over multiple years. A piece of machinery purchased for a manufacturing plant that will save a company money by increased productivity over its life cycle is an example of a project with costs in one period and benefits over a number of periods. In many instances, it is difficult, if not impossible, to determine which project provides the greatest value unless the effects of time are somehow considered. What these decision-makers need is a method of evaluating these different costs and benefits that accrue across time as if they were incurred at the same point in time—today, for example.

To evaluate projects, or generally costs and benefits that accrue over time, a model should compare these future costs and benefits—usually measured as dollars—having adjusted for these timing effects. Discounting is just such a method. It allows a comparison of outcomes (*e.g.*, cash flows) that occur over a span of time as if those actions occurred today. It in effect adjusts cash flows for the time value of money and thereby reduces future cash flows into a single equivalent number measured in today's dollars.

Mechanically, discounting is very similar to compound interest. In fact, many people think of discounting as *reverse* compound interest. So, before explaining the mechanics of discounting, a brief discussion of some of the basic financial concepts surrounding interest or return on investments may prove helpful.

Figure 6:1 shows the process by which compound interest, or return, accrues. \$100,000 invested in a bank at the beginning of the year accrues interest, or generates a return. At a 10 percent interest rate, for example, that investment generates \$10,000 in interest, or return. At the end of the year, there is \$110,000 in the account. Then, at the beginning of the next year, the process begins again. Only now, there is \$110,000 to invest as principal, and that higher principal accrues interest. At the end of the second year, there is \$121,000 in the account—the original \$100,000 in principal, interest on the principal, and interest on the accumulated interest, as well. The process continues until the principal and accumulated interest are withdrawn. Table 6:1 indicates the amount of interest and total investment that

would be available at the end of one year if \$100,000 were invested at different interest rates. This process is simple enough, but it highlights one of the most basic principles of corporate finance: a dollar received today is worth more than the same dollar received a year from now.

Figure 6:1 How Investments Grow Over Time

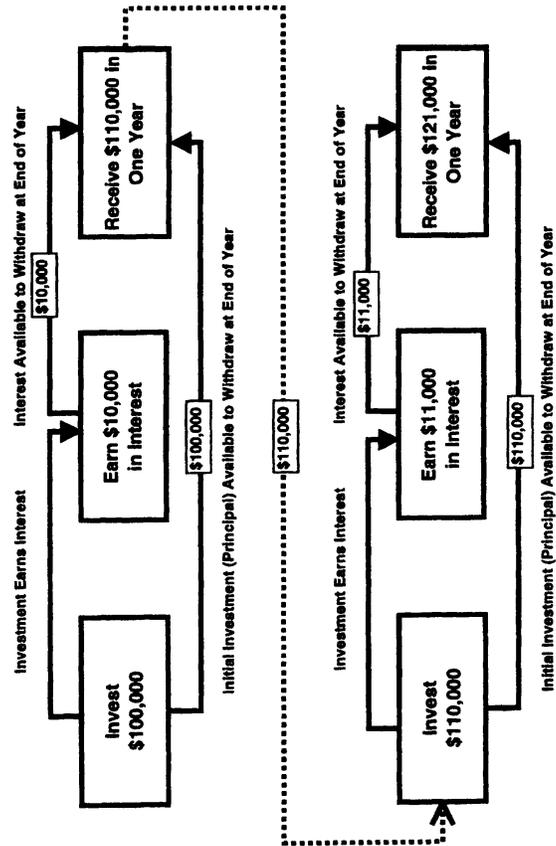


Table 6:1 Value of \$100,000 One Year Later Invested at Different Interest Rates

Principal Invested at Beginning of Year	Interest Rate	Return on Investment	Value at End of Year
\$100,000	0.0%	\$0	\$100,000
\$100,000	1.0%	\$1,000	\$101,000
\$100,000	2.0%	\$2,000	\$102,000
\$100,000	3.0%	\$3,000	\$103,000
\$100,000	4.0%	\$4,000	\$104,000
\$100,000	5.0%	\$5,000	\$105,000
\$100,000	6.0%	\$6,000	\$106,000
\$100,000	7.0%	\$7,000	\$107,000
\$100,000	8.0%	\$8,000	\$108,000
\$100,000	9.0%	\$9,000	\$109,000
\$100,000	10.0%	\$10,000	\$110,000
\$100,000	11.0%	\$11,000	\$111,000
\$100,000	12.0%	\$12,000	\$112,000
\$100,000	13.0%	\$13,000	\$113,000
\$100,000	14.0%	\$14,000	\$114,000
\$100,000	15.0%	\$15,000	\$115,000
\$100,000	16.0%	\$16,000	\$116,000
\$100,000	17.0%	\$17,000	\$117,000
\$100,000	18.0%	\$18,000	\$118,000
\$100,000	19.0%	\$19,000	\$119,000
\$100,000	20.0%	\$20,000	\$120,000

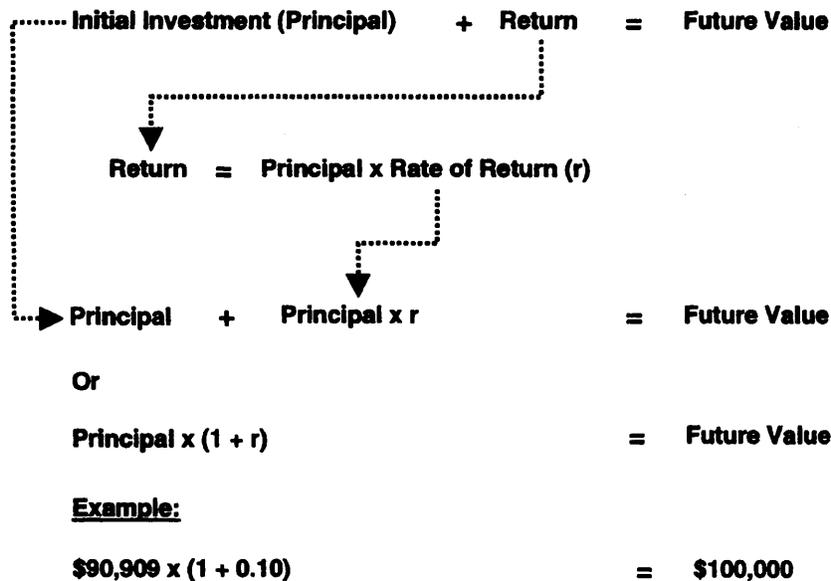
It is clear that timing affects the value of money. In fact, in every case—except when the interest rate is zero—money received now is worth more than the same amount of money received later. This is the simple but critical insight on which discounting is based.

Table 6:1 can be modified to answer the question “how much money must be invested now so that at the end of the year an investment will accumulate \$100,000?” The results are shown in Table 6:2. The value of the initial investment falls as the interest rate rises. The total of principal plus interest is what creates the \$100,000, and as the interest rate rises, interest displaces the need for principal. Table 6:2 is the essence of discounting. It shows the values that would be needed today to generate \$100,000 at the end of one year, at different interest rates—or discount rates. The key to discounting is value *today*. At a 10 percent discount rate, \$100,000 one year from now is worth \$90,909 today. This is a method of evaluating future cash flows as if they occurred today. Figure 6:2 demonstrates how the values in Table 6:2 are estimated. An initial amount of money (or principal) earns interest (or return). At the end of the year, the principal and the accumulated interest equal the future value. The return earned, however, is really a rate of return—like an interest rate—multiplied by the initial amount of the principal invested. That is, a percentage return is earned on the investment. So, the return earned is the initial investment multiplied by the rate of return. In other words, the future value obtained at the end of the year is the initial amount of the principal, multiplied by $1 + r$, where r is the rate of return. If this equation is tested with the results from Table 6:2, it is clear that an investment of \$90,909 for one year at 10 percent interest will equal \$100,000 at the end of the year.

Table 6:2 How Much to Invest to Obtain \$100,000 One Year Later Invested at Different Interest Rates

Principal Invested at Beginning of Year	Interest Rate	Return on Investment	Value at End of Year
\$100,000	0.0%	\$0	\$100,000
\$99,010	1.0%	\$990	\$100,000
\$98,039	2.0%	\$1,961	\$100,000
\$97,087	3.0%	\$2,913	\$100,000
\$96,154	4.0%	\$3,846	\$100,000
\$95,238	5.0%	\$4,762	\$100,000
\$94,340	6.0%	\$5,660	\$100,000
\$93,458	7.0%	\$6,542	\$100,000
\$92,593	8.0%	\$7,407	\$100,000
\$91,743	9.0%	\$8,257	\$100,000
\$90,909	10.0%	\$9,091	\$100,000
\$90,090	11.0%	\$9,910	\$100,000
\$89,286	12.0%	\$10,714	\$100,000
\$88,496	13.0%	\$11,504	\$100,000
\$87,719	14.0%	\$12,281	\$100,000
\$86,957	15.0%	\$13,043	\$100,000
\$86,207	16.0%	\$13,793	\$100,000
\$85,470	17.0%	\$14,530	\$100,000
\$84,746	18.0%	\$15,254	\$100,000
\$84,034	19.0%	\$15,966	\$100,000
\$83,333	20.0%	\$16,667	\$100,000

Figure 6:2 Calculation of Future Value



§ 6:3 The mechanics of discounting

Mechanically, discounting is quite simple. As mentioned before, it works like a re-

verse calculation of compound interest. Table 6:2 demonstrated the amount of principal needed to generate, after accumulation of interest, a fixed amount of money one year into the future. Now think of cash flows and the discounting process as an investor would typically encounter it. He or she will generally know the future cash flows, and the question will be what their value is today. So, the investor needs to develop a process by which he or she can take a number—like the \$100,000—and determine at what point in the future it accrues. Well, if the investor knows that he or she will receive the \$100,000 one year from now, then the investor needs to determine what the value of \$100,000 received one year from now is, as if the investor had been given the equivalent value today.

While a reader could simply look at Table 6:2 to determine the equivalent value today of \$100,000 received one year from now at a discount rate of 10 percent, the next several examples develop a methodology by which an investor can estimate today's equivalent value.

§ 6:4 The mechanics of discounting—The one-period discounting problem

The next example demonstrates how to solve for the values observed in Table 6:2. Specifically, it will determine the discounted value of \$100,000 received one year from now at a discount rate of 10 percent. This example demonstrates how discounting works for a business considering the purchase of a piece of equipment.

A company wants to invest in a noise suppressor with a useful life of one year. At the end of the year the noise suppressor must be discarded. It has no useful life beyond one year, so it has no “scrap” value. By using the noise suppressor, the company will be able to use equipment that is now idle and will avoid using equipment that is more expensive to run. This substitution of one piece of equipment for another will save the company \$100,000, which, in this example, it receives at the end of the year. The noise suppressor, however, must be acquired today, at the beginning of the year. It will cost \$80,000. Should this company invest or not?

Before beginning any calculations, the company should distill the problem down to a few simple issues. First, the cost of the machinery is \$80,000. It creates a value of \$100,000, which is the reduced cost of switching back to the less expensive equipment. The savings of \$100,000 does not accrue until the end of the year, but the \$80,000 in cost must be made instantly. The investment only has value for one year. So, the question before the company is whether to make the investment or not.

Even without doing any calculations the company might conclude that the answer is yes. In this example, by spending \$80,000 today, the company receives \$100,000 one year from now—a 25 percent return on the investment. Given the alternatives of doing nothing or investing in this new noise suppressor, the company should choose to invest. But implicit in the decision to invest is a recognition that a 25 percent return is very high—an exceptionally high return on the investment. That is undoubtedly a better return on the investment than most companies will get for their routine purchases of plant and equipment. The company should not choose to invest simply because this purchase makes a positive return. Rather, it should invest because this project makes a return greater than alternative opportunities for investing that \$80,000 in capital. Not all investment decisions are as clear as this one.

To evaluate this investment decision the company needs to calculate the present value, or discounted value, of that \$100,000 that will be received as a benefit in one year. The company then needs to compare that result against the \$80,000 cost of purchasing the equipment that provides the benefit. For purposes of this discussion, assume that, in general, the business receives a 10 percent return on its investments—whether it puts that money in the bank, in equipment, or in other investment alternatives. What is the present value of the \$100,000 when the return available to the company is 10 percent?

Looking back at Figure 6:2, this number can be calculated easily. The principal invested at the beginning of the period multiplied by $(1 + r)$ is equal to the future value one year later. This relationship can be rewritten to solve for the amount of initial investment needed so that the company ends up with \$100,000 and the discount rate is 10 percent. This result is shown in Figure 6:3.

Figure 6:3 Calculation of Present Value

$$\begin{array}{rcl}
 \text{Principal} \times (1 + r) & = & \text{Future Value} \\
 \\
 \text{Principal} & = & \frac{\text{Future Value}}{(1 + r)} \\
 \text{So} & & \\
 \text{Present Value (PV)} & = & \frac{\text{Future Value}}{(1 + r)} \\
 \text{Example:} & & \\
 \$90,909 & = & \frac{\$100,000}{(1 + 0.10)}
 \end{array}$$

The amount of principal that the company would need to invest today is called the present value (PV). It represents the amount of money that would make the investor indifferent between a sum of money today and a sum of money in the future at a predefined interest rate, or discount rate. In this example the PV of \$100,000 received one year in the future can be estimated. It is \$90,909.

So, should the company invest? Well, the company has \$80,000 now. It can keep that money and invest it at 10 percent, or it can use it to buy a piece of equipment that will make \$100,000 in one year. That amount—\$100,000—is worth \$90,909 today. So the equipment is worth more today than the money it costs to purchase it. If the company's only choices are to buy the equipment or to do nothing, it should buy the equipment.

§ 6:5 The mechanics of discounting—The multi-period discounting problem

The problem, of course, is that the company probably has several alternative investments that can address this noise issue, and it must choose among them to determine which is best. Compounding the problem it faces is the fact that many investment opportunities have payouts that occur over multiple years and pay out in different ways. Each of these issues will be addressed later in this chapter. The next example examines an investment with cash flows over multiple periods of time.

The company has yet another business decision to make. It is considering installing a piece of equipment to help automate its production process. The equipment costs \$1 million, which must be paid immediately. The equipment will last for five years, with no scrap value. For each year of operation, there is a savings of \$300,000. This is a total of \$1.5 million in savings, or a net cost of \$500,000 over and above the initial cost of purchase. This equipment is the only alternative under consideration. Should the company choose to install this equipment?

The cost—the \$1 million—is paid out immediately, but the benefit—the \$300,000 per year—is received over time. If both occurred today, or at the same time, the answer would be obvious—the company would purchase the equipment because the benefits of \$1.5 million exceed the cost of \$1 million. But, because the cost is paid

before the benefit is received, there is an opportunity cost to purchasing the equipment. If the company buys the equipment, it gets the benefit in the future, but it forfeits other uses for the money used to make the investment. For example, the company cannot invest that money in the bank and let it earn interest.

So, effectively the company is being asked to choose between two competing investment opportunities. One is worth \$1 million today. The other opportunity is worth \$1.5 million over the next five years, and the company needs to estimate what it is worth today. If the rate of return the company can earn on its investment is 10 percent annually, then how much money would it need to invest in the bank right now so that it could withdraw \$300,000 at the end of each of five years and have nothing left over? That, after all, is the choice the company is really making here. If that undetermined amount is less than \$1 million, then the \$1 million the company has now is the better opportunity, and it should not invest in the equipment. If, however, the amount the company would put in the bank today is greater than \$1 million, then the present value of the \$300,000 annual payments over the next five years is greater than \$1 million, and the company should invest in the equipment. The cash flows for this problem are shown in Table 6:3.

Table 6:3 Summary of Project Cash Flows

	Time Period					Total
	1	2	3	4	5	
Nominal Cash Flows	-1,000,000	300,000	300,000	300,000	300,000	500,000

§ 6:6 The mechanics of discounting—The multi-period discounting problem—Estimating the present value of the first payment

How much money would the company need to put in the bank today, earning 10 percent interest, in order to have \$300,000 that it could withdraw at the end of one year? The calculation follows:

$$\text{Present Value} = \frac{\text{Future Value}}{(1 + r)} = \frac{\$300,000}{(1 + .10)} = \$272,727$$

This is the same equation from the previous example. If, today, the company places \$272,727 into a bank account that earns 10 percent annual return, in one year it will have the principal plus an additional \$27,273 in interest for a total of \$300,000. Put another way, the present value of \$300,000, received one year from now, at a discount rate of 10 percent, is \$272,727.

§ 6:7 The mechanics of discounting—The multi-period discounting problem—Estimating the present value of later payments

The next question is “what amount of money should the company put into the bank, at 10 percent interest, so that over *two* years, it will have \$300,000 (the second \$300,000 payment)?” The company already knows that if it puts \$272,727 in the bank, after one year it is worth \$300,000, so the amount to leave in there for two years must be less. In fact, the company needs to put in an amount that, one year from now, will be worth \$272,727, since that amount, if left for another year, will be worth the \$300,000 the company is trying to estimate. Table 6:4 demonstrates the amount of initial investment necessary to earn \$100,000 *two* years into the future.

Table 6:4 How Much to Invest to Obtain \$100,000 Two Years Later Invested at Different Interest Rates

Principal Invested at Beginning of First Year	Interest Rate	Return on Investment	Value at End of Year One	Interest Rate	Return on Investment	Value at End of Year Two
\$100,000	0.0%	\$0	\$100,000	0.0%	\$0	\$100,000
\$98,030	1.0%	\$980	\$99,010	1.0%	\$990	\$100,000
\$96,117	2.0%	\$1,922	\$98,039	2.0%	\$1,961	\$100,000
\$94,260	3.0%	\$2,828	\$97,087	3.0%	\$2,913	\$100,000
\$92,456	4.0%	\$3,698	\$96,154	4.0%	\$3,846	\$100,000
\$90,703	5.0%	\$4,535	\$95,238	5.0%	\$4,762	\$100,000
\$89,000	6.0%	\$5,340	\$94,340	6.0%	\$5,660	\$100,000
\$87,344	7.0%	\$6,114	\$93,458	7.0%	\$6,542	\$100,000
\$85,734	8.0%	\$6,859	\$92,593	8.0%	\$7,407	\$100,000
\$84,168	9.0%	\$7,575	\$91,743	9.0%	\$8,257	\$100,000
\$82,645	10.0%	\$8,264	\$90,909	10.0%	\$9,091	\$100,000
\$81,162	11.0%	\$8,928	\$90,090	11.0%	\$9,910	\$100,000
\$79,719	12.0%	\$9,566	\$89,286	12.0%	\$10,714	\$100,000
\$78,315	13.0%	\$10,181	\$88,496	13.0%	\$11,504	\$100,000
\$76,947	14.0%	\$10,773	\$87,719	14.0%	\$12,281	\$100,000
\$75,614	15.0%	\$11,342	\$86,957	15.0%	\$13,043	\$100,000
\$74,316	16.0%	\$11,891	\$86,207	16.0%	\$13,793	\$100,000
\$73,051	17.0%	\$12,419	\$85,470	17.0%	\$14,530	\$100,000
\$71,818	18.0%	\$12,927	\$84,746	18.0%	\$15,254	\$100,000
\$70,616	19.0%	\$13,417	\$84,034	19.0%	\$15,966	\$100,000
\$69,444	20.0%	\$13,889	\$83,333	20.0%	\$16,667	\$100,000

One way to estimate the value of \$300,000 two years into the future is to discount each year. Table 6:4 shows that the PV of \$100,000 two years into the future, at 10 percent discount rate, is \$82,645. So, the PV of \$300,000 at the same discount rate and at the same point in time should be triple that number, or \$247,934. This number can also be calculated with the following formula:

$$\text{Present Value} = \frac{\text{Future Value}}{(1 + r)} = \frac{\$272,727}{(1+.10)} = \$247,934$$

If the company invests \$247,934 into an account that returns 10 percent, in one year it will be worth \$272,727, and this \$272,727, if left in the bank for a year, will be worth \$300,000. So the PV of \$300,000 received two years from now is \$247,934.

While this step-wise approach works, it can certainly be cumbersome. There is, however, a generalized method for performing these calculations. When determining

the PV of \$300,000 two years from now, the above calculations discounted that amount back one year, then discounted again that already-discounted amount. A simpler way of doing this is

$$PV_{t=2} = \frac{FV}{(1+r)^T} = \frac{\$300,000}{(1+.10)^2} = \$247,934$$

This equation is actually not as complicated as it looks. The t is a time subscript. Today would be $t = 0$. One year from now would be $t = 1$, two years from now $t = 2$, and so on. This formula is exactly the formula that was used in the previous examples, except the denominator is now raised to a power, and the power is the number of periods into the future that the future cash flow occurs.

So, for example, if the company wanted to know what the PV of a \$1 million payment, made fifty-five years from now, was worth in today's dollars at a 6 percent discount rate over the period, the equation would be:

$$PV = \frac{\$1,000,000}{(1+.06)^{55}} = \$40,567$$

So, the present value of \$1 million, received fifty-five years from now, is only \$40,567 at a 6 percent discount rate. If an investor placed \$40,567 into a bank account and let it grow and compound for the next fifty-five years, he or she would end up with a \$1 million bank account.

§ 6:8 The mechanics of discounting—The multi-period discounting problem—Examining the solution

This equation now provides a simpler method for determining the value of those five \$300,000 payments.

\$300,000 at $t = 1 = \$272,727$ (this has already been solved)

\$300,000 at $t = 2 = \$247,934$ (this has also been solved)

\$300,000 at $t = 3 =$

$$PV_{T=0} = \frac{\$300,000}{(1+.10)^3} = \$225,394$$

\$300,000 at $t = 4 =$

$$PV_{T=0} = \frac{\$300,000}{(1+.10)^4} = \$204,904$$

\$300,000 at $t = 5 =$

$$PV_{T=0} = \frac{\$300,000}{(1+.10)^5} = \$186,276$$

So, what is the value of five payments of \$300,000 at a discount rate of 10 percent? As it turns out, those payments have a PV of \$1,137,236. The equipment may cost \$1 million, but it has a PV of over \$1.1 million. Once the company deducts the initial \$1 million cost of that investment, it is still ahead by \$137,236. This result is shown in Table 6:5.

Table 6:5 refers to the *net* present value of this investment. So while the PV of the five \$300,000 payments is \$1,137,236, the net present value (NPV) of this investment is \$137,236. It is a measure of the net benefit, or cost, of the investment.

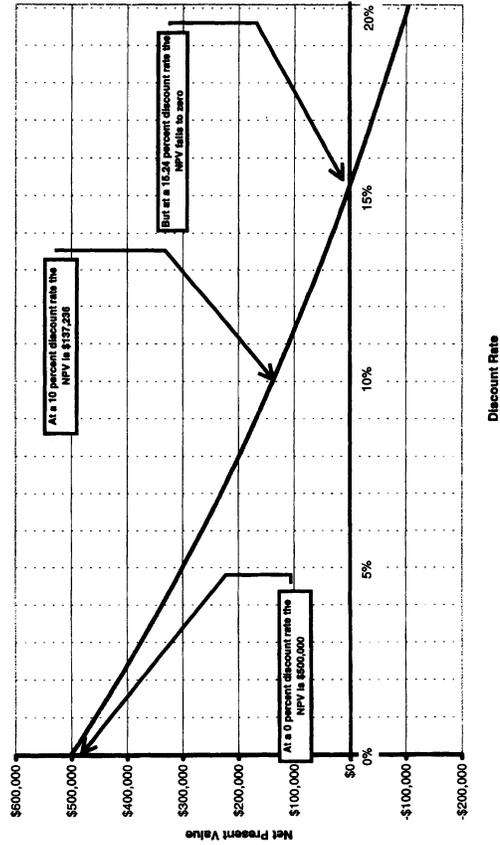
As this example demonstrates, the process of discounting is rather mechanical. An investor simply plugs in a future value, determines its point of accrual, assumes a discount rate, and calculates a present value. For any given investment decision, most of these factors are predetermined—most except for the discount rate itself.

Although the discount rate will be discussed shortly, it is worth noting that as the discount rate changes, the present value of some predetermined future cash flow also changes. In fact, for the investment decision just discussed, the NPV was \$137,236 at a discount rate of 10 percent. What happens when the investor does not know the discount rate or is concerned that the estimate of that rate may not be very precise? Figure 6:4 plots the NPV against the discount rate to demonstrate how discount rates affect present value for this investment decision.

Table 6:5 The Net Present Value of Facility Improvements (Calculated at 10% Nominal Discount Rate)

	Now	1	2	3	4	5	Total
Nominal Cash Flows	-1,000,000	300,000	300,000	300,000	300,000	300,000	500,000
PV Calculation	$\frac{-1,000,000}{(1 + .10)^0}$	$\frac{300,000}{(1 + .10)^1}$	$\frac{300,000}{(1 + .10)^2}$	$\frac{300,000}{(1 + .10)^3}$	$\frac{300,000}{(1 + .10)^4}$	$\frac{300,000}{(1 + .10)^5}$	
PV Result	-1,000,000	272,727	247,934	225,394	204,904	186,276	<u>137,236 = NPV</u>

Figure 6:4 Sensitivity of the Project NPV to Discount Rates



Although the project has an NPV of \$137,236 at 10 percent, its value is quite sensitive to the discount rate. As the discount rate falls, the value rises, and as the discount rate rises, the value shrinks. In fact, at any discount rate above 15.24 percent, this investment actually loses money on a time-adjusted basis.

§ 6:9 The mechanics of discounting—Competing multi-period investment alternatives

The previous example estimated the NPV of a company's decision to purchase a piece of equipment for its production process. This next example assumes that the company is evaluating two different options for equipment. The example just discussed was Option 1.

Option 2 is the alternative process under consideration. The company must select one of the two options or do nothing. Option 2 also has a life span of five years. It has an initial cost of \$1.5 million—higher than Option 1's \$1 million—but its benefits over the five years total \$2.25 million. However, unlike Option 1, which pays out its benefits in equal payments over five years, Option 2 pays out \$250,000 in each of the first two years, \$500,000 per year in each of the next two years, and \$750,000 in the fifth year of service. Its benefits are received disproportionately further out in the future. The two alternatives are shown in Table 6:6. For purposes of this evaluation, the company's discount rate is 10 percent.

The company already knows what Option 1 is worth. It has an NPV of \$137,236 when the discount rate is 10 percent. Option 2 requires more cost, but provides more benefits. Its benefits, however, occur further in the future. The calculation of the NPV for both processes is shown in Table 6:7. At a 10 percent discount rate, it is clear that Option 1 is preferable to Option 2 because Option 1 has a higher net present value than Option 2. If the company's choice is between selecting Option 1, selecting Option 2, and doing nothing, and if the discount rate is assumed to be 10 percent, then it should choose Option 1. Despite the fact that Option 2 provides a higher nominal net value (\$750,000), its benefits are provided disproportionately later than those of Option 1, and on a time-adjusted basis, Option 1 is preferable.

Table 6:7 Calculating the Net Present Value for the Cash Flows of Two Alternative Projects (Calculated at 10% Nominal Discount Rate)

	Now	Time Period					Total
		1	2	3	4	5	
Option 1	-1,000,000	300,000	300,000	300,000	300,000	300,000	500,000
PV Calculation	$-1,000,000$	$\frac{300,000}{(1 + .10)^1}$	$\frac{300,000}{(1 + .10)^2}$	$\frac{300,000}{(1 + .10)^3}$	$\frac{300,000}{(1 + .10)^4}$	$\frac{300,000}{(1 + .10)^5}$	
PV Result	-1,000,000	272,727	247,934	225,394	204,904	186,276	<u>137,236 = NPV</u>
Option 2	-1,500,000	250,000	250,000	500,000	500,000	750,000	750,000
PV Calculation	$-1,500,000$	$\frac{250,000}{(1 + .10)^1}$	$\frac{250,000}{(1 + .10)^2}$	$\frac{500,000}{(1 + .10)^3}$	$\frac{500,000}{(1 + .10)^4}$	$\frac{750,000}{(1 + .10)^5}$	
PV Result	-1,500,000	227,273	206,612	375,657	341,507	465,691	<u>116,739 = NPV</u>

§ 6:10 The mechanics of discounting—Perpetuities

A perpetuity is a fixed amount of money paid or received at a set interval, forever. A payment of \$100 each and every year, forever, is an example of a perpetuity. If an investor attempted to calculate the value of that cash flow stream on a payment-by-payment basis, he or she would be working for a very long time, an infinitely long time, to be exact. While this sounds like an impossible cash flow stream to estimate for purposes of calculating present value, it is actually one of the easiest cash flow streams to estimate. And its estimation provides some insight into how to think about discounting multi-period cash flows.

So, what is the PV of \$100 paid at the end of each and every year, forever, when the discount rate is 10 percent? The answer is \$1,000. This may not be obvious at

first, but think of it as a bank account. An investor earns 10 percent annual return on a bank account, and this investor wants to earn \$100. How much does the investor have to put into the account to earn \$100 in interest when the bank pays 10 percent? The answer is \$1,000. Now, if the investor leaves the \$1,000 in the bank, but spends the interest every year, after thirty years, the investor has \$1,000 in the bank, and each and every year he or she has received \$100. In fact, as long as that \$1,000 stays in the bank, the investor will receive \$100 per year, forever. So, the value of a perpetuity of \$100 at a discount rate of 10 percent is \$1,000.

Of course, there is an equation that can demonstrate this, and in this case, at least, the equation is fairly simple. The relationship between the initial investment—the money put into the bank—and the return on that investment is represented as follows:

$$\text{Return} = (\text{Initial Investment}) \times (r)$$

The return is \$100 each year, and the rate of return (r) is 10 percent, so this equation can be turned around and solved for the amount of the initial investment:

$$\left(\frac{\text{Return}}{\text{Rate of Return}}\right) = \text{Initial Investment} = \left(\frac{\$100}{.10}\right) = \$1,000$$

This is a relatively simple, but extremely useful, equation. Investors will often encounter long-term cost streams that are measured in today's dollars. Discounting them may be time consuming, but will reveal the precise answer. As a benchmark, however, very long-term cost streams can be treated like perpetuities.

For example, if a company is involved in remediating a hazardous waste site, it may be asked to incur costs for long-term groundwater remediation. In addition to capital costs for pumps, piping, and related equipment, there are ongoing operation and maintenance (O&M) costs. As an example, if the company is asked to pay out \$600,000 per year for O&M, for thirty years, what is the present value of the O&M?

At a 10 percent discount rate, a perpetuity—\$600,000 per year, forever—would be \$6 million. A thirty-year payment stream must be less than \$6 million because the company does not have to make payments beyond the thirtieth year. So how much less becomes the question. A \$600,000 payment made thirty-one years from now would actually have a very small present value due to all those years of compounding. Payments far out into the future generally have a small present value, and the PV falls as the discount rate rises.

Actually, when a thirty-year O&M of \$600,000 per year at a 10 percent discount rate is calculated, that cash flow would have a PV of \$5.66 million. It is not precisely the \$6 million perpetuity, but sometimes close is close enough, and in those instances, thinking of long-term cash flows as perpetuities is a very handy rule of thumb.

§ 6:11 The discount rate

As a mechanical exercise, discounting is very straightforward. It is basically the process of calculating compound interest, reversed. Beyond understanding a few equations, discounting relies on the estimation of the discount rate. In all the examples so far, the discount rate has been assumed. Yet, as Figure 6:4 demonstrates, changes in the discount rate can turn profitable investment outcomes into non-profitable investment losers. This section focuses on several common issues related to the discount rate and highlights several problems that can arise in the discounting process.

§ 6:12 The discount rate—Real versus nominal discount rates

So far, the discussion of discounting and its analogy to earning a return on invest-

ments has simply ignored the impact of inflation. To the extent that inflation exists, there is a need to account for it in the context of discounting, and there are several ways to do this. One approach is to use the nominal discount rate and inflate future costs. Another common method is to adjust the discount rate for inflation and leave the dollars uninflated. This section discusses each of these alternatives.

Table 6:8 presents a hypothetical investment opportunity. The cost to purchase this opportunity—paid up front—is \$100,000. This investment returns a stream of benefits for the next five years. In each year the benefit is \$50,000, valued in constant dollars. However, since inflation (for purposes of this example) is 5 percent annually, cash flows in the future must be inflated. As a result, the benefit in year five, although measured today as \$50,000, will be \$63,814 when it actually occurs, and that is the number that should be discounted.

Although this is a hypothetical example, in the real world this very problem occurs quite frequently. For instance, in the O&M calculation above, the company was told that O&M would cost \$600,000 per year. However, that estimate was made in today's dollars, or constant dollars. Obviously, if inflation is 5 percent this year, then O&M will cost more—\$30,000 more next year, to be exact. A calculation of present value needs to take that into account.

Returning to the example, if the inflated cash flows are discounted at 10 percent nominal discount rate, the NPV is \$117,906, as shown in Table 6:9. The method of discounting used is the same as that previously employed. The only difference is that now the costs have been inflated. Certainly, this is one way to account for the effects of inflation.

There is another way to adjust for inflation, however, and that is to modify the discount rate itself and leave the cash flows in constant dollars. Rather than raising the costs by the inflation rate, this method reduces the discount rate by the rate of inflation. The inflation-adjusted discount rate is called a real (versus nominal) discount rate. The following equation demonstrates that adjustment:

$$\text{Real Discount Rate} = \frac{1 + \text{Nominal Discount Rate}}{1 + \text{Inflation Rate}} - 1 = \frac{1 + .10}{1 + .05} - 1$$

$$= 0.0476 \text{ or } 4.76\%$$

This calculation can be tested by returning to the hypothetical investment problem from Table 6:8 and 6:9. Instead of inflating the costs, a real (or inflation-adjusted) discount rate is used. With a nominal discount rate of 10 percent and inflation at 5 percent, the real discount rate is 4.76 percent. That real discount rate is now applied to the constant dollar cash flows from Table 6:8. The result is shown in Table 6:10, which compares the two inflation adjustment approaches just discussed.

Table 6:8 Current Dollar and Inflated Cash Flows for a Project (With Inflation at 5 Percent)

	Time Period					Total	
	Now	1	2	3	4		5
Cash Flows (Constant Dollars)	-100,000	50,000	50,000	50,000	50,000	50,000	150,000
Inflation Factor	100.0%	105.0%	110.3%	115.8%	121.6%	127.6%	
Cash Flows (Inflated)	-100,000	52,500	55,125	57,881	60,775	63,814	190,096

Table 6:9 Calculating the NPV of Inflated Cash Flows for a Project (With Inflation at 5 Percent)

	Now	Time Period				Total	
		1	2	3	4	5	
Cash Flows (Constant Dollars)	-100,000	50,000	50,000	50,000	50,000	50,000	150,000
Inflation Factor	100.0%	105.0%	110.3%	115.8%	121.6%	127.6%	
Cash Flows (Inflated)	-100,000	52,500	55,125	57,881	60,775	63,814	
PV Calculation	$\frac{-100,000}{(1 + .10)^0}$	$\frac{52,500}{(1 + .10)^1}$	$\frac{55,125}{(1 + .10)^2}$	$\frac{57,881}{(1 + .10)^3}$	$\frac{60,775}{(1 + .10)^4}$	$\frac{63,814}{(1 + .10)^5}$	
PV Result	-100,000	47,727	45,558	43,487	41,510	39,624	117,906 = NPV

Table 6:10 Calculating the NPV of Cash Flows for a Project Using a Real Discount Rate (With 10 Percent Nominal Discount Rate and Inflation at 5 Percent)

	Now	Time Period				Total	
		1	2	3	4	5	
Cash Flows (Constant Dollars)	-100,000	50,000	50,000	50,000	50,000	50,000	150,000
Inflation Factor	100.0%	105.0%	110.3%	115.8%	121.6%	127.6%	
With a Nominal Discount Rate and Inflated Costs							
Cash Flows (Inflated)	-100,000	52,500	55,125	57,881	60,775	63,814	190,096
PV Calculation	-100,000 (1 + .10) ⁰	52,500 (1 + .10) ¹	55,125 (1 + .10) ²	57,881 (1 + .10) ³	60,775 (1 + .10) ⁴	63,814 (1 + .10) ⁵	
PV Result	-100,000	47,727	45,558	43,487	41,510	39,624	117,906 = NPV
With a Real (Inflation Adjusted) Discount Rate							
Cash Flows (Constant Dollars)	-100,000	50,000	50,000	50,000	50,000	50,000	150,000
PV Calculation	-100,000 (1 + .0476) ⁰	50,000 (1 + .0476) ¹	50,000 (1 + .0476) ²	50,000 (1 + .0476) ³	50,000 (1 + .0476) ⁴	50,000 (1 + .0476) ⁵	
PV Result	-100,000	47,727	45,558	43,487	41,510	39,624	117,906 = NPV

The results are exactly the same. Under either approach, this project has an NPV of \$117,906. While choice in selection of an approach to adjusting for inflation is a matter of personal preference, use of real, or inflation-adjusted, discount rates is very common in financial calculations because the process is somewhat easier. Whether an investor inflates costs or adjusts the discount rate for inflation, the discounting process should account for the effects of inflation.

§ 6:13 The discount rate—Risk and discount rates

As mentioned before, the previous examples have demonstrated the basic principle of finance that a dollar received today is worth more than a dollar received tomorrow. Another basic principle is that a safe dollar—one provided with certainty—is worth more than a risky or uncertain dollar—one that has risk associated with receiving

it. The examples used so far have evaluated future costs and benefits as if they were known, or certain, but, in reality, these are just estimates. Individuals and businesses alike seek to avoid risk, particularly if they can do so without sacrificing the return they earn on their investments. Costs and benefits should really be thought of as expected costs and expected benefits. If two different investments—say two different machines—return the same expected benefit but one is riskier than the other, most investors will prefer the less risky option.

To compensate for risk, the discount rate should be adjusted up or down depending on the relative risk associated with a particular investment. For example, if a particular machine provides a well-defined, easily quantifiable return, that return may have little, or perhaps no, risk. Therefore, a discount rate based on a risk-free rate of return—something like government treasury bills, which have no risk associated with them—may be the appropriate opportunity cost. Treasury bill rates, which provide a fixed, safe return, are frequently used to measure the risk-free rate of return.

For investments that have more risk or uncertainty associated with them, a higher discount rate is appropriate. In finance, the stock market is used as a benchmark, and the study of stock returns can be used to calculate a market risk premium. Investors in the stock market have received this risk premium (the return in the stock market less the return on treasury bills) for placing their money in the market as opposed to treasury bills.

Discount rates for any particular investment are generally benchmarked against the stock market. Are their returns more or less risky than returns in the stock market? This evaluation of risk affects the calculation of the discount rate. Riskier investments demand a higher discount rate. For example, two investment choices may each provide an expected return of \$100,000, but one process may be riskier than the other. Consequently, most investors would prefer the less risky option. These two investment choices may have the same future value, but their discounted value—their value today—is not equivalent. There is clearly a preference for the less risky investment. In order to obtain a lower PV, it must be associated with a higher discount rate.

In order to make the two investments seem equivalent, a premium would need to be added to the future value of the riskier investment. One alternative is to put that premium into the payout. Another alternative, analogous to the method employed to modify the discount rate for inflation, is to place a risk premium into the discount rate itself.

Placing the risk premium into the discount rate is the commonly preferred method for accounting for risk, in part because cash flows are what they are. Investors do not usually have the ability to modify future cash flows, so they are left to evaluate risk and adjust the discount rate accordingly.

This section does not address all the nuances of accounting for risk or estimating a firm's cost of capital, but any investor should recognize that discount rates need to reflect the relative risk of the cash flows they are used to discount. Cash flows with no risk—costs that have already been incurred—are frequently cited as examples of riskless costs and will have a lower discount rate than cash flows for riskier opportunities.

§ 6:14 The discount rate—The importance of discount rates

This next section revisits an earlier example. Table 6:7 examines two alternative investments. An evaluation of Option 1 found that a 10 percent discount rate had an NPV of \$137,236. However, further evaluation revealed that its value was sensitive to the discount rate. A comparison of Option 1 and Option 2 at a 10 percent discount rate revealed that Option 1 was preferable to Option 2, despite the fact

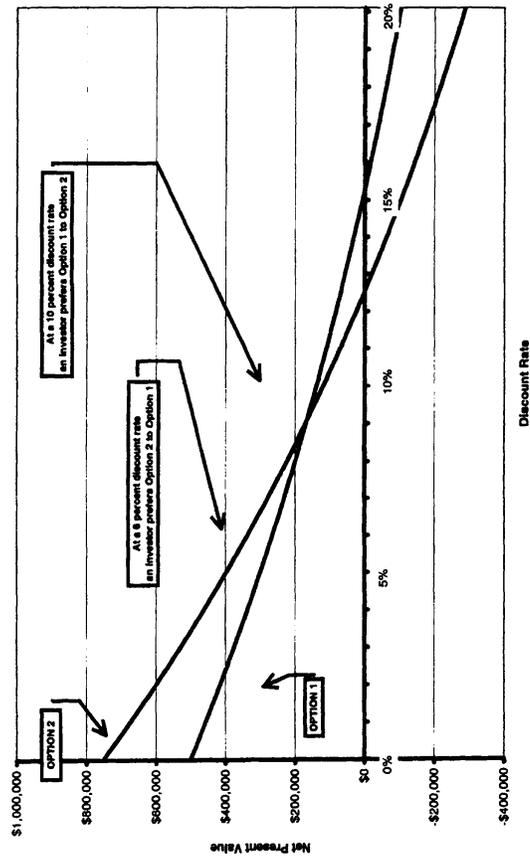
that Option 2 paid out more net dollars. It was all in the timing. Discounting is all about timing, too. Table 6:11 shows the results of re-evaluating that decision using a 6 percent nominal discount rate. Although the NPV has risen for both options, at a 6 percent discount rate an investor's preference switches from Option 1 to Option 2. This is because Option 2 has the higher NPV at a 6 percent discount rate.

Figure 6:5 shows a graph of the NPV for each process over a range of discount rates. The NPV lines cross each other, which explains why an investor would prefer Option 2 at a low discount rate, Option 1 at a higher discount rate, and neither at a discount rate exceeding 15.2 percent.

Table 6:11 Calculating the Net Present Value for the Cash Flows of Two Alternative Projects (Calculated at 6% Nominal Discount Rate)

	Now	Time Period					Total
		1	2	3	4	5	
Option 1	-1,000,000	300,000	300,000	300,000	300,000	300,000	<u>500,000</u>
PV Calculation	$\frac{-1,000,000}{(1 + .06)^0}$	$\frac{300,000}{(1 + .06)^1}$	$\frac{300,000}{(1 + .06)^2}$	$\frac{300,000}{(1 + .06)^3}$	$\frac{300,000}{(1 + .06)^4}$	$\frac{300,000}{(1 + .06)^5}$	
PV Result	-1,000,000	283,019	266,999	251,886	237,628	224,177	<u>263,709 = NPV</u>
Option 2	-1,500,000	250,000	250,000	500,000	500,000	750,000	<u>750,000</u>
PV Calculation	$\frac{-1,500,000}{(1 + .06)^0}$	$\frac{250,000}{(1 + .06)^1}$	$\frac{250,000}{(1 + .06)^2}$	$\frac{500,000}{(1 + .06)^3}$	$\frac{500,000}{(1 + .06)^4}$	$\frac{750,000}{(1 + .06)^5}$	
PV Result	-1,500,000	235,849	222,499	419,810	396,047	560,444	<u>334,648 = NPV</u>

Figure 6:5 Investment Preferences Switch as Discount Rates Change



This example highlights several key issues. First, while the mechanics of discounting may be straightforward, decisions rely on the estimation of the discount rate. And, as demonstrated here, decisions can be very sensitive to the choice of a discount rate. Second, testing the sensitivity of a decision to different discount rates is usually a prudent step. Even if an investor is confident in the choice of a discount rate, it is usually useful to know whether the investment choice is sensitive to the discount rate employed. And third, an investor should not assume that a preference for one alternative or another is the same regardless of the discount rate employed. Different rates can affect the relative value of projects.

III. DECISION ANALYSIS

§ 6:15 In general

Every manager in any business knows that forecasting future events is an essential function. Developing reasonable estimates of future costs and liabilities is required for a multitude of business functions ranging from business decision-making to compliance with regulatory requirements. Obviously, quantifying future liabilities or costs that are uncertain is a complicated process that does not lend itself to easy solutions. While some organizations have developed their own forecasting methods (the Securities and Exchange Commission, for example, has its own set of guidelines with regard to when and how future liabilities should be estimated and disclosed), the process itself has been largely subjective.¹

Lately, however, how these forecasts are made has come under scrutiny and, in some cases, criticism. Companies have been chastised for “burying their heads in the sand” in response to the inherent uncertainty related to future events. The methods employed to estimate future liabilities have also been criticized because they do not always provide relevant or valuable information.

To address some of these issues, the American Society for Testing and Materials (ASTM) has recently proposed new estimating standards.² The ASTM's proposal is specifically designed to address the wide range of circumstances that require estimating future environmental liabilities. The method it endorses is expected cost analysis, based on a decision-analysis evaluation of future events. This section focuses on the expected cost methodology itself and demonstrates through examples how decision analysis and expected cost analysis work, and how these analytical tools can be applied to the estimation of future environmental costs.³

§ 6:16 Expected value

The expected value is a probability-weighted average based on a range of potential outcomes. For example, in a situation where all of the possible outcomes have the same likelihood of occurring (so the probability of each is the same), a probability-weighted average is identical to a simple average. For example, if you open your wallet, which you know contains one \$5 and one \$10 bill, and pull out a bill, you are equally likely to pull out either one. The simple average of the bills is $[(\$10 + \$5) / 2]$ \$7.50. The probability-weighted average is also $[\$10 \times 50\% + \$5 \times 50\%]$ or \$7.50.

[Section 6:15]

¹The prime directive for accounting for loss contingencies under the Generally Accepted Accounting Principles has been provided by the Financial Accounting Standards Board. Financial Accounting Standards Board, Statement No. 5, Accounting for Contingencies (1975).

²ASTM Committee E51 on Environmental Risk Management Sub-Committee.05 on Reserves, Standard Practice for Estimating Environmental Costs and Liabilities (1997).

³For more information on decision analysis, see Richard Lane White & Shameek Konar, Proposed New ASTM Standards for Estimating Environmental Liabilities Signal a Preference for the Use of Decision Analysis and Expected Cost Analysis, 1 Strategic Env'tl. Mgmt. 185 (1999).

Expected value really “works” when different outcomes have different likelihoods of occurring. For example, you have a \$5 bill and a \$10 bill in your wallet, but you always put the larger bills in the back. This time, when pulling out a bill, you reach for the back. Unless you make a “mistake” (and you do 10 percent of the time) you will pull out a \$10 bill. Now a simple average [\$7.50] does not adequately reflect the future. It’s clear, after all, that there’s a very high likelihood that you are about to pull out a \$10 bill.

§ 6:17 How to think about uncertainty and decision analysis

One common method used to develop expected value estimates is decision analysis, or the development of decision trees and the use of decision theoretic modeling. This approach evaluates the different outcomes at each critical point in the process, forces the development of cost estimates for different outcomes, and makes an investor think about the probabilities of occurrence of these different outcomes. The calculation results in an expected value, a probability-weighted average. In addition, it can be used to develop a probability distribution of various potential outcomes. There are five steps in developing a decision tree model:¹

1. Identify the potential outcomes/scenarios likely to occur in the future and identify their timing.
2. Develop a decision tree or simulation model of all potential event outcomes.
3. Estimate the costs associated with each potential outcome.
4. Determine the likelihood of each item.
5. Compute the distribution of potential costs and the expected value.²

In some cases, historical data are available, or comparables can be evaluated to estimate either cost estimates or probabilities for specific events necessary for steps 3 and 4. The remainder of this section develops a sample decision tree to demonstrate the concepts of uncertainty and the computation of expected values.

If you flip a coin, will you get heads or tails? If you say heads or, likewise, tails, you are guessing. If you say there is a 50/50 chance of getting one or the other, you are right, but you did not answer the question. The question did not ask for the likelihood or probability of getting heads or tails, it asked which one you would get. Of course, you don’t know because the event has not occurred yet, and the outcome is not certain. You know what it *can* be, but you don’t know what it *will* be. That is uncertainty.

Although you may not know the answer—as to what a flip of the coin will produce—you do have some key pieces of information. You know, for example, that it will either be heads or tails (the coin won’t rest on its edge), so you know all of the potential reasonable outcomes. This is useful information. You also know the likelihood of each outcome. After all, you have a 50 percent chance of getting heads and a 50 percent chance of getting tails. There are really no other options besides these. With this in mind, consider the following question:

Using a fair coin, with a 50/50 chance of getting heads when it is flipped, what is the likelihood that if you flip the coin twice you will get heads both times? (A hint . . . it’s *not* 50 percent!)

Well, what are the potential outcomes? (And, by the way, whether you draw out

[Section 6:17]

¹These steps are based on the outline provided by the draft ASTM standards. How the information necessary to develop the inputs goes into the decision theoretic models will be described in later sections of this chapter.

²In situations where the number of potential outcomes from the decision tree approach become too numerous to compute individually, simulation models can be used to estimate the distribution of outcomes and the expected value.

the options on a piece of paper or figure them in your head, you are evaluating uncertainty using decision analysis.) You could get two heads; but you could also get two tails. Moreover, you could get one of each. So, is the likelihood of heads both times one third? No, it is 25 percent, as demonstrated in Figure 6:6. The first time you flip the coin, there is a 50/50 chance of getting heads. But in order to get heads both times, you have to get a head on this first flip. So, half of the time the game will be over after the first flip, because half the time you'll get tails on the first flip.

Now, if you were fortunate enough to get heads on the first flip, you then have to get heads on the next flip, which is completely independent of the first. When you flip that coin a second time, there is, once again, a 50/50 chance of getting heads. That is, only half of the time the first flip will produce heads, and then only half of the time the second flip will do the same. The probability or likelihood of getting heads both times is 25 percent.

To determine the likelihood of any given outcome, you follow its path and multiply the probabilities. The likelihood of getting heads twice is the likelihood of getting heads the first time (50 percent) *multiplied* by the likelihood of getting heads the second time (50 percent), which is 25 percent. You *multiply* probabilities.

This example demonstrates that it is possible to estimate the likelihood of future events. By determining all the possible outcomes for each flip of the coin, you know what the outcome might be. By knowing the probabilities associated with those specific outcomes, you can then estimate the likelihood of occurrence. But likelihood isn't "expected value," and in order to embrace the concept of expected value it is important to really understand uncertainty. The following problem modifies the example in Figure 6:6.

Each time you flip that coin and get heads, a friend will pay you \$10, but you can only flip it twice. Your friend will pay nothing for tails. But first your friend needs to go to the bank and get the money to pay you, even though you haven't flipped the coin yet. How much money should your friend get?

If your friend is lucky and you flip two tails, he or she will not need any money. On the other hand, he or she might have to pay you \$20. Or your friend might end up somewhere in the middle. So your friend will go to the bank machine and take out \$10. This is what your friend expects to pay out. It is the expected value of what your friend is about to lose and what you are about to win.

Figure 6:7 shows the initial decision tree with the different outcomes of two coin flips. Only this time it notes what your friend expects to pay at each result. After the first flip of the coin, your friend will pay you \$10 if you get heads and nothing if you get tails. If you get heads again, your friend will pay you another \$10. But, if your second flip produces tails, your friend will pay you only \$10 for the successful flip and nothing for the second flip. Figure 6:7 shows the payouts for the "tails-first" paths. Notice that while probabilities are *multiplied*, costs are *added* at each event.

Figure 6:6 Results of Flipping a Coin Twice

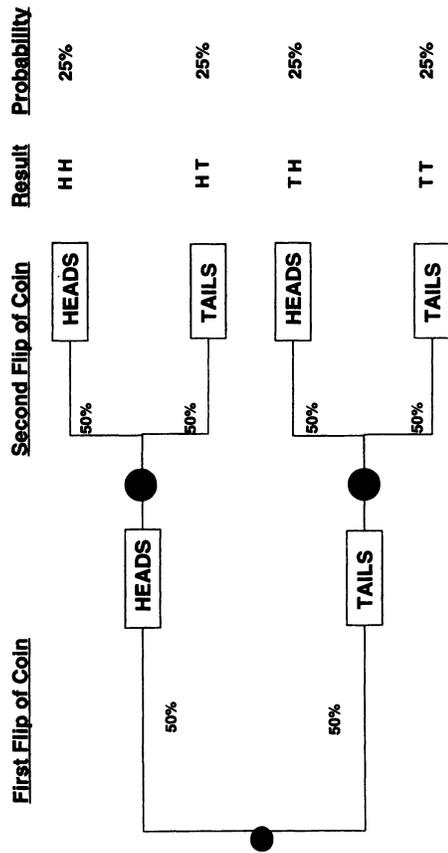
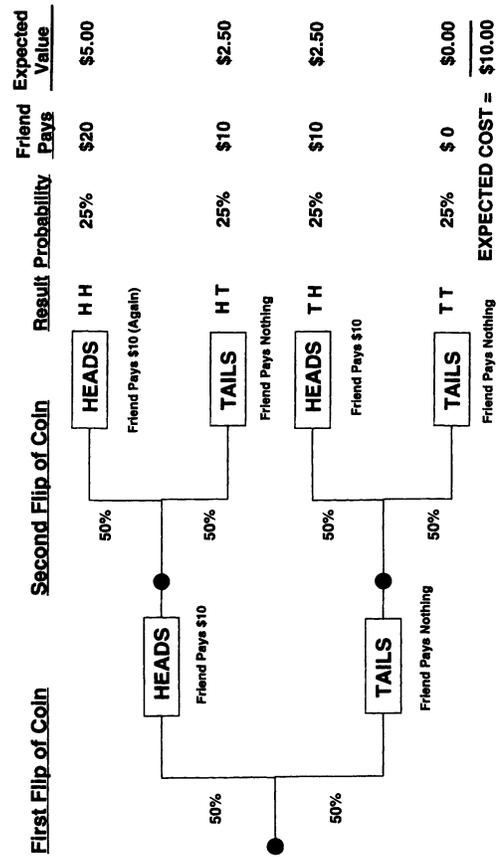


Figure 6:7 The Expected Value of Flipping a Coin Twice



The right-hand columns reproduce the outcomes—what your friend will have to pay if you end up with that outcome. The table also lists the likelihood or probability that each outcome will occur. Your friend will pay \$20 for two heads, \$10 for heads then tails, \$10 for tails then heads, and, finally, nothing for two tails. The chart also indicates the expected value of each path, the probability-weighted outcome, and, at the bottom, the expected value of your flipping two coins—what your friend expects to pay for this future uncertain activity. This number is estimated by adding each of the individual expected values (for each outcome) together.

Notice that although your friend will pay you \$20 for two consecutive heads, there is only a 25 percent chance that you will accomplish that feat. The “probability-adjusted” payout, or the expected value, of that path is \$5, which is \$20 multiplied by the probability that you actually get that outcome. Likewise, if you get one head and one tail, in that order, your friend will pay you \$10. But, again, since the likelihood of that event is 25 percent, its expected value is \$2.50. Your friend can do this for each of the four potential outcomes, and when your friend is finished, he or she adds up all those expected value numbers. The result—the sum of the expected values from the different paths—is the expected value of the activity itself. In this case, when your friend adds the expected values together, the total is \$10. That is the amount your friend expects to lose to you. That number is not always “right.” Sometimes your friend will pay you nothing, and sometimes your friend will pay you \$20. However, \$10 is what your friend should expect to pay.

Developing Figure 6:7 requires your friend to determine the range of possible outcomes, the probabilities for the different events, and the costs or payments that would be made for different events. When those pieces of information are known, there is relatively less uncertainty. If there is uncertainty in those pieces of information, the decision analysis process still works in the same way, but one would simply need to incorporate more variables to evaluate. For example, if the coin could also land on its edge, the diagram would be somewhat more complicated, but it would still be possible to draw the diagram and to use it to evaluate the various outcomes.

§ 6:18 Applying expected value analysis to environmental problems

It is one thing to model how a coin can be flipped twice. After all, the possible outcomes (heads and tails) and the key probabilities (50/50) are known. And your friend told you the costs or payouts he or she would make under certain conditions. Unfortunately, the real world—particularly in regard to future environmental liabilities—seldom provides such a clear roadmap for analysis.

The following example uses information concerning an environmental site.

A manufacturing facility sits on an area that was formerly a waste disposal staging area. The site has not been tested, and the regulators are not currently evaluating this site. In fact, the site might never be addressed. If an environmental study is required, it is likely that some remediation work will be required. However, it may be the case that the study will find no need for further work. Based on the company’s knowledge of the site, if work is undertaken, it would be limited to soil remediation. However, the quantity of soil that potentially would be treated is uncertain, and there are several different soil remediation alternatives.

How does the company begin to quantify or get a handle on the potential cost of remediating this site? There are so many uncertainties that *determining* the cost of remediation is impossible. At this point there is no single future cost of remediation. However, while uncertainty prevents the company from determining the cost of remediation, it does not prevent it from *estimating* the cost of remediation.

§ 6:19 Applying expected value analysis to environmental problems—The no action option

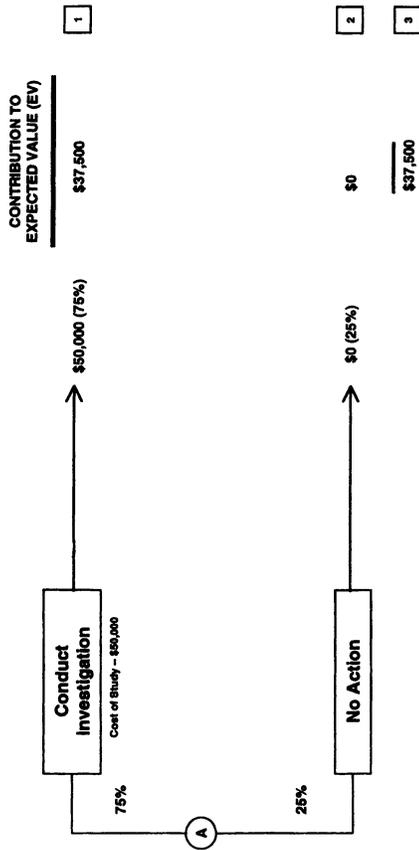
Currently, regulators are not evaluating the site, and the company has no plans to undertake an evaluation. The problem may just go away. That is, it may require no further action and have a future cost of \$0. Is that likely? No, not really, but there is a chance this will happen.

§ 6:20 Applying expected value analysis to environmental problems—The no action option—Determining the range of outcomes

The first uncertainty to evaluate is the possibility that the problem will go away without any further action. The cost of that outcome is \$0. What is the alternative? That is, what activity will occur at the site if the problem does not go away? In all likelihood, some study or evaluation of the site will occur, either performed voluntarily or at the behest of the regulators. But, before the company digs up any of that soil, it will study it.

This means that at some future point the company is going to either “study” or “not study” the site. Not studying in this case means that, once again, the site goes away. The two alternatives the company faces in the future are shown in Figure 6:8. A dot shows where these two options come together in the diagram to indicate uncertainty—the company does not know which path to choose.

Figure 6:8 The “Study or No Study Required” Options



§ 6:21 Applying expected value analysis to environmental problems—The no action option—Estimating costs

If no one compels the company to study or evaluate the site, it then goes down the “no action” path and is finished. The cost for that outcome is also \$0. The alternative is a study or evaluation of the site. While that cost might be uncertain, the company will assume that a study would cost \$50,000. Now the company knows what its first area of uncertainty looks like, but it does not know what the outcome will be—it has a range of outcomes. This is just like “heads or tails,” only now it is “study or no study required.”

§ 6:22 Applying expected value analysis to environmental problems—The no action option—Estimating probabilities

When it came to coins, the likelihood of getting either heads or tails was obvious—50 percent. When it comes to “study or no study required,” the likelihood is uncertain, but there are ways to estimate it. For example, it may be the case that the company has many other sites just like this one. Thus, it has some sense of what the regulators are likely to require here. Or, there may be similar sites in this area, and the company can evaluate how the regulators have responded to those. Even if the company cannot determine that the likelihood is some precise number (e.g., exactly 50 percent), it can still collect information in order to make an estimate of the likelihood.

If the company had four of these sites, would the regulators make it study two, three, or four of them? For purposes of this discussion, assume that the regulators will make the company study three out of four of the sites. This means that 75 percent of the time (three of four times) the company will go down the “conduct investigation” path, and 25 percent of the time it will go down the “no action” path. Now all of the information the company needs to develop Figure 6:8 is complete. The company knows the possible outcomes, the associated costs, and the probabilities assigned to each path.

§ 6:23 Applying expected value analysis to environmental problems—Estimating the expected value of the study

Assuming that this is all there is to the remediation—the company either studies (and then does nothing else) or it does nothing at all—the study will cost \$50,000, and there is a 75 percent chance that the regulators will require a study. What is the expected cost? As shown in Figure 6:8, it is \$37,500.

The analysis of this problem answers several questions. First, what happens if the company is not very confident in its probabilities? How does that affect the expected value? Second, how does the expected value (\$37,500 in this example) compare to the different outcomes? And third, why is \$37,500 the right number for the expected value?

§ 6:24 Applying expected value analysis to environmental problems—Estimating the expected value of the study—Probabilities affect expected value

To arrive at the estimated \$37,500 expected value, the company used a probability of 75 percent that the regulators would make it conduct a study. If a different probability was used, the resulting estimate would also differ. For example, if the likelihood was only 50 percent, the expected value would have been \$25,000 (i.e., \$50,000 × 50%). The expected cost is sensitive to the probabilities that are assigned to specific outcomes. Sometimes, however, a great deal of uncertainty is tied to very little cost, meaning that the uncertainty has no significant impact on the cost estimate. There are ways to test the impact of uncertainty in probability

estimates, but the key point here is that the process of evaluating future costs using decision analysis does work.

Sometimes a company is less interested in a specific answer than in other relevant information about a future cost. For example, a company may have a great deal of uncertainty over the likelihood that a study will be required. Although it decides the probability is 75 percent, the company is just not confident that this is a very solid number. Besides, what the company wants to know is not simply the expected value of the study/no study option, but also, for budgeting purposes, whether that option is going to cost at least \$10,000 next year. It's a simple yes or no question. Is this uncertain event expected to cost \$10,000 (or more) at some point in the future?

Decision analysis can help answer that question. If the company assumes that the outcome (*i.e.*, the expected value) will cost \$10,000, then what is the corresponding probability? The answer is 20 percent. That is, if there is a 20 percent likelihood of a \$50,000 study, then the expected value is \$10,000. So, the company still may be uncertain as to whether the probability is 75 percent, but if it is trying to determine whether a study will cost at least \$10,000, the answer is yes (if the likelihood is 20 percent or higher).

**§ 6:25 Applying expected value analysis to environmental problems—
Estimating the expected value of the study—Why expected value
may not represent a specific outcome**

When the company calculated the expected value of the study to be \$37,500, the only outcomes that were available were “pay nothing” and “pay \$50,000.” However, because there is a probability weighting to these outcomes, the expected value is \$37,500. This can be confusing. Sometimes people want to know which path results in the expected value, but there is no \$37,500 path. It is simply a weighted average of the two identified paths.

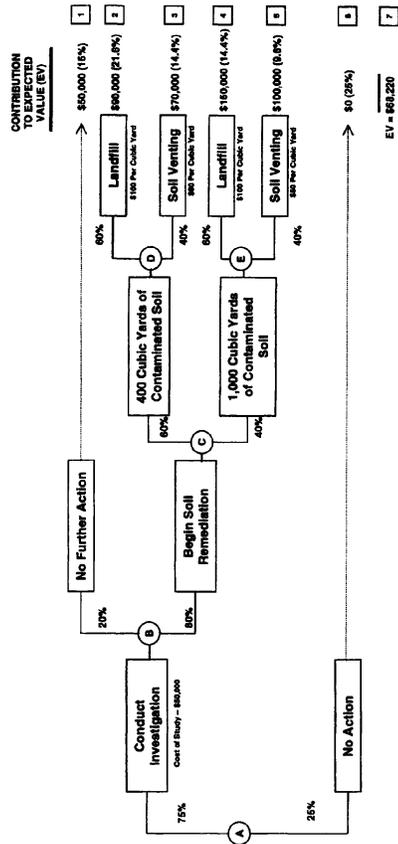
**§ 6:26 Applying expected value analysis to environmental problems—
Estimating the expected value of the study—Why expected value is
the right answer**

If a study is required, the company will spend \$50,000. But, if the company has four identical sites, the odds are that it will only study three sites (*i.e.*, $.75 \times$ four sites). That will cost a total of \$150,000 ($\$50,000 \times$ three sites). So, the cost related to studying four sites, when the company actually studies three of them, is \$150,000, or \$37,500 per potential site. If the company had budgeted \$50,000 per site, it would be implicitly assuming that each of the four sites definitely will be studied, even though the company had previously concluded that the odds of this occurring were only 75 percent. An expected value gives a company the correct estimate of the future cost.

**§ 6:27 Applying expected value analysis to environmental problems—
Evaluating post-study actions**

If the regulators do require a study, the company may find that soil remediation is unnecessary. On the other hand, it may find out that some soil cleanup has to be done. How does a company address this in the expected cost analysis? It simply adds another node (a point where different decisions or events occur) to the decision tree and evaluates the options. Figure 6:9 shows this result.

Figure 6:9 Hypothetical Decision Tree for Site Remediation



This node is somewhat more complicated than the one shown in Figure 6:8 because it actually links several nodes together. Now that the study is complete, there are five subsequent options. Once again, there is an option for “no further action” following the study. If that option is not selected, then the regulators will require soil remediation. However, the quantity of soil and the remedy remain uncertain. The company has identified two potential soil volumes, and under each one, two methods of treatment have been identified. As a result, there are four soil treatment options. Thus, as this node is drawn, there are only five possible outcomes after the study is conducted.

§ 6:28 Applying expected value analysis to environmental problems— Calculating the probabilities and expected costs of each outcome

At each decision point, a number of options may occur, and probabilities are assigned to each option. At each point, these probabilities must, by definition, equal 100 percent. In other words, either the company studies or it doesn't. There are no other options. And, if the company studies, it either takes no further action or it conducts one of four soil remedies. Again, there are no other options.

For example, in Figure 6:9, each node is labeled “A” through “E.” Likewise, each outcome is numbered “1” through “6” (with “7” being the sum of the individual paths' expected values). So, if the company wants to calculate the probability associated with remediating 400 cubic yards of soil using soil venting treatment, it looks at Outcome 3. The probability of that outcome is calculated as follows:

A 75 percent chance of a site study is multiplied by an 80 percent chance that, when the study is completed, soil remediation will be required. This is then multiplied by a 60 percent chance that the quantity of soil, given the need for remediation, will be 400 cubic yards. That number is multiplied by a 40 percent chance that the remedy selected for those 400 cubic yards would be soil venting. This results in a 14.4 percent likelihood of that event occurring (*i.e.*, $75\% \times 80\% \times 60\% \times 40\%$).

The company could also calculate the cost associated with that event. If the company ends up at Outcome 3, it means that it did undertake the study, thus spending \$50,000. It would also mean that once the study was completed, it was determined that remediation of 400 cubic yards of soil was required. Finally, it would mean that the selected remedy was soil venting. Since soil venting costs \$50 per cubic yard, and the number of cubic yards is 400, the cost of treatment would be \$20,000 (*i.e.*, $\$50 \times 400$). Thus, the cost of this path would be the study cost (*i.e.*, \$50,000) plus the cost of the treatment (*i.e.*, \$20,000) for a total of \$70,000. Since the likelihood that this path would be taken is 14.4 percent, the probability-weighted contribution is \$10,080 (*i.e.*, $.144 \times \$70,000$). If the company follows each path and estimates its likelihood, its cost, and its contribution to total expected cost, and then sums the contribution of each path, it will find that the expected value of the future remediation cost for this site is \$68,220.

This very uncertain future event has been estimated. Many, if not most, future events can be estimated using these decision analysis techniques. In general, the greater the uncertainty, the less confidence there will be in the estimate and, frequently, the more sensitive the estimate will be to changes in underlying assumptions. Often, this uncertainty is reflected in the decision tree by displaying a number of options at any node. But the process itself (*i.e.*, developing decision trees and estimating expected values) can be a powerful tool in evaluating future events.

Although it may not be able to solve every future cost estimation problem, decision analysis is an incredibly powerful tool that can be used in many circumstances to estimate future costs or evaluate future events. Decision analysis requires more work and more information collection than other methods do, but it also provides more information about future events. It provides an estimate of future costs and of minimum and maximum costs as well, and, perhaps most important, it provides a

measure of the distribution of possible outcomes and the ability to evaluate the relative uncertainty behind the forecast itself.

For environmental managers, however, decision analysis is more than just a tool for estimating expected value and supporting some estimate of future costs. It is the *process* of developing the decision tree that is often most useful. The act of developing the decision tree forces participants to focus on specific remedial factors and to develop a range of outcomes at each critical point in the process. It then compels participants to quantify the impact of these outcomes and evaluate the likelihood that any outcome will occur. It imposes structure on uncertainty; it shows the participants what may unfold without proactive intervention. As a result, proactive environmental managers can use decision analysis as a tool for evaluating future environmental liabilities and as a roadmap to the steps necessary to manage the future effectively.

IV. COST-BENEFIT ANALYSIS

§ 6:29 In general

Cost-benefit analysis is the principal technique employed by individuals, corporations, and government agencies to facilitate decision-making by providing a tool to evaluate alternative courses of action. When making choices or decisions in our daily lives, each of us employs the fundamental principles of cost-benefit analysis. For example, when purchasing a car, a consumer weighs the various pros and cons associated with different models in order to try to get the best value.¹ Similarly, when corporations evaluate different investment opportunities, they are essentially conducting a form of cost-benefit analysis where the profits associated with each option are the benefits and the costs constitute the investment that is required. The corporation would then go on to select the alternative that has the greatest net profit (*i.e.*, profit less cost).

Cost-benefit analysis is perhaps the primary analytical tool used by governments in making public policy choices. Governments typically are faced with budget constraints and have to make choices between a variety of different programs to fund. For example, when the government is faced with the decision of how to spend a budget surplus, various alternatives are put forward—from new educational programs, to increased health care benefits, to increased defense spending. The government must consider the net benefits to society and the country that each of these programs is likely to result in prior to making its decision.

Core decision-making at all levels either explicitly or implicitly uses cost-benefit analysis. This section provides a formal generic framework that may be utilized by decision-makers in different fields to aid their decision-making. The following section will begin with a discussion of the characteristics of the cost-benefit analysis tool and the fundamental rules that must be followed in its application. Following this, alternative formulations of problems where cost-benefit analysis may be used are addressed using examples. This will be followed by a discussion of the methodology that may be used to estimate the costs and benefits associated with a particular project and the potential pitfalls associated with the use of cost-benefit analysis as a tool for decision-making.

§ 6:30 Basic analytical steps

In theory, cost-benefit analysis provides an objective and rigorous analytical

[Section 6:29]

¹To put this example in the cost-benefit analysis framework, the price associated with various models the consumer is considering is the cost, and the potential usefulness derived from the car and its various features would constitute the benefits. In making the final choice an individual would typically select the car that has the largest net benefit (*i.e.*, total benefit less total cost).

framework for decision-making. This approach simply requires a systematic enumeration of the costs and benefits associated with a particular decision or a group of possible alternatives. On estimating these potential benefits and costs, the alternative that provides the maximum net benefit (*i.e.*, benefit less cost) should be selected. This is an *ex ante* analysis and is in many ways similar to the *ex post* profit and loss analyses conducted by business entities.¹

Individuals and other entities often use cost-benefit analysis to help them decide between a number of alternatives available to them. The rationale behind cost-benefit analysis is one of economic efficiency in that it attempts to put resources to their most beneficial use. Using the car analogy again, in buying the best car he or she can afford out of a number of alternatives, the consumer is putting his or her resources to the best possible use. Similarly, cost-benefit analysis is also used by governments, for example, to determine the type of pollution control system that should be put in place to control the spread of a contaminant in ground water or to decide between a group of alternative poverty alleviation measures.

The following five-step process may be followed to conduct cost-benefit analyses.

- *Identify all of the alternatives.* This step involves the identification of all of the alternatives that may potentially be undertaken. For example, the first step when a consumer is interested in buying a car is for the consumer to identify all of the models he or she is interested in. Similarly, for a corporation interested in investing money, the identification of all feasible investment opportunities would constitute the first step in conducting a cost-benefit analysis. And, in the case of a government attempting to clean up the environment, the identification of all the possible programs that it may undertake (*e.g.*, reduction in sulfur dioxide emissions, controlling perchloroethylene releases from unregulated business, or controlling non-point source pollution from agricultural sources) would be the first step in conducting such an analysis.

- *Determine all potential impacts.* The favorable, as well as the unfavorable, impacts associated with all of the potential projects must be determined, both in the present as well as in the future. In doing this, it is important to evaluate these impacts from the correct perspective (*i.e.*, from the perspective of the decision-making principal). For example, a company considering the release of a new product into the market should only account for factors that affect its own costs and benefits (profits). This company does not necessarily need to include in its analysis the impact of this product on the profitability of other businesses. On the other hand, in the case of a government making a public policy decision, it must try to evaluate the effect the policy is likely to have on society in general and should include in its analysis the likely impact on a much larger universe of constituents.

- *Assign values to these impacts.* The favorable impacts may be viewed as benefits and the unfavorable impacts as costs. The assignment of values is critical to bringing all of the alternatives to a common denominator that facilitates comparison. Typically, benefits, and the costs associated with different projects, are expressed in dollar terms.

- *Calculate the net benefit.* The net benefit for a project is computed as the total benefit minus the total cost.

- *Select the best alternative.* The fundamental rule for conducting a cost-benefit analysis is selecting the project that has the highest net benefit.

Cost-benefit analysis is indeed a very powerful tool for use in decision-making,

[Section 6:30]

¹An *ex ante* analysis is conducted prior to the event actually taking place and, hence, is a predictive analysis. There is a significant amount of uncertainty associated with this type of analysis. An *ex post* analysis is conducted after the event has taken place. Profit and loss, for example, are *ex post* concepts. Expected return, however, is an *ex ante* concept.

but at the same time it may involve extremely complicated analysis in order to correctly quantify the problem at hand. The application of the cost-benefit analysis to solve problems of varying degrees of complexity is probably best understood in the context of examples. This section considers five potential situations that encompass most of the different scenarios where cost-benefit analysis would typically be applied.

§ 6:31 Basic analytical steps—Accepting or rejecting a single project

This example analyzes the simplest of all situations. It evaluates a single project and either accepts or rejects it. This example is based on the assumption that there are no constraints in terms of the amount of resources that can be spent on this project.

A company that manufactures widgets generates a certain amount of pollution as a part of its manufacturing process. It is faced with costs associated with permitting and with the disposal of the pollutant. Additionally, there is a significant amount of potential future liability from the disposal of this product, given regulatory uncertainties. For example, the product may become a listed waste in the future in which case the company is likely to be required to clean up its disposal sites and would also face potential toxic tort liability. The company has decided that it would like to mitigate the current costs and the potential future liability resulting from the release of the pollutant by adopting pollution prevention technology. The cost of installing the system is estimated to be \$100,000. The net benefits to the company from cost savings over the years in terms of disposal costs and permitting is estimated to be \$75,000. In addition, the reduction in future liability (both from a reduced likelihood of being required to clean up the pollutants in the future and a reduction in potential toxic torts) is estimated at \$50,000.¹ The net benefit to the company from installing this pollution prevention technology is calculated as

$$\$75,000 + \$50,000 - \$100,000 = \$25,000$$

In this case the decision is a simple yes/no decision without any constraints. Based on the above calculations, the net benefit from adopting the pollution prevention technology is \$25,000. On the other hand, in the situation where this technology is not adopted, negative net benefit numbers result from the permitting and disposal costs as well as from the potential future liability. Thus, following the fundamental principle of cost-benefit analysis, the net benefits are maximized by installing the pollution prevention system.

§ 6:32 Basic analytical steps—Selecting from a number of discrete alternatives

If there are eight alternative proposals presented to the company for the abatement of the pollution resulting from the manufacturing process, the company has to select one of them. Each of these eight methods has different implementation costs and is effective to different degrees in terms of abating the release of the pollutant. Figure 6:10 lists the costs and the potential benefits associated with each of the technologies.

System A is the cheapest, and System H is the most expensive. As system price increases, so does the effectiveness in controlling emissions levels, which results in increasing benefits. The net benefit from each alternative is computed in the final

[Section 6:31]

¹Developing future cost estimates for both cleanup costs and toxic tort liability is a very complicated task and would require a large amount of detailed and complex analysis. Tools such as decision trees and discounting should be employed to accomplish this.

column on Figure 6:10. Based on a comparison of the net benefits, the company realizes that System E has the highest net benefit of \$250,000 and should be the system selected to prevent the release of the pollutant.

§ 6:33 Basic analytical steps—Selecting the scale of a project

The systems described in the previous example were mutually exclusive, and a single system had to be selected from the group. Alternatively, companies are often faced with situations where they have to select the scale of a project instead of selecting between several projects. A common example is the case of the addition of fertilizers to increase agricultural productivity. In this case a farmer needs to determine the optimal level of fertilizer that may be used on a tract of land for the production of corn. Historical productivity data on the impact of fertilizers on the corn yield can be used to solve the farmer's problem. The benefits from the use of fertilizers (in terms of the value of the increased corn output), and the costs of buying the fertilizer are presented in Figure 6:11.

Figures 6:12 and 6:13 depict the data from Figure 6:11 graphically and show the total benefits and total costs resulting from fertilizer use.

Figure 6:10 Alternative Pollution Control Systems (\$'000)

Pollution Control System	System Cost	Benefits		Total Benefit	Net Benefit
		Savings from Permitting and Disposal	Savings from Future Liability Reductions		
A	100	100	50	150	50
B	300	250	250	500	200
C	150	175	150	325	175
D	500	300	400	700	200
E	350	250	350	600	250
F	250	200	200	400	150
G	200	175	200	375	175
H	700	300	550	850	150

Figure 6:11 Net Benefits from the Use of Fertilizers (\$'000)

Tons of Fertilizer	[2] Total Benefit	[3] Total Cost	[4] Net Benefit	[5] Marginal Benefit	[6] Marginal Cost	[7] Marginal Net Benefit
0	0	0	0.00	0.00	0.00	0.00
5	4.5	1	3.47	0.37	0.20	0.17
10	6.3	2	4.32	0.26	0.20	0.06
15	7.7	3	4.75	0.24	0.20	0.04
20	8.9	4	4.94	0.21	0.20	0.01
25	10.0	5	5.00	0.18	0.20	-0.01
30	11.0	6	4.85	0.16	0.20	-0.02
35	11.8	7	4.83	0.16	0.20	-0.04
40	12.6	8	4.65	0.15	0.20	-0.05
45	13.4	9	4.42	0.15	0.20	-0.06
50	14.1	10	4.14	0.14	0.20	-0.06
55	14.8	11	3.63	0.13	0.20	-0.07
60	15.5	12	3.49	0.13	0.20	-0.07
65	16.1	13	3.12	0.12	0.20	-0.08
70	16.7	14	2.73	0.12	0.20	-0.08
75	17.3	15	2.32	0.11	0.20	-0.09
80	17.9	16	1.89	0.11	0.20	-0.09
85	18.4	17	1.44	0.11	0.20	-0.09
90	19.0	18	0.97	0.10	0.20	-0.10
95	19.5	19	0.49	0.10	0.20	-0.10
100	20.0	20	0.00	0.10	0.20	-0.10
105	20.5	21	-0.51	0.10	0.20	-0.10
110	21.0	22	-1.02	0.09	0.20	-0.11
115	21.4	23	-1.55	0.09	0.20	-0.11
120	21.9	24	-2.09	0.09	0.20	-0.11
125	22.4	25	-2.64	0.18	0.20	-0.02

[1] Tons of fertilizer used for the project.
 [2] Total benefits from the fertilizer resulting from an increase in corn productivity.
 [3] Total cost of the fertilizer.
 [4] = [2] - [3]
 [5] Increase in benefits per additional ton of fertilizer.
 [6] Increase in costs per additional ton of fertilizer.
 [7] = [5] - [6]

Figure 6:12 Total Costs and Benefits from Fertilizer Use

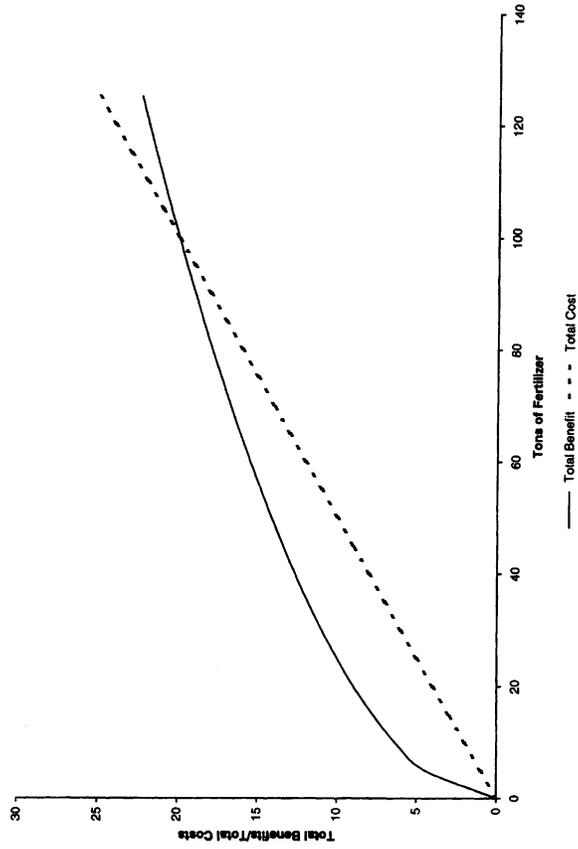
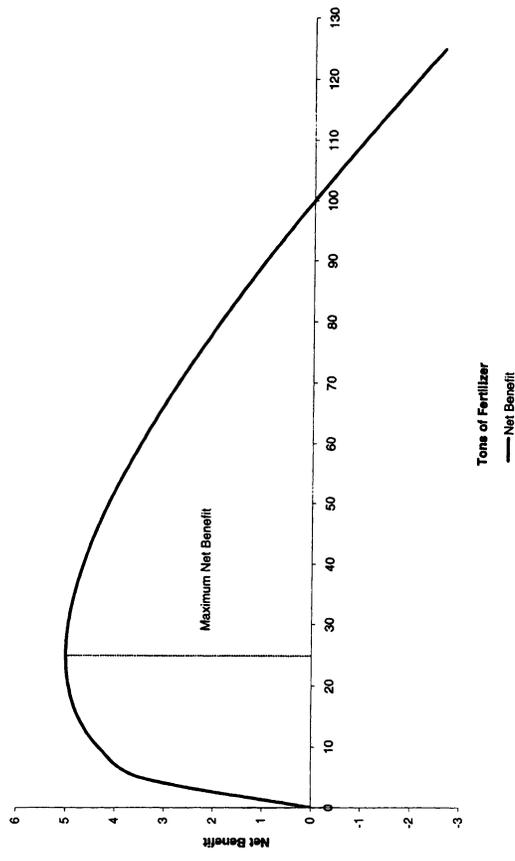


Figure 6:13 Net Benefits from the Use of Fertilizers



In this case, as before, the objective is to use the amount of fertilizer that maximizes the net benefit (*i.e.*, total benefit minus total costs) for the farmer. Net benefits for all of the levels of fertilizer use have been calculated in Figure 6:11. Figures 6:11 and 6:13 demonstrate that the net benefit from fertilizer use reaches its maximum when the farmer uses twenty-five tons of fertilizer. By going through this exercise, the farmer has determined the optimal scale for the project, or the amount of fertilizer that should be used to generate maximum returns.

Selecting the scale of projects is an issue that is frequently encountered in conducting environmental cleanups. Consider a situation where a company is faced with a groundwater contamination problem at an environmental site. This contamination problem may be mitigated by using systems that pump the water out of the ground and treat it. The scale of the project, or the rate at which the water should be extracted from the ground, will need to be determined so that the benefits from this process are optimized. Cost-benefit analysis comes in handy in such a situation. The company would typically compare the costs at different pumping rates to the impact that these pumping rates would have on the level of contamination (benefits) to determine the net benefits. Finally, the pumping rates resulting in the highest net benefit will be selected.

This example provides an alternate version of the fundamental decision rule, which is based on maximizing net benefits. The optimal scale for a project may also be determined by continually increasing the scale of the project to the point where the increase in the benefit from a single unit increase in the input (marginal benefit) is equal to the cost of that unit of input (marginal cost). If the company increases the scale of the project beyond the point where the marginal costs equal the marginal benefits, then the costs of each additional unit become greater than the benefit that we derive from it, and the additional unit is no longer optimal. In the fertilizer example, this point is demonstrated in Figure 6:11. The marginal benefit almost equals the marginal cost at twenty-five tons of fertilizer use.¹ To reach this point the farmer continues adding fertilizer to the point where the additional benefit from a ton of fertilizer is equal to the cost of that ton of fertilizer. An alternative way of expressing this rule is that the optimal level of inputs is defined by the point where the marginal net benefit is zero.

A crucial assumption embedded in this principle for determining the optimal scale of a project is that there will eventually come a point at which the marginal benefit from a ton of fertilizer will be less than its marginal cost. This assumption is formally referred to in economics as the *law of diminishing returns*. While it is not necessarily the way all physical phenomenon work, it is more often than not an accurate description of the real world.

§ 6:34 Basic analytical steps—Selecting from a number of discrete alternatives subject to resource constraints

Companies are often constrained by the amount of money they can spend on projects. In the next example, the projects outlined in § 6:32 are not mutually exclusive, and the company has eight widget manufacturing facilities for which it must consider the installation of pollution prevention systems. The company has received bids from contractors for the installation of the systems at the eight facilities and has calculated the potential benefits from each system based on its effectiveness. However, the company only has \$800,000 to spend on these systems and is faced with the problem of deciding which of the facilities will get these systems.

[Section 6:33]

¹Since discrete increments are used to indicate the amounts of fertilizer, the marginal cost is not exactly equal to the marginal benefit from the fertilizer at twenty-five tons, but it is approximately the point at which the benefits become lower than the costs.

In order to do this most effectively, the company needs to select a group of projects that would maximize the net benefits for an outlay of \$800,000. The company could try to find a solution to this problem by using the trial and error method. For this method, the company would select groups of projects that would, in total, cost \$800,000 or less and then compare the net benefits across all of the groups until it was satisfied that it had selected the best group. This could be a very tedious process, especially if there are a large number of potential alternatives.¹

There is a far more systematic way of tackling such problems. Since, in this case, it is the initial outlay, or the costs of the project, that constrain the company, it is useful to compute the net benefit from each project per dollar spent on the project. These values for the alternatives described in § 6:32 (Figure 6:10) are represented in Figure 6:14. The systems are ranked from the highest net benefit per dollar to the lowest, and a cumulative total outlay for these systems is computed in the last column of Figure 6:14. System C has the highest net benefit per dollar followed by systems G and E. When determining the systems to install, the company should begin with the system that provides the highest net benefit per dollar and continue with progressively lower ranked units until it exhausts its resource constraint.

[Section 6:34]

¹If, for example, the company had eight alternative pollution abatement systems that it could fund at different manufacturing facilities, then it can actually create 2^8 potential groups (since with each system the company would have two choices, to either accept or to reject it), which it would have to evaluate. To begin with, the company would have to select the groups that satisfied the resource constraint. After this, it would have to compare the net benefits for the selected groups to determine the optimal combination of systems.

Figure 6:14 Alternative Pollution Control Systems (\$'000)

Pollution Control System	System Cost [1]	Total Benefit [2]	Net Benefit [3]	Net Benefit/Cost [4]	Cumulative Cost [5]
C	150	325	175	1.167	150
G	200	375	175	0.875	350
E	350	600	250	0.714	700
B	300	500	200	0.667	1000
F	250	400	150	0.600	1250
A	100	150	50	0.500	1350
D	500	700	200	0.400	1850
H	700	850	150	0.214	2550

[1] Total costs of system implementation.

[2] Total benefits from the installation of systems.

[3] = [2] - [1]

[4] = [3]/[1]

[5] Cumulative system costs starting with the system that has the highest net benefit per dollars.

In this case, the company would select the top three systems in terms of the net benefits per dollar. These are systems C, G and E, for a total cost of \$700,000. Unfortunately, the next system (system B) is too expensive for the company to adopt. Given the indivisibility of these systems, the company would continue down the ranks of the systems until it found one that it could afford. In this example, that would be system A. The resulting net benefits from the selected systems (C, G, E, and A) would amount to \$650,000 and would maximize the company's net benefits for its initial outlay of \$800,000.

§ 6:35 Basic analytical steps—Selecting optimal alternatives and scale subject to resource constraints

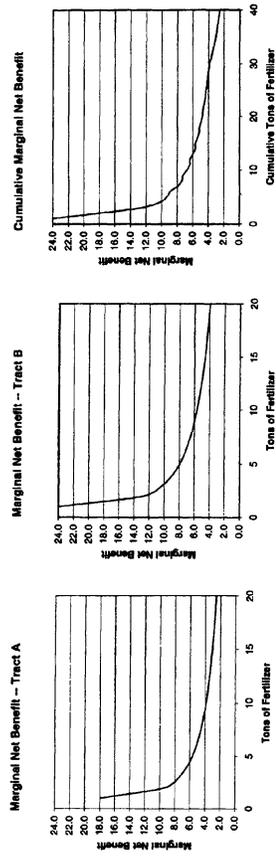
This final example discusses a scenario that is really an amalgamation of all of the alternatives discussed in this section. In this case, the company will be simultaneously determining the scale of a number of projects subject to a resource constraint. If there were no resource constraints, then this decision would be straightforward. The company would essentially determine the optimal scale for each project individually by using the procedure outlined in § 6:33. But, the company is subject to resource constraints, and it will need to optimize the net benefits across the projects.

For the next example, the farmer now has two tracts of land to which he is adding fertilizers for different crops. It is not very hard for the farmer to convince himself that the marginal net benefit at both the tracts of land should be equal at the optimum level of resource allocation between these two tracts. For example, if the farmer is faced with determining to which tract he would like to apply the next additional ton of fertilizer, the obvious answer is that it should be applied "to the tract that produces a higher marginal benefit for the additional ton." And, the farmer is likely to continue adding fertilizer to that tract until he comes to the point where the marginal benefit from the additional ton of fertilizer to that tract is the same as it is at the other tract of land. In theory, this rule is applicable regardless of the number of different projects that the farmer is simultaneously addressing. The optimal solution in terms of the allocation of resources across these projects would have to be one that equalizes the net marginal benefits from all the projects.

In practice, the way this is achieved is to create a cumulative marginal net benefit curve that sums the tons of fertilizers across the two tracts of land at each specific level of marginal net benefit. For example, if the amount of fertilizer required to obtain a marginal net benefit of \$100 per ton of fertilizer is 50 tons for the first tract and 75 tons for the second tract, then the cumulative marginal net benefit curve would have a point that defines a marginal net benefit of \$100 at 125 tons (*i.e.*, 75 tons plus 50 tons) of fertilizer. The farmer would compute such a curve at all the different marginal net benefit levels to create the cumulative marginal net benefit curve.

Figure 6:15 contains the marginal net benefit curves for two individual tracts of land A and B. The cumulative marginal net benefit curve in Figure 6:15 has been determined by summing the number of tons required at each tract of land for any given level of marginal net benefit. If, for example, the farmer had a resource constraint of 30 tons of fertilizer, based on the cumulative marginal net benefit curve on Figure 6:15, the farmer would have a marginal net benefit of \$4,000 per ton of fertilizer. Given the initial principle of equating the marginal net benefits across the different projects, this would result in 10 tons of the fertilizer being allocated to Tract A and 20 tons to Tract B in order to optimize the net benefits from the two projects.

Figure 6.15 Cumulative Marginal Net Benefit Curves



Most people make decisions similar to this one on a daily basis. Many people are faced with situations where they have to allocate time between multiple projects and tasks that need to be completed, and they are restricted by the total amount of time that they have to devote to these projects. People make intuitive scaling decisions between projects and tasks. Similarly, governments and corporations are frequently involved in such decision-making and do so with the help of the tools described in this section.

§ 6:36 Estimating costs and benefits

The decision rules described in the previous section as means of selecting between the different alternatives and project scales subject to constraints constitute the easy part of cost-benefit analysis. The far more difficult problem faced when conducting cost-benefit analyses is the estimation of the costs and the benefits associated with these projects. Typical issues encountered in the estimation of these costs and benefits include (1) defining the scope of the impacts; (2) uncertainty; (3) discounting; and (4) metrics for measuring the impacts.

§ 6:37 Estimating costs and benefits—Defining the scope of the impacts

In determining the costs and the benefits associated with a particular decision, it is critical to identify all of the potential impacts resulting from the implementation of the strategy. This is especially a problem in situations where the government evaluates the impacts associated with different public policy decisions. These evaluations are difficult because the universe of potentially impacted entities is so large. For example, in determining the costs and benefits associated with a hydroelectric power project, the government would have to account for a number of different impacts (both good and bad) including direct project costs, ecological costs, health effects, commercial impacts, recreational impacts, distributional impacts (*i.e.*, which section of society benefits from the project), option and existence values (*i.e.*, value associated with the option/ability to benefit from the use of a resource, *e.g.*, value associated with saving the whales or the bald eagle), and so on. In order to accurately reflect the costs and benefits from different projects, it is important to conduct a comprehensive analysis of the potential impacts of the projects.¹ The government must also keep in mind that there will invariably be side effects that are completely neglected. For example, the use of catalytic converters, while reducing carbon monoxide and hydrocarbon emissions, may have led to an increase in sulfate emissions.

§ 6:38 Estimating costs and benefits—Uncertainty

Since cost-benefit analysis is typically conducted *ex ante*, investors have to predict both the costs and the impacts associated with the projects being considered. Accurate prediction of these impacts would require investors to capture uncertainties in the future resulting from changes in regulation, government, commercial and economic conditions, policy effectiveness, and so on. This is a hard problem to solve, and decision analysis is a good tool to use in such situations to predict future impacts and characterize uncertainty. A recent proposal by the ASTM identifies decision analysis as potentially the best method for the prediction of future costs, es-

[Section 6:37]

¹It is, however, important to not get carried away with the estimation of second and third order impacts, especially if they do not constitute a significant proportion of the total costs and benefits.

pecially in the case of unrealized environmental liabilities.¹ In conducting decision analysis to capture future uncertainty, the analyst would have to make a number of different assumptions with regard to both alternative scenarios that may occur in the future and the likelihood of their occurrence. These assumptions must be formulated with caution to ensure that they accurately reflect currently available information on the potential future states of the world.

§ 6:39 Estimating costs and benefits—Discounting

Since all of the costs and benefits from projects being evaluated are likely to be incurred at some point in the future, analysts need to account for the time value of money. The future costs and benefits need to be discounted at risk adjusted discount rates to bring them to a common denominator for comparison purposes. In order to do this, the analyst would have to make assumptions with regard to the timing of these impacts (*i.e.*, when these impacts are likely to be felt) as well as the discount rates that may be used.

§ 6:40 Estimating costs and benefits—Metrics for measuring the impacts

Developing metrics for measuring the impacts may actually be the biggest challenge from the perspective of measuring the costs and the benefits associated with certain projects. A number of benefits, especially, are in non-market commodities, and it is difficult to assign them a value. An example would be the difficulty in valuing the improved air quality resulting from emissions reductions as a result of EPA's sulfur dioxide permit trading program. Since air is not typically bought or sold in the market, it is difficult to value it. Similarly, health, ecological, and reputational impacts are difficult to evaluate.¹ The next problem is that all of the impacts—both costs and benefits—need to be reduced to the same common denominator, typically in present value dollar terms. At times, it is possible to conduct cost effectiveness studies when the benefits are difficult to estimate in dollars. For example, in the case of emissions reductions, analysts may use a measure, such as the tons of emissions reduced per dollar expenditure on control. This, however, does not include the second order impacts, such as the environmental and health benefits from the cleaner air.

Cost-benefit analysis in some form or another is probably the primary tool used by individuals, corporations, and governments to aid decision-making. The principal framework for decision-making under a cost-benefit analysis framework is straightforward, as described in the examples above. The hard part about conducting these analyses is the estimation of the costs and the benefits themselves. In doing this, the analyst has to make a number of different assumptions. The old adage that an analysis is as good as its underlying assumptions definitely holds true here, and a lot of careful thought should be put into the formulation of the assumptions underlying the estimation of the costs and the benefits. This tool may also be used at a more aggregate level (without necessarily estimating all of the second order impacts) to eliminate certain alternatives that are not competitive at all in terms of being a potential solution. This would help narrow the potential alternatives that would need careful analysis.

[Section 6:38]

¹See ASTM Committee E51 on Environmental Risk Management Sub-Committee.05 on Reserves, Standard Practice for Estimating Environmental Costs and Liabilities (1997).

[Section 6:40]

¹The use of techniques such as contingent valuation, which is based on determining people's willingness to pay for certain amenities, is sometimes used to estimate the values associated with non-market commodities.

V. COST ALLOCATION

§ 6:41 In general

Evaluating the costs associated with a project, activity, or investment is an action that people and businesses perform routinely. Very few of these activities, however, are so well defined that analysts can assign the costs related to those activities without some method of cost allocation. For many activities, businesses have identified mechanisms to assist in cost allocation. For example, in many businesses, photocopies must be assigned to project numbers, which identify clients or department billing codes. This assists in the allocation of photocopy costs among those who use photocopy-related equipment and supplies. Undoubtedly, there are a number of activities in daily life where allocation of costs or resources takes place.

Cost allocation is inherently difficult because there is no unique solution. Compounding this is the fact that some of the competing theories of cost allocation will systematically favor one group of users over another, leaving groups of users to support competing, sometimes conflicting, cost allocation approaches. This section will address some of the basic cost allocation issues, examine several cost allocation approaches, and hopefully leave the reader with a better understanding of how to examine and address cost allocation questions.¹

§ 6:42 Basic terminology

Cost allocation is an area of cost accounting complete with its own terminology. This section will not turn readers into cost accountants, but an understanding of the basic terms used in cost accounting, as they apply to cost allocation questions, will be useful. To place these terms in some context, consider a hypothetical Superfund site with three potentially responsible parties (PRPs). Two PRPs sent solvents to the site, and the remaining PRP sent solid waste to the site. The two types of waste were not commingled, but were disposed of in distinct areas at the site. The solid waste will be excavated and hauled off to a landfill. The remedy designed to address the solvent disposal will be groundwater pump-and-treat. Definitions of some of the basic cost allocation terms follow.

- A *cost object* (or *cost objective*) is an activity or process that an analyst wishes to cost. In the example, the groundwater treatment is an example of a cost objective because analysts will want to allocate the costs related to that activity among those who should share its costs.
- *Cost allocation* is the assignment of common, indirect, or joint costs to different products, parties, or activities. Developing a method to link solvent-related remedy costs to the two solvent-generator PRPs in the example is a cost allocation because these remedy costs cannot be uniquely assigned to a specific party, although they can be linked to a specific group of parties.
- A *direct cost* is a cost that can be assigned uniquely back to an individual party, specific activity, or cost object in some manner.
- A *common cost* (or *indirect cost*) is a cost that is shared or created by two or more users, products, or activities.
- An *indirect cost* (or *common cost*) is a cost that cannot be traced back to a unique party, activity, or product.
- *Joint costs* are the costs of inputs and processes that yield multiple outputs or products simultaneously, typically in fixed proportions.

Although there are more cost allocation terms, these are sufficient for a discussion of the following problems.

[Section 6:41]

¹For a more detailed analysis of cost allocation issues, see Richard Lane White and John C. Butler III, *Applying Cost Causation Principles in Superfund Allocation Cases*, 28 *Envtl. L. Rep.* (Envtl. L. Inst.) 10067 (1998).

§ 6:43 Sample cost allocation problems—Airline tickets

An environmental consultant has been asked to attend two meetings this week. One meeting, this Wednesday, is in Los Angeles. The other meeting, this Thursday, is in Chicago. The consultant lives in Boston. One option is for the consultant to fly to Los Angeles Tuesday evening for the Wednesday morning meeting and catch the afternoon flight back to Boston, arriving Wednesday night. That flight will cost \$1,200 round trip. Of course, then the consultant would need to catch another flight on Thursday morning for the meeting in Chicago. That round trip flight would cost another \$800. Alternatively, the consultant could make one trip, flying first to Los Angeles, then to Chicago, and then back to Boston. That flight would cost only \$1,500. This analysis assumes that there are no other costs involved.

The consultant decides to book the combined trip for \$1,500. However, when it is time for the consultant to submit an expense report, he or she needs to allocate the cost of that trip between these two meetings. How should the consultant allocate that \$1,500 ticket?

There are numerous ways to allocate that ticket and no “right” answer. That is what makes cost allocation so difficult: there is no one right answer to the cost allocation problem. Several possible solutions follow.

- Split the cost evenly. There were two meetings, and there would have been two flights, so split the cost on a per-meeting basis. Each business meeting would be assigned \$750 in cost.
- Assign the Los Angeles meeting its full cost, \$1,200, and assign the remainder to the Chicago meeting, which would be \$300.
- Alternatively, assign the Chicago meeting its full cost, \$800, and assign the remainder to the Los Angeles meeting, which would be \$700.
- Total up the cost of the two individual trips, which would be \$2,000, and assign the \$1,500 combined trip to each meeting based on the ratio each individual trip would have cost on its own. That would result in Los Angeles being assigned 60 percent of the \$1,500 ticket, or \$900, and Chicago being assigned 40 percent, or \$600.

While there are undoubtedly many other alternatives available, there are some bounds to this allocation problem. For example, while, theoretically, the consultant could assign the Los Angeles meeting the full \$1,500 and the Chicago meeting nothing, the Los Angeles client would be foolish to pay such a charge. The client would argue that the consultant could have flown out to the Los Angeles meeting for \$1,200, so, at most, that client should pay \$1,200. Likewise, the Chicago client would argue that it should pay no more than the cost of flying only to Chicago, or \$800.

Also, notice that while there are numerous ways to allocate these costs, some are, on their face, more equitable than others. The consultant can split the costs equally among the two trips, but that ignores the fact that one trip is more expensive than another. If the consultant charges one meeting its full cost, the other meeting receives a deep discount over the cost that it, on its own, would have to bear. Answering the cost allocation question is clearly complicated.

§ 6:44 Sample cost allocation problems—Video conferencing

As the consultant is about to book the ticket for a combined trip to Los Angeles and Chicago—under the costs and conditions previously described—the Chicago client calls to say that a video conference call will suffice. While that is certainly one possibility, the consultant realizes that there are costs involved with that action as well. The cost to set up the video conference would be \$300 from either Los Angeles (where the consultant is on Wednesday) or from Boston (where the consultant will be on Thursday after flying back from Los Angeles). The cost of the Los Angeles trip, by itself, is still \$1,200.

The consultant calls the Chicago client and tells it that while the cost of the video conference is \$300, alternatively he or she can show up at the office in Chicago by simply adding another \$300 to the Los Angeles ticket. The client agrees, and the consultant purchases the combined ticket. Now how does the consultant allocate the cost between the Los Angeles meeting and the Chicago meeting?

Most people would probably allocate the \$1,500 as \$1,200 to the Los Angeles meeting, and \$300 to the Chicago meeting. After all, the Chicago client originally asked for a video conference, which would have cost \$300. The consultant flew to Chicago simply because it was the same cost. Nevertheless, the cost allocation problem is fundamentally similar to the one examined in the previous example.

What is different here is the alternative to the joint travel. In the first example, the alternative was a Chicago-only flight, at a cost of \$800. In this second example, the alternative is the \$300 video conference. To many, these but-for alternatives affect the allocation of the combined ticket cost. But again, the cost allocation problem is complicated.

§ 6:45 Sample cost allocation problems—Photocopiers

The report production department of a law firm is considering the lease of a new hi-tech photocopier, with all the latest features. Not only is it faster and more efficient than the previous photocopier, it will also copy in either black and white or in color. Every time someone uses the photocopier, he or she has to enter a project code number for billing purposes. The photocopier is routinely used for a variety of projects around the firm. The firm leases photocopiers on a monthly basis.

The monthly lease for this machine would be \$1,000. Although the production department is evaluating the lease of the color/black and white version of the photocopier, the firm could also lease one with the same features, with the exception of its color copying capability, for \$500 per month. A color-only copier would cost \$800 per month. Supplies related to the photocopying process (*i.e.*, ink and paper) are \$0.02 per sheet for black and white copying and \$0.50 per sheet for color copying. Each month a number of projects use the black and white copying feature, making an average of 10,000 copies per month. In addition, several specialized projects use the color copying feature, making an average of 1,000 copies per month. Which photocopier should be leased? How should the copying costs be allocated (or charged) among the various users?

Table 6:12 shows a calculation of the average cost for making a copy. One option, of course, is simply to charge each user this average cost. If the firm simply counts copies, there are 11,000 copies per month. The machine costs \$1,000 per month, and the supplies, in total, are another \$700, for a total of \$1,700 per month, or \$0.155 per copy.

However, users of the black and white copy features may argue that this price is too high. After all, they could go rent the same machine, except for the color features, and produce their own copies for only \$0.07 per page. They might also point out that the color copies cost, at a minimum, \$1 per copy. If the firm does not charge the black and white users less than \$0.07 per page, they might just go get their own copier. The costs for black and white copies, and for color copies, are shown in Table 6:13.

Table 6:12 The Average Cost Per Copy from a Combined Machine

Type of Copy	Number of Copies	Cost of Supplies		Equipment Cost	Total Cost	Average Cost Per Page
		Per Page	Total			
Black and White	10,000	\$ 0.02	\$ 200.00	\$ 1,000	\$ 1,700	\$ 0.155
Color	1,000	\$ 0.50	\$ 500.00			
Total	11,000		\$ 700.00			

Table 6:13 The Average Cost Per Copy from Separate Machines

Type of Copy	Number of Copies	Cost of Supplies		Equipment Cost	Total Cost	Average Cost Per Page
		Per Page	Total			
Black and White	10,000	\$ 0.02	\$ 200.00	\$ 500	\$ 700	\$ 0.070
Color	1,000	\$ 0.50	\$ 500.00	\$ 800	\$ 1,300	\$ 1.300

Here, equity would seem to dictate that the stand-alone cost—the cost to one group of people, on their own—would serve as a reservation price, in this case a ceiling on what can be allocated to that group. If the firm charges this group more than they would pay for the service on their own, they just may go get that service on their own. This limits the firm’s ability to use one group to subsidize another.

At the same time, however, the firm cannot charge the color copy users too much, or they too will go out and procure their own copier. They also have a reservation price. If the firm charges them more than \$1.30 per page, they can obtain their own copier.

The range of reservation prices creates a range around which the firm can price the copies. If the firm charges the full reservation price to the black and white copies (\$0.07 per copy), then it can charge as low as \$1 per page for color copies and still cover costs. Alternatively, if the firm charges the full reservation price for color copies (\$1.30 per page), then it can lower the black and white copy price to \$0.04 per page. Outside that range, the two groups will not work together.

Within that range, the firm can choose any combination. There are no hard-and-fast cost allocation rules that tell the firm what the right answer should be. Two alternative approaches that can be evaluated here, however, are incremental cost and stand-alone cost.

Using an incremental cost allocation approach, the firm would first determine which use, black and white, or color, was the default or primary purpose. Users in that group would pay the cost as if they were the only users. Additional users would then be assigned the incrementally greater costs. If, for example, the firm determined that black and white copying was the primary purpose for the machine, it might allocate the \$500 base cost per month for the machine to the black and white users, resulting in a per-page cost of \$0.07 per page. Color users would then pay the incremental cost to lease the machinery, and their cost would be \$1 per page. Of course, if the firm reversed the primary users, it would get a very different answer. This is why incremental cost analysis is often subject to the criticism of “gaming the system” by participants—each has an advantage in being perceived as the incremental user.

An alternative approach is to estimate the costs each group would incur were they to purchase their own copy machines—their so-called stand-alone cost. This result is shown in Table 6:14. The stand-alone cost for black and white copying is \$700 per month, and the stand-alone cost for color copying is \$1,300 per month. By leasing a machine that provides both services, the costs are reduced from \$2,000 (the cost of buying both services separately) to only \$1,700 (a savings of \$300 per month). Under a stand-alone approach, both groups benefit. In addition, the benefits are shared in proportion to what each group would pay on its own, and each group pays the same fraction of its stand-alone cost. In this case, each group pays 85 percent of the cost it would have incurred on its own.

Table 6:14 The Allocation of the Common Photocopier Costs Using Stand-Alone Cost Allocation Method

Type of Copy	Total Cost If Purchased Separately	Ratio of Stand Alone Costs	Total Cost of Combined Photocopier	Allocation of Combined Photocopier	Allocated Share of Cost	Share of Stand Alone Cost Allocated to Each Party	Savings by Using Combined Photocopier	Share of Savings
Black and White	\$ 700	35.0%		\$ 595	35.0%	85.0%	\$ 105	35.0%
Color	\$ 1,300	85.0%		\$ 1,105	65.0%	85.0%	\$ 195	65.0%
Total	\$ 2,000	100.0%	\$ 1,700	\$ 1,700	100.0%	85.0%	\$ 300	100.0%

Equity issues aside—and there are some very basic equity issues that could be used to argue in favor of a stand-alone cost approach to allocation—the stand-alone approach does not depend on the interaction of the groups being examined; each group is examined in isolation. It also avoids the pitfall of “gaming,” which can occur with other methods, since the stand-alone alternatives can be estimated whether there are other parties involved or not. Finally, these stand-alone estimates are themselves the reservation prices within which most allocations must occur. Since the allocator should know the range under which he or she can develop an acceptable allocation, one might as well make further use of that information to actually develop the allocation.

§ 6:46 Basic principles

All costs can be broken down into one of two groups: a direct cost or a common cost. For purposes of this chapter, a common cost is one that is related to more than

one party, process, or activity. So, a common cost would include a joint cost or any indirect cost. Cost terminology aside, what this means is that a cost is either direct—in which case it can be uniquely assigned to a specific party or activity—or it is common, or indirect—in which case it cannot be uniquely assigned.

The video conference the consultant had with the Chicago clients is a direct cost. It can be directly assigned to the Chicago client, and no one but that client should be asked to bear that cost. The combined plane ticket taking the consultant to both Los Angeles and Chicago is not a direct cost because it cannot be assigned uniquely. It is assignable to both the Los Angeles client and the Chicago client. It is a common, or indirect, cost.

Cost allocation is all about allocating common, or indirect, costs. The assignment of direct costs to those people or activities that cause them is not cost allocation, per se, because there is nothing to allocate. Direct costs should, without exception, be assigned to those who cause them. There is a one-to-one relationship between a direct cost and its cause. Other activities or parties should not be assigned a direct cost to which they have no relationship. There is a well-defined rule of assignment for direct costs, and any assignment short of assignment to the cause of a direct cost is seen as inappropriate.

Common costs, on the other hand, defy easy assignment because they relate to more than one activity or more than one party. Nevertheless, the group of activities or the group of parties that is responsible for a common cost should be held accountable for that cost. In the video conferencing example, the Chicago client's video costs are a direct cost—costs caused by that client and that client alone. There is no question about assignment, and there is no need for allocation short of direct assignment. The combined plane ticket, however, is a common cost. While there are a number of ways to allocate the cost of that ticket between the Los Angeles client and the Chicago client, it is clear that they, collectively, should bear that cost.

§ 6:47 Application to environmental matters

Although cost allocation occurs routinely, even in a variety of environmental matters, perhaps its most common application is in Superfund cases, where remediation costs are allocated among responsible parties, or PRPs. Allocation in the Superfund context is prescribed by statute, and courts are authorized to allocate remediation costs among PRPs.

§ 6:48 Application to environmental matters—Background on Superfund and allocation

When the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)¹ was passed by Congress in 1980, it was designed to address remediation of the nation's worst hazardous waste sites. Though amended and reauthorized in 1986, the fledgling Superfund program still left a number of key issues unaddressed. Probably the single most contentious issue facing those involved in Superfund sites was—and continues to be—the allocation of cleanup costs.

The allocation issue is contentious for a variety of reasons. First, four broad categories of parties face liability. Second, the standard for disposal—hazardous substances—is so broad that nearly everything sent for disposal meets the standard. Third, there is no causality requirement. Fourth, liability is strict, so negligence is not an issue. Fifth, liability is joint and several. And sixth, liability is retroactive. When these factors are combined with expensive site cleanup costs, the result is a very contentious allocation problem.

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¹42 U.S.C.A. §§ 9601 to 9675, ELR Stat. CERCLA §§ 101 to 405.

§ 6:49 Application to environmental matters—Limited guidance on allocation

CERCLA is noticeably quiet when it comes to crafting an approach for allocating liability among various PRPs. Liability is strict, so issues such as volume of waste, toxicity of waste, relative fault of the parties, and causation have no place in determining liability.

However, these factors—volume, toxicity, fault, and causation—are all the type of factors one might consider when doing an allocation. Allocation of Superfund cleanup costs has been assigned, by statute, to the courts, which “may allocate response costs among the liable parties using such equitable factors as the court determines are appropriate.”¹ But, beyond using “equitable factors,” the statute is silent as to the actual approach to take in allocating response costs. As a result, courts and allocators have been left to determine what equitable means and what factors are relevant or appropriate in developing equitable allocations of response costs.

§ 6:50 Application to environmental matters—EPA’s position on allocation

Although EPA does not generally play a central role in Superfund cost allocation, it has addressed issues of liability and allocation from time to time. For example, EPA has published guidance documents on issues such as developing waste-in lists, settling with *de minimis* and *de micromis* PRPs, and developing nonbinding allocations of responsibility (NBARs). And over the past several years, EPA has attempted to address the issues of liability and allocation for parties involved with municipal solid waste (MSW).

EPA’s NBAR guidance describes its approach to developing allocations among PRPs. While many of the NBAR examples are discussed in terms of volume, the NBAR guidance clearly identifies cost causation as the primary tool for allocating costs among responsible parties. As the NBAR guidance notes, “where it is possible to do so, waste types and volumes that necessitate particular remedial activities will be fully attributed to the appropriate contributors.”¹ And as other commentators have noted, “EPA has consistently—if obliquely—articulated the need to connect a party’s allocation to costs which its wastes cause since EPA adopted its Interim Policy on Nonbinding Preliminary Allocations of Responsibility.”²

Most recently, EPA has adopted controversial guidance on MSW generators and transporters.³ Although purportedly addressing liability, it actually focuses on addressing allocation of response costs for parties associated with MSW wastes. EPA proposes to cash out MSW generators and transporters at a cost that, in its view, “reflects a reasonable approximation of the cost of remediating MSW.”⁴ The appropriate cost to assign to a party, in EPA’s view, is the cost that reasonably approximates what damage that party caused. Allocation approaches based on toxic-

[Section 6:49]

¹42 U.S.C.A. § 9613(f)(1), ELR Stat. CERCLA § 113(f)(1).

[Section 6:50]

¹52 Fed. Reg. 19919-20 (May 28, 1987).

²See B. Dougals Bernheim et al., Comments of Air Products and Chemicals, Inc.; Lucent Technologies; Mack Trucks, Inc.; Pennsylvania Power & Light Company; Raytheon Appliances, Inc.; Tarkett, Inc.; GAF Corporation; General Electric Company; and Ingersoll-Rand Concerning The United States Environmental Protection Agency’s Municipal Solid Waste Settlement Proposal, 6 (August 1997).

³See EPA Proposal for Municipal and MSW Liability Relief at CERCLA Co-Disposal Sites, 62 Fed. Reg. 37321 (July 11, 1997).

⁴52 Fed. Reg. 37321, 37233 (July 11, 1977).

ity, by comparison, were rejected by EPA because “toxicity is usually causally related to the cost of the cleanup for only a few substances.”⁵

§ 6:51 Application to environmental matters—Cost causation and equitable factors

Courts search for a nexus between cost causation—the underlying principle to cost allocation—and equity in the allocation process. Courts have been granted wide latitude to use equitable factors in developing an allocation of response costs at Superfund sites. Courts have been assigned the task of allocating not harm, in and of itself, but of allocating response costs, or remediation costs. Further, while given wide latitude in crafting these allocations, courts have been directed to develop allocations based on *equitable* factors. At the conclusion of the allocation process, the court should develop an allocation of costs using the tools of cost allocation and should make sure that the allocation is equitable in its distribution of costs among the parties.

Cost causation is not one of the oft-cited Gore Factors,¹ but it is an amalgam of several Gore factors and other equitable factors. For example, volume, or amount of material contributed, is a Gore factor. Why is volume of material relevant to an allocation? Because we do not measure frequency of disposal—whether one party used the site more than another. Instead, we measure how much material each party sent to the site. Implicitly, at least, we assume that the amount of material is related to the remedial activities for which the PRPs are being asked to pay.

Why do we measure toxicity, which is yet another Gore factor? Is it simply because those parties who sent more toxic or more hazardous materials should pay more, or is it that more toxic and more hazardous materials disproportionately affect the need for and the level of the remediation? What is it that allocators and courts are trying to address? Whether a pound of solvent (*e.g.*, trichloroethylene) is worse than a pound of arsenic, or whether an allocation should consider how different wastes give rise to different costs?

Stepping back from the Gore factors themselves and examining other equitable factors used by courts, one can repeatedly see that courts turn to the interrelated concepts of causation and relative fault. What exactly is causation? In the context of Superfund cost allocation, it is the remediation costs that have been caused by the disposals and actions of various PRPs. A party may dispose of a waste stream containing a hazardous substance, but the real question is: does that waste stream cause any problem or contribute to the need for a remedial action by itself or in combination with other waste streams?

Cost causation—an examination of how costs are created and who or what parties are responsible for specific costs—addresses each of these equitable factors. The amount of material (volume) and its characteristics (toxicity or hazardousness) are evaluated in tandem, not in isolation. The allocation exercise is not about allocating pounds or toxic pounds. It is about allocating costs. A causation analysis is designed to distinguish the contributions to cost of one party from another. The interplay of causation and relative fault becomes a central focus of cost causation. So while cost causation is not specifically delineated in the Gore factors, it is central to an examination of equitable factors in the context of CERCLA cost allocation.

§ 6:52 Application to environmental matters—Cost allocation in Superfund cases

The following hypothetical will assist in the evaluation of cost allocation problems.

⁵52 Fed. Reg. 19919-20 (May 28, 1987).

[Section 6:51]

¹These are a set of six factors delineated in the unsuccessful amendment to CERCLA proposed by then-Rep. Albert Gore (D-Tenn.).

Party A dumps five drums of waste solvent onto a parcel of property. Party B simultaneously dumps ten drums of waste solvent onto the same parcel of property. A third party, C, dumps an additional five drums of waste solvent onto the same parcel of property. Later, the site must be remediated as a national priorities list site with a single distinct area of contamination. Had either Party A or Party C been the only party at the site, their individual contributions would have caused the need to remediate 100 cubic yards of soil, which would have been sent to a Resource Conservation and Recovery Act (RCRA) landfill. Had Party B been the only party at the site, its individual contribution would have caused the need to remediate 200 cubic yards of soil, which again, would have been sent to a RCRA landfill. The actual remedy at the site calls for 300 cubic yards of soil to be excavated and taken to a RCRA landfill. According to the remediation contractor, the cost associated with this remediation is estimated at \$80 per cubic yard plus a \$12,000 setup fee for any volumes less than 50,000 cubic yards. There are no other costs to allocate between the three parties.

Analysis of this scenario will examine three different methods that PRPs employ for allocating costs—volumetric, toxicity, and cost causation analyses. Two of the methods relate to waste characteristics, but only indirectly relate to the cost of disposal. These approaches do not result in cost-causation based allocation of remedy costs. The volumetric, toxicity-based, and cost causation allocations do not provide the same answer.

§ 6:53 Application to environmental matters—Cost allocation in Superfund cases—Volumetric analysis

Party A contributed five drums of waste solvent, Party B contributed ten drums of waste solvent, and Party C contributed five drums of waste solvent. The total quantity of waste solvent at the site is twenty drums of waste. In a volumetric allocation, Party A would be assigned 25 percent of the cost, Party B would be assigned 50 percent, and Party C would be assigned the remaining 25 percent. This result is shown in Table 6:15.

Table 6:15 Allocation Results

Responsible Party	Quantity of Material (Gallons)	Share (%)	Cost of Remediation (\$)	Share (%)
Party A	275.0	25.0%	\$ 20,000	29.4%
Party B	550.0	50.0%	\$ 28,000	41.2%
Party C	275.0	25.0%	\$ 20,000	29.4%
Total	1,100.0	100.0%	\$ 68,000	100.0%

§ 6:54 Application to environmental matters—Cost allocation in Superfund cases—Toxicity analysis

Although the parties sent different quantities of material to the site, the type of material that each sent to the site is identical. A toxicity weighted volumetric allocation should produce identical results: 25 percent to Party A, 50 percent to Party B, and 25 percent to Party C.

§ 6:55 Application to environmental matters—Cost allocation in Superfund cases—Cost causation analysis

In this example, the entire cleanup cost is a common cost because the costs are caused by more than one party. No direct or uniquely identifiable costs can be assigned to a particular party. Although each party is contributing the same type of material, the costs associated with remediating the waste are not directly volume

variable, so the first step is to estimate the costs associated with addressing each party's waste, as well as the cost for remediating the entire site itself.

Both Party A and Party C contributed five drums of waste solvent, and each disposal, on its own, would have required remediation of 100 cubic yards of contaminated soil. The cost to remediate that quantity of soil is \$20,000. Party B, which sent twice as much waste and contaminated twice as much soil, would need to spend \$28,000 if it were the only party at the site. The site itself, which has 300 cubic yards of contaminated soil, will cost \$36,000 to remediate, and this is the cost that is to be allocated among the three parties.¹

Table 6:16 shows how to allocate this \$36,000 site cost using the stand-alone cost estimates for each of the three parties. In this example, the total of the three stand-alone costs is \$68,000—nearly twice the cost of the actual remediation. There are “economies of joint action” from the joint disposal and joint cleanup of this site because the cost of remediation, on an average cost per cubic yard basis, falls as the amount of material to be remediated rises.

The shares assignable to each party are calculated as the ratio of that party's stand-alone cost relative to the sum of all stand-alone cost estimates. Party B's 41.2 percent share is calculated as $\$28,000 / (\$20,000 + \$28,000 + \$20,000)$. These allocated shares can then be applied to the actual site remedy to determine each party's cost contribution. The wastes in this example were commingled, so the site is not geographically divisible. The cost causation allocation is not dependent on whether the site is divisible. The allocation does not suddenly change depending on whether wastes are commingled or are geographically separated.

In this example, economies of joint action result in a savings of \$32,000. At the same time, each party is actually allocated a cost that is proportionately less than its stand-alone cost estimate. Since the premise of Superfund cost allocation is to equitably distribute the response costs, it is worth noting two results that flow from using stand-alone cost estimates to allocate these common costs. First, each party in this case is paying only a fraction of its stand-alone cost, but each party is paying the same fraction of its stand-alone cost. Second, in this example, there is a benefit from joint action. That benefit is distributed among the parties on the same basis as their relative liability. Both of these results can be seen in Table 6:17.

Table 6:16 Cost Causation Shares for Each Party Using Stand Alone Cost Estimates

Responsible Party	Stand Alone Cost Estimate	Share of Total (%)	Actual Site Cost (\$)	Assigned Cost (%)
Party A	\$ 20,000	29.4%	\$ 36,000	\$ 10,588.2
Party B	\$ 28,000	41.2%		\$ 14,823.5
Party C	\$ 20,000	29.4%		\$ 10,588.2
Total	\$ 68,000	100.0%		\$ 36,000.0

By definition, cost allocation is not a process that leads to unique right or wrong answers. Cost allocation is a process of allocating common costs—costs caused by more than one party or process—and there is no unique method for assignment. Nevertheless, there are ways to define boundaries for the cost allocation problem. Recognition that parties have reservation prices—prices at which they will choose to take independent action—will often define boundaries for the cost allocation process.

It is equally important to note that while there are various processes for allocat-

[Section 6:55]

¹For Party A and Party C the cost is calculated as $\$12,000 + (100) \times (\$80) = \$20,000$. For Party B the cost is calculated as $\$12,000 + (200) \times (\$80) = \$28,000$. The cost to remediate the site as it now exists is calculated as $\$12,000 + (300) \times (\$80) = \$36,000$.

ing costs, the underpinnings of the cost allocation process are aimed at linking the costs being allocated back to those parties or activities that created the costs. In the photocopier example, it is clear that copy paper should be assigned back to those who use it. In the Superfund context, it is equally clear that allocation should not be focused on characteristics of waste streams in and of themselves, but rather on the costs that these wastes incur as part of the remediation process.

Finally, it is important to realize that not all cost allocation processes are created equally. While some are technical solutions to the cost allocation problem, they suffer when examined for equity considerations. Other approaches to cost allocation appear to be designed primarily to address equity considerations. Depending on the objective of the cost allocation, one approach may prove much more responsive than another.

Table 6:17 Cost Causation Shares for Each Party Using Stand Alone Cost Estimates

Responsible Party	Stand Alone Cost Estimate	Allocated Share of Actual Cost (\$)	Assigned Cost (\$)	Share of SAC Actually Assigned (%)	"Benefit" Received (\$)	Share of Total Benefit (%)
Party A	\$ 20,000	29.4%	\$ 10,588.2	52.9%	\$ 9,411.8	29.4%
Party B	\$ 28,000	41.2%	\$ 14,823.5	52.9%	\$ 13,176.5	41.2%
Party C	\$ 20,000	29.4%	\$ 10,588.2	52.9%	\$ 9,411.8	29.4%
Total	\$ 68,000	100.0%	\$ 36,000.0	52.9%	\$ 32,000.0	100.0%

Part C

FUNCTIONAL PROGRAMS

Chapter 7

State Environmental Law and Programs*

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I. THE IMPORTANCE OF STATE ENVIRONMENTAL LAW

§ 7:1 Introduction

Environmental law happens primarily in the states. Long before the advent of the now-familiar federal programs, most states had enacted laws and regulations aimed at controlling or abating pollution. During and after the “environmental decade” of the 1970s, the states continued to develop their own environmental laws. Sometimes this development and state legislative action was in direct response to the new federal programs, which provided for the submission of state “plans” and for federal

*By James M. McElfish, Jr.

approval of “state programs.”¹ In other cases, state law developed to address particular environmental concerns, or in response to the emergence of a state constituency favoring increased environmental protection.²

Most environmental law in the United States is *state* law. Every state has detailed laws governing air pollution, water pollution, waste disposal, and resource management. These laws affect more people, more decisions, and more interests than the oft-discussed federal laws. In many states, the federal programs are essentially implemented entirely by state law; that is, a facility’s specific compliance obligations under the Clean Air Act, the Clean Water Act, and other statutes, are defined by state law, state regulations, and state permits.³ While many of these state laws track the federal statutes nearly verbatim,⁴ others provide for significant variation. Sometimes this variation reflects the preexistence of established state programs.⁵ Other times it reflects conscious efforts by state legislators to address environmental problems in a different way.⁶

The almost total emphasis on federal environmental law found in treatises, law review articles, and popular publications is due only in part to the importance of federal law in defining the national environmental agenda and in prescribing the means of implementation. A major reason for the predominately federal focus has been the sheer magnitude and variability of state environmental laws, regulations, procedures, and institutions. State law must be viewed as a major functional program in order to understand the breadth and scope of environmental law. As environmental law reaches maturity, practitioners and scholars have recognized that much of the “action” is really occurring in state law. California’s “Proposition 65” and New Jersey’s Environmental Cleanup Responsibility Act in the hazardous waste field are only two of the more influential laws of the 1980s to attract national attention.⁷ In the groundwater area, the states are far out in front of the federal statutory effort.⁸ California enacted legislation to regulate greenhouse gas emissions from automobiles. Many states also have enacted laws aimed at reducing the industrial use of toxic substances. These laws employ public reporting, facility assessment and planning, and goal-setting techniques to accomplish what has come to be known as “pollution prevention.”⁹ Countless other state laws, while less well-

[Section 7:1]

¹See § 4:9.

²*E.g.*, § 7:3.

³See § 7:5.

⁴Some state legislatures essentially have adopted the federal programs by reference. *E.g.*, Minn. Stat. Ann. § 115.03 (NPDES); Vt. Stat. Ann. § 6604 (RCRA).

⁵*E.g.*, Pa. Stat. Ann. tit. 35, § 691.1 et seq. (Clean Streams Law); N.Y. Env’tl. Conserv. Law, ch. 71 (Environmental Enforcement Provisions).

⁶*E.g.*, New Jersey’s Environmental Cleanup Responsibility Act (ECRA), N.J. Stat. Ann. § 13.1K-6 et seq. (closure or transfer of “industrial establishment” requires cleanup of hazardous substances on site or “negative declaration;” penalty for noncompliance includes voidability of transaction). ECRA was amended in 1993 and renamed “Industrial Site Recovery Act.” See 1993 N.J. Laws 139, amending N.J. Stat. Ann. § 13.1K-1 et seq.

⁷Cal. Health & Safety Code § 25249.1 et seq.; N.J. Stat. Ann. § 13.1K-6 et seq.

⁸See, *e.g.*, Ariz. Rev. Stat. Ann. § 49-201 et seq.; Conn. Gen. Stat. ch. 446K, § 22a-416 et seq.; Iowa Code Ann. § 455E.1 et seq.; Wis. Stat. Ann. § 160.001 et seq.

⁹See, *e.g.*, Massachusetts Toxics Use Reduction Act (TURA), Mass. Gen. L. ch. 21[I], §§ 1 to 23 (1989). TURA reduces industrial use of toxics through mandatory planning approaches. Oregon also uses a planning approach. See Or. Rev. Stat. §§ 465.003 to .037. Nearly a dozen other states have toxics use reduction laws.

known nationally, are no less important in their impact on behavior.¹⁰ State laws addressing non-point source water pollution are dealing with a problem not fully addressed by the federal Clean Water Act.¹¹

As businesses maintain operations in more than one state, and law practices themselves become more national in scope, environmental lawyers are finding that they must be familiar not only with the major federal programs, but also with numerous and varied state laws. Critical to modern environmental practice is the recognition that “the states” are not a monolith, nor do their programs function like “mini-EPAs.” It is not safe to assume that state law is essentially like federal law, nor that environmental practice in one state is much like that in another.¹²

Perhaps the most important thing to recognize about state environmental law is its independence of federal authority. While many state laws are patterned on the federal laws, and may even operate as federally “authorized” state programs, the basis for state environmental regulation actually lies in the states’ police power—the inherent authority (or constitutional authority) of the sovereign to protect the health, safety, and welfare of its citizens. State laws are based upon the police power, not upon a federal “delegation” of the commerce power. In short, the federal statutory overlay does not “empower” the states to do anything. Rather, it enlists the states¹³ to exercise *their* inherent authority to enact laws regulating activities that affect the environment. All of the state laws operate *ex proprio vigore*—from their own force. Thus, state environmental law is not simply a vestige operating with respect to federal environmental law. Nor does state law operate solely to “fill in the blanks” set out in federal law.¹⁴ Rather, state law ordinarily sets out a full program of regulation that may include not only those elements needed for federal “authorization,” but also numerous additional elements (for example, state water pollution laws regulating nonpoint sources and discharges to groundwater, laws requiring siting approval for solid and hazardous waste disposal facilities, or laws requiring state permits for “interim status” RCRA facilities that require no federal permit). Unless it is affirmatively preempted, state environmental law operates whether or not there is a federal “authorization” of a given state program.¹⁵

Aside from the recent boom in federal “Superfund” cases,¹⁶ the preponderance of modern environmental law practice is the practice of state law. Aggregate state budgets for environmental issues far surpass the federal budget commitment, and

¹⁰*E.g.*, Cal. Bus. & Prof. Code § 17508.5 (prohibiting commercial use of terms “biodegradable,” “ozone friendly,” “photodegradable,” “recyclable,” or “recycled,” unless the goods meet statutory definitions). A First Amendment challenge to this law was rejected in *Association of Nat’l Advertisers, Inc. v. Lungren*, 44 F.3d 726, 25 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20183 (9th Cir. 1994), cert. denied, 64 *U.S.L.W.* 3240 (U.S. Oct. 2, 1995) (No. 94-1930).

¹¹*See, e.g.*, James M. McElfish, *State Enforcement Authorities for Polluted Runoff*, 28 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 10181 (1998) (collecting state regulatory and enforcement-oriented laws dealing with non-point pollution from agriculture, forestry, and other land-disturbing activities).

¹²Some significant variations among states are discussed in § 7:9. Among these are differences in substantive law, in procedures (including the effectiveness of administrative “orders” in various states), and in institutional organization.

¹³Some would say it “conscripts” the states. *See, e.g.*, Pederson, *Federal/State Relations in the Clean Air Act, the Clean Water Act, and RCRA: Does the Pattern Make Sense?* 12 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 15069 (1982).

¹⁴For example, by prescribing the water quality standards called for by section 303 of the Clean Water Act, 33 *U.S.C.A.* § 1313.

¹⁵*See* § 7:8.

¹⁶Cases under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 *U.S.C.A.* §§ 9601 to 9675, as amended, are consuming a great deal of legal attention and energy, perhaps disproportionate to the environmental risk. The Superfund Amendments and Reauthorization Act of 1986, Pub. L. No. 99-499, 100 Stat. 1613, with its commitment of \$8.5 billion to the effort, continued this trend. *See generally* Ch 14.

state and local government employees working on environmental regulatory issues vastly outnumber their federal counterparts. This state-centered focus commenced prior to the “new federalism” of the Reagan Administration, which merely added an ideological commitment to leave implementation to the states.¹⁷ Thus, environmental law, which began as a creature of state law, continues to have a strong state focus even after several decades of federal activism and legislation.

§ 7:2 Sources of state environmental law—State statutes

The first state environmental statutes were generally enacted in response to serious perceived public health risks.¹ Over time, state statutes began to respond to potential risks and to environmental damages as well as health risks. The effectiveness of the early statutes was often limited; the Health Departments and other responsible state agencies were generally given very limited enforcement powers, and there were frequently mandatory conference and conciliation provisions in the statutes.² Moreover, state pollution control boards were often by law composed of significant numbers of representatives of the regulated industries.³ Nevertheless, as public environmental awareness increased in the states, and comprehensive federal legislation was enacted, state statutes became a significant factor in achieving environmental objectives.

Today, state environmental statutes, policies, and institutions reflect not only the outlines of the well-known federal programs, but also the states’ diverse ecosystems, political history, and economic dependencies. In many substantive areas the states have served as “laboratories” for the development of new and innovative approaches to environmental problems. In some cases, these approaches have led to the subsequent adoption of national laws and policies drawing on the experiences of a few leading states.⁴ In other cases, state laws, institutions, or policies have impeded environmental protection efforts despite federal “oversight.”⁵

Understanding the antecedents of state environmental law is more difficult than it is for federal law. In most states the legislative process is such that no legislative history is prepared or maintained. This leaves the state courts, and lawyers, with

¹⁷This ideological commitment was also coupled with budget cuts in 1982 and 1983, both in the federal effort and in federal funds provided to the states. While some viewed the “new federalism” as a partial “deregulation,” a number of states became more aggressive in order to fill the void. The subsequent growth in hazardous waste legislation and funding at both state and federal levels has overtaken many of the deregulation effects. Many state environmental programs remain short of funding, however.

[Section 7:2]

¹See §§ 2:3, 2:4. Pennsylvania, for example, passed its first “clean streams law” in 1905 following outbreaks of typhoid fever. Act of April 22, 1905, P.L. 260, No. 182. Its scope was limited. For example, the coal industry was exempt from many of its provisions until 1965. Act of August 23, 1965, P.L. 372, No. 194, Pa. Stat. Ann. tit. 35, § 691.315 (1965).

²See § 2:4. Vestiges of these continue even in some current state laws (and in recently enacted laws). For example, several states require that upon discovery of a violation, the responsible state agency must engage in “conference, conciliation and persuasion” with the violator before it may issue an order or commence a judicial action. *E.g.*, Ga. Code Ann. § 12-8-71; Wyo. Stat. § 35-11-701(c). Other states have similar provisions.

³See Vaughn, Air Pollution Control Boards, 1972 *Envtl. L. Rev.* 141, 149-54.

⁴One example of this phenomenon is the federal Surface Mining Control and Reclamation Act of 1977, 30 U.S.C.A. § 1201 et seq., which was substantially modeled on the Pennsylvania Surface Mining Conservation and Reclamation Act. Pa. Stat. Ann. tit. 52, § 1396.1 et seq. (1976). See 123 Cong. Rec. 12,872 (1977). A current example is the substantial federal legislative interest in comprehensive groundwater protection laws recently enacted in a number of states. See, *e.g.*, Ariz. Rev. Stat. § 49-201 et seq.; Conn. Gen. Stat. ch. 446K, § 22a-416 et seq.; Iowa Code Ann. § 455E.1 et seq.; Wis. Stat. Ann. § 160.001 et seq. Any future federal statute could be expected to draw significantly upon these state “experiments.”

⁵See § 7:9.

little guidance as to the meaning of various program components. Not all of the statutes are clearly drafted, as many of the state legislatures have little or no professional staff to assist in drafting. Interpretation of state law is typically governed by the bureaucracy, and in the courts by traditional principles of statutory construction.

State environmental statutes generally include both standard setting and enforcement provisions.⁶ State standard setting has not been entirely overtaken by federal requirements, although flexibility in such standard setting has been somewhat constricted by federal law.⁷ Each of the major federal environmental laws contains nonpreemption provisions. For example, the Clean Air Act provides that it shall not “preclude or deny the right of any state or political subdivision thereof to adopt or enforce (1) any standard or limitation respecting emissions of air pollutants, or (2) any requirement respecting control or abatement of air pollution” so long as the state standards are not “less stringent” than those set forth in the federally-approved state implementation plan.⁸ The Clean Water Act, in nearly identical language, preserves state effluent limitations and requirements for control or abatement of pollution that are not “less stringent” than the federal requirements.⁹ The Clean Water Act also specifically recognizes water quality standard setting as a state function.¹⁰ Likewise, the Resource Conservation and Recovery Act preserves state “requirements” that are not “less stringent” than federal requirements.¹¹ State standard setting continues in vitality and importance (1) where it is not less stringent than applicable federal standards, (2) where federal law expressly looks to state standards (e.g., state water quality standards), and (3) where federal law is silent (e.g., state groundwater standards).

In most states, standard setting has been legislatively delegated to the administrative agencies.¹² In some cases, public “commissions” with memberships representing various governmental, industry and public constituencies are assigned this function.¹³ In a number of states, the agencies are given broad authority to promulgate rules in order to protect the environment. The Texas Natural Resource Conservation Commission, for example, has “the powers to perform any acts, whether specifically authorized by [the Water Code] or other laws, necessary and convenient to the exercise of its jurisdiction and powers,” and the power to “adopt

⁶The earliest state air pollution standard setting involved smoke abatement; violations were frequently determined in the 1960s with reference to the “Ringelmann Chart.” Smoke emissions exceeding certain levels of opacity, as determined by a trained state or local “smoke reader,” were prohibited. *See, e.g.*, *Portland v. Fry Roofing*, 472 P.2d 826 (Ore. 1970); *see also* § 2:3.

⁷*See* § 12:8 (Clean Air Act) and § 13:15 (Clean Water Act).

⁸Clean Air Act § 116, 42 U.S.C.A. § 7416. State setting of new motor vehicle emission standards is, however, preempted. Clean Air Act § 209(a), 42 U.S.C.A. § 7543(a).

⁹Clean Water Act § 510, 33 U.S.C.A. § 1370.

¹⁰Clean Water Act § 303, 33 U.S.C.A. § 1313. In *PUD No. 1 of Jefferson County v. Washington Dep’t of Env’tl. Ecology*, 114 S. Ct. 1900, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20945 (1994), the Supreme Court upheld state instream flow requirements imposed under Clean Water Act § 401, 33 U.S.C.A. § 1341, rejecting claims that states lack jurisdiction to impose such requirements or that such action conflicts with the Federal Power Act.

¹¹Resource Conservation and Recovery Act § 3009, 42 U.S.C.A. § 6929.

¹²In Maine, however, rules adopted by the Board of Environmental Protection must be legislatively enacted in order to have validity. *See* Maine Rev. Stat. Ann. tit. 38, §§ 367, 584.

¹³*E.g.*, Pennsylvania Environmental Quality Board, Pa. Stat. Ann. tit. 71, § 180–1 (twelve *ex officio* members, four legislators, five citizens); Nevada Environmental Commission, Nev. Rev. Stat. § 445.451 (director of department of wildlife, state forester firewarden, state engineer, director of department of agriculture, director of department of minerals, member of state board of health, and four citizens including one “engineering contractor”); Iowa Water, Air and Waste Management Commission, Iowa Stat. §§ 455B.104 to 455B.105 (three livestock and grain farmers; one manufacturer; one person in business, finance or commerce; four citizens with interest in and knowledge of air, water and waste management).

any rules necessary to carry out its power and duties under this code and other laws of this state.”¹⁴ Kentucky’s Department of Natural Resources and Environmental Protection has the authority to promulgate “any rule or regulation pertaining to the prevention, abatement, and control of existing or threatened air or water pollution, control of noise, or the use of air, land, or water resources, or strip mining and reclamation.”¹⁵ Similar delegations of authority exist in other states.¹⁶

State enforcement responsibilities are generally carried out by administrative agencies, with or without the assistance of the state attorney general. Every state has the ability to issue administrative compliance orders to enforce air pollution standards.¹⁷ Most states also use administrative orders for water and hazardous waste violations. The availability of administratively assessed penalties varies. For example, as of 1987, twenty-eight states could assess administrative civil penalties against hazardous waste violators.¹⁸ The adoption of state administrative penalty provisions continues to increase.

Much state environmental enforcement is carried on in the courts, rather than through administrative processes. In some instances this occurs because the administrative enforcement provisions and sanctions are relatively weak, or even nonexistent.¹⁹ In many instances, however, the leverage provided by a civil injunction, judicial penalty, contempt sanction, or criminal prosecution is simply preferable to a routine “compliance order” approach.²⁰ State statutory provisions affecting enforcement differ significantly from state-to-state.²¹

§ 7:3 Sources of state environmental law—State constitutional provisions

In the early 1970s a substantial number of states adopted constitutional amendments aimed at protecting the environment.¹ These amendments were generally put in terms of declaring the policy of the state, of establishing a “public trust” over the environment, or creating environmental “rights” for the citizens of the state. One of the first of these provisions was that adopted by New York in 1969.² The New York provision declared the “policy of the state” to be “to conserve and protect its natural resources and scenic beauty and encourage the development and improvement of its

¹⁴Texas Water Code §§ 5.102, 5.103.

¹⁵Ky. Rev. Stat. § 224.045(6)(b).

¹⁶*E.g.*, Conn. Gen. Stat. Ann. § 22a-2 et seq.; N.Y. Evtl. Conserv. Law § 3-0301.

¹⁷*E.g.*, Ariz. Rev. Stat. Ann. § 49-434; Nev. Rev. Stat. § 445.526; N.C. Gen. Stat. § 143-215.110; N.Y. Evtl. Conserv. Law § 19-0505.

¹⁸These states are Alabama, Arkansas, California, Connecticut, Delaware, Georgia, Hawaii, Illinois, Indiana, Iowa, Kansas, Louisiana, Maryland, Massachusetts, Minnesota, Mississippi, New Jersey, New Mexico, New York, North Carolina, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, and Washington. This total does not include those states that have no ability to assess an administrative penalty unilaterally, but that may obtain penalties through settlement in connection with administrative resolution of a violation.

¹⁹*E.g.*, Idaho Code §§ 39-108, 39-109.

²⁰In general, the states and state administrative agencies have much better access to the state courts than does EPA to the federal courts. There are fewer layers of review than occur in the complex EPA Region to EPA headquarters to Department of Justice referral process. *See* § 9:1. Moreover, state attorneys general frequently handle both administrative cases and civil cases, and so can elect the preferable approach with greater ease.

²¹*See* § 7:9.

[Section 7:3]

¹Alaska Const. art. VIII; Fla. Const. art. II, § 7; Ga. Const. art. III, § 6 para. 2(a)(1); Hawaii Const. art. XI, § 1; Ill. Const. art. XI; La. Const. art. X; Mass. Const. art. XLIX; Mich. Const. art. IV, § 52; Mont. Const. art. IX, § 1; N.Mex. Const. art. XX; N.Y. Const. art. XIV, § 4; N.C. Const. art. XIV, § 5; Pa. Const. art. I, § 27; R.I. Const. amend. 37; Tex. Const. art. XVI, § 59(a); Va. Const. art. XI, § 1.

²N.Y. Const. art. XIV § 4 (adopted November 4, 1969, eff. January 1, 1970).

agricultural lands,” and instructed the legislature to include “adequate provision for the abatement of air and water pollution.”³

In general, these constitutional provisions have had very little observable impact on the environmental laws and policy of the states that adopted such provisions. A number of state courts, in ruling upon early attempts to use these provisions in litigation, have found them to be essentially hortatory. A major issue has been whether or not these constitutional provisions are self-executing—that is, are they effective and directly applicable of their own force without the necessity of implementing legislation? Several courts have answered this question in the negative.⁴

Those constitutional provisions that declare public policy and expressly direct the legislature to act appear to require implementing legislation by their own terms.⁵ Such provisions are generally found not to be self-executing. Nevertheless, there may be enforceable public rights created by such provisions even absent implementing legislation. For example, New York’s constitutional provision primarily declares state policy, and expressly directs the declaration at the legislature. This would suggest that the drafters contemplated the need for implementing legislation in order to create an enforceable public right. Interestingly, however, the amendment was added to a state constitutional article that already provided that “a violation of any of the provisions of this article may be restrained at the suit of the people⁶ or, with the consent of the supreme court in appellate division, on notice to the attorney-general at the suit of any citizen.”⁷ Thus, it is not clear whether the New York provision is self-executing.

The Louisiana environmental constitutional provision states:

The natural resources of the state, including air and water, and the healthful, scenic, historic, and esthetic quality of the environment shall be protected, conserved, and replenished insofar as possible and consistent with the health, safety and welfare of the people. The legislature shall enact laws to implement this policy.⁸

While the last sentence appears to be classically non-self-executing, the first sentence has nevertheless been held by the Louisiana Supreme Court to create an enforceable “public trust” obligation. In *Save Ourselves, Inc. v. Louisiana Environmental Control Commission*,⁹ the court reviewed the state’s grant of permits to construct and operate a proposed \$84 million hazardous waste treatment facility, which was to be built along the Mississippi River. The court remanded the permit decision, requiring the state agency to provide evidence to show that the state agency had carried out its duties to protect the environment. Specifically, the court found that the agency is “duty bound to demonstrate that it has properly exercised” its constitutional functions, including showing that the adverse impacts of the proposed facility had been minimized or avoided to the maximum extent possible, and that the balance had been weighed in favor of the environment.¹⁰

The Pennsylvania constitutional provision is one of the most explicit statements of a public trust approach:

³N.Y. Const. art. XIV § 4 (adopted November 4, 1969, eff. January 1, 1970). The provision also placed limits on the disposition of state-owned park land.

⁴See, e.g., *Robb v. Shockoe Slip Found.*, 228 Va. 678, 324 S.E.2d 674 (1985); *County of Delta v. Michigan Dep’t of Natural Resources*, 118 Mich. App. 458, 325 N.W.2d 455 (1982).

⁵E.g., Mich. Const. art. IV, § 52.

⁶That is, upon suit by the Attorney General on behalf of the people of New York.

⁷N.Y. Const. art. XIV, § 5.

⁸La. Const. art. IX, § 1.

⁹*Save Ourselves, Inc. v. Louisiana Environmental Control Comm’n*, 452 So. 2d 1152, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20790 (La. 1984).

¹⁰*Save Ourselves, Inc. v. Louisiana Environmental Control Comm’n*, 452 So. 2d 1152, 1160, 14 Env’tl. L. Rep. (Env’tl. L. Inst.) 20790, 20793 (La. 1984). The court drew heavily on the reasoning and language of *Calvert Cliffs’ Coordinating Comm’n, Inc. v. United States Atomic Energy Comm’n*, 449

The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic, and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.¹¹

The Pennsylvania courts have found this provision to be self-executing.¹² The Pennsylvania Commonwealth Court in *Payne v. Kassab*¹³ established a three-part test for applying the constitutional amendment. The decisionmaker must determine (1) whether there was compliance with all rules and regulations relevant to the protection of the Commonwealth's natural resources, (2) whether the record demonstrates a "reasonable effort to reduce environmental incursion to a minimum," and (3) whether the environmental harm from the challenged action "so clearly outweighs the benefits that to proceed further would be an abuse of discretion."¹⁴ The primary impact of the Pennsylvania provision has been that state agencies have incorporated it into the permit process. Since the *Payne* decision, it has no longer been sufficient for a permit applicant simply to show compliance with all statutes and regulations. An applicant must, in addition, present a basis for satisfying the latter two prongs of the test. Pennsylvania has used its constitutional provision administratively to deny mining and waste disposal permits, and in acting upon public utility applications.

The Montana Supreme Court has held the state's constitutional protections for the environment to be self-executing. In a 1999 opinion, the court ruled that the state's Declaration of Rights, which guarantees every citizen the "right to a clean and healthful environment,"¹⁵ and the corresponding constitutional provision, providing that "the state and every person shall maintain and improve a clean and healthful environment in Montana for present and future generations,"¹⁶ provide a basis for citizen litigation challenging a state statute that created a blanket authorization for discharges of water produced from exploration wells without a nondegradation review. In *Montana Environmental Information Center v. Department of Environmental Quality*,¹⁷ the court held that the constitutional right to a clean and healthful environment is a "fundamental right" subject to "strict scrutiny analysis," which requires a showing that a "compelling state interest" required the state to infringe the right and that the legislature had chosen the least onerous path that could be taken to achieve the state objective. The court held that to the extent the statute in question excluded certain activities from nondegradation review "without regard to the nature or volume of the substances being discharged,"

F.2d 1109, 1 Env'tl. L. Rep. (Env'tl. L. Inst.) 20346 (D.C. Cir. 1971), an early case under the federal National Environmental Policy Act of 1969 (NEPA), 42 U.S.C.A. § 4321 et seq. *Calvert Cliffs* had suggested a "substantive" environmental balancing requirement under the federal NEPA, a concept since discarded under subsequent federal decisions. See *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20288 (1978); *Strycker's Bay Neighborhood Council, Inc. v. Karlen*, 444 U.S. 223, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20079 (1980).

¹¹Pa. Const. art. I, § 27; see also Hawaii Const. art. XI, § 1 ("All public natural resources are held in trust by the State for the benefit of the people."). There is no reported decisional law interpreting the Hawaii provision.

¹²*Payne v. Kassab*, 11 Pa. Commw. 14, 312 A.2d 86, aff'd, 468 Pa. 226, 361 A.2d 263, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20796 (1976). "No implementing legislation is needed to enunciate these broad purposes and establish these relationships; the amendment does so by its own *ipse dixit*." *Id.* at 245.

¹³*Payne v. Kassab*, 11 Pa. Commw. 14, 312 A.2d 86, aff'd, 468 Pa. 226, 361 A.2d 263, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20796 (1976).

¹⁴*Payne v. Kassab*, 11 Pa. Commw. 14, 29–30, 312 A.2d 86, aff'd, 468 Pa. 226, 361 A.2d 263, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20796 (1976).

¹⁵Mont. Const. art. II, § 3.

¹⁶Mont. Const. art. IX, § 1.

¹⁷*Montana Env'tl. Information Ctr. v. Department of Env'tl. Quality*, No. 97-455 (Mont. 10–20–99).

it violated the state constitution. It reversed and remanded a lower court decision that had entered judgment for the state.

Each of the self-executing constitutional provisions has provided a basis for judicial review of state actions. While few actions have been overturned based on state constitutional provisions, these provisions can be and have been effective in shaping state administrative responses and actions affecting the environment.

§ 7:4 Sources of state environmental law—State common law

An extremely important source of state environmental law is the common law of public nuisance. Once the workhorse of early environmental law (prior to enactment of most state and federal environmental statutes), public nuisance law has enjoyed a recent resurgence in the states.

Public nuisance law must be distinguished from its similarly-named cousin—private nuisance. Private nuisance is a tort, and is subject to familiar tort principles, including negligence, fault, and causation; and the grant of injunctive relief requires a balancing of the equities.¹ In contrast, public nuisance is not founded upon tort, but rather upon the police powers of the state to provide for the protection of public health, welfare, and safety. As a result, it is not subject to tort defenses and principles. Liability is based entirely upon the existence of the “nuisance” condition, regardless of the existence or absence of fault.² Because a nuisance is an “offense” against the state, its abatement is governed by strict liability. Historically, a public nuisance could either be criminally prosecuted or be subject to an equity action by the state for abatement. The abatement action is what survives in most jurisdictions today.³

The abatement action may include the recovery of moneys spent by the state to abate the public nuisance. In effect, this is the common law precursor of modern statutory actions for cost recovery.⁴ In such public nuisance actions, the monetary recovery is “limited to the reasonable costs for abatement, not necessarily the amount expended, and does not extend to future costs.”⁵ Most public nuisance actions, however, involve injunctive relief to compel the property owner itself to abate the nuisance.⁶

While private nuisance actions are usually limited to damage to property, and to

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¹Private nuisance law in the environmental area is exemplified by such cases as *Boomer v. Atlantic Cement Co.*, 26 N.Y.2d 219, 257 N.E.2d 870, 309 N.Y.S.2d 312 (1970) (injunction against polluter granted, but to be dissolved where damages available), and *Spur Indus., Inc. v. Del E. Webb Dev. Co.*, 108 Ariz. 178, 494 P.2d 700, 2 Env'tl. L. Rep. (Env'tl. L. Inst.) 20390 (1972) (injunction granted, conditioned on indemnification by party “coming to the nuisance”). Private nuisance actions include both actions where a tortious injury to use of one’s land is alleged, and “public nuisance” claims brought by private individuals (rather than the state) for a “particular damage” suffered by the private plaintiff as a result of the public wrong. See Prosser, *Private Action for Public Nuisance*, 52 Va. L. Rev. 997, 999 (1966).

²*E.g.*, *Board of Health v. Copcutt*, 140 N.Y. 12, 35 N.E. 443 (1893) (owner of dam liable for abatement of pollution of waters that accumulated in impoundment although pollution caused by others); *New York v. Shore Realty Corp.*, 759 F.2d 1032, 1051, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20358, 20367 (2d Cir. 1985) (developer found “liable for maintenance of a *public* nuisance irrespective of negligence or fault”) (emphasis in original).

³*E.g.*, Colo. Rev. Stat. § 16-13-305(e) (pollution abatable as “Class 3 public nuisance”).

⁴*E.g.*, CERCLA § 107, 42 U.S.C.A. § 9607.

⁵*State v. Schenectady Chems., Inc.*, 117 Misc. 2d 960, 459 N.Y.S.2d 971, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20550 (1983), *aff'd*, 103 A.D.2d 33, 479 N.Y.S.2d 1010 (1984).

⁶A state nuisance action may also reach beyond the current property owner. *E.g.*, *State v. Ole Olsen, Inc.*, 35 N.Y.2d 979, 365 N.Y.S.2d 528, 324 N.E.2d 886 (1975) (developer liable for failure of sewage systems even though no longer property owner).

injury already suffered, public nuisance actions may be used by the state to protect public health, safety, and welfare, and may reach even *prospective* threats to these interests.⁷

The grant of injunctive relief in a public nuisance action is not subject to the usual equitable balancing requirement. If the state can show the existence of a public nuisance, it need not demonstrate irreparable harm or the lack of an adequate remedy at law in order to obtain an abatement injunction.⁸ The injunction properly issues as an exercise of the police power. Indeed, because the injunction issues as a result of the “condition” that constitutes the nuisance, nuisance law is a powerful enforcement tool for the states.⁹ Where a state or federal permit, statute, or regulation might provide an inadequate basis for leverage to obtain abatement, state nuisance law can fill the void. An illustration of the power of the states’ public nuisance authority is the leading case of *Commonwealth v. Barnes & Tucker Co.*¹⁰ In that case, a coal mining company had operated an underground coal mine for over thirty years on a site which had been previously mined by its predecessors. The mining had occurred in conformance with state law and applicable permits, and the mine was finally closed and sealed in 1969 in accordance with standard mining practices. Approximately one year later, acid waters that had naturally accumulated in the mine workings began flowing out into the Susquehanna River. The Commonwealth of Pennsylvania sued to force the company to engage in a perpetual pump and treat regime (*i.e.*, lowering the water level in the mine and treating the pumped outflow). The company denied fault, and also defended on the basis of its compliance with all statutory and permit obligations. While the Pennsylvania Supreme Court found a basis for statutory liability, it more importantly also found the company liable under common law public nuisance. The court observed: “The absence of facts supporting concepts of negligence, foreseeability or unlawful conduct is not in the least fatal to a finding of the existence of a common law nuisance.”¹¹ The operator was held liable because of the adverse *condition* resulting from the mine, even though the mine had been properly operated in accordance with the law, and there was no way to have prevented the natural conditions that led to the acid

⁷*E.g.*, *Village of Wilsonville v. SCA Servs., Inc.*, 426 N.E.2d 824, 837, 11 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20698, 20704 (Ill. 1981) (a “prospective nuisance [is] . . . a fit candidate for injunctive relief [as] . . . it is only the damage which is prospective”); *Wood v. Picillo*, 443 A.2d 1244, 12 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21000 (R.I. 1982) (hazardous waste leaking from dump will at some point in future injure humans and wildlife, and may be abated as public nuisance).

⁸When the state “brings an equity action to abate a public nuisance its right to relief is not restricted by any balancing of equities.” *Commonwealth v. Barnes & Tucker Co.*, 472 Pa. 115, 371 A.2d 461, 467, 7 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20394 (1977).

⁹This tool is not available to the federal government. While it previously appeared that a federal common law of nuisance might exist, *see Illinois v. Milwaukee*, 406 U.S. 91, 2 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20201 (1972), it is now evident that the major federal environmental statutes have preempted any federal common law remedy. *Milwaukee v. Illinois*, 451 U.S. 304, 11 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20406 (1981) (FWPCA preempts federal common law remedy for water pollution).

¹⁰*Commonwealth v. Barnes & Tucker Co.*, 455 Pa. 392, 319 A.2d 871, 4 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20545 (1974), on remand, 23 Pa. Commw. 496, 353 A.2d 471, 6 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20466 (1976), *aff’d*, 472 Pa. 115, 371 A.2d 461, 7 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20394, appeal dismissed, 434 U.S. 807 (1977).

¹¹*Commonwealth v. Barnes & Tucker Co.*, 455 Pa. 392, 410, 319 A.2d 871, 4 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20545, 20550 (1974), on remand, 23 Pa. Commw. 496, 353 A.2d 471, 6 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20466 (1976), *aff’d*, 472 Pa. 115, 371 A.2d 461, 7 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20394, appeal dismissed, 434 U.S. 807 (1977).

water “breakout.” The relevance of *Barnes & Tucker* to current solid and hazardous waste management and cleanup issues is obvious.¹²

The availability to the states of common law remedies underscores the importance of understanding environmental law as more than simply the outgrowth of major federal programs. The states often have substantially more enforcement leverage and flexibility than does the federal government.

II. THE STATE-FEDERAL ALLOCATION OF RESPONSIBILITIES

§ 7:5 Introduction

Environmental law operates in the United States most frequently as an admixture of federal and state standards, goals, requirements, limitations, and enforcement authorities. This federal-state combination has been described in various ways. Frequently the federal Environmental Protection Agency (EPA) speaks of the state-federal “partnership.” Others refer to the same relationship as “cooperative federalism,” the “new federalism,”¹ or simply “federalism.” The federal role is often described as “oversight”—with connotations, to some, of the “overseer.” The state role, which is to carry on the direct application of the law under most of the federal statutes,² is variously described as state “primacy,”³ state “authorization,”⁴ program “approval,”⁵ or “delegation.”⁶ Congress itself has not always been consistent in its terminology—even within a single statute or program within a statute. The Underground Storage Tank Program under Subtitle I of RCRA, for example, provides for “approval of state programs” on the one hand, and for “withdrawal of authorization” on the other.⁷

The use of various terms reflects the organic and changing quality of federal and state responsibilities under the major federal environmental programs. The terms are often used interchangeably, or to describe specific features of the state-federal interface as perceived at a given time. For purposes of legal analysis, however, it is most useful to focus upon the allocation of powers and responsibilities. The terminology—including statutory terminology—may be misleading. For example, despite the common use of the term “delegation” by EPA and practitioners and its appearance in the Clean Air Act, none of the federal statutes effectively delegates any federal power to the states. Rather, the federal government relies on the states’ own inherent and constitutional powers to carry out environmental implementation responsibilities, and, upon recognition of a state’s programs, refrains from exercising federal powers to their fullest in that state. Likewise, withdrawal of federal “authorization” from a state, or failure to grant such “authorization,” does not mean that the state

¹²A number of states use public nuisance law in the hazardous waste context. The Texas Water Commission has even expressly codified common law public nuisance principles in its industrial solid waste and hazardous waste regulations. 31 Tex. Admin. Code § 335.4.

[Section 7:5]

¹This term became popular in the first term of the Reagan Administration. See Symposium, The New Federalism in Environmental Law: Taking Stock, 12 *Envtl. L. Rep.* (Envtl. L. Inst.) 15065 (1982).

²See § 4:9; § 9:3.

³Although the language of § 503 of the Surface Mining Control and Reclamation Act of 1977, 30 U.S.C.A. § 1253, speaks of state program “approval,” regulators and lawyers commonly refer to state “primacy” under this law in situations when a state regulatory program has been approved. This practice probably resulted from Congress’ use of the term “primary” authority in SMCRA §§ 101(f), 522(a)(1), 30 U.S.C.A. §§ 1201(f), 1272(a)(1).

⁴RCRA § 3006, 42 U.S.C.A. § 6926.

⁵Clean Air Act § 110, 42 U.S.C.A. § 7410; Clean Water Act § 402, 33 U.S.C.A. § 1342.

⁶Clean Air Act §§ 111(c), 112(d), 42 U.S.C.A. §§ 7411(c), 7412(d). This is the only express use of the term “delegate” in federal environmental law. See *also* § 8:34.

⁷RCRA §§ 9004(a), (e), 42 U.S.C.A. §§ 6991c(a), (e).

lacks power to make and enforce laws dealing with the subject matter of the authorization (*e.g.*, water pollution or hazardous waste). Lack of “authorization” in a state simply means that the federal government must promulgate and implement a full-blown federal effort in that state in addition to whatever independent efforts the state might make.⁸

Thus, the actual division of responsibilities between the federal government and the states is significant. The ability of the federal government to persuade (or coerce) states to seek and maintain authorization under each program is also important, as this affects allocation of both federal and state resources. Finally, the federal government’s oversight and “residual” enforcement activities in approved or authorized states represent a continuing contact between federal and state officials that significantly influences the actions of state officials and hence also the response of the regulated industry.

§ 7:6 Federal approval of state programs

Most of the major federal environmental statutes provide for the submission of state plans or programs for approval by the federal government.¹ The basic theory of these statutes is that the states should take the lead in implementation and enforcement subject to baseline (*e.g.*, minimum) national standards set by the federal government, and to federal oversight of the adequacy of the state effort. If a state elects not to submit a plan or to assume the statutory responsibilities, however, the only consequence is that the federal government must do so in its stead. The federal government must, in effect, induce the states to “take” the environmental programs. Sometimes the possibility of a heavy federal presence is itself a sufficient inducement for a state to act. In other instances, the federal government offers the “carrot” of funding of state employees to carry out the programs under state control, or other financial inducements.² A state legislature’s potential embarrassment at having the federal government administer a program in a given state also can provide an incentive for a state to seek program “approval” or “authorization.”

Where a state is neither troubled by the possibility of a federal program, nor induced financially to seek state program approval, there may be little incentive to take on the responsibilities. The combination of federal pressure, public opinion, and financial inducements has resulted in substantial state participation under the Clean Air Act, Clean Water Act, and RCRA.³ The underground storage tank program

⁸“If state residents would prefer their government to devote its attention and resources to problems other than those deemed important by Congress, they may choose to have the Federal Government rather than the State bear the expense of a federally mandated regulatory program, and they may continue to supplement that program to the extent state law is not preempted.” *New York v. United States*, 505 U.S. 144, 168 (1992). For example, California stringently regulated hazardous waste handling, treatment, storage, and disposal for many years, but did not obtain federal RCRA authorization until 1991. A number of states lack authorization to operate the NPDES permit program under the Clean Water Act: Alaska, Arizona, District of Columbia, Idaho, Maine, Massachusetts, New Hampshire, New Mexico, Puerto Rico and Texas. Only two states—Michigan and New Jersey—have been authorized to operate the section 404 dredge and fill permit program under the Clean Water Act, although several states had applied for such authority, and several others had been given similar authority under the terms of Corps of Engineers “state program general permits.”

[Section 7:6]

¹See § 4:9.

²Under § 405(c) of the federal Surface Mining Control and Reclamation Act of 1977, 30 U.S.C.A. § 1235(c), for example, state control over the expenditure of federally-collected abandoned mine land (AML) reclamation funds is contingent upon whether the state has an approved “regulatory” program.

³The state side of the relationship under the federal statutes may become even more important. EPA has begun to offer states greater flexibility under its “National Environmental Performance Partnership System,” which allows states to identify their own goals. This initiative, launched in 1996,

created by the 1984 amendments to RCRA presented a different situation, however.⁴ Under that program, states were to submit programs for EPA approval in order to operate “in lieu of” the federal program. Unfortunately, Congress did not appropriate significant funds to offer the states as an inducement to administer the program, nor did the threat of an intrusive federal program in a given state appear likely given the low funding level available to the federal regulators and the size of the underground storage tank universe—about 1.4 million regulated tanks operated by over 500,000 different facilities.⁵ Congress also missed a potential inducement by failing to link the states’ participation in the proceeds of the Leaking Underground Storage Tank Trust Fund⁶ to the submission of an approvable state program for the regulation of underground storage tanks under RCRA. The result was a weak federal baseline program allowing a great deal of flexibility to states in obtaining state program approval. The federal leverage available under each of the statutes is thus important in defining the nature of the state-federal relationship.⁷

The federal government ordinarily needs to have the states accept primary responsibility for implementation and enforcement because of the lack of sufficient federal resources to carry out the program in all states. Accordingly, when there is friction between the federal EPA and a state over the administration of an approved program, the federal government’s threat to revoke the state’s approval may be more than balanced by the *state’s* threat to return the program to the federal government.

While the relationship between the federal government and state governments varies under the several statutes, it is solidly ingrained in U.S. environmental law. The rationale for this duality of implementation is based upon the recognition that most pollution problems are interstate in character, or at least have impacts on interstate commerce (for example, by making a polluter’s goods generally cheaper than those of a competitor that must incur pollution control expenses). Furthermore, upwind and upstream states may have limited incentive to impose pollution controls absent a federal framework. At the same time, the states are perceived to have advantages for enforcement, including the recognition of local problems and the efficient application of resources. It is unclear whether these state advantages are real or are primarily received as articles of faith. Nevertheless, given the inadequacy of federal resources to do the entire job of environmental regulation and the

has had a greater effect than President Reagan’s Executive Order 12612, entitled “Federalism.” 52 Fed. Reg. 41685 (1987). This Order required the executive agencies to defer to the states and to eschew federal standard-setting and federal baseline requirements whenever possible. The order stated, in part: “With respect to national policies administered by the states, the national government should grant the states the maximum administrative discretion possible Executive departments and agencies shall . . . [r]efrain, to the maximum extent possible, from establishing uniform, national standards for programs and, when possible, defer to the states to establish standards.” The Order required the federal agencies to prepare “federalism assessments” for all proposed policies and regulations with potential effects upon states, and granted the Office of Management and Budget the power to oversee federal agency compliance.

⁴See § 14:81.

⁵See 52 Fed. Reg. 12662 to 12786 (1987).

⁶RCRA § 9003(h), 42 U.S.C.A. § 6991b(h) (as added by the Superfund Amendments and Reauthorization Act of 1986 (SARA), Pub. L. No. 99-499, 100 Stat. 1613).

⁷Such leverage may be considerable. The Clean Air Act is linked to federal highway dollars, a significant inducement for states to prepare adequate state implementation plans (SIPs). See *Virginia v. Browner*, 80 F.3d 869, 26 Env’tl. L. Rep. (Env’tl. L. Inst.) 21245 (4th Cir. 1996) (upholding EPA disapproval of Virginia’s SIP for failure to provide adequate citizen standing to challenge permit decisions, and rejecting constitutional challenges to the linkage to highway funds).

states' willingness to participate—as evidenced by their efforts predating the federal programs—the issue is probably moot.⁸

Given the interstate nature of pollution problems and the checkered history of state regulation, federal baseline requirements are necessary.⁹ Federal oversight is then a concomitant in order to assure uniform state implementation and enforcement.

§ 7:7 Federal oversight of state programs

The main feature of the federal-state relationship under the major federal environmental laws is the federal “oversight” of the state effort. This function includes evaluation of the state laws and regulations for continuing “consistency” with the federal program, evaluation of the state’s current permitting, inspection, and enforcement efforts, and federal decisions about taking direct federal enforcement action against violators.¹

Whatever its form, federal oversight basically involves the potential for state program withdrawal, federal “assumption of enforcement,” cuts in state grant funds, or direct federal enforcement against individual violators without either program withdrawal or assumption of enforcement. Under the Clean Water Act’s National Pollutant Discharge Elimination System (NPDES) program, RCRA, the Underground Storage Tank program, and the Safe Drinking Water Act, the EPA may withdraw a state’s “approval” or “authorization” if a state is not adequately carrying out its program obligations.² Under the Clean Air Act, the EPA may not withdraw approval of a State Implementation Plan (SIP); instead it has the power to assume enforcement of the SIP itself or to revise the SIP to supply necessary

⁸The state side of the relationship under the federal statutes may become even more important. EPA has begun to offer states greater flexibility under its “National Environmental Performance Partnership System,” which allows states to identify their own goals. This initiative, launched in 1996, has had a greater effect than President Reagan’s Executive Order 12612, entitled “Federalism.” 52 Fed. Reg. 41685 (1987). This Order required the executive agencies to defer to the states and to eschew federal standard-setting and federal baseline requirements whenever possible. The order stated, in part: “With respect to national policies administered by the states, the national government should grant the states the maximum administrative discretion possible . . . Executive departments and agencies shall . . . [r]efrain, to the maximum extent possible, from establishing uniform, national standards for programs and, when possible, defer to the states to establish standards.” The Order required the federal agencies to prepare “federalism assessments” for all proposed policies and regulations with potential effects upon states, and granted the Office of Management and Budget the power to oversee federal agency compliance.

⁹Sometimes the federal baseline becomes the *de jure* maximum. In 1987, for example, the Utah legislature enacted legislation requiring the Utah Solid and Hazardous Wastes Committee to eliminate all state hazardous waste regulations that were more stringent than the federal regulations unless the state agency could, after hearing, make a formal written finding (based on public health and environmental studies) that the federal regulations are not adequate to protect public health and the environment. Utah Code Ann. § 19-6-106(1). See also S.D. Codified Laws Ann. § 1-40-4.1 (rules may not be more stringent than EPA rules). For a collection of state laws limiting the stringency of state regulation to the federal minimum standards, see James M. McElfish, Jr., *Minimal Stringency: Abdication of State Innovation*, 25 *Envtl. L. Rep. (Envtl. L. Inst.)* 10003 (Jan. 1995).

[Section 7:7]

¹These oversight functions are discussed in greater detail from the EPA enforcement perspective at § 9:34.

²Respectively, these provisions are found at Clean Water Act § 402(c)(3), 33 U.S.C.A. § 1342(c)(3); RCRA § 3006(e), 42 U.S.C.A. § 6926(e); RCRA § 9004(e), 42 U.S.C.A. § 6991c(e); SDWA § 1422(b)(3), 42 U.S.C.A. § 300h-1(b)(3). EPA’s duty to withdraw program authorization may not be discretionary once a state’s noncompliance has been determined. See *National Wildlife Fed’n v. United States Environmental Protection Agency*, 980 F.2d 765, 23 *Envtl. L. Rep. (Envtl. L. Inst.)* 20440 (D.C. Cir. 1992) (EPA must withdraw state primacy under Safe Drinking Water Act once it has determined that a state is out of compliance).

modifications if the state fails to do so.³ The sanction of program withdrawal has never been exercised by EPA under any of the statutes providing for such action.⁴

Federal “assumption of enforcement” is provided for under both the Clean Air Act and the Clean Water Act.⁵ This type of oversight provision contemplates that the Administrator of EPA may take over a state’s enforcement function wholesale if SIP or NPDES permit violations are “widespread” and result from a state’s failure to enforce. This is a more drastic version of EPA’s “residual” authority under each of the major environmental statutes to enforce on a case-by-case basis in the authorized states.⁶ Oversight, therefore, is tied closely to federal enforcement goals and standards.

Such oversight has produced significant acrimony between EPA and the states. EPA’s enforcement priorities are often not the same as those of the states, and federal enforcement tools (such as civil penalties) are often favored by EPA over state preferences (which may include permit revocation actions or criminal remedies). The entire oversight process requires a substantial amount of paperwork and accounting, thus diverting resources on both the federal and state sides away from direct environmental protection. These inefficiencies appear to be inevitable given a federal-state system. There have been few moves toward a wholly federal or entirely state approach to environmental problems.

Some observers have suggested that the federal government might best confine its activities to standard setting and technical research and development, while leaving all implementation to the states. Apart from the obvious problem of assuring uniformity of enforcement in such a system (*i.e.*, preventing the occurrence of pollution havens absent serious federal oversight), there is also another serious drawback to such a plan. Standard setting should be tied to enforcement. Standard setting is weakest when it operates in isolation from day-to-day enforcement problems. By splitting standard setting and enforcement between two governmental levels, the nation would risk the promulgation and maintenance of unenforceable standards, or standards that are essentially irrelevant to many activities. EPA’s successes in standard setting have, in part, relied on substantial input from its Regions and enforcement personnel, particularly in fine-tuning the federal regulations. The retention of significant residual enforcement authority at the federal level is probably appropriate for this reason, as well as for state enforcement quality control purposes.

In sum, the federal-state oversight scheme adopted under the major federal programs probably has had a mixed effect on the quality of regulatory performance. While close federal scrutiny may have made traditionally “bad” states better in environmental regulation, it has also arguably exerted a negative effect on “good”

³Clean Air Act §§ 110(c)(1)(C), 113, 42 U.S.C.A. §§ 7410(c)(1)(C), 7413.

⁴In 1987, EPA commenced proceedings to withdraw the authorization of North Carolina’s RCRA program, charging that a recent amendment to state law had rendered it no longer “consistent” with the federal statute. 52 Fed. Reg. 43903 (1987). Oddly, the action that provoked this first attempt to exercise EPA’s withdrawal power was not a state failure to administer or enforce, but rather a state law that was arguably more stringent in regulating hazardous waste facilities by restricting their siting. EPA acted at the petition of a commercial waste disposal operator and a trade association. In 1990, EPA decided not to withdraw North Carolina’s RCRA authorization. This decision was upheld in *Hazardous Waste Treatment Council v. Reilly*, 938 F.2d 1390, 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 21228 (D.C. Cir. 1991).

⁵Clean Air Act § 113, 42 U.S.C.A. § 7413; Clean Water Act § 309(a)(2), 33 U.S.C.A. § 1319(a)(2).

⁶*See* § 9:1. Direct federal enforcement against violators in approved or authorized states under the Clean Air Act, Clean Water Act, RCRA, the Underground Storage Tank Program, and the Safe Drinking Water Act is of the approved *state* program. Such enforcement of the state program by the federal government may, however, occur in federal court. *E.g.*, *Union Elec. Co. v. EPA*, 515 F.2d 206, 211, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20259 (8th Cir.), *aff’d*, 427 U.S. 246, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20570 (1975) (SIP requirements enforceable by EPA in federal court).

state efforts. The latter effect results from: (1) the diversion of significant state resources to the resource demands of federal oversight reporting and review; (2) the diversion of state resources to respond to particular enforcement actions targeted as federal priorities, even though the state may place higher priorities on other environmental actions; and (3) federal emphasis on the use of particular enforcement tools and approaches that are easy to measure for oversight purposes and that have obvious federal analogues.⁷ States are encouraged to stick to the federal model for implementation. The federal-state scheme thus produces a general leveling effect.

§ 7:8 Federal preemption

There is generally little preemption of state environmental law by federal law. Although a substantial amount of environmental legislation on the federal level touches on the same subject matter as state legislation, preemption is generally disfavored unless Congress has expressly preempted the subject matter, or the federal law cannot be given effect without the state law yielding.¹ The law of preemption is too complex to cover here in any depth, but a number of important issues and rulings in the environmental area deserve attention. Preemption will continue to be a major issue, as more states legislate broadly on environmental issues not addressed by, or addressed differently in, federal environmental laws.²

The threshold issue in any preemption determination is establishing whether

⁷For example, EPA places substantial emphasis on state administrative orders and civil penalties. These are relatively easy to “count,” and they are the tools that EPA itself most often uses. This emphasis may discourage a state from using a “permit bar,” contractor debarment, or resource intensive permit revocation case to deal with a violation or exercise settlement leverage, even though the latter may be the more environmentally protective course. It is “easier” to issue an order and assess a civil penalty in most cases.

[Section 7:8]

¹*See, e.g.*, Clean Air Act § 209(a), 42 U.S.C.A. § 7453(a) (expressly preempts state emission standards for new motor vehicles); Toxic Substances Control Act § 18, 15 U.S.C.A. § 2617 (expressly preempts, with limited exceptions, state regulation of chemical substances acted on by EPA); Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) § 24(b), 7 U.S.C.A. § 136v(b) (expressly preempts state requirements for labeling or packaging that are different from or addition to federal requirements); *Engine Mfrs. Ass’n v. South Coast Air Quality Mgmt. Dist.*, 541 U.S. 246, 124 S. Ct. 1756, 158 L. Ed. 2d 529 (2004) (certain aspects of California’s fleet vehicle rules preempted by § 209(a) of the Clean Air Act); *see also Exxon Corp. v. Hunt*, 475 U.S. 355, 16 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20396 (1986) (holding that CERCLA § 114(c), as enacted in 1980, partially preempted the New Jersey Spill Act, N.J. Stat. Ann. §§ 58:10-23.11 et seq., although CERCLA § 114(c) was repealed in 1986 following this decision); *cf. Wisconsin Pub. Intervenor v. Mortier*, 501 U.S. 597, 111 S. Ct. 2476, 115 L. Ed. 2d 532, 21 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21127 (1991) (FIFRA does not preempt town’s ordinance regulating the use of pesticides either explicitly or implicitly or by virtue of an actual conflict). *Compare Manor Care, Inc. v. Yaskin*, 950 F.2d 122, 22 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20320 (3d Cir. 1991) (CERCLA does not preempt New Jersey’s use of its Spill Act for cost recovery even though costs were incurred at federal CERCLA site).

²Much of the debate over the Oil Pollution Act of 1990, Pub. L. 101-380, 104 Stat. 484, 33 U.S.C.A. §§ 2701 to 2761, focused on whether state liability schemes would be preempted by Congress; they were not. However, the Act’s savings clause was construed narrowly by the U.S. Supreme Court, which struck down Washington state regulations on the outfitting and operation of oil tankers in state waters. *United States v. Locke*, 529 U.S. 89, 120 S. Ct. 1135, 146 L.Ed.2d 69 (2000); *see also CSX Transp., Inc. v. Williams*, 406 F.3d 667 (D.C. Cir. 2005) (CSX Transport would likely succeed on its claim that a District of Columbia Act banning hazardous shipments by rail or truck travel within 2.2 miles of the capitol building was preempted by the Federal Railroad Safety Act.); *Green Mountain R.R. Corp. v. Vermont*, 404 F.3d 638, 35 *Envtl. L. Rep.* (*Envtl. Law Inst.*) 20081 (2d Cir. 2005) (Interstate Commerce Commission Termination Act expressly preempts pre-construction permit requirement of Vermont’s environmental land use statute.); *Skull Valley Band of Goshute Indians v. Nielson*, 376 F.3d 1223, 34 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20064 (10th Cir. 2004) (Energy Policy Act preempts Utah’s statutes regulating the storage, licensing, and transportation of spent nuclear fuel.); *Northern Natural Gas Co. v. Iowa Utilities Bd.*, 377 F.3d 817, *Envtl. L. Rep.* (*Envtl. L. Inst.*) (8th Cir. 2004) (Iowa’s land

Congress intended to preempt state law. Congress may preempt state law in a number of ways. First, preemption may arise when Congress uses explicit preemptive language in the federal statute. Most of the major environmental statutes that provide for state program approval by federal authorities expressly require that the state law be consistent with the federal law as a condition for such approval. At the same time, a state's authority to regulate "more stringently" is expressly preserved.³ Consequently, where a state law is more stringent than its federal counterpart, the state law is expressly *not* preempted. A more difficult question arises when a state law or program either has not been approved, or has been specifically disapproved by EPA for lack of consistency with the federal program. In general, the state law or program is not preempted, but the resolution of a preemption issue may depend on the nature of the inconsistency.⁴

In the absence of express language, preemption may arise in one of two ways. Conflict preemption arises where a state law stands as an obstacle to the accomplishment and execution of the federal legislation.⁵ But the fact that the federal government has regulated a subject area does not always require a finding of preemption, particularly where the state law or regulation aims at a different aspect of behavior or a different interest.⁶ Finally, implied preemption may be found where federal legislation is sufficiently comprehensive to make the reasonable inference that Congress has left no room for supplementary state regulation.⁷

The primary area of environmental preemption litigation has involved the so-called "dormant Commerce Clause," a form of implied preemption. Because the U.S.

restoration statutes regulating the environmental effects of natural gas pipelines are preempted by the Natural Gas Act and FERC regulations.).

³*See, e.g.*, Resource Conservation and Recovery Act (RCRA) § 3009, 42 U.S.C.A. § 6929 (state or local government may impose more stringent requirements).

⁴For example, California continued to operate its hazardous waste program throughout the 1980s even though it was not fully consistent with RCRA. RCRA does not expressly preempt "inconsistent" laws, only those that are "less stringent." *See* RCRA § 3009, 42 U.S.C.A. § 6929. In contrast, the federal Surface Mining Control and Reclamation Act of 1977 expressly preempts "inconsistent" state laws. SMCRA § 505, 30 U.S.C.A. § 1255.

⁵*Clean Air Markets Group v. Pataki*, 338 F.3d 82, 33 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20247 (2d Cir. 2003) (Title IV of the Clean Air Act Amendments preempts a New York law requiring that the New York State Public Service Commission charge an air pollution mitigation offset when a utility sold or traded allowances to one of fourteen upwind states.); *Northern Plains Res. Council v. Fidelity Exploration and Dev. Co.*, 325 F.3d 1155, 33 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20171 (9th Cir. 2003) (Clean Water Act preempts Montana's law exempting Fidelity from obtaining an NPDES permit for the discharge of unaltered groundwater produced in association with methane gas extraction.); *Boyes v. Shell Oil Prods. Co.*, 199 F.3d 1260, 30 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20268 (11th Cir. 2000) (RCRA citizen suit provision preempts Florida law limiting suits against underground storage tank owners.).

⁶*See, e.g.*, *Air Conditioning and Refrigeration Inst. v. Energy Res. Conservation and Dev. Comm'n*, 410 F.3d 492, 35 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20026 (9th Cir. 2005) (Energy Policy and Conservation Act does not preempt California's appliance regulations requiring manufacturers to submit data to state energy commission, mark their appliances with basic information such as energy performance, and be subjected to related compliance and enforcement rules), cert. denied, 126 S. Ct. 2887, 165 L. Ed. 2d 916 (2006); *Oxygenated Fuels Ass'n, Inc. v. Davis*, 331 F.3d 665, 33 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20212 (9th Cir. 2003) (Clean Air Act's reformulated gasoline (RFG) program does not preempt California's ban on the fuel additive MTBE); *Chemical Specialties Mfrs. Ass'n v. Allenby*, 958 F.2d 941, 22 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20822 (9th Cir. 1992) (FIFRA and federal Hazardous Substances Act do not preempt California Proposition 65's requirement for point of sale warnings); *LaFarge Corp. v. Campbell*, 813 F. Supp. 501, 23 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20896 (W.D. Tex. 1993) (RCRA does not preempt state statute prohibiting burning of waste-derived fuel within one-half mile of an established residence); *Welch v. Board of Supervisors*, 860 F. Supp. 328, 25 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20467 (W.D. Va. 1994), *aff'd*, 888 F. Supp. 753, 26 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20171 (W.D. Va. 1995) (Clean Water Act does not expressly or impliedly preempt county ordinance that prohibits the application of sewage sludge on agricultural lands.).

⁷*Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 230, 67 S. Ct. 1146, 1152, 91 L. Ed. 2d 1447 (1947).

Constitution authorizes Congress to legislate concerning interstate commerce,⁸ federal courts have been particularly careful to assure that Congress' silence or inaction in a given area is not interpreted as authorization for the states to enact laws that might impair interstate commerce. The absence of federal legislation in a given area of interstate commerce may, in fact, reflect Congress' settled judgment that there should be no provisions—state or federal—regulating such commercial activity. In such an instance, congressional silence will be given preemptive effect over state attempts at regulation.

The leading case applying the dormant Commerce Clause power to environmental legislation is *Philadelphia v. New Jersey*,⁹ in which the Supreme Court held that New Jersey could not ban the importation of out-of-state waste. In that case, the Court set forth the test to be employed in determining whether a state law violates the Commerce Clause. Once a statute has been shown to have a discriminatory effect on out-of-state commerce, “[t]he crucial inquiry . . . must be directed to determining whether [the law being challenged] is basically a protectionist measure, or whether it can fairly be viewed as a law directed to legitimate local concerns, with effects upon interstate commerce that are only incidental.”¹⁰ The “market participant” exception to the dormant commerce clause applies when a state or local government is engaged in a market as a proprietor rather than as a regulator.¹¹

A substantial number of decisions, including Supreme Court decisions, have struck down state laws and regulations that limit or prohibit the interstate transport or disposal of waste.¹² Waste fees and other differentially imposed limitations, such

⁸U.S. Const. art. I, § 8, cl. 3.

⁹*Philadelphia v. New Jersey*, 437 U.S. 617 (1978).

¹⁰*Philadelphia v. New Jersey*, 437 U.S. 617, 624 (1978). “A state statute that clearly discriminates against interstate commerce is therefore unconstitutional ‘unless the discrimination is demonstrably justified by a valid factor unrelated to economic protectionism.’” *Fort Gratiot Sanitary Landfill, Inc. v. Michigan Dep’t of Nat. Resources*, 504 U.S. 353, 359, 112 S. Ct. 2019, 20-23, 22 *Envtl. L. Rep. (Envtl. L. Inst.)* 20904, 20905 (1992), citing *New Energy Co. v. Limbach*, 486 U.S. 269, 274 (1988). *See, e.g., South Dakota Farm Bureau, Inc. v. Hazeltine*, 340 F.3d 583, 33 *Envtl. L. Rep. (Envtl. L. Inst.)* 20260 (8th Cir. 2003), cert. denied, 541 U.S. 1037, 124 S. Ct. 2095 (2004) (amendment to South Dakota Constitution that prohibited corporations and syndicates, subject to certain exemptions, from acquiring land used for farming and from otherwise engaging in farming in South Dakota is motivated by a discriminatory purpose and violates the dormant commerce clause). In contrast, if a statute “regulates evenhandedly to effectuate a legitimate local public interest, and its effects on interstate commerce are only incidental, it will be upheld unless the burden imposed on such commerce is clearly excessive in relation to the putative local benefits.” *Pike v. Bruce Church, Inc.*, 397 U.S. 137, 142 (1970). The result in many dormant Commerce Clause cases turns on whether the test applied is strict scrutiny, as in *Philadelphia v. New Jersey*, or the *Pike* balancing test. *See, e.g., Chambers Medical Technologies of S.C., Inc. v. Bryant*, 52 F.3d 1252, 25 *Envtl. L. Rep. (Envtl. L. Inst.)* 20972 (4th Cir. 1995) (remanding decision upholding state limit on the amount of infectious waste that may be incinerated based on the estimated amount of such waste generated in South Carolina, for a determination of which test should apply).

¹¹*Hughes v. Alexandria Scrap Corp.*, 426 U.S. 794, 46 S. Ct. 2488 (1976); *see Olympic Pipe Line Co. v. City of Seattle*, 437 F.3d 872, 36 *Envtl. L. Rep. (Envtl. L. Inst.)* 20033 (9th Cir. 2006) (Pipeline Safety Improvement Act (PSA) preempts municipality’s attempt to impose safety standards on a hazardous liquid pipeline. However, City may require safety tests if acting as a proprietor rather than a regulator.); *SSC Corp. v. Town of Smithtown*, 66 F.3d 502, 25 *Envtl. L. Rep. (Envtl. L. Inst.)* 21513 (2d Cir. 1995), cert. denied, 516 U.S. 1112, 116 S. Ct. 911 (1996), reh’g denied, 517 U.S. 1150, 116 S. Ct. 1453 (1996) (Town’s flow control ordinance requiring use of a particular incinerator does not qualify as market participant, but town’s garbage hauling contract is act of market participant.).

¹²*See, e.g., Fort Gratiot Sanitary Landfill, Inc. v. Michigan Dep’t of Nat. Resources*, 504 U.S. 353, 112 S. Ct. 2019, 22 *Envtl. L. Rep. (Envtl. L. Inst.)* 20904 (1992) (limitation on acceptance of out-of-county waste, applicable to out-of-state waste, violates Commerce Clause); *Waste Mgmt Holdings, Inc. v. Gilmore*, 252 F.3d 316, 31 *Envtl. L. Rep. (Envtl. L. Inst.)* 20753 (4th Cir. 2001) (Virginia limitations on amount of out-of-state waste violates Commerce Clause); *In re Southeast Arkansas Landfill, Inc.*, 981 F.2d 372, 23 *Envtl. L. Rep. (Envtl. L. Inst.)* 20499 (8th Cir. 1992) (Arkansas law prohibiting certain disposal of waste from outside waste planning district violates Commerce Clause); *Environmental*

as licensing and bonding requirements, have also been struck down as Commerce Clause violations.¹³ Waste handling laws that are facially neutral but have effects on interstate commerce have met varying fates.¹⁴ In 1994, the Supreme Court struck down a “flow control” ordinance designed to ensure use of a designated transfer station by all waste generated within a municipality’s borders.¹⁵ The Court

Tech. Council v. Sierra Club, 98 F.3d 774, 27 *Envtl. L. Rep.* (Envtl. L. Inst.) 20295 (4th Cir. 1996) (striking down South Carolina laws requiring facilities to reserve space for in-state waste and capping out-of-state waste, requiring show of in-state need to justify permit, and blacklisting waste generated in states without treatment or agreements for treatment); *Hazardous Waste Treatment Council v. South Carolina*, 945 F.2d 781, 21 *Envtl. L. Rep.* (Envtl. L. Inst.) 21494 (4th Cir. 1991) (upholding injunction enjoining limits on disposal of out-of-state waste); *Connecticut Resources Recovery Auth. v. Commissioner of the Dep’t of Env’t. Protection*, 1994 WL 60061, No. CV 93-0524827-S, (Conn. Super. Ct. 2-16-94) (striking down permit conditions requiring solid waste recovery facility to give priority to acceptance of in-state waste); *cf.* *National Solid Wastes Mgmt. Ass’n v. Meyer*, 63 F.3d 652, 25 *Envtl. L. Rep.* (Envtl. L. Inst.) 21473 (7th Cir. 1995) cert. denied, 116 S. Ct. 1351 (1996) (striking down Wisconsin statute that barred disposal of recyclables in Wisconsin landfills unless generator was located in community with an “effective recycling program”); *National Solid Wastes Mgmt. Ass’n v. Meyer*, 165 F.3d 1151, 29 *Envtl. L. Rep.* (Envtl. L. Inst.) 20459 (7th Cir. 1999) (striking down successor statute with similar extraterritorial prescriptions). The same preemption applies to limitations and prohibitions on receipt of foreign waste. *See* *Chemical Waste Mgmt., Inc. v. Templet*, 967 F.2d 1058, 22 *Envtl. L. Rep.* (Envtl. L. Inst.) 21531 (5th Cir. 1992) (striking down Louisiana ban on disposal of waste originating in foreign countries), cert. denied, 113 S. Ct. 1048 (1993).

¹³*See* *Oregon Waste Sys., Inc. v. Dep’t of Env’t. Quality*, 511 U.S. 93, 114 S. Ct. 1345, 24 *Envtl. L. Rep.* (Envtl. L. Inst.) 20674 (1994) (striking down higher surcharge on disposal of out-of-state waste than in-state waste). *But see* *American Trucking Ass’ns, Inc. v. Michigan Pub. Serv. Comm’n*, 545 U.S. 429, 125 S. Ct. 2419 (2005) (Michigan’s imposition of a flat \$100 annual fee on trucks engaging in intrastate commercial hauling was valid exercise of state’s police power and did not violate dormant Commerce Clause). *See also* *American Trucking Ass’ns, Inc. v. State*, 180 N.J. 377, 852 A.2d 142 (2004) (holding that hazardous waste transporter registration fee discriminated against interstate commerce by charging a flat fee unrelated to the transporter’s level of activity in the state and placed an undue burden on interstate commerce); *Chemical Waste Mgmt., Inc. v. Hunt*, 112 S. Ct. 2009, 22 *Envtl. L. Rep.* (Envtl. L. Inst.) 20909 (1992) (striking down differential waste fee for disposal of out-of-state wastes); *Government Suppliers Consolidating Servs., Inc. v. Bayh*, 753 F. Supp. 739, 21 *Envtl. L. Rep.* (Envtl. L. Inst.) 20584 (S.D. Ind. 1990) (striking down fee on out-of-state waste); *Government Suppliers Consolidating Servs., Inc. v. Bayh* (Bayh II), 975 F.2d 1267, 23 *Envtl. L. Rep.* (Envtl. L. Inst.) 20042 (7th Cir. 1992), cert. denied, 113 S. Ct. 977 (1993) (striking down reenacted and new provisions, including prohibitions on backhauling, sticker and vehicle registration requirements, additional tipping fees on out-of-state waste, and surety bond requirements for out-of-state haulers); *cf.* *National Solid Wastes Management Ass’n v. Voinovich*, 959 F.2d 590, 22 *Envtl. L. Rep.* (Envtl. L. Inst.) 20666 (6th Cir. 1992) (reversing summary judgment for plaintiff and remanding for trial on whether state can show compelling justification for differential waste fees on out-of-state waste).

¹⁴*Eastern Ky. Resources v. Fiscal Court of Magoffin County*, 127 F.3d 352, 28 *Envtl. L. Rep.* (Envtl. L. Inst.) 20251 (6th Cir. 1997) (upholding Kentucky requirement that local waste management plans identify capacity for disposing of “out-of-area” waste), cert. denied, 118 S. Ct. 1512 (1998); *Kleenwell Biohazard Waste & Gen. Ecology Consultants, Inc. v. Nelson*, 48 F.3d 391, 25 *Envtl. L. Rep.* (Envtl. L. Inst.) 20867 (9th Cir. 1995) (upholding, against challenge by interstate transporter, Washington State requirement for certificate of public convenience and necessity to collect, transport, or dispose of waste in state), cert. denied, 115 S. Ct. 2580 (1995); *Chambers Medical Technologies of S.C., Inc. v. Bryant*, 52 F.3d 1252, 25 *Envtl. L. Rep.* (Envtl. L. Inst.) 20972 (4th Cir. 1995) (striking down refrigeration requirement for infectious waste because exemption for waste that could be transported within twenty-four hours meant that requirement burdened only out-of-state generators and nondiscriminatory alternatives exist); *SDDS, Inc. v. South Dakota*, 47 F.3d 263, 25 *Envtl. L. Rep.* (Envtl. L. Inst.) 20967 (8th Cir. 1995) (striking down referendum disapproving large-scale municipal solid waste facility; although language was facially neutral, evidence showed that it had been drafted and campaign had been conducted on the basis that it would keep out a specific enterprise that was designed to handle out-of-state waste); *National Solid Wastes Mgmt. Ass’n v. Williams*, 877 F. Supp. 1367, 26 *Envtl. L. Rep.* (Envtl. L. Inst.) 20484 (D. Minn. 1995) (striking down because of discriminatory impacts facially neutral statute imposing certain fee and indemnification requirements for choice of landfilling over waste processing).

¹⁵*C&A Carbone, Inc. v. Town of Clarkstown*, 114 S. Ct. 1677, 24 *Envtl. L. Rep.* (Envtl. L. Inst.) 20815 (1994).

held that the ordinance discriminated against out-of-state waste handlers who might want to compete in the market.¹⁶

¹⁶Other flow control litigation has ensued. *United Haulers Ass'n v. Oneida-Herkimer Solid Waste Mgmt. Auth.*, 261 F.3d 245, 31 *Envtl. L. Rep. (Envtl. L. Inst.)* 20873 (2d Cir. 2001) (reversing and remanding district court decision striking down ordinance requiring use of appropriate sites), on remand, 438 F.3d 150, 36 *Envtl. L. Rep. (Envtl. L. Inst.)* 20041 (2d Cir. 2006) (upholding counties' flow control ordinances requiring all waste generated within counties be delivered to publicly owned corporate facilities for processing); *IESI AR Corp. v. Northwest Ark. Regional Solid Waste Mgmt. Dist.*, 433 F.3d 600, 36 *Envtl. L. Rep. (Envtl. L. Inst.)* 20004 (8th Cir. 2006) (upholding, under the Pike balancing test, a flow control ordinance requiring that the disposal of solid waste occur either in the district in which the ordinance was enacted or in out-of-state landfills); *Southern Waste Systems, LLC v. City of Delray Beach, Fla.*, 420 F.3d 1288 (11th Cir. 2005) (city's waste hauling contract does not violate the dormant commerce clause because it does not discriminate against out-of-state interests in favor of local interests); *National Solid Wastes Mgmt. Ass'n v. Pine Belt Regional Solid Waste Mgmt. Auth.*, 389 F.3d 491, 34 *Envtl. L. Rep. (Envtl. L. Inst.)* 20132 (5th Cir. 2004), cert. denied, 126 S. Ct. 332, 163 L. Ed. 2d 45 (2005) (upholding flow control ordinance under the Pike balancing test because regional waste management authority had legitimate local purpose of ensuring economic viability of its landfill and the ordinance did not have a disparate impact on interstate commerce; the burdens imposed on the interstate contracts of companies that collected, processed, and disposed of solid waste were no greater than the burdens imposed on intrastate contracts); *Maharg, Inc. v. Van Wet Solid Waste Mgmt. Dist.*, 249 F.3d 544, 31 *Envtl. L. Rep. (Envtl. L. Inst.)* 20609 (6th Cir. 2001) (upholding county rules cutting off landfills that do not agree to sign agreement providing for a fee to the county); *U & I Sanitation v. City of Columbus*, 205 F.3d 1063, 30 *Envtl. L. Rep. (Envtl. L. Inst.)* 20382 (8th Cir. 2000) (striking down ordinance requiring use of city-owned transfer station for solid waste destined for in-state disposal); *Huish Detergents, Inc. v. Warren County*, 214 F.3d 707, 30 *Envtl. L. Rep. (Envtl. L. Inst.)* 20595 (6th Cir. 2000); *United Waste Sys. of Iowa, Inc. v. Wilson*, 189 F.3d 762, 30 *Envtl. L. Rep. (Envtl. L. Inst.)* 20088 (8th Cir. 1999) (upholding requirement that city or county designate only one in-state landfill for solid waste disposal, while not prohibiting contract with out-of-state landfill); *Waste Management, Inc. v. Nashville*, 130 F.3d 731, 28 *Envtl. L. Rep. (Envtl. L. Inst.)* 20243 (6th Cir. 1997) (striking down requirement that all residential waste be sent to county-owned facility and requirement imposing fees on other locally generated wastes not disposed of at that facility), cert. denied, 118 S. Ct. 1560 (1998); *Atlantic Coast Demolition & Recycling, Inc. v. Bd. of Chosen Freeholders*, 48 F.3d 701, 25 *Envtl. L. Rep. (Envtl. L. Inst.)* 20620 (3d Cir. 1995) (reversing and remanding district court decision upholding New Jersey flow control ordinance that required each solid waste district to designate a particular facility to process and dispose of all solid waste generated within the district and that favored designation of in-state facilities), on remand, 931 F. Supp. 341, 27 *Envtl. L. Rep. (Envtl. L. Inst.)* 20111 (D.N.J. 1996) (holding that nondiscriminating alternatives must be developed by legislature), aff'd, 112 F.3d 652, 27 *Envtl. L. Rep. (Envtl. L. Inst.)* 21099 (3d Cir. 1997) (holding New Jersey flow control laws violate Commerce Clause and vacating district court stay of its injunction); *Waste Management of Pa. v. Shinn*, 938 F. Supp. 1243, 27 *Envtl. L. Rep. (Envtl. L. Inst.)* 20270 (D.N.J. 1997) (holding New Jersey's self-sufficiency policy violates the Commerce Clause); *SSC Corp. v. Town of Smithtown*, 66 F.3d 502, 25 *Envtl. L. Rep. (Envtl. L. Inst.)* 21513 (2d Cir. 1995), cert. denied, 116 S. Ct. 911, reh'g denied, 116 S. Ct. 1453 (1996) (town ordinance requiring use of a particular waste incinerator, with criminal penalties for nonuse, violates Commerce Clause; however, town contract requiring town-hired hauler to use particular incinerator does not violate Commerce Clause, because town is acting as market participant rather than as regulator); *USA Recycling, Inc. v. Town of Babylon*, 66 F.3d 1272, 25 *Envtl. L. Rep. (Envtl. L. Inst.)* 21522 (2d Cir. 1995), cert. denied, 116 S. Ct. 1419 (1996) (ordinance requiring commercial disposers to use town-hired hauler to collect all garbage does not violate Commerce Clause, because town is merely contracting out a government service in acting as market participant); *Sal Tinnerello & Sons, Inc. v. Stonington*, 141 F.3d 46, 28 *Envtl. L. Rep. (Envtl. L. Inst.)* 21141 (2d Cir. 1998); *Houlton Citizens' Coalition v. Town of Houlton*, 175 F.3d 178, 29 *Envtl. L. Rep. (Envtl. L. Inst.)* 21086 (1st Cir. 1999) (upholding flow control ordinance where both in-state and out-of-state operators could bid for exclusive right and use any disposal site); *United Waste Sys. of Iowa, Inc. v. Wilson*, 189 F.3d 762 (8th Cir. 1999) (upholding Iowa's solid waste program requiring designation of only one in-state landfill, but not prohibiting out-of-state disposal); *Ben Oehrleins & Sons & Daughter, Inc. v. Hennepin County*, 115 F.3d 1372, 28 *Envtl. L. Rep. (Envtl. L. Inst.)* 20048 (8th Cir. 1997) (striking down ordinance limiting ability of out-of-state facilities to receive locally-generated waste, but remanding such limitations as to other in-state facilities for consideration under the Pike balancing test), cert. denied, 118 S. Ct. 629 (1997); *Harvey & Harvey, Inc. v. County of Chester*, 68 F.3d 788, 26 *Envtl. L. Rep. (Envtl. L. Inst.)* 20018 (3d Cir. 1995), cert. denied, 116 S. Ct. 1265 (1996) (reversing and remanding two district court judgments upholding one flow control ordinance and striking down another); *Poor Richard's, Inc. v. Ramsey County*, 922 F. Supp. 1387 (D. Minn. 1996) (striking down ordinance requiring local waste to be delivered to a specific facility); see

Even state laws and regulations that differ marginally from comprehensive federal regulatory schemes have been challenged where they may have a differential effect on in-state and out-of-state articles of commerce.¹⁷ Laws that use regulatory proscriptions to favor use of in-state resources are also constitutionally suspect.¹⁸ Product bans that do not discriminate between in-state and out-of-state products are generally not violative of the Commerce Clause, so long as there is a legitimate state interest in the resultant burden.¹⁹

Claims based on state common law tort principles may also give rise to preemption issues. Where there is a federal regulatory scheme, civil claims based on failures to label, to warn, or to use in accordance with a label, may be vulnerable to the argument that the federal regulation preempts any common law duty. In *Bates v. Dow Agrosciences LLC*, the Supreme Court narrowed the scope of federal preemption and ruled that while the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) continues to expressly preempt any state law, regulation, or tort action that would impose labeling requirements different from those of federal law, FIFRA's prohibition of state requirements for labeling or packaging does not encompass claims for defective design, defective manufacture, negligent testing, and breach of express warranty.²⁰ In *Wyeth v. Levine*, the Supreme Court held that drug-labeling requirements under the Food, Drug, and Cosmetic Act did not pre-empt a state law tort claim based on a duty to warn, absent express preemption tort in that Act and

also Gary D. Peake Excavating, Inc. v. Town of Hancock, 93 F.3d 68 (2d Cir. 1996) (upholding ordinance requiring that any waste disposed of within town be placed in town-operated transfer station or landfill, because ordinance does not limit disposal of waste generated in town to town, and ordinance burdens equally in-state and out-of-state waste disposed of in town).

¹⁷*See, e.g.*, National Solid Wastes Management Ass'n v. Alabama Dep't of Env'tl. Management, 910 F.2d 713, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 21316 (11th Cir. 1990) (finding Supremacy Clause violated by land disposal regulations that failed to adopt variances promulgated by EPA, and finding Commerce Clause violated by preapproval requirements that placed an impermissible burden on interstate commerce), vacated and remanded in part, 924 F.2d 1001, 21 Env'tl. L. Rep. (Env'tl. L. Inst.) 20637 (mootness), cert. denied, 111 S. Ct. 2800 (1991). *But see* Old Bridge Chems., Inc. v. New Jersey Dep't of Env'tl. Protection, 965 F.2d 1287, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 21142 (3d Cir. 1992) (upholding state's definition of hazardous waste, including materials not defined by EPA as hazardous waste under RCRA, and finding state requirements neither preempted by RCRA nor violative of the Commerce Clause when applied to out-of-state waste).

¹⁸*See* Alliance for Clean Coal v. Craig, 840 F. Supp. 554, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20739 (N.D. Ill. 1993) (striking down Illinois law requiring utilities to install scrubbers so they can use Illinois coal instead of switching to low-sulfur coal), *aff'd sub nom.* Alliance for Clean Coal v. Miller, 44 F.3d 591, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 20510 (7th Cir. 1995); *see also* Alliance for Clean Coal v. Bayh, 888 F. Supp. 924 (S.D. Ind. 1995) (striking down Indiana law requiring utility regulatory commission to consider effects of utilities' Clean Air Act compliance plans on the Indiana coal industry and restricting plan approval on such grounds), *aff'd*, No. 95-2065 (7th Cir. 12-22-95).

¹⁹*See* Aseptic Packaging Council v. State, 637 A.2d 457 (Me. 1994) (ban on juice boxes that are not recyclable in Maine does not violate Commerce Clause); *cf.* Cotto Waxo Co. v. Williams, 46 F.3d 790, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 20781 (8th Cir. 1995) (reversing summary judgment that upheld state statute prohibiting sale in Minnesota of petroleum-based cleaning products; although statute does not have extraterritorial reach or discriminate between in-state and out-of-state businesses, it indirectly burdens interstate commerce and must be subjected to balancing test).

²⁰*Bates v. Dow Agrosciences L.L.C.*, 544 U.S. 431, 125 S. Ct. 1788, 161 L. Ed. 2d 687 (2005); *Wuebker v. Wilbur-Ellis Co.*, 418 F.3d 883, 35 Env'tl. L. Rep. (Env'tl. L. Inst.) 20167 (8th Cir. 2005) (following *Bates*, farmers' state law liability claims for design defect, breach of implied warranty of merchantability, and recklessness were not preempted because these claims do not relate to the labeling or packaging requirements imposed by FIFRA); *Oken v. Monsanto Co.*, 544 U.S. 1012, 125 S. Ct. 1968 (2005); *Hardin v. BASF Corp.*, 397 F.3d 1082 (8th Cir. 2005), *reh'g granted & opinion vacated* (June 29, 2005) (both cases remanded for further consideration in light of *Bates*).

the option of the manufacturer to seek a stronger label.²¹ Certain other federal regulatory schemes may preempt toxic tort cases.²²

In summary, while preemption is an important issue, in most instances state laws will be upheld against challenges based on preemption, due to the independent police power of the states and federal statutory provisions preserving the states' authority to enact laws more stringent than the federal baseline programs. However, where state laws facially differentiate between in-state and out-of-state commerce, including inhibitions on the movement of commerce among political subdivisions of a state, the likelihood of Commerce Clause preemption is much greater. In those instances, the state must meet a substantial burden to justify the distinction. In cases in which the state or local law is facially neutral and the burden on interstate commerce is only incidental to the primary object of the law, the law will be upheld unless the burden is excessive in view of the local benefits. Finally, where the federal government has adopted a comprehensive labeling scheme, state common law claims based on such labeling may be preempted by the Commerce Clause.

III. THE OPERATION OF ENVIRONMENTAL LAW IN THE STATES

§ 7:9 Substantive provisions—Statutory prohibitions of pollution

Nearly all states have generic prohibitions on the pollution of water and air. A few, like Nebraska, have broad provisions making the causing of “pollution” a violation of state law.¹ More common, however, is a provision prohibiting the “discharge” of any “pollutant” into the “waters of the state” without a permit.² Similar state law provisions prohibit the unpermitted release of pollutants into the air.³

Many of the no-discharge provisions of the state water pollution laws are even broader than the federal Clean Water Act provisions. The definitions of “pollutant” or “discharge” are typically very inclusive. For example, Pennsylvania defines “industrial waste,” for purposes of its law, to encompass “any liquid, gaseous, radioactive, solid or other substance, not sewage, resulting from any manufacturing or industry, or from any establishment, as herein defined and [various mining-related wastes] ‘Industrial waste’ shall include all such substances whether or not generally characterized as waste.”⁴ Maryland defines “pollutant” as any waste or wastewater discharged from a publicly owned treatment works or industrial source and “any other liquid, gaseous, solid or other substance that will pollute any waters of this state.” “Pollution” is defined as “contamination or other alteration of the

²¹Wyeth v. Levine, 129 S. Ct. 1187 (2009).

²²In re WTC Disaster Site, 414 F.3d 352 (2d Cir. 2005) (under conflict and express preemption, the Air Transportation Safety System Stabilization Act of 2001 preempts state law remedies for damages claims relating to respiratory injuries suffered by rescue workers as a result of exposure to toxins and other contaminants in the aftermath of 9/11).

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¹*E.g.*, Neb. Rev. Stat. § 81-1506.

²Virtually every state has a provision of this type. *See, e.g.*, Ala. Code § 22-22-1; Colo. Rev. Stat. § 25-8-501(1); Mich. Comp. Laws § 3.527; N.J. Stat. Ann. § 58:10a-6(a); N.Y. Env'tl. Conserv. Law §§ 17-0505, 17-0803; 35 Pa. Stat. Ann. §§ 691.301, 691.307; Tex. Water Code Ann. § 26.121. Unlike most other states, Minnesota does not appear to have in its law a general “prohibition” on the discharge of pollutants to the waters of the state without a permit. Its water pollution permit provision simply renders it unlawful to “construct, install or operate a disposal system” without a permit. Minn. Stat. § 115.07. Minnesota reaches the same result, however, through a provision imposing on “every person” the duty to *notify* the state agency immediately of any discharge of any substance “which, if not recovered, may cause pollution of the waters of the state” and to take immediate action to recover the substance and minimize or abate the pollution. Minn. Stat. § 115.061.

³*E.g.*, Md. Code Ann., Envir., § 2-401; 35 Pa. Stat. Ann. § 4006.1; Ohio Rev. Code Ann. § 3704.05.

⁴35 Pa. Stat. Ann. § 691.1. “Establishment” as defined in the law includes virtually every type of process or industry. “Sewage” is regulated under other provisions of the law.

physical, chemical, or biological properties” of the waters of the state, harmful or detrimental to public health, safety, welfare, or to wildlife or any beneficial use.⁵ Many of the states’ provisions have been drafted to deal even with discharges that have not yet reached the waters of the state. The strongest of these provide a basis for dealing with nearly any release before actual contamination has occurred. Texas, for example, proscribes unpermitted discharges “into or adjacent to” the waters of the state.⁶ Louisiana defines unpermitted discharge to include not only the placing or releasing of pollutants to the “air, waters, subsurface water, or ground,” but also the placing of pollutants where such “leaking, seeping, draining or escaping of the pollutants can be reasonably anticipated.”⁷ New Jersey defines “discharge” as “the releasing, spilling, leaking, pumping, pouring, emitting, emptying or dumping of pollutant into the waters of the state or onto land or into wells from which it might flow or drain into said waters.”⁸ Oregon prohibits placement of wastes where they are “likely” to be carried into the waters of the state.⁹

“Waters of the state” is defined in virtually every state expressly to include groundwater (unlike the federal Clean Water Act).¹⁰ Many of the states have not, however, used these water pollution provisions to address groundwater contamination. Those states that do use the provision for groundwater protection generally do so not for permitting, but to add a “count” to an enforcement action, or as the basis for enforcement where another cause of action is not available to deal with contamination that has occurred in the past.¹¹

In general, state water pollution laws have served as a significant source of authority for dealing with hazardous and solid waste issues that transcend federal RCRA authorities (and their state analogues in approved waste programs). State air laws, in contrast, have remained closely tied to the federal Clean Air Act system.

§ 7:10 Substantive provisions—State criminal laws

Criminal enforcement of environmental laws is becoming increasingly important, and is a significant area of development in the environmental laws of many states. The growing interest in state criminal enforcement, particularly in the hazardous waste area, means that many cases that would have been handled previously as civil or administrative cases now may be criminally prosecuted. Substantial numbers of state statutes now set forth environmental crimes.¹

⁵Md. Code Ann., Envir., § 9-101.

⁶Tex. Water Code § 26.121.

⁷La. Rev. Stat. Ann. § 30:1054(10).

⁸N.J. Stat. Ann. § 58:10a-3.

⁹Or. Rev. Stat. § 468.720.

¹⁰*E.g.*, Tex. Water Code § 26.001(5) (“groundwater, percolating or otherwise”); N.J. Stat. Ann. § 58:10a-3 (“ground water”); 35 Pa. Stat. Ann. § 691.1 (“underground water”). Rhode Island was an exception until 1983, when it specifically amended its law to include groundwater. R.I. Gen. Laws § 46-12-28.

¹¹A notable exception is New Jersey, which has an aggressive program of groundwater permitting, including *involuntary* permitting of contamination sources as a means of exercising closer control over their operations and obtaining corrective action. N.J. Stat. Ann. § 58:10a-6(a); N.J. Admin. Code tit. 7, § 14A-6.1(a).

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¹A useful compendium of these statutes appears in Allen, *Criminal Sanctions Under Federal and State Environmental Statutes*, 14 Ecology L.Q. 117 (1987). A compendium of state hazardous waste criminal provisions appears in McElfish, *State Hazardous Waste Crimes*, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 10465 (1987).

Some state legislatures have enacted numerous criminal laws in the environmental area.² Others have done very little.³ Indeed, several states have erected significant barriers to the use of their criminal environmental laws in enforcement, either by imposing substantial *scienter* requirements or by authorizing only minimal sanctions. For example, Wisconsin's hazardous waste criminal law requires the state to prove the "intentional" commission of offenses in order to convict, and has criminalized only a few types of conduct.⁴ At least one state legislature has provided no prison term for hazardous waste criminal violations, and a maximum criminal fine only marginally higher than its civil penalties.⁵ In contrast, a number of states provide for strict liability criminal offenses,⁶ and for offenses with fines of up to \$200,000 or \$500,000 per day and prison terms of up to fifteen or twenty years.⁷

Those states that have multiple charging options, a range of fines and prison terms, and *scienter* requirements that facilitate successful prosecution can achieve credible deterrence. The enactment of environmental criminal laws continues to be an area of activity in the states.⁸

§ 7:11 Substantive provisions—State "NEPAs"

In the wake of the National Environmental Policy Act (NEPA),¹ a number of states enacted laws requiring the state to conduct review of the environmental impacts of proposed state actions. These "little NEPAs" have provided a basis for environmental considerations to be recognized and addressed in the decisionmaking process. Fifteen states, Puerto Rico, and the District of Columbia have enacted such legislation.² New Mexico enacted such a law in 1971, but repealed it in 1974.³ Several states have adopted "little NEPAs" by executive order.⁴ A few states also have environmental impact analysis requirements that are limited to specific programs.⁵

²*E.g.*, California (Cal. Health & Safety Code § 42400 et seq., § 25189 et seq., Cal. Water Code §§ 13261, 13268, 13387); New York (N.Y. Env'tl. Conserv. Law §§ 71-2105, 71-1933, 71-2705 et seq.).

³Colorado, for example, has no criminal provisions for air pollution violations.

⁴Wis. Stat. Ann. §§ 144.74(3) to (4).

⁵Utah Code Ann. § 26-14-13 (maximum fine of \$15,000).

⁶*E.g.*, 35 Pa. Stat. Ann. §§ 6018.606(a) to (c), and (f); Mich. Comp. Laws Ann. § 299.548(2).

⁷*E.g.*, N.Y. Env'tl. Conserv. Law § 71-2714; 35 Pa. Stat. Ann. § 6018.606(g).

⁸Sometimes, however, the revision of existing state environmental criminal laws has not kept pace with changes in the corresponding civil and administrative sanctions and remedies. This can produce anomalies. For example, criminal prosecutions for violation of underground injection well provisions in Texas require the state to prove "knowing or intentional" violations, and the maximum fine is only \$5,000 per day (with no prison term). Tex. Water Code § 27.105. The same offense, if handled *administratively*, requires no proof of intent and carries a civil penalty of up to \$10,000 per day. Tex. Water Code § 27.1015.

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¹Pub. L. No. 91-190, 83 Stat. 852 (1970), *codified at* 42 U.S.C.A. §§ 4321 to 4347. *See* Ch 10.

²Cal. Pub. Res. Code §§ 21000 to 21176; Conn. Gen. Stat. Ann. §§ 22a-1 to 22a-7; D.C. Code § 6-981 et seq. (1990 Supp.); Ga. Code §§ 12-16-1 to 12-16-8; Hawaii Rev. Stat. §§ 343-1 to 343-8; Ind. Code Ann. §§ 13-1-10-1 to 13-1-10-8; Md. Nat. Res. Code Ann. §§ 1-301 to 1-305; Mass. Laws Ann. ch. 30, § 61 et seq.; Minn. Stat. Ann. §§ 116D. to 116D.07; Mont. Code Ann. §§ 75-1-101 to 75-1-324; N.Y. Env'tl. Conserv. Law § 8-0101 to 8-0117; N.C. Gen. Stat. §§ 113A-1 to 113A-10; P.R. Laws Ann. tit. 12, § 1121 et seq.; S.D. Codified Laws Ann. §§ 34A-9-1 to 34A-9-13; Va. Code § 10-107 et seq., § 10-177 et seq.; Wash. Rev. Code Ann. § 43.21C.010 et seq.; Wis. Stat. Ann. § 1.11.

³N.M. Stat. Ann. § 12-20-1 et seq. (1971), *repealed*, 1974 N.M. Laws Ch. 46 § 1.

⁴These states are Michigan, New Jersey, Texas, and Utah.

⁵*E.g.*, Del. Code Ann. tit. 7, § 7001 et seq. (coastal zone); Nebraska Dep't of Roads Action Plan (1973), as amended; Tenn. Code Ann. § 13-18-103 (2002) (major energy projects). A number of these are collected in Robinson, SEQRA's Siblings: Precedents from Little NEPA's in the Sister States, 46 Alb. L. Rev. 1155 (1982).

The California Environmental Quality Act of 1970⁶ was the first of the state NEPAs. It has been the subject of considerable litigation and subsequent amendment. Essentially it requires all public agencies (including counties, cities, regional agencies, and other political subdivisions) to prepare Environmental Impact Reports (EIRs) for projects which “may have a significant effect on the environment.” In an early case, subsequently ratified by legislative amendment, the California Supreme Court held that the EIR requirement covers private activities subject to public permitting or approval.⁷ Most of the subsequent state NEPAs expressly covered permitting activities. New York’s State Environmental Quality Review Act (SEQRA),⁸ enacted in 1975, covers projects or activities directly undertaken by an agency; projects or activities funded or otherwise supported by an agency through grants, contracts, subsidies, loans or other forms of assistance; projects or activities involving issuance of a lease, permit, license, certificate or other entitlement; and “policy, regulations and procedure-making.”⁹

There is a substantial body of case law interpreting state NEPA provisions. While much of the case law follows federal decisions on the federal NEPA statute,¹⁰ a number of the state provisions have substantive aspects unique to the state statutes favoring selection of the environmentally preferable alternatives.¹¹

Certain of the state NEPAs have affected the development of federal NEPA law. For example, Massachusetts first developed “scoping” of its required environmental impact reports as a means of identifying and focusing efforts on the most important issues.¹² The Council on Environmental Quality, drawing on this experience, subsequently adopted regulations making “scoping” an integral part of the federal Environmental Impact Statement (EIS) process under NEPA.¹³

§ 7:12 Substantive provisions—State “transactional” environmental laws

Beginning in the 1980s it became evident to some states that the approach of regulatory standard setting, inspection, and government enforcement would not reach all instances of environmental degradation. In a time of increased awareness of the contamination of lands due to past activities that were lawful when conducted, and in recognition of the likelihood that state government would be unable alone to identify and remedy all of these problems, several states enacted laws requiring private enterprises to disclose and remedy environmental harms when conducting transactions involving industrial or other property where degradation might have occurred. These laws are unlike the standard regulatory programs in their reliance on private transactions rather than the discovery of “violations” or “imminent

⁶Cal. Pub. Res. Code § 21000 et seq.

⁷*Friends of Mammoth v. Board of Supervisors of Mono County*, 8 Cal. 3d 247, 502 P.2d 1049, 104 Cal. Rptr. 761, 2 Env’tl. L. Rep. (Env’tl. L. Inst.) 20673 (1972).

⁸N.Y. Env’tl. Conserv. Law §§ 8-0101 to 8-0117.

⁹N.Y. Env’tl. Conserv. Law § 8-0105. Other states have exempted permitting and licensing from EIS requirements. *E.g.*, Ind. Code Ann. § 13-1-10-6. “Little NEPAs” have other limitations in states such as Virginia (exempts highway projects) and the District of Columbia (exempts projects in the downtown sector).

¹⁰*E.g.*, *Friends of Mammoth v. Board of Supervisors of Mono County*, 8 Cal. 3d 247, 502 P.2d 1049, 104 Cal. Rptr. 761, 2 Env’tl. L. Rep. (Env’tl. L. Inst.) 20673 (1972); *Wisconsin’s Env’tl. Decade, Inc. v. Public Serv. Comm’n*, 69 Wis. 2d 1, 230 N.W.2d 243 (1975).

¹¹*E.g.*, *Polygon Corp. v. City of Seattle*, 90 Wash. 2d 59, 578 P.2d 1309, 8 Env’tl. L. Rep. (Env’tl. L. Inst.) 20561 (1978); *SAVE v. Bothell*, 89 Wash. 2d 862, 576 P.2d 401 (1978); *In re City of White Bear Lake*, 311 Minn. 146, 247 N.W.2d 901 (1976); *cf.* *Laurel Hills Homeowners Ass’n v. City Council of Los Angeles*, 83 Cal. App. 3d 515, 147 Cal. Rptr. 842, 8 Env’tl. L. Rep. (Env’tl. L. Inst.) 20714 (1978) (feasible mitigation required, but not selection of most superior environmental alternative).

¹²Mass Ann. Laws ch. 30, §§ 61 to 62H.

¹³Council on Environmental Quality, 1978 Annual Report 396, 398. *See* 40 C.F.R. § 1501.7.

danger” conditions as triggers for action, and in their involvement of the private sector as the primary instrument for discovery of environmental degradation.

The first and most comprehensive of these laws was the New Jersey Environmental Cleanup Responsibility Act (ECRA), which became effective January 1, 1984.¹ ECRA required any “industrial establishment” closing, selling, or transferring operations to give the state notice of the transaction and to submit either a “negative declaration” or a “cleanup plan” for the site. Industrial establishments were defined as places at which hazardous substances or hazardous wastes are handled and which fall within a long list of industries identified by their Standard Industrial Classification (SIC) numbers. Terminations, sales, and transfers of operations include corporate mergers and acquisitions, sales of assets, real property sales, leases, financial reorganizations, bankruptcies, permanent cessations of operations, temporary cessations of operations for more than two years, and other events.

A negative declaration is a statement that there has been no discharge of hazardous wastes or substances, or that any such discharge has been cleaned up in accordance with procedures established by the state. A negative declaration must be reviewed and approved by the state prior to the transfer. If a cleanup plan is required, it must also be approved by the state, and the owner/operator must supply financial security sufficient to guarantee performance. Notwithstanding any other law, the transfer of an industrial establishment was contingent upon compliance. Absent a negative declaration or cleanup plan, or in the event of a false negative declaration, the transaction was voidable by the transferee, and the transferor (or owner or operator of a closing establishment) would be held strictly liable for all cleanup costs and damages and for civil penalties of up to \$25,000 per day of violation. The state could void the transaction if the negative declaration or cleanup plan is not submitted.

ECRA resulted in a great deal of “environmental auditing” of facilities involved in triggering events, and—because of the transaction voidability and strict liability features—involved the financial industry and corporate and real property bars in environmental issues to a greater extent than most environmental statutes. New Jersey reported that it opened about 1,200 new ECRA “cases” per year, and that it obtained more than 400 cleanups in the first three years of the law’s operation. The state also issued 5,000 or more determinations of nonapplicability per year at the request of inquiring parties. New Jersey viewed ECRA as an important adjunct to its traditional regulatory programs and “superfund” cleanup programs because of (1) the level of private resources devoted to detecting and attempting to remedy environmental contamination, and (2) the fact that cleanups were achieved without state enforcement litigation. Because the cleanups are driven by parties’ desires to complete their intended business transactions, the incentive is to comply with what the state wants rather than to delay and contest actions, as is often the case with traditional regulatory enforcement.

The law occasioned considerable controversy in the business and financial communities, partly because of the long delays in obtaining approval of negative declarations or cleanup plans. Although the initial backlog was substantially reduced when New Jersey devoted more staff to ECRA, the process was, nevertheless, time-consuming. In order to allow many transactions to close in a timely fashion, New Jersey authorized parties to sign administrative consent orders to perform the cleanups after the transactions. In every instance these orders required the posting of substantial financial security for cleanup performance.

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¹N.J. Stat. Ann. § 13:1K-6 et seq. ECRA was replaced by the Industrial Site Recovery Act (ISRA) in 1993. See 1993 N.J. Laws 139, amending N.J. Stat. Ann. § 13:1K-1 et seq. As discussed later in this section, ISRA retains many of the primary features of ECRA.

Apart from issues of delay, ECRA was also criticized on several theoretical grounds. First, it potentially distorted economic decisions by compelling parties to maintain skeleton work forces in order to avoid “closing” and to defer any cleanup. In addition, it placed upon the present owner the entire cost of cleaning up past contamination, even though the contamination may have been caused by former owners or operators. In this respect ECRA was somewhat more draconian than CERCLA, which at least distributes liability among numerous “potentially responsible parties” that conducted past activities at a given site. Further, the sites addressed under ECRA were not selected according to environmental or health priorities. ECRA’s approach was not “worst-first” or otherwise risk-based; it captured whatever sites encountered a triggering event and did not deal with the others. Finally, the law was not self-enforcing, but required substantial state staff involvement. New Jersey financed the program by imposing substantial filing fees upon businesses submitting the required ECRA notifications. Given the monies devoted to certifying negative declarations and issuing determinations of nonapplicability, the law may have been less “efficient” than some hypothetical alternative approaches. Nonetheless, by harnessing the considerable resources of many industrial establishments and utilizing the “pressure point” of transfer—when incentives to contest state requirements are lowest—New Jersey achieved a significant and quantifiable number of environmental improvements through an innovative approach to lawmaking.

Responding to many of the criticisms of ECRA, the New Jersey Legislature amended the law in 1993, retitling it the “Industrial Site Recovery Act” (ISRA).² ISRA retains the basic approach of ECRA, linking the cleanup obligation to a transfer or closure of an industrial site. Failure to comply with ISRA makes the transfer voidable by the transferee or the state, but the transferee must give the transferor reasonable notice and an opportunity to cure the defect. ISRA also makes it easier to complete transactions based on binding agreements to conduct the cleanup after the transaction’s closing, simplifying the practice that had arisen under ECRA by substituting agreements for administrative consent orders. ISRA also allows the cleanup obligation to be deferred if three conditions have been satisfied: (1) the site has been assessed, (2) the industrial use by the transferee will not change substantially, and (3) the ability to pay for eventual cleanup is certified. The purpose of this amendment was to obviate the need for cleanup of industrial sites that would essentially remain in operation, but under different ownership.

Finally, ISRA directs the state’s environmental agency to develop and promulgate cleanup standards. Pending adoption of these standards, the law prescribes the use of a risk-based standard of one additional cancer per million persons exposed to the site for seventy years. This stringent default cleanup standard was, in part, the price of the compromise to change some of the other provisions of ECRA.

In 1985, Connecticut enacted a similar law, popularly known as the “Transfer Act.”³ The statute covers the “transfer” of any establishment that handles hazardous waste. The term “establishment” includes any business that generated more than 100 kilograms per month of hazardous waste on or after May 1, 1967, or that transported, treated, recycled, disposed of, stored, or otherwise used hazardous waste generated by another, as well as dry cleaners, furniture strippers, auto body repair shops, and paint shops regardless of the quantity of hazardous waste generated. The term “transfer” is broadly defined, but does not include cessation of operations. If an establishment is subject to the law, either it must submit to the state a negative declaration stating that there has been no discharge of hazardous waste on site or that any such discharge has been cleaned up, or either party to the

²1993 N.J. Laws 139, amending N.J. Stat. Ann. § 13.1K-1 et seq.

³Conn. Gen. Stat. Ann. §§ 22a-134 to 22a-134d.

transaction must submit a certification that cleanup will occur in accordance with procedures approved by the state agency. Unlike New Jersey, Connecticut need not approve the cleanup plan prior to the transfer. Also unlike ISRA, the Transfer Act does not make the transaction voidable for failure to comply. Instead, the transferor remains strictly liable for cleanup costs and damages, and the state may assess a civil penalty of up to \$100,000 against any noncomplying party. Because of minimal staffing, Connecticut has not reviewed negative declarations during the first several years under the Transfer Act.

ISRA and the Transfer Act are the most far-reaching of the state transactional environmental laws. Several other states have enacted laws premised more on disclosure than on cleanup. In 1988, Illinois enacted the Responsible Property Transfer Act (RPTA), effective November 1, 1989, and applicable to transactions closing on or after January 1, 1990.⁴ The RPTA, unlike the Transfer Act and ISRA, appears to focus simply on real property transfers rather than encompassing corporate acquisitions or changes in control. It also does not apply to changes in leasehold interests unless the term of the lease, including all options, exceeds forty years. The RPTA applies to transfers of real property upon which are sited facilities required to report under § 312 of the federal Emergency Planning and Community Right-to-Know Act of 1986 or facilities with underground storage tanks. The RPTA requires notice from the transferor to the lender and transferee concerning (1) the latter's potential liability under Illinois law for costs related to the release of hazardous substances, (2) information about activities by the transferor on the property that might create such liability, and (3) minimal information on the activities of previous owners. The disclosure statement is supplied prior to the closing; the law allows a party to void the pending transaction within ten days after demand for or receipt of the disclosure statement if it discloses "environmental defects" previously unknown to that party, or if it is not provided. The disclosure statement must be permanently recorded in local deed records within thirty days after the closing, and must also be submitted to the Illinois EPA. The state agency has no obligation to review the statement, however, and no cleanup obligations are associated with the disclosure filing. It is intended simply to alert the parties to potential liabilities and thereby to encourage voluntary cleanups to avoid them. The RPTA provides for civil penalties for failure to comply.

The influence of these disclosure statutes and the impact of CERCLA's retroactive liability have led to a substantial increase in site audits—an "environmental due diligence" in connection with transactions. In 1993, the American Society for Testing and Materials (ASTM), a private, voluntary standard-setting organization, which is widely recognized and influential, issued its "Standards on Environmental Site Assessment for Commercial Real Estate."⁵ The ASTM subcommittee charged with developing the standards had a two-fold mandate: (1) to attempt to define the practices necessary to qualify for the innocent landowner defense to federal Superfund liability,⁶ and (2) to outline prudent business practices for environmental assessment of properties involved in commercial real estate transactions. ASTM standards, while voluntary, are frequently influential in determining the customary and standard practices in use in a variety of applications and industries.

⁴Ill. Rev. Stat. ch. 30 §§ 901 to 907.

⁵In fact, two ASTM standards were developed: "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" (ASTM Standard E 1527-93) and "Standard Practice for Environmental Site Assessments: Transaction Screen Process" (ASTM Standard E 1528-93).

⁶See CERCLA § 101(35)(B), 42 U.S.C.A. § 9601(35)(B) (requiring the defendant to undertake, "at the time of acquisition, all appropriate inquiry into the prior history and uses of the property consistent with good commercial or customary practice in an effort to minimize liability").

Several other states have enacted disclosure statutes.⁷ These are likely to proliferate for a number of reasons. First, they are more palatable to industrial and financial interests than mandatory cleanup statutes tied to business transactions. Second, they serve to alert parties (and particularly lenders) to possible environmental liabilities, thus providing an additional layer of protection beyond customary “due diligence” practices. Third, by their very provisions such statutes are beginning to define the scope of “due diligence” obligations, providing greater assurance to parties with fiduciary obligations that they have done what is needful. This assurance is becoming increasingly important given the scope of cleanup liabilities under strict liability laws—witness the number of nonapplicability letters sought in New Jersey. The state disclosure statutes enhance the operation of the scheme of environmental improvement that is built around environmental audits and private “regulation” of activities potentially having impacts on the environment.⁸

§ 7:13 Procedures and institutions

State procedures and institutional structures have a profound effect on the implementation of environmental laws. Such issues as which court reviews the decisions of the administrative agency, whether review is on the record or *de novo*, whether administrative orders are stayed pending review, and how the administrative agency is structured are all important. Each of the states must be examined programmatically in order to assess the significance of these features for implementation and enforcement. Nevertheless, general observations can be made.

Nearly every state has provisions for the issuance of emergency administrative orders without hearing; such orders are followed by a hearing immediately thereafter, either automatically or upon request.¹ Ordinarily these orders are available only where the state has found “imminent danger” to human health or the environment.²

The states also have non-emergency order authorities. In general, the states fall into two groups with respect to the procedures for non-emergency orders. The first group follows the usual federal approach³ of issuing an order/complaint which only becomes final and effective if the alleged violator fails to request a hearing, or the order is upheld by an administrative law judge, board, or agency director after hearing.⁴ The majority of states have adopted this approach.

The second group of states provides for the issuance by the responsible state agency of orders that are immediately effective.⁵ These orders must be complied with even though a request for hearing has been made and review is pending, unless the alleged violator can make an affirmative showing sufficient to obtain a stay.

⁷See, e.g., Cal. Health & Safety Code § 25359.7 (transferors of nonresidential real property required to notify transferees of releases of hazardous substances on property); Cal. Civ. Code § 1102.6 (sellers of residential real property required to notify purchasers of environmental hazards). Indiana enacted a Responsible Property Transfer Law modeled on the Illinois RPTA in 1989. Ind. Code Ann. § 13-7-72.

⁸See Ch 8 and § 3:24.

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¹E.g., Alaska Stat. §§ 46.03.290, 46.03.820; Ark. Stat. Ann. § 82-4208; Conn. Gen. Stat. § 22a-7; La. Rev. Stat. Ann. § 30:1073C; Mich. Comp. Laws Ann. § 299.547; N.Y. Env'tl. Conserv. Law § 71-0301; S.C. Code Ann. § 48-1-290; Va. Code § 62.1-44.15.

²A few states have provisions for emergency *oral* orders which must be complied with immediately; such orders must be reduced to writing thereafter. See, e.g., 35 Pa. Stat. Ann. § 6018.602(d).

³See 40 C.F.R. pt. 124.

⁴E.g., Ark. Stat. Ann. § 82-4204; Fla. Stat. Ann. § 403.121; 415 Ill. Comp. Stat. Ann. sec. 5/31 (replacing Ill. Rev. Stat. ch. 111-½, § 1031); Mich. Comp. Laws Ann. §§ 299.548, 3.527; N.Y. Env'tl. Conserv. Law §§ 71-2703, 71-2705, 71-2727, 71-1709(7), 19-0505; Va. Code §§ 10-310, 62.1-44.15.

⁵E.g., Colo. Rev. Stat. §§ 25-8-404(4), 25-8-607; 71 Pa. Stat. Ann. § 510-21; W. Va. Code §§ 20-5E-14, 20-5A-11. Several other states have orders that are immediately effective.

In these states, the law essentially presumes that the agency has properly evaluated the situation and has exercised its informed judgment in issuing the order. While the recipient of the order is entitled to review, the legislature has determined that it is in the interest of the public that the order remain in effect pending review.

The burden of obtaining a stay in the latter group of states rests upon the alleged violator. This shift in the initial burden provides the state environmental agency with considerable enforcement leverage. An alleged violator may be more inclined to reach a settlement, particularly if its stay petition is denied. Stay standards vary, however, and political considerations also can lead to weaker or stronger interpretations of even the same stay standards.⁶

Some statutory stay standards are fairly strong. For example, an Ohio statute provides that if a stay is *granted*, the ultimate appeal must be decided by the Environmental Board of Review “immediate[ly] without interruption by continuances, other than for unavoidable circumstances.”⁷ This provision places a premium on the order remaining in effect, or if stayed, coming back into effect as early as possible for the benefit of the public if upheld.⁸ Moreover, the Ohio Board’s procedural rules provide that, “except for compelling reasons justifying a stay, a stay shall be denied.”⁹ Several other states have strong provisions requiring the order recipient to show its entitlement to a stay pending administrative review.¹⁰ In Pennsylvania, the violation of a solid or hazardous waste order that has not been stayed is expressly punishable as a direct *judicial* contempt (even though administrative review on the merits may be pending).¹¹

A significant number of states—nearly all of them among those states whose administrative orders are not immediately effective—have adopted statutory preconditions to the initiation of enforcement actions. These preconditions include such things as the requirements of “grace” periods for negotiation, preliminary notification of violations and provision of an “opportunity” to cure, and elaborate civil referral processes. These occur in a variety of media-specific state statutes, but some examples from the hazardous waste area will illustrate the concept. For example, in Delaware, before the Department of Natural Resources and Environmental Control may issue an order under the state’s hazardous waste management act, the Secretary must first give notice of the violation and provide thirty days to correct the violation. Only if the violator fails to correct the violation within this period may the Secretary issue an order, which is then itself subject to administrative

⁶For example, the West Virginia Water Resources Board may grant a stay of an administrative order only upon a showing of “unjust hardship to the appellant.” W. Va. Code § 20-5A-15(b). Reportedly, most stay applications presented to the Board have been granted.

⁷Ohio Rev. Code Ann. § 3745.04.

⁸The Ohio Supreme Court has taken a narrow view of what constitutes “unavoidable circumstances” allowing a continuance if a stay has been granted. *See, e.g., State ex rel. Republic Steel v. Environmental Bd. of Review*, 48 Ohio St. 2d 38 (1976).

⁹Ohio Admin. Code § 3746-5-13(A). The Board may impose conditions on a stay including, where appropriate, the filing of a bond or other security. Ohio Admin. Code § 3746-5-13(B).

¹⁰*E.g.,* 71 Pa. Stat. Ann. § 510-21(d); *see also* Me. Rev. Stat. Ann. tit. 38, § 1304(12); Ind. Code § 4-21.5-3-6. The stay standards in these states, developed under administrative and judicial cases, are a showing by the appellant of the likelihood of success on the merits, irreparable injury to the alleged violator absent a stay, and no significant injury to the public if a stay is granted. Absent a stay, the order is enforceable. *Department of Envntl. Resources v. Bethlehem Steel Corp.*, 469 Pa. 578, 367 A.2d 222 (1976), cert. denied, 430 U.S. 955 (1977). In Washington the stay standards are somewhat different. The appellant may make a *prima facie* case to the Pollution Control Board for a stay by showing *either* a likelihood of success on the merits or irreparable harm. On such a showing, the Board must grant the stay *unless* the Department of Ecology can show either (1) a substantial probability of success on the merits, or (2) a likelihood of success on the merits and an overriding public interest justifying denial of the stay. Ecology Procedures Simplification Act, 1987 Wash. Laws ch. 109, § 7.

¹¹35 Pa. Stat. Ann. § 6018.603.

appeal.¹² New Mexico and Wisconsin have similar provisions. Moreover, in these two states, the agency is also barred from filing a civil judicial action until after the continuation of the violation beyond the thirtieth day after issuance of the notice, except in cases of “imminent and substantial danger.”¹³ In Idaho, the agency must issue a notice of violation and afford the violator fifteen days to request a conference for the purpose of negotiating an agreed administrative consent order; the agency lacks authority to issue a unilateral order. If a conference has been requested, the agency is barred from instituting civil judicial proceedings until sixty days after the notice of violation.¹⁴ Several other states require the agency, under various environmental programs, to afford time for “conference, conciliation, or persuasion” before issuance of an order.¹⁵

A few states have unusual formal processes for the referral of enforcement cases to the attorney general for civil action. For example, both the Texas Natural Resource Conservation Commission and the Missouri Hazardous Waste Management Commission have public processes for referring enforcement cases. The enforcement staff or agency presents a petition to the Commission for referral, and the alleged violator is permitted to oppose the petition for referral in public session. In each case, these procedures have occurred largely as a result of agency practice, rather than through statutory requirement.

The institutional organization of review in the states is also of significance. A leading institutional difference among the states concerns who makes the final decision upon administrative review of enforcement actions. There are several models. In some states, the agency director or secretary makes the final decision after a hearing before an administrative law judge results in a recommended decision (*e.g.*, Maryland, Michigan, New York) (the “ALJ/Secretary Model”).¹⁶ In others, the agency action is immediately effective but an independent review board or commission hears the administrative appeal and renders a decision (*e.g.*, Ohio, Pennsylvania, West Virginia) (the “Agency Final/Board Review Model”). In a few states, the agency issues an order, but an independent board or commission passes upon its validity at hearing *before* it is deemed final (*e.g.*, Missouri) (the “Agency/Board Model”). In still others, the agency itself is headed by a board or commission, which renders a decision based on the evidence presented before it or before an administrative law judge who renders a recommended decision (*e.g.*, Texas, Virginia, Alabama) (the “Board Control Model”). Finally, in one state—Illinois—the agency may not issue an order but must apply to an independent board for an order; the order may be issued by the independent board only after an administrative evidentiary hearing at which the agency must prove its case (the “Illinois Model”).¹⁷

The ALJ/Secretary Model. The advantages of a system wherein the director or secretary renders the final decision are efficiency, control over the timing of review, and the fact that the ultimate decision is made by an official who is publicly charged with enforcement and protection of the environment as part of his or her official

¹²Del. Code Ann. § 6309(a).

¹³N.M. Stat. Ann. §§ 74-4-10, 74-4-13; Wis. Stat. Ann. §§ 144.73, 144.72.

¹⁴Idaho Code § 39-4413.

¹⁵*E.g.*, Ga. Code Ann. § 12-8-71 (hazardous waste); Mo. Rev. Stat. § 260.410.4 (hazardous waste); Or. Rev. Stat. § 468.090 (water pollution); Wyo. Stat. § 35-11-701(c) (environmental violations other than surface mining); *see also* 415 Ill. Comp. Stat. Ann. sec. 5/31 (replacing Ill. Rev. Stat. ch. 111-½, § 1031(d)) (opportunity to “resolve the conflicts” required).

¹⁶Approximately half the states use this approach. Some do not use administrative law judges but simply have the agency director make the final decision.

¹⁷Delaware has a hybrid system. There the agency order is subject to review by an administrative law judge, with final review by the agency director (the Secretary). The Secretary’s *final* decision, however, is itself reviewable by the Environmental Appeals Board rather than in court. *See* Del. Code Ann. § 6008.

public duties. The vulnerability of such a system is that it may be perceived as unfair or “stacked” against the regulated community because the authority issuing the order is also responsible for passing upon its validity. As a result, courts reviewing such a decision (even if an administrative evidentiary hearing has been held) may give the administrative decision less deference than they otherwise might (even if the courts purport to apply the usual “substantial evidence” judicial review standard for review of agency decisions).

The Agency Final/Board Review Model. Those states in which the director or secretary issues immediately effective, final orders that are then subject to administrative review by a separate board upon appeal have the advantages of the ALJ/Secretary Model. The system is, however, insulated from the perception of unfairness (and from judicial second-guessing) by the availability of an independent forum for review. These states also avoid the disadvantages of agency subservience to the independent board as under the Illinois system or the Agency/Board Model, moreover, because of the ability to act by issuing an immediately effective final order.

The Agency/Board Model. Those states in which the agency issues an order that is not final or effective during the pendency of administrative review by an independent board, have some of the advantages of the first two groups, but are disadvantaged by depending upon the board to act promptly. They may also be disadvantaged to the extent that the reviewing board membership by law represents various interest groups (e.g., Wyoming, Missouri) or takes a different view of enforcement than the agency.

The Board Control Model. States in which the review board also directs the agency (e.g., Texas, Virginia) share some of the advantages and disadvantages of the first three groups. Essentially, however, they lack the flexibility of agency director-headed review while not providing the “independence” of the independent board.

The Illinois Model. The unique Illinois system is problematic. There the agency is entirely dependent for orders upon an independent board, which has no enforcement function itself. The agency is unable to act, or even to settle a case upon consent with a violator without approval and entry of an order by the board. This gives it even less enforcement flexibility than systems that rely entirely upon judicial enforcement, or that rely solely on injunctions to enforce administrative orders (e.g., those that lack administrative civil penalties). The agency must constantly calculate whether it can persuade the board to act, to act quickly, and to sustain the proposal to take an action. The board, for its part, is entirely free to give no deference to the agency.¹⁸

The ability of a state to ensure that review of administrative enforcement actions occurs in a single designated court appears to be important to effective enforcement. In the majority of states, administrative enforcement actions are judicially reviewable in the local court (usually the trial court, although sometimes the regional appellate division) for the county where the violation was committed or where the

¹⁸One commentator, curiously, argues that Illinois has the best institutional system because of the total independence of the board from any enforcement function, and the total dependence of the agency upon its persuasive powers to obtain relief from the board through formal presentation of evidence. Currie, *Enforcement Under the Illinois Pollution Law*, 70 Nw. U.L. Rev. 389, 444-49 (1975); Currie, *State Pollution Statutes*, 48 U. Chi. L. Rev. 27, 69 (1981). Essentially, this “administrative review” system has all of the disadvantages of a court, and provides few advantages since its decisions are themselves reviewable in a county court.

violator maintains its place of business.¹⁹ This provision for judicial review in the local court occurs in many states even where the administrative hearing conducted by the administrative law judge, the agency director, or the independent hearing board is not local. Even though the administrative review process may have been conducted centrally, judicial review often reverts to the local court. These local courts ordinarily hear very few hazardous waste, air pollution, or water pollution enforcement cases, or environmental violations of any type. As a result, in each instance the state agency, or attorney general, must educate the court as to the reasons underlying the system of regulation, the basis for the violation, the unusual strict liability concepts often applied to environmental violations (for example, a release of pollutants into the environment is a “violation” in most states, irrespective of whether there was “fault” on the part of the party responsible for the release), and other issues. Because these concepts and their applications are unfamiliar to many of the judges, the local courts frequently borrow on their experiences with other—quite inapplicable—types of cases of administrative review (for example, zoning appeals or liquor license revocations).²⁰ In addition, the local forum may work in favor of a violator that either is, or is associated with, a major employer in the community. In contrast, administrative enforcement decisions appear less likely to be second-guessed when judicial review is conducted by a single court.²¹ The central venue and experience of the reviewing court can be extremely important to an enforcement effort.²²

Whether the reviewing court is a trial court or an appellate court appears to make far less difference than the venue. In either court, review of administrative actions is generally conducted in most states by a judge who reviews the existing administrative record and does not hold a trial or take new testimony.²³ It is possible, however, that the state might be better off in an appellate court even for such record review, because appellate judges are arguably more accustomed to applying judicial deference to decisions under review. Moreover, the violator may be less likely to appeal an adverse decision rendered by an appellate court because the next appeal is to the state supreme court (rather than simply to an intermediate appellate court as would be the case if initial judicial review were in the trial court).²⁴

Other judicial review provisions may provide cause for concern. In Iowa, for example, a person who has complied with a hazardous waste order issued by the

¹⁹*E.g.*, 415 Ill. Comp. Stat. Ann. sec. 5/41(replacing Ill. Rev. Stat. ch. 111-½, § 1041); Mich. Comp. Laws Ann. § 3.560(203); N.Y. Civ. Prac. Law §§ 506, 7804; Wash. Rev. Code Ann. §§ 43.21B.180, 43.21B.190.

²⁰By way of example, the penalties associated with environmental violations are far higher than those associated with many other types of conduct (including willful or directly injurious behavior). Local courts are often reluctant to uphold such penalties, based on their experiences with other types of administrative cases. *See, e.g.*, *Midland v. Illinois Pollution Control Bd.*, 456 N.E.2d 914, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20338 (Ill. App. 1984) (reversing and remanding \$40,000 penalty that used EPA-type penalty policy); *see also City of East Moline v. Pollution Control Bd.*, 483 N.E.2d 642 (Ill. App. 1985) (\$30,000 penalty reduced by court to \$10,000 because environmental penalty should not be punitive).

²¹This is the situation with, for example, Pennsylvania's Commonwealth Court, which hears all appeals from the Environmental Hearing Board. *See Harman Coal Co. v. Commonwealth*, 384 A.2d 289, 292 (Pa. Commw. 1981) (deference to hearing board).

²²The designation of a venue for judicial review is not evidently controlled by the size of the state. For example, California requires that judicial appeals be in a local court, while Texas appeals are heard centrally.

²³There are some exceptions. North Carolina offers appellants *de novo* judicial review of administrative cases. N.C. Gen. Stat. §§ 130A-22, 130A-24, 143.215.5. Kansas provides for *de novo* judicial review of administrative decisions revoking hazardous waste permits. Kan. Stat. Ann. § 65-3439.

²⁴This second point has less significance in those few states that have only a two-tiered judicial system.

agency may, in addition to taking a direct appeal, seek relief from the order in a local court within six months “on the grounds that the requirements imposed by the order are excessive, that the benefits to society are not commensurate with the costs of complying with the order and that society can be protected in a less costly manner.” The court may modify or vacate an order “[u]pon a finding that the requirements imposed by the order are excessive.”²⁵

The venue for *direct* judicial enforcement actions is also an important institutional feature in state enforcement. In almost every state the violator may be sued only in the county where the violation occurred or where it maintains its place of business.²⁶ The state will thus often be litigating before a trial court that lacks experience in the regulatory scheme. Such courts, as noted above, may be reluctant to impose the strict “violation” standard as the basis for granting an injunction, and may be unsympathetic to stringent state penalty schemes. In addition, there may be wide disparity in the results of enforcement cases brought in different counties. Several states have attempted to overcome these difficulties by authorizing the agency to file suit in a single court. Pennsylvania’s Commonwealth Court, for example, serves not only as an appellate court for the review of all administrative cases, but also as the trial court for any case brought by the state (or against the state).²⁷ Connecticut environmental cases may be brought by the state either in the superior court for Hartford, or in the local superior court.²⁸

Important enforcement advantages flow from the ability of a state to control the selection of the forum, and to prevent the defendant from doing so. In Michigan, for example, judicial enforcement cases may be brought, at the option of the state, in either the circuit court for Ingham county (*i.e.*, a central forum) or in the county where the defendant resides or does business.²⁹ In Indiana, the state may bring suit in any court for a county where the state agency maintains an office (*i.e.*, a central court), or in the county of the violation or the residence or place of business of the defendant. Each party, however, has the chance to change the venue to any adjacent county. Thus, the defendant may engage in some forum shopping—but the state may also do so in return.³⁰ In Wisconsin, normal venue rules allow the state to file either in a central court or where the violation occurred. The law has been made more restrictive for hazardous waste enforcement, however. The legislature has provided that the state must file its action in the county of the violation, and that the case may be transferred to a central court only if both parties agree.³¹ These venue provisions affect state strategies in choosing whether to handle cases administratively, to settle, or to initiate direct civil enforcement in the courts. The variation from state to state is partly reflected in differing preferences for use of available enforcement tools.

Other procedural and institutional factors influence state implementation. Thus, any analysis of an environmental law problem that is based on a presumed similarity of state procedures and institutions to federal counterparts, will necessarily be insufficient—and misleading. State environmental law can be quite complex. Part of the complexity is due to the propensity of many states to rely on unwritten customs

²⁵Iowa Code Ann. § 455B.421.

²⁶This local venue provision is found even in several states that require judicial review of administrative *appeals* to be conducted in a central court (for example, Texas, Missouri, and Louisiana).

²⁷The Pennsylvania DER has the *option*, however, to file suit against a violator in a county Court of Common Pleas if it so desires. This judicial scheme allows the state, and not the defendant, to pick the most hospitable forum for a given case.

²⁸Conn. Gen. Stat. §§ 22a-430(d), 22a-432, 22a-435, 22a-123.

²⁹*E.g.*, Mich. Comp. Laws § 299.548(9).

³⁰Ind. Code § 4-21.5-5-6; Ind. R. Trial Pro. 76.

³¹Wis. Stat. Ann. § 144.73(4).

and procedures rather than on regulations for carrying out processes under state statutes. State regulations typically provide only part of the necessary information.

§ 7:14 States as engines of sustainable development: Some think they can¹

States have been and should continue to be engines of sustainable development in the United States. They are not the only forces at work, and some have been willing to let others, along with the large federal locomotive, pull them up the sustainable development hill, but they are necessary if the United States is to reach its goals. The important roles that states have in policymaking and implementation means that a complete assessment of progress towards sustainable development in the U.S. must include an examination of what states are accomplishing. This discussion begins by narrowing the broad sweep of sustainable development to those aspects that are of particular relevance to U.S. states then provides an overview of what states had done prior to the Rio Summit, followed by an assessment of what they have done in the intervening 10 years. It concludes with recommendations for states to continue their progress toward sustainable development. As will be discussed further, states in the United States have many attributes of national governments, particularly with respect to their authority and responsibility for most aspects of sustainable development. This discussion could then, in theory, encompass all of sustainable development, but it will not attempt to assess aspects of sustainable development related to specific media, resources, and issues covered comprehensively in other chapters.

Beginning even before the advent of the modern era of environmental law in the U.S. in 1970, some states have developed innovative laws and programs that have served as models for other states and the federal government for solving environmental problems and promoting what is now understood as sustainable development. Sustainable development depends on local action that keeps larger social goals in mind while satisfying local needs. This is the role state governments are intended to carry out in the U.S. and, at their best, some have done much to promote and to achieve sustainable development, but the efforts and progress have been uneven. In order to achieve sustainable development in the U.S., all the states must join the effort, follow the examples of the leading states, adopt the innovations that have proven successful, involve their citizens, report on their progress, and continue to create innovative policies and programs.

Characteristics of Sustainable Development in the Context of States

Sustainable development remains an elusive concept even 10 years after the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in June 1992 (Rio Summit). The Rio Declaration on Environment and Development² and Agenda 21³ have defined sustainable development in terms of a series of principles and needed actions, but these documents are not well-known to state officials, or the public, in the U.S. Sustainable development, particularly in the context of the states, is probably best understood as a process. There is a substantive goal for that process, but because the goal is to simultaneously achieve a society's economic, social, environmental, and security goals while maintaining the ability of future generations to attain their goals in the same areas, it will never be possible to say that the goal of sustainable development has been achieved and the

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¹John A. Pendergrass

²Rio Declaration on Environment and Development, U.N. Conference on Environment and Development, U.N. Doc. A/CONF.151/5Rev.1, 31 I.L.M. 874 (1992).

³Agenda 21, U.N. Conference on Environment and Development, U.N. Doc. A/CONF.151.26 (1992).

process is complete.⁴ Nevertheless, achieving perceptible progress toward those goals is important. This discussion seeks to provide both an overview of the way states approach sustainable development and a spotlight on some of the most notable achievements, tangible results, and policies.

The process of sustainable development is dynamic, integrative, participatory, decentralized, and continuous. Sustainable development is necessarily dynamic because it serves needs and goals of society as they change over time. It is integrative because it seeks to achieve disparate societal goals that are, nevertheless, interrelated. Participation is essential if sustainable development is to successfully meet the needs and goals of society as a whole while treating all segments of society fairly.⁵ Decentralization is considered important in order to enhance the effectiveness of participation in the process of sustainable development and to assure that local needs and goals are met.⁶ Finally, sustainable development must be a continuing process because societal needs and goals change over time, particularly as some needs are met. The intergenerational aspect of sustainable development means that the process must be renewed at least on a generational schedule.

At least five principles have been identified as being important to sustainable development: integrated decision-making, the polluter-pays principle, the precautionary principle, intergenerational equity, and developed country leadership.⁷ The latter clearly is of more relevance at the national level, although the relative lack of leadership by the federal government has meant that a few states have by default taken on leadership roles for the U.S. The polluter-pays principle has been widely adopted in federal and state laws and thus can be taken as a given in the context of assessing the progress of states toward sustainable development. In contrast, the precautionary principle has not been widely applied in the U.S. and, therefore, for opposite reasons it also provides little grist for assessing sustainable development in the states. The fact that U.S. states have largely ignored the precautionary principle should not be understood to lessen its importance to achieving sustainability, and notable examples of its use may help to demonstrate its value and advantages to state policymakers. Integrated decision-making⁸ and intergenerational equity are the most salient of these principles for evaluating states' efforts to promote sustainable development. In addition, the mechanism of decentralization of decision-making⁹ is also an important aspect of sustainable development in the context of the roles of the federal, state, and local governments in the U.S.

Integrated decision-making

Integrated decision-making is essential for the process of sustainable development to be successful in achieving society's needs and goals with respect to economic

⁴See John C. Dernbach, Sustainable Development: Now More Than Ever, 32 *Envtl. L. Rep. (Envtl. L. Inst.)* 10003, nn.4-7 (Jan. 2002).

⁵See Rio Declaration, U.N. Doc. A/CONF.151/5Rev.1, 31 *I.L.M.* 874, princ. 10 ("Environmental issues are best handled with the participation of all concerned citizens, at the relevant level.").

⁶See Rio Declaration, U.N. Doc. A/CONF.151/5Rev.1, 31 *I.L.M.* 874, princ. 10 ("Environmental issues are best handled with the participation of all concerned citizens, at the relevant level."), 11 ("Environmental standards. . . should reflect the environmental and developmental context to which they apply.").

⁷Dernbach, Sustainable Development: Now More Than Ever, 32 *Envtl. L. Rep. (Envtl. L. Inst.)* 10003, 10009-12 (Jan. 2002).

⁸Rio Declaration, U.N. Doc. A/CONF.151/5Rev.1, 31 *I.L.M.* 874, princ. 4 ("In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process.") (for further discussion of Principle 4, see Dernbach, Sustainable Development: Now More Than Ever, 32 *Envtl. L. Rep. (Envtl. L. Inst.)* 10003, 10009 (Jan. 2002).

⁹Agenda 21, U.N. Conference on Environment and Development, U.N. Doc. A/CONF.151.26, ¶ 8.5(g).

development, environmental protection, social development, and security. The Rio Declaration speaks of integrating environmental protection into development decisions,¹⁰ but the better practice is to integrate all decisions that relate to the broad social needs identified above. Decisions intended to further one goal should not, as a general rule, make it more difficult to achieve other goals and, to the extent possible, should support and reinforce efforts to achieve the other objectives. Agenda 21 states that “the overall objective is to improve or restructure the decision-making process so that consideration of socio-economic and environmental issues is fully integrated and a broader range of public participation assured.”¹¹ Development decisions made without consideration of social and environmental consequences will have, at best, only a random chance of contributing to sustainable development.¹² The Rio Declaration also recommends that nations adopt environmental impact assessment (EIA), which institutionalizes integrated decision-making, as a decision-making tool.¹³

Governments, including state governments, typically are not organized to integrate all these factors in their decision-making. Rather, they are organized into departments with specific responsibilities for particular issues and mandates and authorities limited to those issues. Thus states have departments of environmental protection, economic development, and human services, each of which is authorized and directed to maximize public welfare with respect to their specific issue, but with little or no authority to coordinate with other departments or consider the effects they have on other aspects of public welfare or vice versa. Integrated decision-making is intended to reverse this tendency.¹⁴

Effective integrated decision-making relies on information and the ability to monitor progress toward goals. Agenda 21 recommends improving “the data systems and analytical methods used to support [integrated] decision-making processes.”¹⁵ Similarly, it recommends improving the indicators commonly used to monitor progress towards societal goals, noting that gross national product (GNP) and measure-

¹⁰Rio Declaration, U.N. Doc. A/CONF.151/5Rev.1, 31 I.L.M. 874, princ. 4.

¹¹Agenda 21, U.N. Conference on Environment and Development, U.N. Doc. A/CONF.151, ¶ 8.3.

¹²This discussion leaves considerations of the security aspects of sustainable development to national level assessments because national security is a federal government responsibility. Nevertheless, the reaction to terrorist attacks on New York and Washington, D.C. indicate that this division may no longer be as simple as it once seemed. States now are actively involved in homeland security and some of the actions taken as part of new security measures are having and will continue to have substantial effects on sustainable development. In particular, new restrictions on the availability to the public of information are likely to substantially hinder public participation in a wide variety of decisions relating not only to the security aspects of sustainable development, but to the developmental, environmental, and social aspects as well. See Carl Bruch, *The Right to “No” Increases Vulnerability*, *Envtl. F.*, Jan./Feb. 2002, at 50. For a list of governmental information, including some state information, see *Access to Government Information Post* September 11, available at <http://www.ombwatch.org/article/articleview/213/1/1/>.

¹³Rio Declaration, U.N. Doc. A/CONF.151/5Rev.1, 31 I.L.M. 874, princ. 17 (“Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.”).

¹⁴See Agenda 21, U.N. Conference on Environment and Development, U.N. Doc. A/CONF.151.26, ¶ 8.2 (“An adjustment or even a fundamental reshaping of decision-making. . . may be necessary if environment and development is to be put at the centre of economic and political decision-making, in effect achieving a full integration of these factors. . . Governments have also begun to make significant changes in the institutional structures of government in order to enable more systematic consideration of the environment when decisions are made on economic, social, fiscal, energy, agricultural, transportation, trade and other policies, as well as implications of policies in these areas for the environment.”).

¹⁵Agenda 21, U.N. Conference on Environment and Development, U.N. Doc. A/CONF.151.26, ¶ 8.5 (1992). Specifically, Agenda 21 recommends, “improving the use of data and information at all stages of planning and development, making systematic and simultaneous use of social, economic, developmental, ecological and environmental data.” *Id.* at ¶ 8.5(a).

ments of individual resource or pollution flows are inadequate indicators of sustainability.¹⁶ It recommends that national governments develop indicators of sustainable development.¹⁷ In fact, a few states and nongovernmental organizations (NGOs) have been the leaders in the U.S. in developing and applying indicators of sustainable development.¹⁸

Intergenerational equity

Intergenerational equity is perhaps the core defining principle of sustainable development. The classic definition states: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”¹⁹ The Rio Declaration restates it as “The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.”²⁰ This is a simple statement but represents a significant commitment by the present generation, and all succeeding “present” generations, to consider the interests of future generations in making decisions about the use of natural resources and care for the environment.

State governments at some level, though sometimes in a not well-articulated fashion, typically consider intergenerational equity an important policy goal. This derives from the fact that state governments have the most direct responsibility for assuring the general welfare of their citizens, including future generations of citizens. One of the demands that citizens make on their state and local governments in particular is that they demonstrate a commitment to assuring that the children and grandchildren of the current generation have better opportunities for safe, healthy, and prosperous lives than does the current generation. Intergenerational equity is, therefore, typically at least something to be aspired to by states.

Decentralized decision-making

Unlike the first two principles of particular relevance to states, decentralized decision-making is derivative of other higher order principles. Principle 10 of the Rio Declaration states:

Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes.²¹

In addition, Principle 11 provides that “[e]nvironmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply.”²² Finally, Principle 22 states that “[i]ndigenous people, and their communities and other local communities, have a vital role in environmental management and development because of their knowledge and traditional practices.

¹⁶Agenda 21, U.N. Conference on Environment and Development, U.N. Doc. A/CONF.151.26, ¶ 40.4.

¹⁷Agenda 21, U.N. Conference on Environment and Development, U.N. Doc. A/CONF.151.26, ¶ 40.6.

¹⁸See Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning 20-21* (2001); Institute for Southern Studies, *Gold and Green 2000 Report*, available at <http://www.southernstudies.org/gg2000statesandindicators.html>; discussed in this section at notes 150 and 196 and accompanying text.

¹⁹World Commission on Environment and Development, *Our Common Future* 43 (1987).

²⁰Rio Declaration, U.N. Doc. A/CONF.151/5Rev.1, 31 I.L.M. 874, princ. 3.

²¹Rio Declaration, U.N. Doc. A/CONF.151/5Rev.1, 31 I.L.M. 874, princ. 10.

²²Rio Declaration, U.N. Doc. A/CONF.151/5Rev.1, 31 I.L.M. 874, princ. 11.

States should recognize and . . . enable their effective participation in the achievement of sustainable development.”²³

Decentralized decision-making serves several of the purposes articulated in these principles. It facilitates participation by individuals, indigenous people, and local communities in environmental decision-making processes, particularly those that affect local resources or development projects and thus affect them directly. It also facilitates access to information that is most relevant, such as information relating to individual communities. For these reasons, Agenda 21 specifically recommends “delegating planning and management responsibilities to the lowest level of public authority consistent with effective action” as a method of supporting integrated decision-making.²⁴

Decentralized decision-making is well established in the United States, having a constitutional basis²⁵ as well as being a core political value. This Article focuses on the devolution of environmental decision-making from the federal government to the states. Decentralization clearly extends to local governments as well, and all states rely on their local governments to make decisions regarding many aspects of environment and development, such as the siting and support of development projects. Involvement of local governments in sustainable development is, however, beyond the scope of this discussion.²⁶

Status of Sustainable Development in the States Before the Rio Summit

This section discusses the status of sustainable development in the states at the time of the Rio Summit in 1992. In particular, it focuses on the extent to which elements and principles of sustainable development were already institutionalized in states by 1992. This background provides the context for describing, understanding, and evaluating states efforts and progress toward sustainable development since 1992.

Integrated decision-making

After the beginning of the modern era of environmental law in 1970, many states quickly grasped the advantages of integrated decision-making and adopted various forms of it. Most commonly these were based on the example of the environmental impact statement adopted in the National Environmental Policy Act (NEPA).²⁷ That particular form of integrated decision-making also was the one most successfully implemented, as environmental impact statements were, despite opposition, routinely prepared in a number of states. Integrated decision-making also was adopted in a few states’ constitutions, most often through recognition of a public trust obligation. In addition, a few leading states incorporated concepts of integrated decision-making into their land use statutes prior to 1992. The law enacted by New Jersey, in particular, sought to implement many of the principles of sustainable development, including integrated decision-making and intergenerational equity. Finally, a few states made integrated decision-making the centerpiece of laws aimed at encouraging pollution prevention. While these states may have been visionary in adopting such laws, their record in implementing them prior to 1992 was mixed.

A sizeable minority of states had already adopted a form of procedural integra-

²³Rio Declaration, U.N. Doc. A/CONF.151/5Rev.1, 31 I.L.M. 874, princ. 22.

²⁴Agenda 21, U.N. Conference on Environment and Development, U.N. Doc. A/CONF.151.26, ¶ 8.5 (g).

²⁵U.S. Const. amend. X.

²⁶For further discussion of local governments and sustainable development, see President’s Council on Sustainable Development (PCSD), *Toward a Sustainable America: Advancing Prosperity, Opportunity, and a Healthy Environment for the 21st Century* (1999).

²⁷NEPA §§ 2-209, 102(2)(C), 42 U.S.C.A. §§ 4321 to 4370d, 4332(2)(C).

tion²⁸ before 1992 by having passed state environmental policy acts (SEPA) based on NEPA. Fourteen states, plus the District of Columbia and Puerto Rico, have enacted SEPA and four others adopted similar requirements by executive order.²⁹ A significant purpose of SEPA is to integrate environmental considerations into state decisions. For example, the New York legislature, in enacting its State Environmental Quality Review Act (SEQRA), declared:

It is the intent of the legislature that the protection and enhancement of the environment, human and community resources shall be given appropriate weight with social and economic considerations in public policy. Social, economic, and environmental factors shall be considered together in reaching decisions on proposed activities.³⁰

Like NEPA, a key provision of the SEPA is a requirement to conduct an environmental impact assessment (EIA) for proposed state actions, including approvals of major projects.³¹ These assessments are intended to “ensure systematic consideration of environmental risks at the early stages of planning before the [s]tate commits its resources.”³² Unlike NEPA, SEPA have generally taken a step toward substantive integration by requiring agencies to balance environmental impacts with the economic and other needs involved in the decision.³³ A few states have gone even further, favoring the environmentally preferable alternative over others.³⁴

A few states have even raised integration of environmental, social, and economic welfare to the level of their state constitutions. For example, the Louisiana Constitution states:

The natural resources of the state, including air and water, and the healthful, scenic, historic, and esthetic quality of the environment shall be protected, conserved, and replenished insofar as possible and consistent with the health, safety, and welfare of the public.³⁵

The Louisiana Supreme Court held that this provision created a public trust obligation on the state government that included demonstrating that adverse environmental effects of a proposed state action had been minimized.³⁶ Implementation of the constitutional provision thus begins to merge with the procedural and, in this case, the substantive integrating functions of environmental impact analysis.

²⁸See Dernbach, Sustainable Development: Now More Than Ever, 32 *Envtl. L. Rep.* (Envtl. L. Inst.) 10003, 10010 (Jan. 2002) (“Procedural integration is the simultaneous and coherent consideration of economic, environmental, and social factors in making a particular decision.”).

²⁹The states with SEPA legislation include California, Connecticut, Hawaii, Indiana, Maryland, Massachusetts, Minnesota, Montana, New York, North Carolina, South Dakota, Virginia, Washington, and Wisconsin. The states adopting SEPA by executive order include Michigan, New Jersey, Texas, and Utah.

³⁰N.Y. *Envtl. Conserv. Law* § 8-0103(7).

³¹N.Y. *Envtl. Conserv. Law* § 6.03[1][c].

³²*Town of Westport v. State*, 204 Conn. 212, 527 A.2d 1177, 1182 (1987).

³³Daniel P. Selmi & Kenneth A. Manaster, *State Environmental Law* §§ 10.02[3] and 10.05 [§§ 10A:2 to 10A:5.]. For example, the New York statute requires an agency to “make an explicit finding that the requirements of this section have been met and that consistent with social, economic and other essential considerations, to the maximum extent practicable, adverse environmental effects revealed in the environmental impact statement process will be minimized or avoided.” N.Y. *Envtl. Conserv. L.* § 8-0109[8].

³⁴See, e.g., *In re City of White Bear Lake*, 311 Minn. 146, 247 N.W.2d 901 (1976).

³⁵La. Const. art. IX, § 1.

³⁶*Save Ourselves, Inc. v. Louisiana Env'tl. Control Comm'n*, 452 So. 2d 1152, 1160 14 *Envtl. L. Rep.* (Envtl. L. Inst.) 20790, 20793 (La. 1984).

The public trust concept, that the state government has a duty to protect the state's natural resources for the benefit of all the citizens of the state,³⁷ is more explicit in the Pennsylvania Constitution, which provides:

The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic, and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.³⁸

The Pennsylvania Commonwealth Court has held that this provision imposes an affirmative duty on the state that applies to its decisions to approve economic activity.³⁹ In deciding whether to approve an activity, such as mining, the state decision-maker must make three determinations: (1) the applicant complied with all rules and regulations protecting the Commonwealth's natural resources; (2) "a reasonable effort to reduce environmental incursion to a minimum" was made; and (3) that the environmental harm from the action does not so clearly outweigh the benefits that to approve the action would be an abuse of discretion.⁴⁰ The commonwealth has institutionalized these requirements by incorporating them into the permit process and requiring applicants to demonstrate the basis for the latter two findings.⁴¹ Pennsylvania thus achieved at least a first order level of procedural and substantive integration of environmental considerations into decisions that had traditionally been made based on economic and other public welfare criteria.⁴²

The Hawaii Constitution specifically requires the state and its local governments to integrate conservation and development of environmental resources for the benefit of present and future generations, marrying two of the key principles of sustainable development. In 1978, the state added the following provision:

For the benefit of present and future generations, the State and its political subdivisions shall conserve and protect Hawaii's natural beauty and all natural resources, including land, water, air, minerals and energy sources, and shall promote the development and utilization of these resources in a manner consistent with their conservation and in furtherance of the self-sufficiency of the State.⁴³

The section also includes a classic statement of the public trust: "[a]ll public natural resources are held in trust by the State for the benefit of the people."⁴⁴ The Hawaii Supreme Court interpreted this provision to have elevated the public trust "to the level of a constitutional mandate."⁴⁵ As such, the legislature and state agencies may not override the public trust responsibilities of the state. The Court also explained that "[t]he public trust is a dual concept of sovereign right and

³⁷See *Illinois Cent. R.R. Co. v. Illinois*, 146 U.S. 387 (1892).

³⁸Pa. Const. art. 1, § 27.

³⁹*Payne v. Kassab*, 11 Pa. Commw. 14, 312 A.2d 86 (1973), *aff'd*, 468 Pa. 226, 361 A.2d 263, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 29796 (1976).

⁴⁰*Payne v. Kassab*, 11 Pa. Commw. 14, 29-30, 312 A.2d 86 (1973).

⁴¹See § 7:3.

⁴²One commentator has argued that Article I, § 27 of the Pennsylvania Constitution supports sustainable development by providing a basis for integrating environment into all state decision making. John C. Dernbach, *Taking the Pennsylvania Constitution Seriously When It Protects the Environment: Part I—An Interpretative Framework for Article I, Section 27*, 103 Dickinson L. Rev. 693, 716-22 (1999); John C. Dernbach, *Taking the Pennsylvania Constitution Seriously When It Protects the Environment: Part II—Environmental Rights and Public Trust*, 104 Dickinson L. Rev. 97 (1999).

⁴³Hawaii Const. art. XI, § 1.

⁴⁴Hawaii Const. art. XI, § 1.

⁴⁵*In re Water Use Permit Applications*, 94 Haw. 97, 31, 9 P.3d 409 (2000).

responsibility.”⁴⁶ The state’s responsibility is to preserve the trust resources for public purposes, which can evolve over time. In the case of water, the Court held that the public trust has evolved to include retaining water in its natural state, use for drinking water, and use by native Hawaiians, but “the public trust has never been understood to safeguard rights of exclusive use for private commercial gain.”⁴⁷ “We hold that, while the state water resources trust acknowledges that private use for ‘economic development’ may produce important public benefits and that such benefits must figure into any balancing of competing interests in water, it stops short of embracing private commercial use as a protected ‘trust purpose.’”⁴⁸ Instead, the Court held that “the water resources trust also encompasses a duty to promote the reasonable and beneficial use of water resources in order to maximize their social and economic benefits to the people of this state.”⁴⁹ The Hawaii Supreme Court thus interprets its state’s constitutional public trust responsibility as being intended to assure that resources are used to achieve integrated environmental, social, and economic goals and to evolve over time as needed.

Other states expanded the public trust concept through legislation. The Michigan Environmental Protection Act (MEPA) grants citizens the right to sue “for the protection of the air, water, and other natural resources and the public trust in these resources from pollution, impairment, or destruction.”⁵⁰ A defendant to such a suit may defend on the grounds that “there is no feasible and prudent alternative to defendant’s conduct and his or her conduct is consistent with the promotion of the public health, safety, and welfare in light of the state’s paramount concern for the protection of its natural resources.”⁵¹ The MEPA not only raised the level of protection for natural resources, it also recognized the value of citizen enforcement of environmental protection. Furthermore, the statute provides that any defense must demonstrate that it promotes public health, safety and welfare, not allowing a more traditional economic justification to prevail.

Integrated decision-making is of particular importance for determinations that relate to the use of resources, of which land is the most inclusive. In 1973, Oregon became the first state to adopt a comprehensive, statewide land-use planning program.⁵² Oregon’s land use planning program is based on 19 statewide planning goals that provide the framework for all local land use plans in the state. The goals, adopted in the mid-1970s, begin with the goal of providing citizens the opportunity to participate in all phases of the planning process, lists the resources, such as agricultural lands, forest lands, air, water, and land quality, open space, scenic areas and natural resources, and estuaries that are to be included in land use plans, and specifies services, such as housing, public facilities, transportation, and energy conservation, that should be provided for in plans.⁵³ Oregon’s land use planning program

⁴⁶In re Water Use Permit Applications, 94 Haw. 97, 135, 9 P.3d 409 (2000).

⁴⁷In re Water Use Permit Applications, 94 Haw. 97, 138, 9 P.3d 409 (2000).

⁴⁸In re Water Use Permit Applications, 94 Haw. 97, 138, 9 P.3d 409 (2000).

⁴⁹In re Water Use Permit Applications, 94 Haw. 97, 139, 9 P.3d 409 (2000).

⁵⁰Mich. Stat. Ann. § 324.1701(1). A few other states have followed Michigan’s lead. Connecticut, Conn. Gen. Stat. § 22a-16; Florida, Fla. Stat. Ann. § 403.412(2)(a); Minnesota, Minn. Stat. Ann. §§ 116B.01-13; and New Jersey, N.J. Stat. Ann. § 2A:35A-4, are among the states that have passed environmental rights acts empowering citizens to sue for violations of environmental law or to protect natural resources and the environment. The Minnesota legislature made explicit what was implicit in the Michigan statute, that “[e]conomic considerations alone shall not constitute a defense.” Minn. Stat. Ann. § 116B.04.

⁵¹Mich. Stat. Ann. § 324.1703.

⁵²Or. Rev. Stat. Chs. 195 & 197 (1999) (first enacted as Senate Bill 100 in 1973).

⁵³See Oregon Department of Land Conservation & Development, A Summary of Oregon’s Statewide Planning Goals, available at http://www.lcd.state.or.us/goalpdfs/goals_summary.PDF.

seeks to integrate improvement and diversification of the state's economy⁵⁴ with planning for resource use and protection⁵⁵ and efficient provision of public services, including housing.⁵⁶ In other words, it makes integrated decision-making the foundation of land use planning. It emphasizes five principles, all elements of what has since come to be seen as sustainable development: (1) efficient use of land and energy resources; (2) full utilization of urban services; (3) ensuring a mix of uses such as retail, offices, residences, schools, and recreation; (4) transportation options, including bike paths and walkways; and (5) detailed, human-scaled design.⁵⁷

Prior to 1992, New Jersey had perhaps come the closest to establishing integrated decision making as a tool for meeting the goals of sustainable development. The New Jersey State Planning Act, enacted in 1986, established the Office of State Planning and the New Jersey State Planning Commission and required the preparation of a State Development and Redevelopment Plan (Plan).⁵⁸ The state's legislature declared that the act was needed to provide "sound and integrated Statewide planning. . . to conserve [the state's] natural resources, revitalize its urban centers, protect the quality of its environment, and provide needed housing and adequate public services at a reasonable cost while promoting beneficial economic growth, development and renewal."⁵⁹ The legislature included social justice along with development and environmental protection as goals for the Plan:

[a]n increasing concentration of the poor and minorities in older urban areas jeopardizes the future well-being of this State, and a sound and comprehensive planning process will facilitate the provision of equal social and economic opportunity so that all of New Jersey's citizens can benefit from growth, development and redevelopment.⁶⁰

The Plan was required to "represent a balance of development and conservation objectives" and to coordinate planning for land use, housing, economic development, transportation, natural resource conservation, agriculture and farmland retention, recreation, urban and suburban redevelopment, historic preservation, public facilities and services, and intergovernmental coordination.⁶¹ Furthermore, the state adopted a broadly inclusive process for developing and obtaining widespread approval of the Plan, including by local planning agencies.⁶² Thus, years before the Rio Summit, New Jersey saw the importance of incorporating fair and affordable housing, conservation of natural resources, and other issues into a statewide plan to achieve a balanced set of goals adapted from the traditional ones of development and conservation. In 1986, the New Jersey legislature essentially created a statewide blueprint for sustainable development.

Integrated decision-making also is an important part of the analytical process involved in pollution prevention. Pollution prevention is one of the most important methods of achieving the environmental goals of sustainable development and relies heavily on integrated decision-making in order to identify the methods, technologies, and practices that will successfully prevent pollution in specific applications.

⁵⁴Oregon Department of Land Conservation & Development, A Summary of Oregon's Statewide Planning Goals, Goal 9.

⁵⁵Oregon Department of Land Conservation & Development, A Summary of Oregon's Statewide Planning Goals, Goals 5 and 6.

⁵⁶Oregon Department of Land Conservation & Development, A Summary of Oregon's Statewide Planning Goals, Goals 10-12.

⁵⁷See Oregon Department of Land Conservation & Development, Oregon's Statewide Planning Goals & Guidelines, available at <http://www.lcd.state.or.us/goalhtml/goals.html>.

⁵⁸N.J.S.A. §§ 52:18A-196-207.

⁵⁹N.J.S.A. § 52:18A-196(a).

⁶⁰N.J.S.A. § 52:18A-196(g).

⁶¹N.J.S.A. § 52:18A-200.

⁶²N.J.S.A. § 52:18A-202.

Massachusetts enacted a ground-breaking pollution prevention statute in 1989, the Toxics Use Reduction Act (TURA),⁶³ which requires anyone who meets the thresholds for reporting under the federal Emergency Planning and Community Right-to-Know Act (EPCRA)⁶⁴ to prepare a toxic use reduction plan.⁶⁵ Toxics use reduction is defined as:

in-plant changes in production processes or raw materials that reduce, avoid, or eliminate the use of toxic or hazardous substances or generation of hazardous byproducts per unit of product, so as to reduce risks to the health of workers, consumers, or the environment, without shifting risks between workers, consumers, or parts of the environment. . . . However, toxics use reduction shall not include or in any way be inferred to promote or require incineration, transfer from one medium of release or discharge to other media, off-site or out-of-production unit waste recycling, or methods of end-of-pipe treatment of toxics as waste.⁶⁶

This definition embodies the goals of sustainable development by seeking to protect workers and consumers as well as the environment and by excluding from its ambit any change that would merely shift risks from one receptor to another. The state set a goal of a 50% reduction by 1997 from 1987 in the quantities of toxic or hazardous byproducts generated by industry in Massachusetts.⁶⁷ The statute includes minimum requirements for the required toxics use reduction plans but turns over to private toxics use reduction planners the function of certifying that plans meet the minimum requirements.⁶⁸ One of the requirements is that workers must be notified six months prior to the date a plan or its update is due and their comments and suggestions must be solicited.

New Jersey enacted a similar law in 1991. Its Pollution Prevention Act (PPA) also requires facilities subject to EPCRA reporting requirements to prepare pollution prevention plans that meet statutory standards.⁶⁹ Like the Massachusetts statute, New Jersey's PPA seeks to protect workers, consumers, and the environment without shifting risks.⁷⁰ New Jersey also set a statewide goal of reducing by 50%, calculated on the basis of 1987 amounts, the generation of hazardous substances as nonproduct output within five years after the pollution prevention plans were required to be completed.⁷¹ The New Jersey Department of Environmental Protection (NJDEP) is authorized to approve the plans and to require pollution prevention be made a part of a facility's permit.⁷²

California passed the Hazardous Waste Source Reduction and Management Review Act of 1989 the same year as Massachusetts enacted TURA.⁷³ This law requires generators that generate more than 12,000 kilograms of hazardous waste per year at a site to "conduct a source reduction evaluation review and plan" beginning in 1991 and every four years thereafter.⁷⁴ The review and plan must include numerical goals for reducing the generation of hazardous waste based on its best

⁶³Mass. Gen. Laws ch. 21I, § 11.

⁶⁴EPCRA §§ 301 to 330, 42 U.S.C.A. §§ 11001 to 11050.

⁶⁵Mass. Gen. Laws ch. 21I, § 11.

⁶⁶Mass. Gen. Laws ch. 21I, § 2.

⁶⁷Mass. Gen. Laws ch. 21I, § 13.

⁶⁸Mass. Gen. Laws ch. 21I, § 11.

⁶⁹N.J. Stat. § 13:1D-41.

⁷⁰N.J. Stat. § 13:1D-37.

⁷¹N.J. Stat. § 13:1D-37.

⁷²N.J. Stat. § 13:1D-43.

⁷³Cal. Health & Safety Code §§ 25244.12 to 25244.24.

⁷⁴Cal. Health & Safety Code §§ 25244.15(d), 25244.19(a).

estimate of what is achievable during the four-year period of the plan.⁷⁵ It also must specify the “technically feasible and economically practicable source reduction measures” that the generator will implement and explain and document why it is not implementing any source reduction approaches that it has determined are available and potentially viable.⁷⁶

In 1986, the citizens of California also passed a referendum that has had the effect of preventing pollution. Proposition 65, or the Safe Drinking Water and Toxic Enforcement Act of 1986,⁷⁷ requires the state to publish a list of chemicals that are known to cause cancer, birth defects or other reproductive harm.⁷⁸ Some manufacturers would prefer to reformulate their products in order to avoid the stigma of labeling them as causing disease. For example, one proponent of the law claims that “[p]roposition 65 has spurred faster and more significant lead reductions than federal law by prompting companies to reformulate products and change their manufacturing processes.”⁷⁹ More importantly, the benefits are often nationwide because manufacturers of consumer goods make the changes uniformly rather than creating a California-specific product.⁸⁰ This statute also illustrates the power and effectiveness of providing information to the public.

The varying provisions of states’ constitutions and statutes that purport to make environmental protection a fundamental principle of state law may be “essentially hortatory,” but they reveal the typical early response states made in order to cope with environmental problems—add consideration of the environment to the existing order. That did not necessarily result in the type of integrated decision-making envisioned by the Rio Declaration and Agenda 21, but it did substantially increase the level of consideration of environmental issues in economic development decisions. Largely through the procedural and substantive provisions of specific environmental and pollution control statutes, many based on federal law, the states made consideration, avoidance, mitigation, and remediation of the environmental effects of economic development into an almost wholly separate function of state government. Even before Rio some states had begun to introduce a broader consideration of issues into the narrow realm of the environmental function of state government through pollution prevention laws. Other states had attempted to integrate decisions on the broad range of issues relevant to sustainable development. Finally, to a certain extent many states had at least formally achieved procedural integration of environment into decision-making on major projects prior to the Rio Summit.

Intergenerational equity

Prior to 1992, intergenerational equity in environmental matters was generally at most an aspiration for states. A number of states adopted formal statements of policy that natural resources or the environment should be maintained for the benefit of future generations. The few such policies that were incorporated into state constitutions had little effect in practice. Even among those adopted by statute few were effectively implemented before the Rio Summit.

In 1972, Montana adopted intergenerational equity as an explicit goal for its environmental and natural resources policy, with a constitutional provision that

⁷⁵Cal. Health & Safety Code § 25244.19(b)(9).

⁷⁶Cal. Health & Safety Code § 25244.19(B)(5).

⁷⁷Cal. Health & Safety Code §§ 25249.5 to 25249.13, 25180.7, 25192.

⁷⁸Cal. Health & Safety Code § 25249.8.

⁷⁹Clifford Rechtschaffen, How to Reduce Lead Exposures with One Simple Statute: The Experience of Proposition 65, 29 *Envtl. L. Rep.* (Envtl. L. Inst.) 10581 (1999).

⁸⁰Clifford Rechtschaffen, How to Reduce Lead Exposures with One Simple Statute: The Experience of Proposition 65, 29 *Envtl. L. Rep.* (Envtl. L. Inst.) 10581, 10583 (1999).

states: “The state and each person shall maintain and improve a clean and healthful environment in Montana for present and future generations.”⁸¹ Hawaii adopted a similar provision in 1978 but integrated environmental and development policy. In the article devoted to Conservation, Control and Development of Resources, the Hawaii Constitution provides:

For the benefit of present and future generations, the State and its political subdivisions shall conserve and protect Hawaii’s natural beauty and all natural resources. . . and shall promote the development and utilization of these resources in a manner consistent with their conservation and in furtherance of the self-sufficiency of the State.⁸²

For decades, however, neither state took action explicitly based on these provisions or had reason to interpret them.⁸³

States also had incorporated the goal of intergenerational equity into various statutes, such as the New Jersey Development and Redevelopment Plan. In directing that the Office of State Planning develop this plan, the state legislature stated:

It is in the public interest to encourage development, redevelopment and economic growth in locations that are well situated with respect to present or anticipated public services and facilities, giving appropriate priority to the redevelopment, repair, rehabilitation or replacement of existing facilities and to *discourage development where it may impair or destroy natural resources or environmental qualities that are vital to the health and well-being of the present and future citizens of this State.*⁸⁴

The state was, however, slow to implement the State Plan.⁸⁵

Preserving environmental quality for the future is also stated as a goal of the California Environmental Quality Act. The legislature declared that: “The maintenance of a quality environment for the people of this state now and in the future is a matter of statewide concern.”⁸⁶ It also stated that it is the policy of the state to:

Develop and maintain a high-quality environment now and in the future, . . . and preserve for future generations representations of all plant and animal communities. . . [e]nsure that the long-term protection of the environment, consistent with the provision of a decent home and suitable living environment for every Californian, shall be the guiding criterion in public decisions. . . [and] [c]reate and maintain conditions under which man and nature can exist in productive harmony to fulfill the social and economic requirements of present and future generations.⁸⁷

California has implemented this provision through the requirement for environmental impact review, which has been used extensively in the state.

The New York legislature made similar findings in enacting the SEQRA: “The maintenance of a quality environment for the people of this state that at all times is healthful and pleasing to the senses and intellect of man now and in the future is a matter of statewide concern.”⁸⁸ The legislature also declared:

It is the intent of the legislature that all agencies conduct their affairs with an awareness that they are stewards of the air, water, land, and living resources, and that they

⁸¹Montana Const. art IX § 1.

⁸²Hawaii Const. art. XI, § 1.

⁸³See Hawaii Const. art. XI, § 1; *In re Water Use Permit Applications*, 94 Haw. 97, 9 P.3d 409 (2000); *Montana Env'tl. Info. Ctr. v. Department of Env'tl. Quality*, 296 Mont. 207, 988 P.2d 1236 (1999); discussed in this section at notes 169-72 and accompanying text.

⁸⁴N.J.S.A. § 52:18A-196(d) (emphasis added).

⁸⁵See John Pendergrass, *A Rich History of State Innovation*, *Env'tl. F.*, Nov./Dec. 1994, at 12 (citing examples of laws from Pennsylvania, California, New Jersey, and Oregon that became models for federal laws).

⁸⁶Cal. Pub. Res. Code § 21000(a).

⁸⁷Cal. Pub. Res. Code § 21001.

⁸⁸N.Y. Env'tl. Conserv. Law § 8-0103(1).

have an obligation to protect the environment for the use and enjoyment of this and all future generations.⁸⁹

As with California, these policies were most observably implemented through environmental impact assessment of specific projects.

Although these statements demonstrate that state legislatures, and the constitutional convention in the case of Montana, recognize the concept of a duty to future generations, they have not resulted in much else. Such statements did not cause intergenerational equity to become part of the regular practice and implementation of environmental law in most of these states prior to the Rio Summit. Certainly it can be difficult to apply a concept such as intergenerational equity in making a decision on a specific project, but there is at least one conceptual framework that can help decision-makers in their deliberations. John Rawls would have decision-makers consider how they would decide if they were behind a “veil of ignorance” that prevented them from knowing how their decision would affect their interests, including not knowing “to which generation they belong.”⁹⁰ In fact, in Rawls’ view, “[t]hese broader restrictions on knowledge are appropriate in part because questions of social justice arise between generations as well as within them, for example, the question of . . . the conservation of natural resources and the environment of nature.”⁹¹ It may be difficult to consider intergenerational equity in the abstract, but, as discussed before, most citizens readily agree that it is important for states to provide for their children and their children’s children. The “veil of ignorance” can provide a framework for decision-makers to consider the interests of those and more distant future generations in making determinations that will have present and future consequences.

Decentralization of decision-making

Tension between centralized and decentralized decision-making is a fundamental principle of government in the United States. Although it can be hard to remember when the focus of attention and discussion of environmental and economic policymaking was at the national level, the federal government remains one of limited powers. The Commerce Clause of the U.S. Constitution⁹² is broad, amply broad enough to encompass the substantial pollution control statutes passed by Congress since 1970, but it has limits.⁹³ Power to legislate outside those limits is reserved to the states.⁹⁴ Thus, the importance of decentralized decision-making is enshrined in the Constitution, arguably obviating any need for additional impetus from the Rio Declaration or Agenda 21.

The key to understanding the roles of the states in sustainable development in the U.S. is to recognize that the Constitution established tension between the states and the federal government. The constitutional system retained sovereign powers and responsibilities in the states, in particular through the police power. The authority of states to protect the health, safety, and welfare of the citizenry under their police power is plenary. Accordingly, states have independent authority over

⁸⁹N.Y. Evtl. Conserv. Law § 8-0103(8).

⁹⁰John Rawls, *A Theory of Justice* 137 (reprint 1971). Rawls was arguing for the use or simulation of the “veil of ignorance” in choosing among principles of justice, but the framework can be useful in considering more specific and concrete decisions as well.

⁹¹John Rawls, *A Theory of Justice* 137 (reprint 1971).

⁹²U.S. Const. art. I, § 8.

⁹³*See, e.g.,* *Solid Waste Agency of N. Cook County v. Corps of Eng’rs*, 531 U.S. 159, 31 Evtl. L. Rep. (Evtl. L. Inst.) 20382 (2001) (interpreting the scope of authority of the U.S. Army Corps of Engineers under the Clean Water Act (CWA) to exclude certain intrastate wetlands on the grounds that a broader interpretation would raise questions of whether Congress had exceeded its authority under the Commerce Clause).

⁹⁴U.S. Const. amend. X.

environmental issues, which they exercised long before the explosion of federal environmental law in the 1970s.⁹⁵ States also typically delegated substantial authority to local governments, particularly with respect to land use planning and decisions on development.⁹⁶

Congress asserted the power of the federal government over environmental issues throughout the 1970s and 1980s, passing numerous pollution control and natural resource protection statutes.⁹⁷ These laws cover many aspects of the environment, but they are not comprehensive and the states retain their authority over issues not addressed in the federal statutes. The pollution control laws generally adopted a federal-state partnership model, whereby Congress established minimum federal standards for controlling pollution and allowed states to take over implementation of the requirements if they so desired.⁹⁸ In keeping with the Supremacy Clause of the Constitution,⁹⁹ states that were so inclined were required to adopt laws and regulations that were no less stringent than the federal provisions.¹⁰⁰ The federal government in turn authorizes the state to implement the provisions of the particular federal statute.¹⁰¹ In most cases, the state and federal government have concurrent authority to enforce the standards,¹⁰² while a few statutes limit the federal agency's authority to enforce after a state program has been approved.¹⁰³ The final component of the typical federal pollution control statute is federal oversight of approved state programs. Federal oversight includes federal review of state performance and sanctions may be applied if the state's performance does not meet the statutory standards. Typically, however, the only statutory sanction is withdrawal of approval to implement the program or federal assumption of primary enforce-

⁹⁵See Celia Campbell-Mohn et al., *Sustainable Environmental Law* § 3.2(A) (1993).

⁹⁶Joel S. Hirschorn, *Growing Pains: Quality of Life in the New Economy* 60 (2000).

⁹⁷Celia Campbell-Mohn et al., *Sustainable Environmental Law* § 1.2(I)(1)-(4) (1993).

⁹⁸See, e.g., FWPCA § 402(b), 42 U.S.C.A. § 1342(b) (Under the CWA, a state may apply for approval by EPA of its plan for issuing permits that meet the standards of the National Pollutant Elimination Discharge System (NPDES)). For a comparison of the statutory provisions governing state and federal responsibilities under the Safe Drinking Water Act (SDWA), the Clean Air Act (CAA), the CWA, the Resource Conservation and Recovery Act (RCRA), and the Surface Mining Control and Reclamation Act (SMCRA), see Environmental Law Institute, *Comparison of Federal-State Allocation of Responsibility in Five Environmental Statutes* (1995).

⁹⁹U.S. Const. art. VI.

¹⁰⁰See, e.g., SDWA § 1413(a)(1), 42 U.S.C.A. § 300g-2(a)(1) (A state has primary enforcement authority for public water systems if EPA determines that the state "has adopted drinking water regulations that are no less stringent than the national standards promulgated by [EPA], and if EPA makes other findings about the state program). States generally are free to adopt provisions that are more stringent than federal law, but about half of the states have enacted statutes making the federal "floor" the "ceiling." James M. McElfish, *Minimal Stringency: Abdication of State Innovation*, 25 *Envtl. L. Rep. (Envtl. L. Inst.)* 10003 (Jan. 1995).

¹⁰¹See, e.g., SDWA § 1413(a)(1), 42 U.S.C.A. § 300g-2(a)(1). See also CAA § 111(c)(1), 42 U.S.C.A. § 7411(c)(1) (If EPA finds that a state's plan for implementing and enforcing new source performance standards under the CAA, it must "delegate to such State any authority [it] has. . . to implement and enforce such standards.").

¹⁰²See, e.g., CAA § 111(c)(2), 42 U.S.C.A. § 7411(c)(2) (nothing in the provision for delegating authority to enforce new source performance standards prohibits EPA from enforcing any applicable standard of performance). For a comparison of federal and state enforcement authorities under five environmental statutes, see Environmental Law Institute, *Comparison of Federal-State Allocation of Responsibility in Five Environmental Statutes* (1995).

¹⁰³See, e.g., SMCRA § 521(a)(1), 30 U.S.C.A. § 1271(a)(1) (The Department of the Interior may take action only after notifying the state of information indicating that a person is in violation of a requirement or permit and if the state fails to take action or provide good cause for failing to take action within ten days of the notification.).

ment authority.¹⁰⁴ Federal agencies have invoked such sanctions in only a few rare instances, preferring to use other methods, including reducing grant funding, to induce states to change their programs to meet federal standards.¹⁰⁵ This basic system was first enacted in 1970 under the Clean Air Act (CAA) and was established for all the major federal environmental statutes, except for the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), by the end of that decade.

Environmental federalism was well established before the Rio Summit. States implemented numerous pollution control programs approved by federal agencies under federal statutes, but they also exercised their independent authority to protect the public health and welfare, which covered all aspects of the environment. Among the many aspects of the environment over which states exercise authority largely unfettered by federal law are mining of minerals other than coal, groundwater, use of water, land use, and use of natural resources.

The basic policy elements considered critical to sustainable development, including integrated decision-making, consideration of intergenerational equity in decisions, and decentralized decision-making, had been established in a number of states in the 1970s and 1980s. The states adopted these policies as independent responses to rising concerns about environmental issues. Only a few states had developed policies covering all aspects of sustainable development, and implementation was uneven. Nevertheless, these basic policies were familiar to legislators and other state policy makers prior to the Rio Summit. This provides the background for assessing the progress states have made toward sustainable development since 1992.

Indicators of state accomplishments

Actual progress toward sustainable development is the ultimate goal of integrated decision-making, intergenerational equity, and the other key principles of sustainability. In order to accurately and systematically assess progress toward sustainability, governments need indicators of sustainable development to measure the results of their actions. States in general had not identified the development of indicators of sustainable development as an important task prior to the Rio Summit. In the 1980s, however, Oregon initiated a strategic planning process aimed at meeting the overall goal of “a prosperous Oregon that excels in all walks of life.”¹⁰⁶ Oregon leaders and citizens determined that the overall goal depended on the “interconnectedness of quality jobs, a sustainable environment, and caring com-

¹⁰⁴See, e.g., RCRA § 3006(e), 42 U.S.C.A. § 6926(e) (EPA must withdraw authorization of a state’s hazardous waste regulatory program if it is not administering and enforcing the program in accordance with the federal requirements.); *but see* SDWA § 1415(1)(G), 42 U.S.C.A. § 300g-4(a)(1)(G) (EPA may revoke variances issued by a state if it finds that the state abused its discretion in granting the variances.). For a discussion of oversight under the SDWA, the CAA, the CWA, and RCRA, see Environmental Law Institute, *Federal Oversight of State Environmental Programs: Reforming the System* (1995).

¹⁰⁵The U.S. Environmental Protection Agency withdrew approval of a state program for the first time on December 1, 2001. Anita Huslin, *EPA Takes Over Md. Clean Air Permit Process*, Wash. Post, Dec. 4, 2001, at B2. The Maryland Department of the Environment argues that the effect of the decision is limited and leaves the Maryland program largely in place. See Maryland Department of the Environment, Air Information Center, available at <http://www.mde.state.md.us/arma/Programs/Aqpermit/title5.html>. The Office of Surface Mining, within the Department of the Interior, has exercised its similar authority to withdraw approval of a state program only twice. James M. McElfish, Jr. & Ann E. Beier, *Environmental Regulation of Coal Mining: SMCRA’s Second Decade* 33 (Env’tl. L. Inst. 1990); accord Larry McBride & John Pendergrass, *Coal, in Sustainable Environmental Law*, § 14.3(A), at 993, 1065.

¹⁰⁶Oregon Progress Board, *Achieving the Oregon Shines Vision: The 2001 Benchmark Performance Report 1* (2001).

munities,”¹⁰⁷ goals very similar to those of sustainable development. In 1989, the legislature created the Oregon Progress Board to focus the state on the future by developing and implementing a strategic plan for meeting the stated goals. The Board adopted, and continued to refine, a set of benchmarks as a way of measuring, reporting, and tracking over time indicators of economic, social, and environmental health to show what progress the state was making toward achieving the goals of its strategic plan. Despite the similarity to sustainable development, the Oregon Progress Board did not explicitly link its strategic plan to the state’s sustainability efforts until 2000.¹⁰⁸

Assessment of States’ Progress Since the Rio Summit

Few states, if any, have explicitly focused on Agenda 21 or the Rio Declaration as guides for their efforts to move toward sustainable development.¹⁰⁹ Nevertheless, since 1992, a number of states have made substantial progress in developing and implementing policies aimed at achieving sustainable development. Coupled with the already well-developed policies existing in a few states prior to 1992, this has resulted in a variety of sophisticated policies in place. As a group the states are, at a minimum, fulfilling their role as laboratories for experimenting with programs and policies and are, to an extent, leading policy development in the U.S. State experimentation in sustainable development policy is important for several reasons. First, national policy often is based on, if not outright copied from, successful state policies.¹¹⁰ Second, regardless of whether a state’s residents follow sustainable development policy, they typically are vitally interested in the state achieving the quality of life goals of sustainable development, including improvements for their children and grandchildren. This demand for tangible progress is a powerful stimulus for creative thinking and for action, both of which continued to be needed from states in large measures after 1992. Such creative thinking was necessary because the pre-Summit policies dealt largely with pollution and natural resources as issues separate from development,¹¹¹ and often from each other, even given the advent of several laws integrating development and environmental decision-making.

Results are ultimately more important than policies. Producing meaningful changes in people’s lives is difficult and can take years or even decades. It also can be difficult to show that progress is occurring when the changes being sought are in biological, ecological, climate, and evolutionary processes that operate on time scales much longer than what is easy for humans to perceive and understand. Thus, one of the important activities that some states have undertaken is the development and application of indicators of sustainable development.

It is important to examine what states have accomplished since the Rio Summit because having good laws and policies can be virtually meaningless if they are not implemented. Although there may have been substantial policy development before 1992, few states had fully implemented those policies for a substantial amount of time before the Rio Summit. Furthermore, the establishment of integrated decision-making laws, or even of substantive laws dealing with pollution control and sustainable use of natural resources, does not necessarily mean that those states have

¹⁰⁷Oregon Progress Board, *Achieving the Oregon Shines Vision: The 2001 Benchmark Performance Report 1* (2001).

¹⁰⁸Oregon Progress Board, *Achieving the Oregon Shines Vision: The 2001 Benchmark Performance Report 4* (2001).

¹⁰⁹Research for this section found no mention of Agenda 21 or the Rio Declaration among states’ descriptions of their activities, policies, and initiatives.

¹¹⁰John Pendergrass, *A Rich History of State Innovation*, *Envtl. F.*, Nov./Dec. 1994, at 12 (citing examples of laws from Pennsylvania, California, New Jersey, and Oregon that became models for federal laws).

¹¹¹See Celia Campbell-Mohn et al., *Sustainable Environmental Law* § 3.2(A) (1993).

achieved, or are far along the path to achieving, sustainable development. States such as New Jersey and California have been leaders in environmental policy partly because their environmental problems, including a legacy of past pollution, are substantial.¹¹² The discussion below examines the progress states have made on both sustainable development policy and results since the Rio Summit.

Integrated decision-making

Development and implementation of policies designed to promote and achieve sustainable development, typically relying on integrated decision-making as a means to that end, is one important element of progress toward sustainability. A few states have shown leadership on the policy level since 1992. Prominent among the states that have led recent policy developments are some of the jurisdictions, such as Minnesota, New Jersey, and Oregon, that pioneered sustainable development policy prior to the Rio Summit. Other states, such as Maryland, may be more recent innovators but have contributed significant policies. Implementation of existing policies has seen some success mixed with some missed opportunities. Many states with SEPA's, for example, have successfully implemented them, thereby improving their consideration of environmental issues when making decisions on economic development and other projects. A few states, however, have so limited the application of their SEPA's as to make them largely ineffective.

Policy Developments in Leading States

One of the major missed opportunities of the decade after the Rio Summit was the failure of more states to enact SEPA's. While countries around the globe were adopting environmental impact assessment as an important decision-making tool for promoting sustainable development, states that had not adopted it ignored environmental impact assessment. Despite the favorable view that much of the world took of environmental impact assessment, in the U.S. developers—and others who viewed it as largely contributing to delay of development projects rather than to improving them—had to a large extent captured the public understanding of the process.¹¹³ Thus, one of the notable policy “developments” of the last decade, and even of much of the decade preceding it, has been the halting of the spread of SEPA's among the states.

In some instances, states that adopted important policy innovations that were well designed to promote sustainable development did not fully implement those policies. Although New Jersey established its State Plan as the policy framework for integrated decision-making and planning for sustainable development in the 1980's, there was little progress on implementing the Plan in the first decade. “There is little evidence on the ground of the Plan's impact. . . . Municipal application of the State Plan has been scattered and minimal. State agency use of the Plan has been at the margins. Many people had given up hope for the New Jersey Plan.”¹¹⁴ Then-Governor Christine Todd Whitman (R) changed this in 1998, making implementation of the Plan a key element of her second term.¹¹⁵ As part of this initiative, the NJDEP developed water quality rules requiring proposed developments in areas outside of established centers to conduct comprehensive analyses of the effects of

¹¹²More than 90% of the populations of New Jersey and California live in counties that exceed CAA national ambient air quality standards for one or more pollutants. Chris Kromm & Keith Ernst, *Gold and Green 2000, Indicator Reports, Air Quality (2000)*. For example, Atlantic City, Los Angeles, Newark, and Trenton, like many cities around the country, are nonattainment areas for ozone. U.S. EPA, *Peak Air Quality Statistics for the Six Principal Pollutants by Metropolitan Statistical Area (2000)*, available at <http://www.epa.gov/oar/aqtrnd00/pdffiles/factbook.pdf>.

¹¹³“Shoe” cartoon (1979).

¹¹⁴Barbara L. Lawrence & Dorrie Margolin, *State Plan Update: 1999 (New Jersey Future 2001)*, available at <http://www.njfuture.org/HTMLSrc/updatestateplan.html>.

¹¹⁵Hirschorn, *Growing Pains: Quality of Life in the New Economy* 32-33 (2000).

development on water quality. The first step in implementing broader changes to wastewater management plan regulations was to require new developments to follow the same rules whether they relied on septic tanks and discharge to the ground or connections to sewers and wastewater treatment plants.¹¹⁶

New Jersey Future, an NGO, has initiated and organized a broadly inclusive effort, called the Sustainable State Project, by New Jersey citizens to define goals for what type of state they want to pass on to the next generation.¹¹⁷ The Sustainable State Project acknowledges the State Plan as the basis for promoting sustainable development in the state and builds on that base.¹¹⁸ Sustainability is defined as “an efficient economy, a healthy environment and a just society” functioning in harmony.¹¹⁹ The 11 goals established by the project were adopted by then-Governor Whitman as goals for state agencies to pursue.¹²⁰

At least in concept, the State Plan seems to transcend politics in New Jersey. Within days of being sworn in on January 15, 2002, Governor James E. McGreevey (D) issued an executive order creating a Smart Growth Policy Council comprising cabinet members and senior policy officials of his administration, who are charged with ensuring that all state agencies incorporate principles of smart growth and the Plan into their policies and regulations.¹²¹

Oregon also has built on its early initiatives, such as its statewide land-use planning program,¹²² to integrate certain aspects of development and environmental decision-making. The Transportation and Growth Management Program, a joint program of the Oregon Departments of Transportation and of Land Conservation and Development, integrates transportation and land use planning on a statewide basis.¹²³ Oregon Governor John Kitzhaber (D) also signed an executive order in May 2000, directing the state government to develop and promote policies for achieving sustainability by 2025, with the emphasis on internal state government operations.¹²⁴

Like Oregon and New Jersey, Minnesota has continued and expanded upon efforts to move toward sustainable development begun before the Rio Summit. One of

¹¹⁶N.J.A.C. § 7:15-8 (2001).

¹¹⁷New Jersey Future, *Living with the Future in Mind: Goals and Indicators for New Jersey's Quality of Life 2* (1999).

¹¹⁸New Jersey Future, *Living with the Future in Mind: Goals and Indicators for New Jersey's Quality of Life 5* (1999).

¹¹⁹New Jersey Future, *Living with the Future in Mind: Goals and Indicators for New Jersey's Quality of Life 5* (1999).

¹²⁰Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning 40* (2001).

¹²¹Exec. Order No. 4 (Jan. 31, 2002). The order includes among its premises that

a sound and comprehensive planning process will facilitate the provision of *equal social and economic opportunity* so that all of New Jersey's citizens can benefit from growth, development and redevelopment; and. . . the “State Plan,” embodies the State's official land use and development policies, to guide public investment, infrastructure development, economic growth, urban revitalization, sound housing and transportation policy, agriculture promotion and preservation, energy policy, and preservation of natural, environmental, coastal, historic and cultural resources.

(emphasis added).

¹²²See Or. Rev. Stat. Chs. 195 & 197 (1999); Oregon Department of Land Conservation & Development, *A Summary of Oregon's Statewide Planning Goals*, available at http://www.lcd.state.or.us/goalpdfs/goals_summary.PDF.

¹²³See Oregon Departments of Transportation and Land Conservation & Development, *Transportation and Growth Management Program*, at <http://www.lcd.state.or.us/tgm>.

¹²⁴Oregon Exec. Order No. EO-00-07 (May 17, 2000), *Development of a State Strategy Promoting State Sustainability in Internal State Government Operations*, 39 Or. Admin. R. Bull. 4 (July 1, 2000), available at <http://www.governor.state.or.us/governor/legal/execorders/eo00-07.pdf>.

those early efforts was Minnesota Milestones, a set of 30-year goals for the state.¹²⁵ The state also has an agency, Minnesota Planning, with a broad mandate to lead the state's efforts at achieving sustainability goals. A Governor's Round Table on Sustainable Development was created to promote sustainability and issued a report establishing an agenda for sustainable development.¹²⁶ The Round Table set out five principles for sustainable development in Minnesota: global interdependence, stewardship, conservation, indicators, and shared responsibility.¹²⁷ The state legislature directed state agencies to determine how they could implement these principles.¹²⁸ The Minnesota legislature has, in fact, been quite active in enacting legislation that furthers sustainable development goals. It has passed the Sustainable Forest Resources Act of 1995,¹²⁹ the Metropolitan Livable Communities Act,¹³⁰ the Environmental Regulatory Innovations Act of 1996,¹³¹ and the Community-Based Planning Act of 1997.¹³² Under the latter act, the state has provided technical assistance to local governments through a Local Planning Assistance Center¹³³ and by developing model ordinances for sustainable development.¹³⁴ The state also assures that local plans are consistent with the statewide goals by requiring that they be reviewed and approved by Minnesota Planning.¹³⁵

The efforts to use integrated strategies also extend to agricultural policies. The Energy and Sustainable Agriculture On-Farm Demonstration Grant program, which actually began in 1989, provides up to \$25,000 for on-farm demonstrations of systems or methods that increase energy efficiency, reduce agricultural chemical usage, and show environmental and economic benefits.¹³⁶

Maryland, in particular, has enacted a series of programs intended to reform development practices in the state to encourage development in existing centers and discourage development of greenfields. Maryland's Smart Growth Areas Act added substantial incentives to the concept, adopted in New Jersey's State Plan, of focusing development in existing centers.¹³⁷ Maryland first adopted a policy of concentrating growth in "suitable areas" in 1992,¹³⁸ but in 1997 the state decided to restrict its funding of new infrastructure to "priority funding areas," which were defined to include existing developed centers and areas designated by counties for concentrated

¹²⁵Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* 41 (2001).

¹²⁶Investing in Minnesota's Future: An Agenda for Sustaining Our Quality of Life (1998).

¹²⁷Investing in Minnesota's Future: An Agenda for Sustaining Our Quality of Life 2 (1998).

¹²⁸Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* 41 (2001).

¹²⁹Minn. Stat. Ann ch. 89A.

¹³⁰Minn. Stat. Ann §§ 473.25 to 473.255, 1995 Sess. Laws ch. 255.

¹³¹Minn. Stat. Ann ch. 116C, 1996 Sess. Laws ch. 437.

¹³²1997 Sess. Laws ch. 202, Minn. Stat. §§ 394.232, 462.3535.

¹³³See Minnesota Department of Administration, Local Planning Assistance, <http://www.mnplan.state.mn.us/commplan/index.html>.

¹³⁴Minnesota Planning, *From Policy to Reality: Model Ordinances for Sustainable Development* (2000).

¹³⁵Hirschhorn, *Growing Pains: Quality of Life in the New Economy* 61 (2000).

¹³⁶Minn. Stat. § 17.116 (2001).

¹³⁷S.B. 389 (1997) (amending and adding Md. Code Ann. § 23A-8C, 2-103, 8-610, 5-7B-01 to 5-7B-10).

¹³⁸Economic Growth, Resource Protection, and Planning Act of 1992, Md. Code Ann. § 66B-1.01.

growth.¹³⁹ The law also generally prohibits the state from spending its money on growth-related projects that are not within priority funding areas.¹⁴⁰

Although the policy of integrating state funding for infrastructure with land use planning is a significant advance in policy, implementation has revealed gaps in Maryland's program. First, monitoring of counties' progress and compliance with the program is difficult because they are not required to provide information about how they designate priority funding areas.¹⁴¹ Nor does the law authorize the state to take action to ensure that county smart growth areas comply with the statute. Finally, although the lack of state funding for infrastructure is a disincentive for new development outside of the designated areas, the law does not otherwise address such development.¹⁴²

Comparative Evaluation of State Policies for Integrated Decision-making

A recent report by the Resource Renewal Institute (RRI)¹⁴³ attempts to evaluate the "shifting emphasis toward sustainability" of all 50 states.¹⁴⁴ The report focuses on states' capacity to engage in "green planning" as the indicator of capacity for sustainable development.¹⁴⁵ "Green plans" are described as "long-term environmental management strategies that have the ultimate aim of achieving environmental and economic sustainability—whether for a city, state, region, or nation."¹⁴⁶ They also are defined as having the following ten characteristics: long-term, comprehensive, dynamic, cooperative, integrated, informed, flexible, strategic, results-oriented, and investment-intensive.¹⁴⁷ In simpler terms, green plans can be seen as a method of engaging in integrated decision making.

The State of the States evaluates states on four categories of indices of capacity (using the Green Planning Capacity Index (GPCI)) for green planning: comprehensiveness of the environmental management framework; level of environmental policy innovation; fiscal and program commitment; and quality of governance.¹⁴⁸ Although *The State of the States* substitutes RRI's criteria for green plan capacity as a surrogate for sustainable development,¹⁴⁹ it is a good starting point for assessing states' progress toward sustainable development, and more specifically the integrated decision-making aspect of sustainability, if for no other reason than the

¹³⁹Md. Code Ann. § 5-7B-02.

¹⁴⁰Md. Code Ann. § 5-7B-04(A).

¹⁴¹Chesapeake Bay Foundation and 1000 Friends of Maryland, *Maryland's Next Steps: Making Smart Growth Smarter—Recommendations for Increasing the Effectiveness of Smart Growth and Expanding its Application Through New Initiatives* (1999).

¹⁴²Environmental Law Institute, *Smart Growth in Small Towns and Rural Communities: Maryland's Eastern Shore 4* (2001).

¹⁴³The Resource Renewal Institute is a non-profit, non-governmental organization whose mission is to catalyze the development and implementation of green plans. See <http://www.rri.org/home.html>.

¹⁴⁴Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* (2001).

¹⁴⁵Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning iv* (2001).

¹⁴⁶Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning 3* (2001).

¹⁴⁷Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning 5* (2001).

¹⁴⁸Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning 13* (2001). RRI created the GPCI, with 65 indicators within these four categories, using a weighting system resulting in a 100-point scale with the greatest weight given to RRI's indicators of innovation.

¹⁴⁹For further discussion of the specific elements of the GPCI, see Dernbach, *Sustainable Development: Now More Than Ever*, 32 *Envtl. L. Rep.* (Envtl. L. Inst.) 10003, 10004-05 (Jan. 2002). The most glaring failure of the GPCI as a measure of sustainable development is the absence from the index of

dearth of indicators of sustainability at the state level or of comprehensive evaluations of state sustainable development.

New Jersey and Oregon stand out as innovators under RRI's GPCI, as the only states with more than 70 of the 100 points.¹⁵⁰ Only seven states had more than half of the 100 points possible, with Maine, Massachusetts, Minnesota, Vermont, and Washington joining New Jersey and Oregon as leaders.¹⁵¹

Oregon's leadership in regional planning, recycling, and promoting sustainability in state operations was cited by RRI as notable; the state achieved the highest score under the GPCI. The report also notes that Oregon had completed a comprehensive state of the environment report, which would help guide the green planning process. Interestingly, Oregon had the highest score despite not having adopted a green plan.¹⁵²

New Jersey, like Oregon, scored high in the environmental management framework, environmental policy innovation, and fiscal and program commitment subindices of the GPCI.¹⁵³ The State Plan¹⁵⁴ was considered noteworthy, along with the Sustainable State Project.¹⁵⁵ RRI concluded that although "New Jersey does not yet have an official green plan, . . . no other state has done more to learn about and incorporate green planning principles, especially in the areas of flexible, goal-oriented environmental regulation and statewide land use and transportation planning."¹⁵⁶

Minnesota is also cited by RRI as a state leader in developing policies for sustainable development and for its reliance on broad public participation in developing and implementing those policies. It pointed to Minnesota's many innovative programs, particularly Minnesota Planning, the Sustainable Forest Resources Act, Metropolitan Livable Communities Act, and the Environmental Regulatory Improvement Act, aimed at integrating policies and programs related to environment, economy, and communities.¹⁵⁷ RRI concluded that Minnesota would have ranked even higher on the GPCI, but some of its innovations, including statewide watershed planning, a statewide planning agency, and an environmental data clearing-

any economic indicators. Also, green planning is a means of achieving sustainable development, but not necessarily the only means.

¹⁵⁰Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* 20 (2001).

¹⁵¹Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* 20-21 (2001). In addition to these seven, three other states, including Connecticut (45), Illinois (45), and Florida (43), are characterized in Table 1, "Overview of Research Results-Selected Indicators, GPC Index" of the report as having a high GPC score. *Id.* at 16-17. But, in Figure 7, "Green Plan Capacity (GPC) Index," only the seven states with scores above 50 are grouped together as the top states, with states scoring from 34-49 characterized as above average. *Id.* at 23.

¹⁵²Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* 20 (2001).

¹⁵³Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* 16-17 (2001) (both Oregon and New Jersey were rated above average in the governance sub-index).

¹⁵⁴*See* N.J.S.A. §§ 52:18A-196-207.

¹⁵⁵Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* 20, 37-38 (2001).

¹⁵⁶Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* 20, 37-38 (2001).

¹⁵⁷Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* vii, 15 (2001).

house, were so far ahead of other states that data was not available from enough states for those indicators to be included.¹⁵⁸

The State of the States paid particular attention to Minnesota, New Jersey, and Oregon, as the states with the highest capacity for green planning, which it equates with being farthest along the path to sustainable development.¹⁵⁹ The other four states with relatively high scores, Maine, Massachusetts, Vermont, and Washington, are briefly profiled. Maine's governor is described as strongly supporting sustainability and the state had relatively high scores in three of the four subindices.¹⁶⁰ Washington is lauded for its state of the environment report, long-term strategic planning, and for its Watershed Management Act, which deals with water resource and quality issues along with salmon habitat.¹⁶¹ Massachusetts is rightly singled out for its innovative Toxics Use Reduction Act, which requires firms to prepare and submit plans for reducing their use of toxic substances.¹⁶² Its state of the environment report and high scores on the capacity and innovation indicators are also cited as reasons for its ranking among the leading states. Vermont is praised for being a leading innovator in environmental policies, particularly pollution prevention and recycling.¹⁶³ Specific innovative programs in other states are also mentioned, but the report does not distinguish between programs adopted and being implemented and ones that are merely under consideration and which may never become reality.¹⁶⁴

RRI's GPCI is significant as an attempt to evaluate the progress of states toward sustainable development. It is valuable for the simple fact that it indicates the importance of evaluating states on sustainability, and for creating a method for the evaluation. Upon close examination, however, the methodology employed leaves substantial room for improvement. First, the report equates green planning with sustainable development when such planning is more analogous to the integrated decision-making aspect of sustainable development. The lack of economic and social indicators also is a serious flaw. Sustainable development concerns economic and equity factors as well as environmental ones,¹⁶⁵ but the GPCI ignores them. Third, while there is ample room for debate about which environmental indicators are most important to sustainable development, the absence of any indicators related to

¹⁵⁸Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* 15, 20 (2001). Although these are laudable efforts by Minnesota, all are also being implemented in other states and the GPCI would have been a better indicator of efforts to achieve sustainability if they had been included. In contrast, the GPCI included state level right-to-know laws even though only California satisfied the criterion. *Id.* App. A at 58.

¹⁵⁹Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* 35 (2001).

¹⁶⁰Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* 20 (2001).

¹⁶¹Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* 21 (2001). It is unclear, however, how the Watershed Management Act could be considered in the GPCI, as none of the indicators refer to watershed or water issues, and RRI stated that it would try to include watershed-based planning programs in future surveys. *Id.* at 15.

¹⁶²Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* 21 (2001).

¹⁶³Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* 21 (2001).

¹⁶⁴Proposed legislation in New York, for example, is given the same attention and credit as California's long-standing leadership in implementing air quality and tailpipe emissions standards and as Maryland's landmark smart growth legislation. Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* 21-22 (2001).

¹⁶⁵*See* Dernbach, *Sustainable Development: Now More Than Ever*, 32 *Envtl. L. Rep.* (Envtl. L. Inst.) 10003, 10004-05 (Jan. 2002).

water,¹⁶⁶ a vital resource for development and for public health,¹⁶⁷ seems a significant gap. Missing indicators can be added,¹⁶⁸ indicators that provide minimal information can be dropped,¹⁶⁹ and the GPCI can become a much better index of state efforts to achieve sustainable development, but perhaps the most fundamental change that should be made is to eliminate the use of green planning as a surrogate for sustainable development and to focus explicitly and directly on sustainability as a multi-dimensional yet integrated whole.

Intergenerational equity

Since the Rio Summit, few states have devoted any attention to policy developments or made significant progress toward assuring that the needs of future generations are taken into account when making decisions concerning development, use of natural resources, or environmental issues. The few developments largely have related to implementation of policies adopted before 1992. For example, the Hawaii Supreme Court held that the public-trust provision in the state's constitution is intended to be dynamic in order to serve the needs of future generations.¹⁷⁰ The Court wrote: "[t]he public trust, by its very nature, does not remain fixed for all time, but must conform to changing needs and circumstances."¹⁷¹ In that case, the Court held that in response to current needs the public trust has evolved to cover protecting water in its natural state, protecting water quality so it may be used for drinking water, and protecting water for use by native Hawaiians.

Although it did not rule on the intergenerational aspect of the Montana constitutional right to a clean environment, the Montana Supreme Court recently held that the

right to a clean and healthful environment is a fundamental right because it is guaranteed by the Declaration of Rights found at Article II, Section 3 of Montana's Constitution, and that any statute or *rule* which implicates that right must be strictly scrutinized and can only survive scrutiny if the State establishes a compelling state interest and that its action is closely tailored to effectuate that interest and is the least onerous path that can be taken to achieve the State's objective.¹⁷²

The Court then applied strict scrutiny to a state rule exempting certain discharges into waters of the state from review to assure that they did not degrade the receiving waters and held that the exemption violated the constitutional provision as applied to the facts of the case where the plaintiffs had shown that a discharge included carcinogens. The Court stated, "[o]ur constitution does not require that dead fish float on the surface of our state's rivers and streams before its farsighted environmental protections can be invoked."¹⁷³

¹⁶⁶Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* App. A at 57-59 (2001).

¹⁶⁷*See* Agenda 21, U.N. Conference on Environment and Development, U.N. Doc. A/CONF.151, ¶ 7.5(d) & ch. 18.

¹⁶⁸An indicator covering the state's consideration of environmental impacts when making significant decisions seems directly related to sustainable development.

¹⁶⁹For example, the indicator based on state right-to-know laws actually provides only one data point, as California is the only state recorded as having legislation that meets RRI's criterion. Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* App. A at 58, 61 (2001).

¹⁷⁰For further discussion of this provision, *see* *In re Water Use Permit Applications*, 94 Haw. 97, 9 P.3d 409 (2000).

¹⁷¹*In re Water Use Permit Applications*, 94 Haw. 97, 135, 9 P.3d 409 (2000).

¹⁷²*Montana Env'tl. Info. Ctr. v. Department of Env'tl. Quality*, 296 Mont. 207, 225, 988 P.2d 1236 (1999).

¹⁷³*Montana Env'tl. Info. Ctr. v. Department of Env'tl. Quality*, 296 Mont. 207, 230, 988 P.2d 1236 (1999).

These two state Supreme Court decisions are relatively rare examples of states implementing the principle of intergenerational equity. The Montana case may, unfortunately, be the exception that proves the rule because there the Court struck down state agency action that would not have protected the water for the use of future generations. Nevertheless, the Hawaii case demonstrates that the public trust doctrine is intended to protect resources for future generations and that it is precisely the type of dynamic rule that can continue to meet the resource needs of future generations as those needs change. More importantly, these two Courts have created precedents for acting in a sustainable manner that other states' agencies and courts can follow.

Decentralization of decision-making

Conflicts between the federal government, particularly EPA, and the states caused the normally esoteric topic of federal-state relationships in implementing environmental law to become the subject of news stories and many governmental and other reports in the mid-1990s.¹⁷⁴ Devolution, or transferring to the states power to deal with environmental issues, dominated discussion of process and governance issues in environmental law. The subject has been a part of national environmental policy since the earliest days but reemerged as states' environmental programs matured and the states came together to advance coordinated policy positions on the subject. The Environmental Council of the States (ECOS), the organization of the heads of the environmental agencies of the states and territories, was formed in 1993 and made devolution and the state-federal relationship key issues for the organization.¹⁷⁵

One of the early acts of ECOS was to negotiate an agreement with EPA to shift the federal-state relationship to a more flexible and cooperative one than it had become by the mid-1990s. The National Environmental Performance Partnership System (NEPPS) was established in May 1995, "to strengthen [state and EPA] protection of public health and the environment by directing scarce public resources toward improving environmental results, allowing states greater flexibility to achieve those results, and enhancing [state and EPA] accountability to the public and taxpayers."¹⁷⁶ Conceptually, NEPPS substantially revised the relationships between EPA and the states for the first time since they were established in the early 1970s. In addition to the basic statutes, which provided relatively little specific guidance about the functioning relationship between the two levels of government, the relationship had been defined by a series of federal regulations, guidance memoranda, and policies.¹⁷⁷

In practice, NEPPS has not replaced the former system, but has provided states the opportunity to negotiate greater flexibility within it.¹⁷⁸ Most, but not all, states have negotiated Performance Partnership Agreements with EPA that replace the former system of detailed work plans that the states were required to follow. One of the reforms under NEPPS was to replace the preexisting top-down priority setting

¹⁷⁴See, e.g., U.S. General Accounting Office, *EPA and the States: Environmental Challenges Require a Better Working Relationship* (1995); John A. Pendergrass, *States, EPA Talk Past Each Other*, *Envtl. F.*, Mar./Apr. 1997, at 8. See also Rena I. Steinzor, *EPA and Its Sisters at 30: Devolution, Revolution, or Reform?*, 31 *Envtl. L. Rep. (Envtl. L. Inst.)* 11086, 11089 (Oct. 2001) (calling the mid-1990s a period of "outright nastiness. . . when state officials accused EPA of being drunk with power").

¹⁷⁵See Environmental Council of the States, at <http://www.sso.org/ecos/General%20Info.htm>.

¹⁷⁶Joint Commitment to Reform Oversight and Create a National Environmental Performance Partnership System (May 17, 1995), available at <http://www.epa.gov/ocirpage/nepps/memos.htm>.

¹⁷⁷Environmental Law Institute, *Comparison of Federal-State Allocation of Responsibility in Five Environmental Statutes* (1995); Environmental Law Institute, *Federal Oversight of State Environmental Programs: Reforming the System* 6 (1995).

¹⁷⁸Environmental Law Institute, *An Independent Review of the State-Federal Environmental Partnership Agreements for 1996*, at 13 (1996).

system with a joint state-federal process for goal-setting and planning.¹⁷⁹ The planning process has had mixed success, working best in states that themselves emphasize planning.¹⁸⁰ States and EPA also perceive the results of the NEPPS process quite differently, with EPA officials reporting that it led to joint priority setting, while state officials perceived it as improving their respective understanding of the other's priorities without either changing their position.¹⁸¹ The change also has been greater at the higher levels of state and federal agencies than it has been at the staff level.

State accomplishments

The goals of sustainable development are, of course, principally concerned with results, not just laws, policies, and processes. Answering the question of what on-the-ground progress states have made toward sustainable development is difficult, particularly because there are few established and accepted indicators of sustainable development.¹⁸² Minnesota has published a report of its progress toward sustainability, entitled *Smart Signals: An Assessment of Progress Indicators*, but it is unusual in this respect.¹⁸³ The next best option would be if each state would regularly publish a "State of the State's Environment" report that would provide information on the quality of the environment in the state, including progress toward meeting state and federal statutory goals. Many states have indeed published such reports,¹⁸⁴ but no national compilation or summary has been prepared.

Nationwide Assessments of Progress

Although there is no comprehensive report on the state of the environment for all the states, there are some media-specific and other national assessments of particular aspects of the state of the environment in the states. A recent assessment of water quality for the entire nation concluded that the quality of surface waters of the U.S. has not improved since the Rio Summit and, by some measures, has declined.¹⁸⁵ Because this national assessment is based on a compilation of biennial reports that states are required to submit to EPA,¹⁸⁶ it is the best overall assessment of states' progress toward meeting water quality goals. One significant problem with relying

¹⁷⁹Joint Commitment to Reform Oversight and Create a National Environmental Performance Partnership System App. (May 17, 1995).

¹⁸⁰National Academy of Public Administration, environment.gov 145 (2000).

¹⁸¹National Academy of Public Administration, environment.gov 146 (2000).

¹⁸²For further discussion of indicators of sustainable development at the level of states in the U.S., see this section notes 185-236 and accompanying text.

¹⁸³Minnesota Planning, Environmental Quality Board, *Smart Signals: An Assessment of Progress Indicators* (2000).

¹⁸⁴See Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* 22 (2001) (reporting that 31 states have recently published comprehensive state of the environment reports that include monitoring of and reporting on progress). See, e.g., Maryland Department of Environment, *Maryland's Environmental Indicators: Status Report* (1999), available at http://www.mde.state.md.us/enpa/2000_enpa/envi_indicators/index.html (Maryland reports the most current status of environmental quality indicators, including the six criteria air pollutants, hazardous waste generated per year, toxic releases, reported exceedances of lead poisoning standard, public water systems in compliance with drinking water standards, waters meeting designated use standards, and others. The report provides the goal for each indicator and current measures, but does not provide historical data or an indication of trends.).

¹⁸⁵Robert W. Adler, *Fresh Water—Toward a Sustainable Future*, 32 *Envtl. L. Rep.* (Envtl. L. Inst.) 10167, 10178-79 (Feb. 2002) (noting that the percentage of lakes that do not support their designated use, i.e., fishing, swimming, or public drinking water, was at its highest level (45%) in the most recent reporting period).

¹⁸⁶See FWPCA § 305(b), 33 U.S.C.A. § 1315(b). The latest such report is the National Water Quality Inventory: 1998 Report To Congress. U.S. EPA, *National Water Quality Inventory: 1998 Report To Congress* (2000).

on the simple indicator of whether a stream or lake meets the water quality criteria for its designated use is that states may choose the designated use for a body of water, making the “attainment” status of any body of water a relative matter.¹⁸⁷

Other indicators of water quality also show little improvement. For example, states issued more than 2,500 fish and wildlife consumption advisories in 1998 due to contaminants in water.¹⁸⁸ This is a more holistic indicator of water quality because it shows how pollution is affecting species dependent on water. Other assessments also indicate that freshwater ecosystems are declining in health, with a few indications of improvement over the past decade.¹⁸⁹

Assessing the on-the-ground progress of the states toward meeting basic indicators of air quality is more difficult than determining progress toward water quality goals. Although many states now report on ambient air quality standards, the historical data needed in order to assess progress often is not reported.¹⁹⁰ All states have met the minimum federal standards, the national ambient air quality standards (NAAQS), for three of the six pollutants for which such standards exist.¹⁹¹ At least for lead, however, national regulation in the form of the phase out of lead in gasoline had more to do with attainment of the standard than actions by the states.¹⁹² Many states are still struggling to meet the NAAQS for ozone, particulate matter, and carbon monoxide in their urban areas.¹⁹³ Attainment of air quality standards is complicated for eastern states in particular by pollution blown into their jurisdictions from upwind states, but the failure to meet all of the NAAQS three decades after passage of the federal CAA demonstrates that many states still have much to do. States have attempted to devise regional solutions to the ozone problem in particular, but despite various agreements, little change has actually occurred.¹⁹⁴

A recent report on state performance that was intended only to “diffuse the ‘jobs versus the environment’ myth” actually includes a number of useful indicators of sustainable development.¹⁹⁵ The *Gold and Green 2000* report by the Institute for Southern Studies ranks states on 20 economic (gold) and 20 environmental (green) indicators as a method of evaluating claims that strong environmental standards

¹⁸⁷See FWPCA § 101(a)(2), 33 U.S.C.A. § 1251(a)(2) (setting an interim goal that waters support protection and propagation of fish, shellfish, and wildlife and recreational uses).

¹⁸⁸See Robert W. Adler, *Fresh Water—Toward a Sustainable Future*, 32 *Envtl. L. Rep. (Envtl. L. Inst.)* 10167, 10179 (Feb. 2002).

¹⁸⁹Robert W. Adler, *Fresh Water—Toward a Sustainable Future*, 32 *Envtl. L. Rep. (Envtl. L. Inst.)* 10167, 10180-81 (Feb. 2002) (citing studies showing freshwater-dependent animals are in worse condition than other animals and that freshwater habitats continue to decline in extent and quality, but also that some species of ducks have recovered to reach population management goals).

¹⁹⁰See, e.g., Maryland Department of Environment, *Maryland’s Environmental Indicators: Status Report* (1999), available at http://www.mde.state.md.us/enpa/2000_enpa/envi_indicators/index.html. Oregon includes daily reports on air quality on its web site. See Oregon Department of Environmental Quality, *Oregon Air Quality Index*, available at http://www.deq.state.or.us/eq/eqi_home.htm.

¹⁹¹See David M. Driesen, *Sustainable Development and Air Quality: The Need to Replace Basic Technologies With Cleaner Alternatives*, 32 *Envtl. L. Rep. (Envtl. L. Inst.)* 10277, 10278 n.6 (Mar. 2002) (reporting on national trends showing all areas now meet standards for lead, sulfur oxides, and nitrogen oxide).

¹⁹²David M. Driesen, *Sustainable Development and Air Quality: The Need to Replace Basic Technologies With Cleaner Alternatives*, 32 *Envtl. L. Rep. (Envtl. L. Inst.)* 10277, 10278 n.6 (Mar. 2002).

¹⁹³David M. Driesen, *Sustainable Development and Air Quality: The Need to Replace Basic Technologies With Cleaner Alternatives*, 32 *Envtl. L. Rep. (Envtl. L. Inst.)* 10277-78, 10281 (Mar. 2002).

¹⁹⁴See, e.g., John Pendergrass, *OTAG Opens New Vistas Among States*, *Envtl. F.*, Jan./Feb. 1997, at 5; John Pendergrass, *When Northeast Meets Midwest*, *Envtl. F.*, Sept./Oct. 1997, at 6 (describing efforts by the Ozone Transport Assessment Group (OTAG), a group of midwestern and eastern states including both the upwind and downwind states, to reach agreement on a regional approach).

¹⁹⁵Chris Kromm & Keith Ernst, *Gold and Green 2000, Indicator Reports, Air Quality 1* (2000).

hurt a state's economy.¹⁹⁶ Many of these indicators measure actual results rather than policies, in contrast to RRI's GPCI, which focuses on policies aimed at green planning.

Although the report makes no claim to evaluating states with respect to sustainable development, many of the indicators used in the study are relevant to sustainability. This study improves on the GPCI simply by considering economic indicators as well as environmental ones. Moreover, some of the indicators chosen in each category are particularly relevant to on-the-ground progress toward sustainable development. For example, the economic indicators include unemployment rate, workplace deaths, workers in high-injury and illness jobs, employment growth, annual pay, infant mortality rate, uninsured population, disability benefits, households in poverty, and high school education attainment, all of which could be used as indicators of sustainable development, not just of economic well being.¹⁹⁷ Similarly, the environmental indicators include the following that are well-suited to measuring sustainable development: air quality, carbon dioxide emissions from fossil fuel use, emissions of acid rain components per capita, emissions-to-job ratio, energy consumption, fertilizer use, pesticide use, solid waste recycled, sprawl rating, and toxic chemical discharges.¹⁹⁸

Minnesota and Vermont led the combined rankings, with Vermont ranking first under the green indicators and third under the gold indicators, and Minnesota second under the gold and sixth under the green indicators.¹⁹⁹ Although no other states ranked in the top 10 under both sets of indicators, five states, Colorado (gold 5, green 14), Maine (gold 13, green 6), Maryland (gold 6, green 15), Rhode Island (gold 15, green 4), and Wisconsin (gold 11, green 12), ranked in the top 15 in both.²⁰⁰

Gold and Green 2000 was an update of a study originally done in 1994, which had similar results. Vermont had the same rankings in 1994, and Minnesota's green ranking was one slot lower in 1994 than in 2000.²⁰¹ Hawaii fared much better in the economic indicators in 1994, ranking first, while also ranking fourth on the green scale. New Hampshire also had a more balanced pair of rankings in 1994, sixth on the economic scale and second on the environmental scale. The authors conclude

¹⁹⁶See Institute for Southern Studies, Gold and Green 2000 Report, available at <http://www.southernstudies.org/gg2000methodology.html>.

¹⁹⁷See Institute for Southern Studies, Gold and Green 2000 Report, available at <http://www.southernstudies.org/gg2000statesandindicators.html>. The other economic indicators are: African Americans and Latinos in top jobs, business start-ups, income gap between rich and poor, jobs with high risk of disease, statutory protections for workers, tax fairness, unemployment duration, women in top jobs, workers in toxic industries, and youth unemployment rate. *Id.*

¹⁹⁸Institute for Southern Studies, Gold and Green 2000 Report, available at <http://www.southernstudies.org/gg2000statesandindicators.html>. The other environmental indicators are: average individual's added cancer risk, carcinogens in water, change in energy consumption, gasoline use, hazardous waste generated, miles driven, portion of state budget for environment, solid waste generated, state spending on environment, and total water use per capita. *Id.*

¹⁹⁹See Institute for Southern Studies, Gold and Green 2000 Report, available at <http://www.southernstudies.org/goldgreen2000.html>. Minnesota also was first in a recent report of state health rankings, as it was in 1990. Health Foundation, State Health Rankings 2001 Edition (2002), available at <http://www.unitedhealthfoundation.com/rankings2001/index.html>.

²⁰⁰Institute for Southern Studies, Gold and Green 2000 Report, available at <http://www.southernstudies.org/goldgreen2000.html>. The study highlights these states as highest ranking under both indicators, but adding the two rankings together is another simple method for analyzing the combine rankings and that would result in New Hampshire, ranked first under the gold indicators and 16th under the green indicators, being the third highest ranked state. Under this method Hawaii, third under the green and 17th under the gold, would be seventh, ahead of Maryland and Wisconsin.

²⁰¹See Institute for Southern Studies, Gold and Green 2000 Report, available at <http://www.southernstudies.org/gg2000trends.html>.

that “states with the highest environmental standards have the best economic performance.”²⁰²

It would be unfair to criticize *Gold and Green 2000* for failures with respect to sustainable development indicators, but questions arise even in considering it on its own terms. First, there seems to be considerable overlap in some of the indicators in each category. The definition of the “workers in high-injury and illness jobs” indicator,²⁰³ for example, overlaps with the one for “jobs with high risk of disease,”²⁰⁴ and, to a lesser extent, with “workers in toxic industries.”²⁰⁵ There is similar overlap in the environmental indicators for “change in energy consumption”²⁰⁶ and “energy

²⁰²See Institute for Southern Studies, *Gold and Green 2000 Report*, available at <http://www.southernstudies.org/gg2000introduction.html>.

²⁰³Percent of 1998 workforce covered by unemployment insurance employed in major industries (two-digit Standard Industrial Classifications (SICs)) with illness and injury incidence rates at least twice the national average (6.7 cases per 100 full-time workers) for all private employers. The five industries are Primary Metal Industries (14.0 cases), Fabricated Metal Products (13.9 cases), Transportation Equipment (14.6 cases), Food and Kindred Products (13.6 cases), and Transportation by Air (14.5 cases). Alaska and Hawaii had workforces in Primary Metal Industries too small to register in BLS databases. There were no data available for New Jersey for 1998. See Institute for Southern Studies, *Gold and Green 2000 Report*, available at <http://www.southernstudies.org/gg2000sources.htm> (citing Bureau of Labor Statistics, U.S. Department of Labor, *State Occupational Injuries and Illnesses* (updated Feb. 22, 2000), available at <http://www.bls.gov/oshstate.htm> and Bureau of Labor Statistics, U.S. Department of Labor, *Covered Employment & Wages* (updated Jan. 24, 2000), available at <http://www.stats.bls.gov/cewhome.htm>).

²⁰⁴Percent of 1998 workforce covered by unemployment insurance in nine major industries (two-digit SICs), with incidence rates of disease that are at least double the national average of 44.2 cases per 10,000 full-time workers. The nine industries are Food and Kindred Products (258.5 cases), Apparel and Other Textile Products (129.6 cases), Furniture and Fixtures (109.5 cases), Leather and Leather Products (279.2 cases), Primary Metal Industries (106.2 cases), Fabricated Metal Products (102.3 cases), Electronic and Other Electric Equipment (112.4 cases), Transportation Equipment (343.3 cases), and Instruments and Related Products (97.2 cases). The categories for disease, as identified by the U.S. Occupational Health and Safety Administration, are Skin Diseases or Disorders, Dust Diseases of the Lungs, Respiratory Conditions due to Toxic Agents, Poisoning, Disorders due to Physical Agents, Disorders Associated with Repeated Trauma (which accounted for the largest number of workplace illness incidents), and All Other Occupational Illnesses. See Institute for Southern Studies, *Gold and Green 2000 Report*, available at <http://www.southernstudies.org/gg2000sources.htm> (citing Bureau of Labor Statistics, U.S. Department of Labor, *Nonfatal Occupational Illness Incidence Rates by Industry and Category of Illness, 1998* (updated Jan. 2000), available at <http://www.bls.gov/special.requests/ocw/oshwc/osh/os/ostb0766.pdf> and Bureau of Labor Statistics, U.S. Department of Labor, *Covered Employment & Wages* (updated Jan. 24, 2000), available at <http://www.stats.bls.gov/cewhome.htm>).

²⁰⁵Percent of 1998 workforce covered by unemployment insurance employed in the top seven major industries (two-digit SICs) accounting for the vast majority (87.21%) of the Total On - and Off-site Toxic Releases compiled in the Toxic Release Inventory (TRI). In 1998, the amount of toxic releases was 7,307,337,223 pounds for 270,248,003 Americans or 27.55 pounds per capita. The seven industries that account for 87.21% of these releases, with pounds of toxic release per capita, are: Metal Mining (13.23 lbs.); Electric, Gas, and Sanitary Services (4.21 lbs.); Chemicals and Allied Products (2.78 lbs.); Primary Metal Industries (2.14 lbs.); Paper and Allied Products (.87 lbs.); Rubber and Miscellaneous Plastic Products (.41 lbs.); and Transportation Equipment (.39 lbs.). Some states had workforces in one or more industries that were too small to register in Bureau of Labor Statistics databases. There were no data available for New Jersey for 1998. See Institute for Southern Studies, *Gold and Green 2000 Report*, available at <http://www.southernstudies.org/gg2000sources.htm> (citing Office of Pollution Prevention and Toxics, U.S. Environmental Protection Agency, *TRI Off-Site and On-Site Releases by Industry, 1998* (updated July 18, 2000), available at <http://www.epa.gov/tri/tri98/data/rllms98at2.pdf> and Bureau of Labor Statistics, U.S. Department of Labor, *Covered Employment & Wages* (updated Jan. 24, 2000), available at <http://www.stats.bls.gov/cewhome.htm>).

²⁰⁶Percent change in per-capita energy consumption from 1992 to 1997. See Institute for Southern Studies, *Gold and Green 2000 Report*, available at <http://www.southernstudies.org/gg2000sources.htm> (citing Energy Information Administration, U.S. Department of Energy, *State Energy Data Report, 1997* (1999), available at <http://www.eia.doe.gov/pub/state.data/pdf/SEDR97.pdf>).

consumption.”²⁰⁷ Similarly, the indicators for “gasoline use”²⁰⁸ and “miles driven”²⁰⁹ overlap. Other indicators are simply poor choices because they do not, in fact, provide clear information about a state’s economic or environmental record. The percentage of a state’s budget spent on natural resources and “state spending on environment,”²¹⁰ for example, may be high in states whose economies rely heavily on extractive or other unsustainable natural resource-based industries because those states spend large amounts of money to facilitate extraction of natural resources. In fact, the four states rated highest under the per capita spending indicator, Alaska, Wyoming, Montana, and North Dakota, have mining and/or oil producing industries, which damage the environment. Moreover, the eight highest ranked states all have small populations,²¹¹ which may indicate only that a certain level of spending is necessary regardless of the size of the state and that the determining factor in the indicator is the population denominator. Some traditional indicators are also missing from this report, notably gross state product. As a traditional measure of a state’s total economic activity gross state product seemingly would have a place in a set of 20 indicators of economic health, perhaps combined with other information.²¹² Finally, the entire methodology of this report is based on relative rankings of the states, which do not measure whether the states are meeting objective economic or environmental goals.

State Indicator Initiatives

Measurement and evaluation of states’ on-the-ground progress towards sustainable development is only in its infancy and clearly needs substantially more work on the conceptual level, followed by collection and analysis of appropriate data. A

²⁰⁷Millions of British Thermal Units (BTUs) consumed per capita from all energy sources, 1997. See Institute for Southern Studies, Gold and Green 2000 Report, available at <http://www.southernstudies.org/gg2000sources.htm> (citing Energy Information Administration, U.S. Department of Energy, State Energy Data Report, 1997 (1999), available at <http://www.eia.doe.gov/pub/state.data/pdf/SEDR97.pdf>).

²⁰⁸Total miles traveled by car, truck, or bus per gallon of gas consumed in 1998. See Institute for Southern Studies, Gold and Green 2000 Report, available at <http://www.southernstudies.org/gg2000sources.htm> (citing Office of Highway Policy Information, Federal Highway Administration, Highway Statistics 1998 (updated June 13, 2000), available at <http://www.fhwa.dot.gov/policy/ohpi/hss/index.htm>).

²⁰⁹Total annual Vehicle-Miles of Travel, in millions, driven in 1998 by car, truck, or bus per square mile of land in the state. See Institute for Southern Studies, Gold and Green 2000 Report, available at <http://www.southernstudies.org/gg2000sources.htm> (citing Office of Highway Policy Information, Federal Highway Administration, Highway Statistics 1998 (updated June 13, 2000), available at <http://www.fhwa.dot.gov/policy/ohpi/hss/index.htm>).

²¹⁰Percent of 1998 state budget spent on natural resources. See Institute for Southern Studies, Gold and Green 2000 Report, available at <http://www.southernstudies.org/gg2000sources.htm> (citing Census, Department of Commerce, Spreadsheet of 1998 State Budgets (updated Apr. 26, 2000), available at <http://www.census.gov/govs/state/98states.xls>). Total per capita spending, in dollars, in fiscal year 1998 on state programs addressing natural resources, defined as “conservation, promotion, and development of natural resources, such as soil conservation, water, forests, minerals, and wildlife. Includes irrigation, drainage, flood control, forestry and fire protection, soil reclamation, soil and water conservation, fish and game programs, and agricultural fairs.” *Id.* (emphasis added) (citing U.S. Census, Department of Commerce, Spreadsheet of 1998 State Budgets).

²¹¹The states are, in order: Alaska, Wyoming, Montana, North Dakota, Vermont, South Dakota, Idaho, and Maine. See Institute for Southern Studies, Gold and Green 2000 Report, available at <http://www.southernstudies.org/gg2000indicatorreports/gg2000spendonenviro.html>.

²¹²See, e.g., Minnesota Planning, Environmental Quality Board, Smart Signals: An Assessment of Progress Indicators (2000) (Minnesota Progress Indicator includes gross state product per worker, gross state product per unit of energy consumption, and gross state product per amount of solid waste). Also, the Rio Declaration recommends that nations supplement this traditional indicator with additional indicators but does not suggest ignoring gross domestic product. See Rio Declaration on Environment and Development, U.N. Conference on Environment and Development, U.N. Doc. A/CONF.151/5Rev.1, 31 I.L.M. 874 (1992).

few states have been actively developing indicators of sustainable development to measure and evaluate their own programs and progress. New Jersey Future's Sustainable State Project produced *Living with the Future in Mind: Goals and Indicators for New Jersey's Quality of Life* in 1999, which contains a comprehensive and authoritative set of sustainable development indicators that has been adopted by the state.²¹³

Minnesota's *Smart Signals* report demonstrates the value of a comprehensive report on sustainable development in a state. In it, the state reports trends in a wide variety of indicators of sustainable development covering economic, environmental, and community conditions.²¹⁴ This report also consolidates multiple measures of these three types of conditions into composite indicators which demonstrate that from 1990 to 1997 the environmental factors improved while the economic and community factors declined.²¹⁵ Breaking out components of the environmental factors revealed variations among categories of indicators. For example, renewable resources declined until the mid-1990s, and then recovered slightly, though not to the 1990 levels.²¹⁶ The health of habitat indicator showed improvements for the first two years, but then declined substantially.²¹⁷ On the other hand, the measure of overall toxicity of the Minnesota environment improved from 1990 to 1997²¹⁸ and the waste indicator also improved substantially.²¹⁹ Finally, a composite indicator of changes in air, water, and land quality was slightly higher than the 1990 baseline from 1991 to 1996, but then fell slightly below the baseline for 1997.²²⁰ The overall progress indicator was three percent higher in 1997 than it was in 1990, demonstrating that Minnesota had made some actual progress toward sustainable development.²²¹

Minnesota Milestones²²² is part of that state's effort to establish sustainable development indicators. Minnesota Planning, the state planning office, also developed a new set of indicators of economic health, called the Minnesota Progress

²¹³See New Jersey Future, *Living with the Future in Mind: Goals and Indicators for New Jersey's Quality of Life*, available at <http://www.njfuture.org/HTMLSrc/sustainablestate.html>.

²¹⁴Minnesota Planning, Environmental Quality Board, *Smart Signals: An Assessment of Progress Indicators 18-20* (2000).

²¹⁵Minnesota Planning, Environmental Quality Board, *Smart Signals: An Assessment of Progress Indicators 19* (2000).

²¹⁶Minnesota Planning, Environmental Quality Board, *Smart Signals: An Assessment of Progress Indicators 27* (2000) (the renewable resource indicator measured trends in timber harvest, renewable energy used, annual water use, and change in depth of two aquifers compared to historical levels).

²¹⁷Minnesota Planning, Environmental Quality Board, *Smart Signals: An Assessment of Progress Indicators 30* (2000) (the habitat indicator combined population trends for indicator species for Minnesota's five primary habitat types, loons for lakes, sharp-tailed grouse for brush land, black-throated green warbler for forest, prairie chicken for prairie, and pheasant for farmland).

²¹⁸Minnesota Planning, Environmental Quality Board, *Smart Signals: An Assessment of Progress Indicators 28* (2000) (the toxicity of the environment indicator combined measures of emissions of criteria air pollutants, percentage of monitored wells with atrazine levels below or equal to 1 part per billion, and toxic release inventory releases).

²¹⁹Minnesota Planning, Environmental Quality Board, *Smart Signals: An Assessment of Progress Indicators 28* (2000) (the indicator on elimination of waste combined tons of solid waste generated and percentage of solid waste recycled and showed a 49% improvement in 1997 compared to 1990).

²²⁰Minnesota Planning, Environmental Quality Board, *Smart Signals: An Assessment of Progress Indicators 30* (2000) (this indicator combined criteria air pollutants, emissions of carbon dioxide, number of leaking underground storage tanks, lake transparency compared to historical levels, quantity of fertilizer used, and percentage of monitored wells with nitrate levels equal to or below three parts per billion).

²²¹Minnesota Planning, Environmental Quality Board, *Smart Signals: An Assessment of Progress Indicators 19* (2000).

²²²See Resource Renewal Institute, *The State of the States: Assessing the Capacity of States to Achieve Sustainable Development Through Green Planning* 41 (2001); Minnesota Planning, *From*

Indicator (MPI), to replace traditional economic measures, such as gross state product, unemployment rate, and median household income.²²³ Itself an aggregation of five goals and 42 indicators, the MPI was proposed as a “beginning step in integrating environmental, economic and community information in a way that can help citizens and policymakers view the state’s progress from a more realistic and comprehensive perspective.”²²⁴ The goals are: “Minnesota will have strong, sustainable economic development;” “All Minnesotans will have the means to maintain a reasonable standard of living;” “Rural areas, small cities and urban neighborhoods throughout the state will be economically viable places for people to live and work;” “Minnesotans will conserve natural resources to give future generations a healthy environment and a strong economy;” and “Minnesotans will restore and maintain healthy ecosystems in support of a healthy economy.”²²⁵ The indicators are grouped under the three broad areas of environment, community and economy, but some cover multiple areas. Among the economic ones are the traditional gross state product, but modified by comparing it to the number of workers, the amount of energy consumption, and the amount of solid waste.²²⁶

Minnesota Planning already has used the MPI to take a hard look at its performance. In its first assessment, the economic component of the MPI provided a dramatically different view of Minnesota’s economic performance from 1990 to 1997, declining slightly, than did the gross state product alone, which rose by 27% during the period. Overall, the MPI showed only a 3% increase, raising the question “whether the gross state product paints too rosy a picture of the state’s economy.”²²⁷ In 2000, Minnesota Planning conducted a second assessment of the state’s performance according to the MPI, finding that the MPI peaked in the mid-1980s, followed by a decline until by 1995, the levels were similar to the indicator’s values for the early 1960s.²²⁸

Maryland is another example of a state that developed its own set of sustainable development indicators. The Maryland Economic Growth, Resource Protection, and Planning Commission was created in 1992 to report annually on state and local progress toward sustainability in the named areas.²²⁹ The Commission has developed benchmarks and indicators of sustainable development in land use, public/private transportation, land preservation, public infrastructure, and economic development.

Oregon recently began reevaluating the benchmarks it has been using to measure progress toward meeting the goals of its state strategic plan to determine if they can measure sustainability. The Oregon Progress Board was established in 1989 to monitor and report on progress in achieving the state’s strategic planning goals.

Policy to Reality: Model Ordinances for Sustainable Development (2000); discussed in this section at notes 124-35 and accompanying text.

²²³Minnesota Planning, Environmental Quality Board, Smart Signals: An Assessment of Progress Indicators 9 (2000).

²²⁴Minnesota Planning, Environmental Quality Board, Smart Signals: An Assessment of Progress Indicators 9 (2000). The Minnesota Progress Indicator was based on the Genuine Progress Indicator developed by Redefining Progress, an NGO, in 1995, as modified in keeping with Minnesota Milestones and with local data when available. *Id.* at 1, 9-10. See Cobb et al., *The Genuine Progress Indicator: Summary of Data and Methodology* (1995).

²²⁵Minnesota Planning, Environmental Quality Board, Smart Signals: An Assessment of Progress Indicators 11 (2000).

²²⁶Minnesota Planning, Environmental Quality Board, Smart Signals: An Assessment of Progress Indicators 11 (2000).

²²⁷Minnesota Planning, Environmental Quality Board, Smart Signals: An Assessment of Progress Indicators 12 (2000).

²²⁸Minnesota Planning, Environmental Quality Board, Smart Signals: An Assessment of Progress Indicators 11 (2000).

²²⁹Maryland Economic Growth, Resource Protection, and Planning Act of 1992, Md. General Assembly, Chapter 432, Acts of 1992.

The strategic plan, called *Oregon Shines*, has an overall goal of “a prosperous Oregon that excels in all walks of life.”²³⁰ In his executive order on sustainability, Gov. Kitzhaber asked the Progress Board to assess whether the existing benchmarks could measure sustainability.²³¹ The Board found that many of the elements outlined in widely accepted sustainability guidelines are contained in *Oregon Shines II*, the benchmarks, and the *State of the Environment Report (SOER) 2000*. However, several issues remain, including the need for: (1) the involvement of a broad cross-section of residents in developing Oregon’s sustainability vision; (2) measures of intergenerational equity; (3) an accounting system that includes social and environmental costs/benefits; and (4) measures that demonstrate the interrelationships between the three spheres of economic performance, community and environment.²³²

On a less comprehensive scale, Massachusetts and New Jersey have tracked and reported progress towards meeting the goals of their pollution prevention programs.²³³ By 1998, one year later than its target, Massachusetts met its goal of halving its generation of toxic waste.²³⁴ New Jersey achieved its similar goal by 1994.²³⁵ Many states have reduced their releases of toxic substances as measured by the federal TRI,²³⁶ but Massachusetts and New Jersey have documented reductions that were greater and faster than the national results and can point to their state pollution prevention laws and programs as contributing to their results.

States have contributed substantially to the development of measures and indicators of sustainable development. As a group states such as Maryland, Minnesota, New Jersey, and Oregon have provided intellectual leadership and have demonstrated the utility of sustainability indicators. Minnesota, in particular, has demonstrated its commitment to the MPI, using it and publicizing its use even though it shows the state’s progress to be substantially less than more traditional economic indicators had suggested.

Recommendations

Because the states have not as a group focused on Agenda 21 or, except for a minority of them, even on the procedural and substantive recommendations

²³⁰Oregon Progress Board, *Achieving the Oregon Shines Vision: The 2001 Benchmark Performance Report 1* (2001), available at <http://www.econ.state.or.us/opb/2001report/2001new.html>. The overall strategic vision has three major goals: (1) quality jobs for all Oregonians; (2) safe, caring and engaged communities; and (3) healthy sustainable surroundings. *Id.* at 2. From the start benchmarks to measure progress were considered an integral part of the strategic plan. For 2001, the Board reported on 90 benchmarks, including 16 environmental, 17 economy, 12 education, 9 civic engagement, 8 social support, 7 public safety, and 7 community development benchmarks. The current Benchmark Progress Report gives the state a C+ for 2001, improving from a C in 1998.

²³¹Oregon Progress Board, *Achieving the Oregon Shines Vision: The 2001 Benchmark Performance Report 4* (2001), available at <http://www.econ.state.or.us/opb/2001report/2001new.html>.

²³²Oregon Progress Board, *Achieving the Oregon Shines Vision: The 2001 Benchmark Performance Report 4* (2001), available at <http://www.econ.state.or.us/opb/2001report/2001new.html>.

²³³See N.J.S.A. §§ 52:18A-196-207 (New Jersey State Planning Act); Mass. Gen. Laws ch. 21I, § 11 (Toxics Use Reduction Act).

²³⁴Massachusetts Department of Environmental Protection, 1999 Toxics Use Reduction Information Release: Spring 2001, 10 Years of Toxics Use Reduction 1, 6 (2001) (the percentage reduction accounts for an increase in production of more than half, but even the unadjusted figures showed a sharp reduction as firms that were subject to the toxics use reduction program from the start reported a 34% reduction in “byproduct generation” or toxic waste).

²³⁵New Jersey Department of Environmental Protection, *New Jersey’s Environment 1998*, at 23 (1999) (New Jersey achieved a 50% reduction in nonproduct output by 1994, while the same measure for the U.S. as a whole showed a slight increase in the same period.). See also New Jersey Department of Environmental Protection, *Environmental Indicators Technical Report: Pollution Prevention, Source Reduction, and Toxics Use 7* (1998).

²³⁶See U.S. EPA, 1999 Toxics Release Inventory—State Fact Sheets 27 (Table 23) (2001).

embodied therein, the principal recommendation for states over the next five to ten years is straightforward. States need to make sustainable development an explicit goal. The label is not important, but the substantive goals of sustainable development, particularly leaving a legacy that enables future generations to meet their needs, should be expressly brought into the mainstream of policy making in all the states.

One of the major strengths of the U.S. system of government is the ability of states to act independently to make and implement policies designed to meet the specific needs of the particular jurisdiction, while having a federal government that ensures that all citizens are treated equally and fairly regardless of where they live or travel. The states have long been highly creative and productive laboratories of environmental policy, and this has continued in the field of sustainable development. There is a continuing need for policy development and experimentation in sustainable development, but some states already have proven the effectiveness of some policies. For those policies, it is time to move to the next stage, through widespread adoption and implementation by other states. Because sustainable development depends on integrating economic development with social development, sustainable use of resources, and environmental protection, all of which are primarily the responsibility of state governments, states should be the engines for sustainable development. More states need to follow the examples set by states such as Minnesota, New Jersey, and Oregon, among others, in adopting and implementing policies promoting sustainable development and in holding themselves accountable for achieving sustainability.

Integrated decision-making

Regardless of whether states follow the specific framework of Agenda 21, which seems unlikely, they need to integrate decision-making to account for economic, social, and environmental values as a matter of routine. And they need to report on their progress to their citizens and listen to them in setting priorities, making policies and making decisions on specific projects. These recommendations are more a matter of good governance than being specific to sustainable development.

EIA is one of the few tools recognized as effective in promoting integrated decision-making and in enabling decision-makers to make more informed choices. States should take advantage of this tool. The Rio Declaration calls for national governments to use EIA whenever a proposed activity that is subject to a decision by the national government is likely to have a significant adverse impact on the environment.²³⁷ The federalist structure of government in the United States, in which states have much of the authority and responsibility for development, means that in order to fully and appropriately implement this principle, the states must commit to using EIA. The majority of states that have not have adopted EIA²³⁸ should do so as a principal method of integrating their decisions on development with environmental and social values. Even the states that have adopted EIA should reexamine their laws to assure that they apply broadly to any activity that may have a significant impact on the environment and that is subject to a state agency decision.

A few states have taken the lead in developing statewide strategies, sometimes

²³⁷See Rio Declaration, U.N. Doc. A/CONF.151/5Rev.1, 31 I.L.M. 874, princ. 17 (“Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.”).

²³⁸The states with SEPA legislation include California, Connecticut, Hawaii, Indiana, Maryland, Massachusetts, Minnesota, Montana, New York, North Carolina, South Dakota, Virginia, Washington, and Wisconsin. The states adopting SEPA by executive order include Michigan, New Jersey, Texas, and Utah.

specifically aimed at promoting sustainable development²³⁹ and sometimes focused on other goals.²⁴⁰ Other states should consider adopting strategic plans for promoting long-term progress in all areas that contribute to quality of life for their citizens. Whether denominated as sustainable development or not, such strategic plans can contribute to achieving many of the goals of Agenda 21. A key element of such strategic plans should be measuring the progress the state makes toward achieving the goals of the plan. In this regard, Minnesota and Oregon provide excellent examples for other states to follow.

States that already have developed indicators of sustainable development tailored for their circumstances should continue to refine those indicators. More importantly, they should use them in evaluating their progress and to establish priorities for action, much as Minnesota has done with the MPI. Maryland, Minnesota, New Jersey, and Oregon also should proselytize among the large number of states who lag in their development and use of such indicators.

A number of specific laws and programs have been demonstrated to be successful in one or more states and deserve to be more widely adopted by the rest of the states. Pollution prevention planning is one of these innovative ideas. Laws such as Massachusetts' Toxic Use Reduction Act, or similar laws enacted by other states, have proven successful in reducing the use, and risk associated with that use, of toxic materials. Similarly, California's Proposition 65 has led to greater consumer awareness of toxic materials, but perhaps more importantly, to changes in product formulations and process changes to avoid the need to label products as containing toxic chemicals. Land use planning laws, like New Jersey's and Oregon's, have shown that it is possible to consider many of the elements of sustainable development when making land use decisions. And Maryland and other states have shown the effectiveness of connecting state financial support of development to land use decisions that promote sustainability. These merely illustrate the types of proven innovations made by states that other states should be considering in order to promote sustainable development within their jurisdictions.

Many states also could make better use of the opportunities available to them under federal environmental statutes and the NEPPS to reorient their environmental programs towards more cross-cutting, integrated sustainable development programs. This cannot be done by the states alone; it requires greater and more sustained cooperation from the federal government to implement NEPPS and similar state-federal cooperative programs.²⁴¹ The next generation of state environmental programs should take full advantage of the flexibility available under the federal environmental laws to focus on improving the overall welfare of the residents of each state. One step in that direction would be to integrate natural resource, environmental, public health, and development programs to pursue compatible goals. As they explore the limits of the flexibility under existing federal law and

²³⁹See Oregon Exec. Order No. EO-00-07 (May 17, 2000), Development of a State Strategy Promoting State Sustainability in Internal State Government Operations, 39 Or. Admin. R. Bull. 4 (July 1, 2000), available at <http://www.governor.state.or.us/governor/legal/execorders/eo00-07.pdf> (discussing Oregon executive order on sustainability); Minnesota Planning, From Policy to Reality: Model Ordinances for Sustainable Development (2000) (discussing Minnesota Milestones and related efforts); Minnesota Planning, Environmental Quality Board, Smart Signals: An Assessment of Progress Indicators 9 (2000); see this section notes 123, 133, 222, and accompanying text.

²⁴⁰See Oregon Progress Board, Achieving the Oregon Shines Vision: The 2001 Benchmark Performance Report 1 (2001), available at <http://www.econ.state.or.us/opb/2001report/2001new.html> (discussing the Oregon's strategic plan, Oregon Shines); discussed in this section at note 229 and accompanying text.

²⁴¹This discussion has reviewed federal environmental programs in terms of the U.S. EPA, but similar cooperation is important in programs administered by the U.S. Departments of the Interior, Agriculture, Commerce, Labor, and Energy, as well as by independent agencies including the Nuclear Regulatory Commission and the Federal Energy Regulatory Commission.

their own state laws to achieve integrated programs aimed at achieving sustainable development, states should analyze the need for changes to federal and state law that would further facilitate an integrated approach to sustainability.

Intergenerational equity

States need to take into consideration the needs of future generations in making decisions that may affect the options available to those future generations. While constitutional provisions such as Montana's and Hawaii's that acknowledge the duty owed by the present to the future are useful reminders, it is more important to incorporate consideration of future needs into current decisions. EIA is one method that can incorporate consideration of future needs into current decisions. Many economists argue that cost-benefit analysis, with appropriate discounting of future costs and benefits, also accounts for future needs.²⁴² Many others, including some economists, consider cost-benefit analysis inadequate and inappropriate for making social policy decisions.²⁴³ In contrast to this reductionist approach, EIA integrates information and analytical methods from multiple disciplines in order to provide decision-makers with more complete information about the range of effects of various options. States can do much better in bringing intergenerational equity into their development and policy decisions by making greater and better use of EIA.

Decentralized decision-making

The states need to work with U.S. EPA, the Department of the Interior's Office of Surface Mining, and other federal agencies that oversee state implementation of federal laws to improve the methods for monitoring, measuring, reporting, and evaluating states' discharge of their responsibilities under federal laws. NEPPS should be used by states and EPA, and the concept extended to other agencies with similar state-federal systems of regulation, as a method of accomplishing much of this. NEPPS can be the mechanism for agreements between individual states and the federal government concerning joint priorities, work plans, and funding. It also can provide the framework for the states as a group to work with the federal government to continue to improve the federal-state system of environmental governance to focus on achieving goals, and in monitoring and reporting progress towards achieving those goals.

Congress also needs to revise the basic environmental statutes to provide federal agencies with better incentives and sanctions to use in motivating states to improve their implementation of federal laws. For example, the authority to withhold funding for transportation projects if a state does not demonstrate that it is making progress toward attainment of NAAQS has motivated some states to implement more effective air programs. Congress also should clarify that its oversight of federal agencies' implementation of federal environmental laws includes meaningful review of states that have been authorized to implement those laws. Congress must critically examine the performance of states in implementing federal laws.

The failure of many eastern states to meet the NAAQS for ozone highlights the need for more effective action by the federal government working with states to solve the difficult remaining pollution problems. Because ozone crosses state boundaries, it is a matter for which the federal government has a large responsibility, but the federal role does not absolve states from dealing with their large local contributions to the problem. This is a policy area that has been marked by too much litigation and not enough action by the federal government, the upwind states, or the

²⁴²See, e.g., Frank S. Arnold, Can't Do Cost-Benefit Without It, *Envtl. F.*, Nov./Dec. 2001, at 16 (noting that some economists argue for a declining discount rate as the time under consideration grows longer or that the appropriate social discount rate should be low).

²⁴³See, e.g., Lisa Heinzerling & Fred Ackerman, *Pricing The Priceless: Cost-Benefit Analysis of Environmental Protection* (2002).

even many of the downwind jurisdictions.²⁴⁴ Both cooperation and more innovative and possibly more stringent action is needed by both sets of states, and there is a continuing need for federal government mandates.

Finally, the existence in approximately half of the states of laws prohibiting environmental standards that are more stringent than federal ones indicates that many states are not willing to take action on their own. In light of *Gold and Green 2000*,²⁴⁵ states that have such provisions should reconsider whether they truly promote the interests of their citizens.

Conclusion

The goals of sustainable development—simultaneously achieving economic, social, environmental, and security goals while maintaining the ability of future generations to attain their goals in the same areas—are the goals of state governments. In fact, except for the national security element of the security goal, states are primarily responsible for achieving these goals in the United States. States have therefore taken leadership roles in developing policies designed to achieve these goals and in taking actions and making actual progress toward them. This illustrates the strength of federalism; it is designed for decentralized decision-making, for involving citizens in decisions that most affect them, and it promotes policies and actions tailored to local conditions. Widespread achievement of the substantive goals of sustainable development may, however, be more difficult if the national government does not also take a role. Even successful strategies, policies, and laws can take years or decades to be adopted by the majority of states. At a minimum, the federal government must ensure that all states meet minimum standards and that the citizens of no state are left behind.

States are the level of government that has direct responsibility for the key elements of sustainability. States also are close enough to the issues and the people affected by them to achieve results that meet current demands while considering the needs of future generations. Regardless of the role taken by the federal government in the next decade, the states will therefore continue to be critically important to achievement of sustainable development in the United States.

§ 7:15 Conclusion

State environmental laws and regulations are “functional programs” that must be taken into account as well as federal enforcement and implementation strategies. In addition, state laws reflect state priorities, concerns, biases, and interests. The link to political concerns may be very strong. For example, historic mistrust of state governmental power may be reflected in conciliation provisions, or in requirements that the state agency seek enforcement only in the courts and not through the imposition of administrative sanctions. Concern with representing a variety of interests may result in agency review boards being made up of traditional, or particularly powerful, state constituencies (industry, agriculture, others). Experience with particular historical environmental problems may lead to solutions to new

²⁴⁴Downwind states are indeed taking action. See, e.g., John Pendergrass, What Whitman May See in N.J. Trading Program, *Envtl. F.*, Mar./Apr. 2001, at 10 (describing New Jersey’s trading program for nitrogen oxides and volatile organic compounds). But even these actions are unlikely to be sufficient. See, e.g., John Pendergrass, Pennsylvania, New York Act Uniquely, *Envtl. F.*, June/July 2000, at 8 (describing a New York statute prohibiting trading sulfur dioxide emissions credits to upwind states and noting that it is unlikely to have the desired effect if the trading market operates as intended); John Pendergrass, Birth To Twin Rules in Massachusetts, *Envtl. F.*, June/July 2001, at 10 (describing new rules to regulate grandfathered and new power plants in Massachusetts, noting that the rules do not deal with issues related to trading credits out of state).

²⁴⁵Chris Kromm & Keith Ernst, *Gold and Green 2000*, Indicator Reports, Air Quality (2000).

environmental problems being modeled upon prior approaches to the longstanding problems.¹

In every state, the interaction of substantive law, procedures, and institutions is complex. To identify the key differences among states, as well as to understand these interactions within a given state, requires a willingness by the practitioner to set aside the federal model as the initial basis of analysis. Rather, one should first come to understand how a state views its own program, and the state goals, antecedents, and institutional influences that lie behind the functioning of that program. Then the relationship of the federal component, framework, or program becomes relevant. Approaching an issue from the other direction—solely federal—can lead one to miss important distinctions in state law by fitting state provisions into the wrong federal “box,” or by missing state provisions that have no direct federal counterpart. State environmental law covers a broader range than does federal law, and it functions quite differently—even under many of the familiar federal statutory programs.

[Section 7:15]

¹For example, in Pennsylvania, much surface mining and hazardous waste environmental law derives from its Clean Streams Law. Pa. Stat. Ann. tit. 35, §§ 691 et seq.

Chapter 8

Environmental Self-Assessment*

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I. INTRODUCTION

§ 8:1 In general

Environmental protection law places significant responsibilities and demands on business. Compliance with environmental laws and regulations is central to the continuance of business. An environmental audit/assessment or “audit” program can ensure responsible monitoring, early detection of problems, remedial actions, cost estimates, and prompt reporting of any adverse environmental conditions, either through the company structure or the appropriate government agencies, or both.

Environmental audit/assessment provides other benefits in addition to ensuring compliance. These benefits include financial planning, assistance with Securities and Exchange Commission (SEC) reporting requirements for publicly traded companies, personnel development, public and employee relations, expansion planning, legislative and regulatory strategy development, and assistance in evaluating acquisitions and divestitures. The environmental audit/assessment program also constitutes an integral part of a general management system to assist a company to organize and manage effective environmental programs. Environmental audits/assessments can also be valuable in ensuring compliance with company policies and programs, which can save costs in the long run.

This section provides general information on the significant elements that should be included in an environmental audit/assessment program and discusses the benefits that may be derived from such a program. It also provides guidelines for investigating environmental issues in acquisitions and divestitures that can be used whether or not the company (or asset) to be acquired has its own environmental audit/assessment program. Further, it discusses the use of an auditing program in general as applied to environmental management as well as the revised Board of Environmental, Health and Safety Auditing Standards (BEAC). Finally, it reviews U.S. Environmental Protection Agency (EPA) policy on environmental auditing programs, as reflected in EPA's December 1995 final policy statement on environmental auditing and self-disclosure as amended in 2000, as well as the 2008 Interim Approach to Applying the Audit Policy to New Owners, and environmental review in the international context.¹

II. THE ENVIRONMENTAL AUDIT/ASSESSMENT PROGRAM

§ 8:2 In general

This chapter discusses the benefits and risks of environmental auditing/assessments, the significant elements that should be included in an environmental auditing/assessment program, and general information about areas of controversy in state, national, and international auditing/assessment policy.

I prefer the term “assessment” to “audit” because, unlike a financial audit, in a self-monitoring environmental assessment program to ensure compliance or a more formal environmental review that follows auditing standards, there are fewer specific standards against which to audit. If there are detailed protocols and “independence” of the reviewers, I believe that the term “audit” is more appropriate.¹ The process is more of an “assessment,” on the other hand, if it is less formal and relies more on individual judgments rather than detailed protocols. Nevertheless, it should also be done in an independent manner. I use the term audit/assessment because in most instances the aspects of the program are the same.

While the nature of the business areas within a company may be diverse and no standard audit/assessment program will apply to all divisions, there are some principles common to establishment of any environmental audit/assessment program. The elements should be consistent through all divisions, even if the

[Section 8:1]

¹60 Fed. Reg. 66706 (Dec. 2, 1995). 65 Fed. Reg. 19618 (April 11, 2000). Additional revisions applied to new owners have also been promulgated. 73 Fed. Reg. 44991 (Aug. 1, 2008).

[Section 8:2]

¹See Board of Env'tl., Health & Safety Auditor Certifications, Performance & Program Standards for the Prof. Prac. of Env'tl., Health & Safety Auditing, p.13 (2008) [hereinafter BEAC Standards] (stating that “EH&S auditors shall be objective and independent of the activities they audit, free of conflict of interest in any specific situation, and not influenced by internal or external pressure to modify their findings contrary to their professional judgment”); see also Ridgway M. Hall, Jr., Quality Assurance in EHS Audits and Audit Programs: The New BEAC Standards, 39 ELR 10595 (July, 2009).

procedures differ. The format for developing an audit/assessment program document should be consistent, and the definitions and terms used in audits/assessments and compliance activities should be used uniformly.

An audit/assessment program should provide for an ongoing process. Events occur that require updates, revisions, or modifications to procedures, such as personnel changes or new responsibilities, new regulations, or acquisition of new facilities. An up-to-date program maintains its effectiveness, and also creates a real-time awareness of the environmental status of all operations and reduces the potential for undesirable surprises.

§ 8:3 Elements of an audit/assessment program—Description of the company

The audit/assessment program document should begin with a description of the company's major characteristics. It should be detailed enough to provide a clear picture of the overall organization, products, and business areas. For a company with only one or two facilities, this description could be limited to a facility description; however, the intent of this section should be to provide an overview of the whole company from a headquarters perspective, by division if appropriate, and not merely a facility-by-facility accounting.

§ 8:4 Elements of an audit/assessment program—Environmental policy

The key to a successful audit/assessment program is top-level management support, which is reflected in a formal company policy,¹ and an organization with clear and effective responsibilities and reporting relationships.² The environmental policy statement should clearly affirm company support of environmentally sound business practices and operations.³ In turn, each division should establish a policy consistent with the company's policy and maintain an organization to handle environmental matters. The diversity and size of the business areas will dictate the structure of the organization, which should be uniquely tailored to the characteristics of each division.

§ 8:5 Elements of an audit/assessment program—Environmental categorization of facilities

The company and its divisions should have a procedure for categorizing facilities with respect to potential environmental impact and risk. Key factors and evaluation criteria for categorizing facilities can include the following: (1) geography (domestic and foreign locations); (2) the function of the facility, such as processing, storage, and waste disposal; (3) the operating status of past, present, and future sites; (4) ownership status (e.g., whether the facility is owned or operated); (5) the history of violations and pollution incidents; (6) the type and quantity of material processed, stored, and disposed; (7) past operations or practices; (8) proximity to environmentally sensitive areas; (9) sensitive local or community factors; and (10) the presence or absence of environmental staff at the site. A ranking system can then be developed for classification of facilities from those with the highest potential for

[Section 8:4]

¹See Frank B. Friedman, *Organizing and Managing Effective Corporate Environmental Programs*, *Envtl. F.*, May 1984, at 40, 58.

²Because the lines between environment, safety (including process safety/risk management), and health have become increasingly vague, the same manager should oversee these functions.

³See Frank B. Friedman, *60s Activism and 80s Realities—We've Come A Long Way*, *Envtl. F.*, July 1983, at 8.

problems to those with none. The schedule for visits (audits/assessments) and overall attention can then be established.¹

§ 8:6 Elements of an audit/assessment program—Internal procedures for reporting environmental matters¹

The company should establish internal policies and procedures for reporting significant environmental issues, regulatory activities, and legal actions. In turn, each division should establish internal policies and procedures to facilitate compliance with company requirements and ensure timely division management notification of significant matters. The procedures should provide for multipath reporting to the environmental and legal departments and to the finance department to account for capital, operating, and maintenance expenditures for environmental projects.

Such a reporting procedure ensures prompt and complete reporting for appropriate review at all levels of the company and provides that all legal and environmental departments are using the same data base. It can also provide management with the opportunity to seek legal review at the earliest possible opportunity, which in turn can assist in the attorney's effective use of attorney-client and work product privileges in investigating an issue where possible noncompliance exists.²

Most companies will manage by exception, and will require prompt reports of a variance in environmental standards or requirements affecting facilities or operations, adverse publicity or adverse community relations, notices of violation or advisory actions by regulatory agencies regarding environmental control matters or permit compliance, and similar matters.³ If a company is publicly held, there must be company-wide internal reporting procedures to ensure collection and review of environmental proceedings for timely and accurate reporting to the SEC.

§ 8:7 Elements of an audit/assessment program—Internal procedures for required recordkeeping

Permits, monitoring reports, corporate policy statements, and other records are key documents in an effective environmental management program. Orderly maintenance and ready access to these documents will facilitate the day-to-day management of the environmental program, and will ensure that both the needs of the company and the requirements under various statutes and regulations are met. Therefore, the company and all of its divisions should develop internal procedures for the establishment and maintenance of an effective and efficient recordkeeping system. Each division should design a system tailored to its individual needs and operations.

Environmental record files should be kept in a central file at each facility and

[Section 8:5]

¹See § 8:17.

[Section 8:6]

¹See Frank B. Friedman, *Organizing and Managing Effective Corporate Environmental Programs*, *Envtl. F.*, May 1984, at 40, 58.

²A company should make available to all levels of company management appropriate guidelines on how to request legal advice and how to handle information to ensure the creation of and maximum protection by a privilege.

³Other significant matters include: legal actions, either by or against the company; identified risks to the environment; interference with continued production or marketing of any product because of environmental considerations; substantial incremental expenditures or loss of business related to events or situations caused by environmental considerations; problems where a technical solution exists or that would impose a significant burden threatening the financial viability of the facility or operation; and problems for which the staff cannot identify either remedial technology or the cost of correction.

contain all documents essential to managing the facility's environmental program, or equivalent documentation should be immediately available electronically. These documents should include copies of laws, regulations, permits, corporate policy statements, and other guidelines applicable to the business line of the facility or division; copies of important correspondence related to the environmental management program; and records of monitoring and inspection activities. Additional documentation may be included as dictated by the structure or function of the division.¹ However, today's ease of use and availability has increased, subject to security and regulatory limitations. Internet and intranet capabilities allow a considerable portion of these data and documents to be kept electronically. This can become extremely complicated because of electronic data. What happens when systems change?

In general, records should be kept at least as long as required by law, regulation, permit, or corporate policy—whichever requires the longest retention. On the other hand, obsolete records and other documents should not be allowed to clutter the environmental file. A procedure should be established for identifying the appropriate retention times for generic classes of documents and for determining specific disposition schedules for individual records.

Because environmental records are important to the continued operation of every facility and to the avoidance of corporate liability, it is prudent to assign responsibility for their safekeeping to a member of the environmental management staff or to a qualified records manager. Periodic reviews of the records file should be made by an individual other than the custodian to ensure adherence to established policies and standards. Reviewing electronic records is necessary, but of growing difficulty as more records are kept electronically and downloaded throughout a company.

Integrity of the environmental records file is necessary to ensure that all essential records are intact and readily available. Access to the file and release of information must be controlled. Therefore, the company and all divisions should promulgate a policy on access to environmental records and release of information.²

§ 8:8 Elements of an audit/assessment program—Internal procedures for conduct of inspections or visits by external authorities

Virtually all federal environmental laws authorize EPA (or its contractors) to enter and inspect facilities. All facilities that need permits or are otherwise regulated can anticipate receiving environmental inspections. Preparation and preplanning govern to a great extent the degree to which inspections can be of assistance, rather than a burden. Accordingly, policies and procedures should be established for dealing with inspections. The policies and procedures should include a process to allow the inspection under circumstances that protect the company's rights (for example, copies of authorization letters, provisions for sample splitting, provisions for copies

[Section 8:7]

¹A more complete listing of record categories includes (1) laws and regulations affecting the facility (local, state, and federal); (2) permits in effect and pending applications; (3) regulatory agency contacts; (4) facility layout and process descriptions; (5) air emissions; (6) waterborne effluents, outfalls, and monitoring data; (7) solid waste descriptions, disposal methods and monitoring data (including manifests); (8) past practice descriptions; (9) water supply descriptions; (10) spill control plans; (11) emergency response and disaster plans; (12) pertinent correspondence; (13) company and division policies and procedures; and (14) reports to government agencies (both routine and nonroutine).

²All records removed from the active environmental file because they are no longer current or needed should be reviewed for appropriate disposition (archives, retention, return to originator, or destruction). A need may exist for individual environmental staff members to maintain working files containing copies of those documents in the central file related to their function. The same standards with regard to access, release of information, and records disposition must be applied, and the environmental file custodian should have a record of all environmental working files.

of all reports prepared by the agency, and confidentiality agreements). Although EPA has the authority to enter and inspect a facility, its owners and operators may have the right to refuse entry to agency inspectors in the absence of a valid search warrant. The procedure for an inspector to secure a warrant is not rigorous, however, and EPA can quickly and easily acquire a warrant. A general policy should be adopted as to whether or not, or under what circumstances, the company will require the inspectors to have a warrant. The policy should then be communicated to all company locations and incorporated into inspection procedures.¹

A related issue is the right of an agency's third-party contractor to inspect a facility. If a company adopts a general policy to allow inspections without a warrant by employees of the agency, the same policy could be applied to third-party contractors. On the other hand, the policy could require a case-by-case review if third-party contractors accompany agency employees or conduct the inspection alone, or if their entry is not authorized by statute.² Such a review could cover information such as the purpose of the inspection, its scope, the identity of the contractor, the nature of the facility, or the extent of proprietary or confidential technology or information at the site. The policy should specify whether a secrecy agreement from the third-party contractor is required.

The Superfund Amendments and Reauthorization Act of 1986, which amended the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), expanded EPA's authority for access to private property.³ CERCLA section 104(e)(3) specifies that EPA may enter a "vessel, facility, establishment, or other place or property where any hazardous substance or pollutant or contaminant may be or has been generated, stored, treated, disposed of, or transported from."⁴ Access may be authorized for sample taking and testing, and for other purposes, including preliminary site investigation, removal action, remedial investigation/feasibility study activities, and remedial actions. In addition, access is not limited just to the actual site where the release or threatened release is occurring. EPA is authorized to have access to any property where any hazardous substance or pollutant or contaminant has been transported from and any property onto which such a substance has been released.⁵ CERCLA also authorizes access to any other place or property "where entry is needed to determine the need for response or the appropriate response or to effectuate a response action."⁶

EPA has issued a policy memorandum on this statutory authority.⁷ Under this policy, EPA will always attempt to obtain entry to property by consent; however, if such consent is conditional in that it restricts or impedes the manner or extent of an inspection or response action, imposes indemnity or compensation obligations on EPA, or operates as a release of liability, EPA may choose to obtain a warrant or a court order for immediate entry, or may issue an administrative order after notice and comment. If the party being inspected seeks confidentiality protection as a condition, the Agency's position is that adequate protection is provided by CERCLA

[Section 8:8]

¹A detailed discussion of the advantages and disadvantages of requiring a search warrant is beyond the scope of this chapter. Counsel should be consulted as refusal to give entry to government inspectors is controversial, raises questions as to the "good faith" of the company, and often leads to government retaliation.

²See, e.g., Resource Conservation and Recovery Act § 3007, 42 U.S.C.A. § 6927 (inspections).

³Pub. L. No. 99-499, 100 Stat. 1613 (1986) (amending 42 U.S.C.A. §§ 9601 to 9675).

⁴42 U.S.C.A. § 9604(e)(3).

⁵CERCLA §§ 104(e)(3)(A), (B), (C), 42 U.S.C.A. §§ 9604(e)(3)(A), (B), (C).

⁶CERCLA § 104(e)(3)(D), 42 U.S.C.A. § 9604(e)(3)(D).

⁷Memorandum from Thomas L. Adams Jr., Ass't Administrator, Office of Enforcement and Compliance Monitoring, to EPA Regions I-X (June 5, 1987).

section 104(e)(7), and the policy states that EPA should enter into no further agreements.

Warrant entry is generally used for short-term and nonintrusive activities, and can be obtained on an *ex parte* basis. According to the policy, EPA will generally seek a court order via a civil action in situations involving long-term or intrusive access. Alternatively, EPA may issue an administrative order directing compliance with a request for entry under section 104(e)(5)(A). An administrative order is subject to judicial review (based on the administrative record) and provides for penalties of up to \$25,000 per day against any party that unreasonably fails to comply with such an order.⁸

In addition to policies and procedures on inspections, a specific checklist should be formulated to ensure that all essential actions are taken by facility personnel prior to, during, and after the inspection.

§ 8:9 Elements of an audit/assessment program—Internal procedures for conduct of inspections or visits by external authorities—Planning for an inspection

Planning for an inspection is important because even though prior notification is generally given for an EPA inspection, no advance notice is specifically required. If a company does receive notice that EPA will conduct an inspection, particularly a broad-based multimedia inspection, it should assemble a team to assist the plant, both in preparing for and during the inspection. Plant management should have a clear understanding of (1) the objective and scope of the inspection; (2) the authority under which the inspection is being made and the motivation for *this* inspection visit; (3) the composition of the inspection team; (4) the protocol and planned schedule of the inspection; (5) the nature of the closing conference or report to be provided to facility management; (6) the legal significance of the inspection and potential need for legal counsel; (7) the identity of process, records, or other confidential information or trade secrets, and the need to be sure inspectors are advised prior to inspection as appropriate; and (8) the identity, scope and status of any matters in litigation at the facility to ensure appropriate legal assistance.

Plant management should determine (1) the identity of primary and alternate staff members to greet the inspectors; (2) the identity of primary and alternate staff members to escort and take part in the inspection; (3) how findings will be handled; (4) what notification must be made to upper management and legal counsel; and (5) what limitations should be placed on the inspection team, such as an enumeration of safety procedures or whether photographs should be allowed. In addition, a review should be conducted of past inspection reports, the status of action items, the general plant situation or appearance (i.e., maximum capacity, changeover, and internal construction), and its relationship to the overall impression that will be made on the inspectors. If time is available, a meeting of key company participants should be held to review all pertinent items prior to the inspection.

§ 8:10 Elements of an audit/assessment program—Internal procedures for conduct of inspections or visits by external authorities—Guidelines to follow during an inspection

Generally, all facility management and employees should understand that the inspection should be limited to the agreed-upon area and to its purpose. Management and employees should not volunteer information, but neither should they lie

⁸CERCLA § 104(e)(5)(B), 42 U.S.C.A. § 9604(e)(5)(B).

or mislead the inspectors,¹ nor guess at the answers to questions when all the facts are not known. Facility personnel accompanying the inspectors should have clearly defined directions with regard to (1) verifying the identification of the inspectors and recording the names, positions, office addresses, and telephone numbers; (2) holding an opening conference to confirm the purpose and scope of the inspection; (3) attitude and protocol toward the inspectors; (4) how to respond to deficiencies uncovered; (5) keeping notes during the inspection; (6) limits of authority to disclose information or make commitments; (7) identity or types of reviewable and confidential records; (8) accompanying inspectors at all times; (9) taking concurrent readings and photographs, splitting samples, making duplicate copies of any records given to the inspectors, and keeping detailed lists of all readings, photographs, samples, or records taken or given; and (10) requesting a copy of any report prepared by the inspector.

Facility management should ensure that they are available for a closing conference. They should also identify all confidential or trade secret information to avoid inappropriate disclosure to the inspectors; secure a secrecy agreement and take all measures to assert and preserve claims of confidentiality on any data given; and get a receipt for confidential information given to the inspector, which includes language acknowledging that the inspector understands the nature of the information and the request that it be kept confidential.

§ 8:11 Elements of an audit/assessment program—Internal procedures for conduct of inspections or visits by external authorities—Follow-up after an inspection

A number of actions are necessary to close out an inspection properly after the inspection team has departed. Upper management and legal counsel should be promptly advised of the results of the inspection and its significance. A memorandum to legal counsel should be prepared requesting legal advice on the findings of the inspection and the proposed or possible subsequent actions on any issues cited, such as deficiencies or compliance problems. A response plan, both for the short and long term, should also be developed. Any distribution of the report should be at the direction of counsel. A session should then be held among key facility personnel to disseminate and discuss what was learned from the inspection, but only to the extent that any attorney-client or work product privilege is not lost.

The report, whether to legal counsel, management, or both, should at a minimum contain the following (1) the name and title of each person present at the inspection; (2) a summary of any pre-inspection communication (copies of correspondence may be attached), including the purpose of the inspection and a summary of the pre-inspection conference; (3) a description of the areas examined and information requested; (4) duration of the inspection; (5) any testing or sampling done; (6) any permits examined; (7) any follow-up action requested by the agency or recommended or taken by facility management; and (8) any violations or other problems noted, together with any recommended corrective action.

§ 8:12 Elements of an audit/assessment program—Training and education programs

The development and maintenance of a strong environmental management program depends in large part on the continued awareness of the current status and trends in environmental management and technology, as developed by regulatory agencies, policy makers, scientists, and engineers. This awareness is achieved

[Section 8:10]

¹Misleading an inspector may be a felony. 18 U.S.C.A. § 1001.

through a continuing program of education and training addressing the various needs of hourly employees, supervisors, environmental specialists, audit/assessment team members, division management, community residents, and local community officials.¹ One specialized training program should be directed to members of the individual facility audit/assessment teams.²

§ 8:13 Elements of an audit/assessment program—Long-range strategies and goals¹

Long-range strategies and goals are an integral part of both company and division audit/assessment programs. Long-range goals are here defined as objectives that will occur more than one year in the future, typically within three to five years. Strategies and goals are considered objectives that, if accomplished, will provide (1) compliance with existing or yet to be promulgated regulations; (2) maintenance of existing environmental programs; (3) resolution of issues that have technical, factual, or legal uncertainties; (4) environmental activities that improve the environment such as reducing the company's environmental footprint and activities related to sustainable development², but also will enhance the company's public image; and (5) identification of procedures needed for developing timely information required for new products, facilities, or permits. The long-range strategies or goals program should include (1) a long-range objectives statement reflecting the environmental goals of the company or division and company policy; (2) specific objectives for the divisions and facilities to be accomplished within a five-year time frame; (3) a description of the method by which objectives will be monitored for completion; (4) a description of environmental research and development activities that will be conducted for environmental compliance programs or will further the state-of-the-art in specific areas of interest; and (5) a description of the method by which progress made toward satisfying these long-range strategic objectives will be reported.

§ 8:14 Elements of an audit/assessment program—Long-range strategies and goals—Issues with unascertainable aspects

The term “unascertainable” here refers to issues where uncertainty as to the nature and extent of the problem exists because of a lack of sufficient factual, technological, or legal data. On occasion there may be a number of unascertainable issues, or issues with unascertainable aspects, identified at a company's facilities. This category covers issues for which the total dimensions of the problem are not known. For example, monitoring wells may detect the presence of potential toxic materials below the site of a facility, but the extent and severity of any risk to health or the environment as well as the technological options and costs for treatment are unknown. Another example is environmental issues for which no present day remedial technology is known or for which existing technologies are inadequate. A third involves new environmental laws or regulations for which the implementa-

[Section 8:12]

¹To ensure that personnel are kept at a high degree of environmental awareness, segments of training and education programs might include environmental awareness and compliance policies, supervisory responsibilities, corporate liabilities, environmental technology updates, working with regulatory agencies, community support needs, emergency response plans, and the impact of new legislation and regulations.

²See § 8:16.

[Section 8:13]

¹See Frank B. Friedman, *Managing and Resolving Corporate Environmental Issues*, *Envtl. F.*, Feb. 1985, at 28.

²See Frank B. Friedman, *Practical Guide to Environmental Management*, (Environmental Law Institute, 11th edition 2011, pp.52–56).

tion is unclear. Also included in this category are regulations that have been promulgated but are presently in litigation, as well as regulations that have been proposed or are otherwise under consideration. Finally, environmental issues requiring detailed engineering studies to develop solutions and to estimate ultimate costs of compliance present additional problems. To the extent that a company has unascertainable issues, their inclusion in an audit/assessment program indicates that the company is at least cognizant of the issues it faces. The objective in addressing existing unascertainables, as well as those that may develop as a result of future audits/assessments, is to identify clearly and plan the resolution of those issues.

§ 8:15 Facility audits/assessments

Central to any audit/assessment program is the conduct of individual site reviews by an audit/assessment team. Site audits/assessments determine the status of the company's compliance with federal, state, and local regulations and with company policies and programs on a facility-by-facility basis.

§ 8:16 Facility audits/assessments—The audit/assessment team

Audits/Assessments of individual facilities should be carried out by an audit/assessment team, operating with the full support and authority of management. The team performs the audit/assessment and prepares the report that is the basis for measuring progress toward environmental objectives and action plans. The audit/assessment team is the heart of the operations phase of the company and division environmental audit/assessment programs. The size and makeup of an audit/assessment team depends on the size of the facility, the complexity of the environmental issues, and the period since the last audit/assessment. Accordingly, the team must have broad knowledge of applicable environmental regulations, policies, and company operations, as well as an understanding of the individual facility operation, and be independent of the facility being reviewed. Whether "independence" requires use of outside consultants and counsel is the subject of ongoing controversy.¹ Similarly, there has been continuing discussion about whether individuals engaged in environmental auditing should be certified and about the requirements such certification should entail.²

There are specific instances where the audit/assessment should be conducted under the direction and control of an attorney. These instances usually arise where enforcement action or litigation exists or is reasonably contemplated, or where a government agency has requested information. Some companies have attorneys control the entire program. The audit/assessment program described here, however, is not run by attorneys, but would allow for it if special circumstances existed. Nevertheless, the program should be structured so as to have an attorney on or advising each team. It is important in all cases that the attorney participates by ensuring that the team understands its responsibilities, including: (1) its charter and obligations; (2) its operating procedures; (3) how to deal with areas in litigation; (4) what items are to be written down and how to compose reports; (5) procedures to follow when potential violation exists; and (6) agreement on basic definitions, such as what constitutes a violation, an excursion, and compliance. In addition, the attorney

[Section 8:16]

¹See Frank B. Friedman, *Practical Guide to Environmental Management* 238–240 (Environmental Law Institute, 11th ed. 2011).

²See Frank B. Friedman, *Practical Guide to Environmental Management* 240–244 (Environmental Law Institute, 11th ed. 2011); James W. Conrad Jr., *Sliding Scale or Slippery Slope? The New ASTM's Standard Practices for Environmental Site Audits/Assessments*, 23 *Envtl. L. Rep.* (Envtl. L. Inst.) 10181 (Apr. 1993).

should review copies of the preliminary reports from the team before they are issued in final form to be sure that items that are or should be subject to attorney-client or work product privileges are adequately protected. The attorney then should be sure a follow-up system is in place so that he or she can work with both the audit/assessment team and management to resolve any identified issues.

§ 8:17 Facility audits/assessments—Frequency of site audits/assessments

Once facilities have been categorized according to their relative environmental significance, a plan must be developed which specifies how often a site visit should be conducted. This will necessarily vary, depending on the number of facilities, how they are categorized, and available resources to conduct the site visit. Each division should develop its own plan that suits its own particular requirements.

The following frequency suggestions can be extended depending on the scope of other environmental safeguards and programs in place, such as a successful self-assessment program. For example, facilities categorized as posing little or no environmental problem still need to be reviewed periodically, perhaps once every three years or whenever a significant change in the condition, a process, or status of the facility occurs. Facilities categorized as having a low, but definite potential for environmental problems could be assessed at least once every two years. On the other hand, facilities with potentially serious environmental problems that could present significant liabilities if they are not reviewed periodically could be assessed approximately once every 12 to 18 months. However they are grouped, facilities in the highest category for potential environmental liability, because of the nature of process, operating conditions, wastes, or perception by regulatory authorities or the general public, should be assessed frequently.

If a successful self-assessment program is developed at a facility, or other safeguards are in place, corporate audits can be conducted less frequently.

§ 8:18 Facility audits/assessments—Conducting the audit/assessment

Over time, there will be many staff members who could be part of audit/assessment teams. Given the constantly changing makeup of the teams, it is mandatory that formal procedures be in place to ensure that audits/assessments are conducted consistently and properly.

The following list details basic operational steps to standardize the conduct of the audits/assessments. Legal counsel should be sought throughout the process, particularly in situations where compliance judgments must be made.

(1) *Select and Notify the Team.* The team should be selected in accordance with company procedures.

(2) *Notify the Facility.* The facility should be notified of the impending visit; there is usually little to be gained by surprise visits. The time of the advance notice may vary, but sufficient time must be provided to allow the facility to prepare, collect data, and ensure staff availability. For large facilities, a previsit questionnaire may be used to prepare the site environmental manager and the audit/assessment team for the visit. Use of the questionnaire helps to keep disruptions to a minimum by requesting that, prior to the visit, major environmental issues be identified, certain files be made available, and key personnel be scheduled for interviews.

(3) *Review Background Material.* The audit/assessment team should review the pertinent information on the facility, including the response to the previsit questionnaire, if used, and the results of previous audits/assessments, if any were conducted. These reviews should be done with an eye toward identifying potentially significant issues. In the absence of a completed previsit questionnaire or past audit/assessment results, to become familiar with site operations, the team could review the following (1) facility identification; (2) environmental contact at the facility; (3) topographical

maps or line drawings of the plant and environs, including all vents and waste collection points, existing intake and discharge structures, all buildings and structures and their uses, the location of any existing monitoring facilities, nearby water bodies, wetlands, and springs, and all drinking water wells on facility property and in the vicinity; (4) existing environmental permits issued to the facility by federal, state or local authorities, and copies of pending applications for environmental permits; (5) compliance schedules, consent orders, judgments, waivers, or variances related to compliance with any environmental program; (6) elements at the facility subject to citation or fine for violation of environmental requirements or the subject of criminal or civil suit; and (7) a list of regulated substances used at the facility, including location of storage, processing, and disposal of each substance.

(4) *Hold a Team Meeting.* The audit/assessment team should meet to discuss the background data received and to identify key areas to be highlighted during the site visit.

(5) *Meet with Site Management.* The audit/assessment team should meet first with the division and facility management staff deemed appropriate by the site's environmental manager to discuss the overview of the audit/assessment concept, a brief description of the site's operations, an overview of the facility's organization, the major environmental concerns, training, public relations, and the anticipated regulatory requirements.

(6) *Tour the Facility.* During the tour the team should observe and evaluate general operating practices and interview the site operators. The following topics may be appropriate for review: an internal audit/assessment program; training and education; attitude towards compliance; awareness of regulations; housekeeping; compliance with regulations and new issues such as GHG control; communications to company headquarters' environmental staff; response to spills; unit shutdown and startup notification; unit modifications and expansions; analytical quality assurance; environmental policies and procedures; environmental programs; bypass procedures; terms of permits; spill prevention plans; episode plans; present emissions and effluent limits; and awareness of hazards.

(7) *Conduct Interviews and Review Files.* The audit/assessment of the site's operations will consist of two components: interviews and record inspections. Guidelines on protocol and methodology for conducting the audit/assessment should be adopted. Protocol requires that the visit be conducted in a constructive, nonadversarial fashion because of the sensitive nature of the audit/assessment. Discretion should be allowed in developing audit/assessment methodology based on the variety of operations within the company. A variety of approaches may be appropriate. One approach is to ask a comprehensive list of yes/no questions centered on the requirements of the regulations, which leaves the team little flexibility and limits the opportunity for operational improvement. A second approach is to pose a series of more general questions to determine the general status of the facility. A third approach could involve listing areas of review and leaving the question and response format up to the team, which works best with an experienced team.

(8) *Develop an On-site Report.* Although observations should be discussed during the conduct of the audit/assessment, the team should meet to develop its list of findings more formally before presenting any preliminary results. This session should result in a consensus on the potential weak points of the facility's compliance program, which will comprise the draft on-site report. The on-site report, with preliminary conclusions, would be used to brief the facility's management of findings before the audit/assessment team leaves. This report then would serve as a working paper for the team in preparing the final report.

(9) *Develop and Distribute the Off-site Report.* The off-site or final report should be written by the team within one or two weeks after the audit, and the facility's manager should be provided an opportunity to comment on the final report.

§ 8:19 Program review

In large corporations, health, environment, safety, and risk engineering (HESRE) programs tend to be compartmentalized. The management of the individual functional areas is generally the responsibility of corporate officers. Basic program management issues can go unnoticed. A “Program Management Review” can be used to show how the company’s HESRE programs are integrated; how they compare with corporate policies, procedures, and guidelines; and how they attain their stated intent.

Audit/Assessment programs are often facility specific. They review the performance of the facility’s implementation of HESRE programs. However, it is important to focus periodically on the broader-range management issues that affect the quality of the HESRE performance. To accomplish this, a program review can be initiated. A program review will assist in identifying specific program element deficiencies, implementation inconsistencies, and inconsistent management criteria and execution. In other words, such a review can aid in identifying the root causes of problems, including common management deficiencies that decrease the effectiveness of efforts to comply with policies, procedures, and regulations. Generally, a broader and integrated valuation of HESRE programs can provide senior management valuable information that can positively affect the corporation’s future performance and profitability.

Such reviews can also be effective in testing the adequacy of a corporate program. One may identify issues relating to quality control that need to be addressed in a corporate program.

There are three stated purposes of a program review. The first purpose is to determine if the division’s HESRE programs are consistent with corporate policies, procedures, and guidelines and in some companies, corporate directives and company standards. The next purpose is to evaluate these programs relative to their stated intent. Finally, the review provides an opportunity to capitalize on identified improvements.

It is important to keep such reviews as unbiased and nonjudgmental as possible. The critical point is not what occurred in the past or what is occurring now, but rather to determine if appropriate and necessary management systems are in place and functioning; if adequate resources are provided to ensure the systems’ continuation and effectiveness; and if appropriate measures are executed to measure the quality of program performance, including the means to meet future challenges. Additionally, reviews may need to extend beyond HESRE components and include ongoing business management systems. Integration of HESRE into business decisionmaking may be critical for continued success of the program.

A program review should begin with a “desk top” review of existing written documents (*i.e.*, policies, standards, procedures, guidelines, directives, principles, and audit/assessment reports). The documents can provide a framework for understanding the management and operating infrastructure of divisions and where HESRE accountability resides. There is a tendency in business to place *all* HESRE accountability at the plant level. Clearly, the plant manager should have the primary responsibility for ensuring compliance with the laws and company policies, but senior management should share that accountability and responsibility.

Adequate funding and resources are critical elements of a review. A program review can clarify how a company commits resources to HESRE issues. An examination of accountability would include a review of HESRE function descriptions, job descriptions, assignment of responsibility and accountability for functions to various line managers, requests for and approval of funding, and human resources, as well as maintenance and operating performance and practices.

A significant part of the initial desk-top review addresses program quality control

and quality assurance.¹ This review covers description documents; charge and management support and commitment to audit/assessment programs; third-party audits/assessments; action plans; followup and documentation of quality control and quality assurance measures; and activities built into HESRE programs, policies, and procedures. This last provides an opportunity for action by division management and staffs to explain quality assurance and quality control as applied to their HESRE efforts. The document review should not be limited to headquarters. The review should cover documentation at all levels of management, including the facility level.

Interviews with appropriate personnel are necessary to gain a true understanding of how the management systems and staff view and fulfill their responsibilities with respect to environment, health, and safety.

Facility visits are another critical element of a program review. By participating and conducting facility visits, trends may emerge in HESRE performance and implementation that may not have been obvious. The program review needs to go beyond traditional audit/assessment reviews to ensure that there is more to an organization's efforts than a book of procedures.

As previously stated, the program review should also consider operations, risk management, preventive and predictive maintenance, management of change and capital issues. In times of lower profits, there can be a tendency to change operating practices and reduce preventive maintenance more than is appropriate. These trends, if specifically looked for, should show up in a program review, particularly after a variety of personnel interviews and facility visits. A close review should also be made of the capital expenditure process. For example, the written process may show that capital will always be found for compliance, but the problem may be that decisions regarding compliance expenditures are made too late in a given situation, or that decisions are made at an inappropriate level within an organization. Such requests, particularly when made late in the budget process, may not be viewed favorably by high-level management and will be deferred. Here, again, the issue of management accountability is important. The decisions concerning HESRE issues should not be left solely with facility managers. All levels of management are accountable and should be held responsible for their part in making HESRE decisions.

All of the HESRE areas should go beyond the traditional costs of doing business and should be reviewed in a manner integral with all other management functions. If such reviews are thorough and complete, management and operational problems can be identified and remedied at the appropriate levels of management.

Besides being an excellent management tool, program review also helps provide an important additional safeguard. On July 1, 1991, the Department of Justice issued its policy to limit the use of information developed in environmental audits and other voluntary compliance efforts in criminal prosecutions under environmental statutes. However, the following extract from that statement indicates that the audit and compliance program must be comprehensive and broad based to secure any form of consideration:

The attorney for the Department should consider the existence and scope of any regularized, intensive, and comprehensive environmental compliance program; such a program may include an environmental compliance or management audit. Particular consideration should be given to whether the compliance or audit program includes sufficient measures to identify and prevent future noncompliance, and whether the program was adopted in good faith in a timely manner.

Compliance programs may vary but the following questions should be asked in evaluat-

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¹See Viscoli, Total Quality Management and the Safety and Health Professional, Professional Safety, June 1991, at 97.

ing any program: Was there a strong institutional policy to comply with all environmental requirements? Had safeguards beyond those required by existing law been developed and implemented to prevent noncompliance from occurring? Were there regular procedures, including internal or external compliance and management audits, to evaluate, detect, prevent and remedy circumstances like those that led to the noncompliance? Were there procedures and safeguards to ensure the integrity of any audit conducted? Did the audit evaluate all sources of pollution (i.e., all media), including the possibility of cross-media transfers of pollutants? Were the auditor's recommendations implemented in a timely fashion? Were adequate resources committed to the auditing program and to implementing its recommendations? Was environmental compliance a standard by which employee and corporate departmental performance was judged?

These questions are the same as those asked to determine the scope of a company's program. Notice that they deal with accountability, quality assurance, quality control, resources, and management audits. It is unfortunate that these standards, which are a solid basis for judging the adequacy of an environmental program, are now part of the criminal law process, rather than simply goals of an environmental audit/assessment program. They do, however, provide an effective starting point for examining HESRE programs. The policy is also an excellent tool to integrate HESRE into senior management's focus and business decisions. Strategic business advantage may be realized by using audits/assessments as a management tool.

The program review also needs to check on the overall implementation, communication, supervision, monitoring, and enforcement of company policies. The policies should have, as one of their requirements, compliance with the law and a program to ensure that every employee will be able to report a violation of the policy in a confidential manner and without fear of retribution. The employee should be able to report throughout the chain of supervision or, if the employee believes that such a report would be ineffective under the particular circumstance, to a designated corporate compliance officer. A corporate hot line is also effective. However, the primary responsibility for compliance should rest on the chief executive officers of the divisions, not on a designated corporate compliance officer. The divisions need to develop and document appropriate programs to ensure that all current and proposed facilities, equipment, products, and procedures comply with the policy. They should also take prompt action as may be required, develop and document reporting procedures, and develop and document a timetable for implementing the programs. A review of these programs is obviously a part of the corporate program review, but periodic reports to the corporate environmental department are also helpful.

In many cases, depending on the culture of the company, it is probably better to have the designated corporate compliance officer outside the normal chain of command in the environmental area. If that officer is in the chain of command, it might be argued that although the corporate environmental department needs to provide guidance and interpretation of the policy requirements and review all programs and reports for compliance, there is no outside check and confirmation on the performance. It is, therefore, probably preferable to have the compliance officer in senior-level management, although sometimes the chief environmental, safety and health officer is part of senior management. The principal responsibilities of the compliance officer will be to provide a means, when necessary, for any policy violation to be reported directly to the corporation and to maintain consistent standards for the enforcement of the policy. Some companies have senior-level compliance committees to deal with all compliance issues which often helps with integration of compliance issues. This person should, of course, be backed up by counsel, and it seems advisable to appoint compliance counsel to deal with the legal issues. Thus, the primary responsibility for compliance rests on the actual operations, but at the same time means are developed for maintaining compliance with the policy and with laws and regulations at the corporate level. This technique also has another advantage by providing another vehicle for understanding environmental issues at senior levels of management and for communicating their importance.

III. BENEFITS FROM AN ENVIRONMENTAL AUDIT/ASSESSMENT PROGRAM

§ 8:20 Minimizing civil and criminal liability

Virtually all of the environmental statutes provide sanctions for noncompliance. These can include civil penalties, criminal fines and imprisonment, injunctive actions, permit or registration suspension or revocation, and citizens' suits. Environmental law applies to persons, and a corporation is considered a person under the law. Because corporations act through people, and thus can violate a law by the actions of one of those people, the environmental laws also apply to the corporation's directors, officers, managers, and all employees.¹ This holds true for both civil and criminal liability.²

The danger of criminal sanctions cannot be overemphasized. Criminal penalty provisions apply to the person in the corporation who commits a violation, and an individual can be held criminally liable even if he or she did not actually participate in the act, if that individual approved of the conduct or negligently or knowingly failed to prevent the violation. Thus, a corporate officer can be held vicariously liable for the conduct of subordinate employees.

The corporation itself may be subject to criminal sanctions as a result of an act or failure to act by its management or employees.

Many states sanction corporations criminally only for the acts of management. By contrast, federal courts have adopted a broadly defined doctrine of imputed liability that permits the criminal conviction of a corporation for acts of its low-level employees or outside agents. A corporation can be convicted of federal crimes even if its employees and agents act without management's knowledge or approval and even if management has specifically prohibited the offensive conduct and taken reasonable steps to prevent it.³

It is also vital to recognize that

in today's enforcement climate, no one, not even those remotely responsible for environmental compliance, is immune from criminal prosecution. One must also understand that one does not have to *be* bad when it comes to environmental crimes. The "black heart" requirement commonly associated with other criminal activity is not necessary to sustain a criminal conviction.⁴

Moreover, even a failure to act may result in criminal liability.

A purposeful failure to investigate or deliberate ignorance has been interpreted to impute knowledge of the violation for purposes of criminal liability.⁵ Section 113(c)(5)(B) of the Clean Air Act, for example, suggests potential criminal liability for "knowing endangerment" if an executive purposefully tries to shield herself from

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¹The definition of "owner" or "operator" is extremely broad. See *Joslyn Corp. v. T.L. James & Co., Inc.*, 696 F. Supp. 222, 19 Env'tl. L. Rep. 20518 (W.D. La. 1988), judgment aff'd, 893 F.2d 80, 30 Env't. Rep. Cas. (BNA) 1929, 20 Env'tl. L. Rep. 20382 (5th Cir. 1990). See also Murphy & Samson, Corporate Responsibility for Environmental Damages, White & Case Insights, Apr. 1990, at 23.

²For a comprehensive discussion of sanctions, see § 9:1.

³Giuffra, Sentencing Corporations, Am. Enterprise, May/June 1990, at 85. Corporate criminal liability is based on the theory that if the shareholders are beneficiaries of illegal behavior, they should pay for the consequences. See Etzioni, Getting Down to Business on Corporate Crime, Legal Times, May 21, 1990, at 23; Wash. Post, Apr. 1, 1990, at C3.

⁴Starr & Kelly, Environmental Crimes and the Sentencing Guidelines: The Time Has Come . . . and It is Hard Time, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 10096 (Mar. 1990).

⁵See, e.g., *U.S. v. Johnson & Towers, Inc.*, 741 F.2d 662, 21 Env't. Rep. Cas. (BNA) 1433, 14 Env'tl. L. Rep. 20634 (3d Cir. 1984); RCRA § 3008(f), 42 U.S.C.A. § 6982(f) (setting forth special rules for establishing criminal liability for a knowing endangerment violation).

knowledge.⁶ The government's position on what is "knowing" and "willful" is suggested as follows in the case of *United States v. Protex*.⁷

In the context of public welfare offenses, courts have repeatedly held that "knowingly" requires only that one act voluntarily, with knowledge of one's actions. It does not require knowledge of the law or a specific intent to break the law. . . . Willfully is viewed similarly, as not requiring or denoting specific intent or evil purpose.⁸

On December 20, 2003, Larry Thompson, then Deputy Attorney General, issued a revised policy memorandum on criminal prosecution of corporations.⁹ That memorandum states, "One factor the prosecutor may weigh in assessing the adequacy of a corporation's cooperation is the completeness of its disclosure including, *if necessary*, a waiver of the attorney-client and work product protections, both with respect to its internal investigation and with respect to communications between specific officers, directors and employees and counsel. . . . they are often critical in enabling the government to evaluate the completeness of a corporation's voluntary disclosure and cooperation."¹⁰ The exception, "if necessary," appears to have been ignored in many cases.¹¹ The Thompson memorandum was superseded by a memorandum from Paul J. McNulty on December 12, 2006 entitled *Principles of Federal Prosecution of Business Organizations*.¹² That memorandum doesn't abandon the concepts in the Thompson memorandum but centralizes the decisions by requiring that "when federal prosecutors seek privileged attorney-client communications or legal advice from a company, the U.S. Attorney must obtain written approval from the Deputy Attorney General."¹³

According to former Attorney General Richard Thornburgh, "Criminal enforcement is one of the most radically expanding areas of environmental law, with the use of criminal sanctions becoming one of the most effective means of deterring deliberate non-compliance."¹⁴ Notwithstanding the popular assumption that enforcement significantly diminished during the Bush Administration (civil penalties declined an average of 24% between FYs 2002 and 2006 compared to 1996 through

⁶42 U.S.C.A. § 7413(c)(5)(B). Note also that this Act limits liability significantly for the actual operator, focusing instead on managers, including officers and directors.

⁷*U.S. v. Protex Industries, Inc.*, 874 F.2d 740, 29 Env't. Rep. Cas. (BNA) 1593, 19 Env'tl. L. Rep. 21061 (10th Cir. 1989), cited in McAllister, *Trial of the Criminal Environmental Laws*, A.L.I./A.B.A., Apr. 1990, at 252. See generally Barber, *Fair Warning: The Deterioration of Scierter Under Environmental Criminal Statutes*, 26 Loy. L.A. L. Rev. 105 (1992); Smith, *No Longer Just a Cost of Doing Business: Criminal Liability of Corporate Officials for Violations of the Clean Water Act and the Resource Conservation and Recovery Act*, 53 La. L. Rev. 119 (1992).

For a discussion of scierter, see § 9:30.

⁸McAllister, *Trial of the Criminal Environmental Laws*, A.L.I./A.B.A., Apr. 1990, at 252

⁹Memorandum from Larry D. Thompson, Deputy Attorney General-*Principles of Federal Prosecution of Business Organizations* (Jan. 30, 2003), available at http://www.usdoj.gov/dag/cftf/corporate_guidelines.htm.

¹⁰Memorandum from Larry D. Thompson, Deputy Attorney General, *Principles of Federal Prosecution of Business Organizations*, at 5 (emphasis supplied).

¹¹See also Richard M. Cooper, *Privilege Under Fire*, Nat'l L.J., March 14, 2005, at 12.

¹²Memorandum from Paul J. McNulty, Deputy Attorney General, *Principles of Federal Prosecution of Business Organizations* (Dec. 12, 2006), available at: http://www.usdoj.gov/dag/speeches/2006/mcnulty_memo.pdf.

¹³Ashby Jones, *Thompson Memo Out, McNulty Memo In*, Wall Street Journal (blog posted Dec. 12, 2006), available at: <http://blogs.wsj.com/law/2006/12/12/thompson-memo-out-mcnulty%20memo-in/>: "The new memorandum also instructs prosecutors that they cannot consider a corporation's advancement of attorneys' fees to employees when making a charging decision. An exception is created for those extraordinary instances where the advancement of fees, combined with other significant facts, shows that it was intended to impede the government's investigation."

¹⁴Moretz, *The Rising Cost of Environmental Crime*, Occupational Hazards, Mar. 1990, at 38.

2000 and, criminal penalties declined 38% over the same period),¹⁵ the number of criminal cases initiated were significant:

On the criminal side, FY 2008 showed declines from FY 2007 levels with 319 cases initiated (down from 340). 176 defendants charged (down from 248), and sentences obtained declining to fifty seven years of incarceration (down from sixty-four), and \$63.5 million in criminal fines (down from \$66 million). These declines appear to be relatively minor and do not reflect any decreased focus on criminal enforcement. In fact, the sentencing numbers would likely have been higher but for unexpected delays in sentencing proceedings in several high-profile criminal matters. Given the pendency of these matters, 2009 could well be a banner year for criminal environmental enforcement (footnotes omitted).¹⁶

On the civil side, EPA referred 280 cases to the U.S. Department of Justice in 2008 and obtained “\$127 million in civil penalties.” along with “\$11.8 billion in pollution control upgrades, remediation and environmentally beneficial projects.”¹⁷

The Obama Administration is and will be emphasizing the significance of enforcement and it was expected that 2009 and beyond will be “banner years.”¹⁸ At a May 14, 2009, conference on criminal environmental enforcement policies, both EPA and DOJ officials stated that they plan to use their increased FY 2010 budgets to complete Bush administration criminal enforcement tasks.¹⁹ The Obama Administration’s proposed budget for FY 2010 proposes an increase to \$580 million from \$562 million in 2009 for EPA’s Compliance and Environmental Stewardship budget and the DOJ related budget from \$103 million to \$110 million.²⁰ A DOJ official noted, “With some additional resources we’ll be able to focus . . . on the enforcement side as well as the criminal side.”²¹ As this revision goes to press, EPA budgets are in a state of flux, although it is expected that there still will be significant funding of enforcement efforts. The Agency is reportedly moving toward risk based measures which “may be in part because its FY09 numbers will ‘not be as good, they want to save face and say they’re better than the last administration, so they may be looking for a different story,’ hence the consideration of different metrics for measuring enforcement success.”²² The numbers for 2009 and 2010 were not overwhelming. In 2009 there were 277 civil referrals and 233 in 2010. There were 346 environmental crimes cases opened in 2010, which was a decrease of 11% from 2009. The Agency is looking for metrics such as quantifying exposure based enforcement mandates, including environmental justice related actions and using air toxics data to calculate reduction in cancer risk to maximally exposed individuals.²³

¹⁵Eric Schaeffer, A Fresh Start for EPA Enforcement, 38 ELR 10385, June 2008.

¹⁶Benjamin S. Lippard, Brian Flack and Julia B. Latham, Environmental Enforcement and Crimes, 2008 Annual Report, The Year in Review 2008, p. 63 (2009) (American Bar Association, Section of Environment, Energy and Resources).

¹⁷Benjamin S. Lippard, Brian Flack and Julia B. Latham, Environmental Enforcement and Crimes, 2008 Annual Report, The Year in Review 2008, p. 63 (2009) (American Bar Association, Section of Environment, Energy and Resources).

¹⁸See generally Schaeffer, A Fresh Start for EPA Enforcement, 38 ELR 10385, June 2008.

¹⁹EPA Seeks to Improve Civil, Criminal Coordination, Worrying Industry, Environmental Policy Alert, May 20, 2009, p. 34.

²⁰EPA Seeks to Improve Civil, Criminal Coordination, Worrying Industry, Environmental Policy Alert, May 20, 2009, p. 34.

²¹EPA Seeks to Improve Civil, Criminal Coordination, Worrying Industry, Environmental Policy Alert, May 20, 2009, p. 34.

²²EPA Eyes Cancer Metric to Address Likely Enforcement Decline, Environmental Policy Alert, July 15, 2009, p. 33.

²³EPA Eyes Cancer Metric to Address Likely Enforcement Decline, Environmental Policy Alert, July 15, 2009, p. 33.

Note also that EPA is examining state enforcement data with respect to water issues and has found an “unacceptably high” level of non-compliance.²⁴ These figures do not include criminal enforcement actions pursuant to an extensive list of state and local laws. State and local officials are also expanding their efforts.²⁵

In describing statistics such as these, Roger Marzulla, former Assistant Attorney General in the Environment and Natural Resources Division of the Department of Justice, notes that EPA and the Justice Department measure the success of the environmental enforcement program not on the basis of environmental improvements made, but rather on the number of convictions and the size of penalties obtained. These statistics are, in turn, used to justify annually increasing environmental enforcement budgets. The Justice Department now has 31 full-time environmental prosecutors, a four-fold increase since 1986. In turn, these “new hires” must create still more prosecutions, feeding the vicious cycle that leads to next year’s enforcement report and budget request.²⁶

The number of government employees involved in criminal enforcement has also increased. EPA has approximately 200 criminal investigators devoted full time to environmental crimes. Perhaps most significantly, the FBI has designated environmental crime as a priority and shifted agents from Cold War activities to the environmental area.²⁷ As indicated by a former chief of the Environmental Crimes Section, “there is now a machine and the machine must be fed.”²⁸

Ambitious state and local district attorneys are also looking for cases. Besides the various federal²⁹ environmental statutes, which all have criminal penalty provisions, note the broad scope of the criminal side of state statutes dealing with environmental issues. For example, various transportation, storage, and disposal activities are now punishable as felonies under the California Health and Safety Code.³⁰ In addition, *any* violation of California hazardous waste laws and regulations and any related “permit, rule, standard or requirement” is punishable as a misdemeanor.³¹ New Jersey has a statute adapted from a European law designed primarily to protect against fires and avalanches. This statute has very broad language, including criminal penalties for any person who “purposely or knowingly unlawfully causes an explosion, flood, avalanche, collapse of a building, release or abandonment of poison gas, radioactive or any other harmful or destructive substance.”³²

Sentencing for both corporations and individuals held liable for environmental crimes is a key concern.³³ The U.S. Sentencing Commission Guidelines Manual

²⁴New Enforcement Data Prompts Fears EPA Will Strip States’ CWA Powers, Environmental Policy Alert, July 15, 2009, p. 16.

²⁵Edward Bonanno, Evolution of Criminal Environmental Enforcement, 39 ELR 10352, May 2009.

²⁶Roger J. Marzulla, Testimony Before the Judiciary Comm. of the House Subcomm. on Commercial and Administrative Law 19 (May 2, 1996).

²⁷Criminal Enforcement Action No Longer Limited to “Midnight Dumpers,” Lawyer Tells Conference, 22 Env’t Rep. (BNA) 2406 (Feb. 21, 1992) (remarks by Charles A. DeMonaco, Assistant Chief, Environmental Crimes Section, Environment and Natural Resources Division, Department of Justice, at A.L.I./A.B.A. Conference, Feb. 14, 1992).

²⁸Judson Starr, Oral remarks at the A.B.A. Section of Natural Resources, Energy & Environmental Law’s Annual Conference on Environmental Law, Keystone, Colo. (Mar. 15–18, 1990).

²⁹See Nicholson, Criminal Provisions in Federal Environmental Statutes, A Compilation, (Congressional Research Service, Oct. 5, 1989).

³⁰Cal. Health & Safety Code §§ 25189.5 to 25192.

³¹Cal. Health & Safety Code §§ 25190.

³²N.J. Stat. Ann. 2C:17-2.

³³See § 9:33.

includes a category separately identified as environmental offenses.³⁴ In what used to be a highly subjective process, the rules remove nearly all discretion that judges have traditionally enjoyed at the sentencing stage. Sentencing for most judges was considered a matter of making mathematical computations.³⁵ The Commission drafted sentencing guidelines for organizational defendants. The Commission released new draft sentencing guidelines for corporate violators of environmental laws. They were very controversial. On December 12, 1995, the Commission decided to impose a moratorium on guideline amendments while it performs a guideline audit/assessment and simplification study and evaluates new sentencing guidelines for individuals.

The federal sentencing guidelines for corporations (other than for crimes relating to the environment, export controls, product safety, food and drugs, and national defense) went into effect on November 1, 1991.

The guidelines greatly restrict a judge's discretion in sentencing corporations convicted of federal crimes committed after the effective date and, in most cases, require the imposition of multi-million dollar fines. They may also require imposition of a probation period during which the corporation's operations and records would be subject to governmental review. The guidelines further provide, however, for a reduction in the potential penalties for corporations which have in place a comprehensive and effective compliance program to detect and deter criminal violations.³⁶

³⁴United States Sentencing Commission, Guidelines Manual, § 2Q (Nov. 2011).

³⁵Starr & Kelly, *Environmental Crimes and the Sentencing Guidelines: The Time Has Come . . . and It is Hard Time*, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 10096 (Mar. 1990).

³⁶Federal Sentencing Guidelines Now in Effect for Corporations, *McCutchen Newsletter*, Dec. 12, 1991. Under the Guidelines, mandatory fine ranges are determined using a "base fine" and a "culpability score." The base fine is calculated on the basis of which will be greater:

- i) the amount of the offense level table (all federal crimes have been assigned numerical offense levels), ii) the pecuniary gain to the organization from the offense (either in revenue or cost savings), or iii) the pecuniary loss caused by the offense to the extent the loss was caused intentionally, knowingly, or recklessly.

Miller & Kritz, *New Developments in Corporate Criminal Liability: The Benefits and Risks of Compliance Programs*, Morrison & Foerster, Feb. 1992, at 4. If there is an effective corporate compliance program to prevent and detect violations, the maximum fine can be "below the minimum fine for the very same offense committed by an organization without such a program." Miller & Kritz, *New Developments in Corporate Criminal Liability: The Benefits and Risks of Compliance Programs*, Morrison & Foerster, Feb. 1992, at 5.

A compliance program must be "effective" to merit a reduced culpability score. It is not sufficient that the policy is in writing and distributed to all relevant employees. Due diligence, the "hallmark" of an effective program, requires at a minimum that the organization must:

- 1) establish standards and procedures to be followed by its employees and other agents;
- 2) assign oversight responsibility to "specific individual(s) within high level personnel";
- 3) use due care not to delegate substantial discretionary authority to individuals who the corporation should have known had a propensity to engage in criminal activities;
- 4) effectively communicate its standards and procedures to all employees and agents;
- 5) utilize monitoring and auditing systems to detect criminal conduct and a reporting system that effectively eliminates fear of retribution;
- 6) consistently enforce disciplinary mechanisms; and
- 7) respond appropriately to detected offenses and take steps to prevent further similar offenses.

Miller & Kritz, *New Developments in Corporate Criminal Liability: The Benefits and Risks of Compliance Programs*, Morrison & Foerster, Feb. 1992, at 6–7 (emphasis in original).

Note that the Guidelines and "mandatory disclosure statutes such as California Penal Code Section 387 put company executives in a difficult position by requiring or encouraging disclosure of the criminal conduct to the government." Miller & Kritz, *New Developments in Corporate Criminal Liability: The Benefits and Risks of Compliance Programs*, Morrison & Foerster, Feb. 1992, at 7. Note also that, while the sentencing guidelines do not cover environmental crimes directly, they indirectly affect probation issues.

Fines may be as high as \$300 million.³⁷ Aggravating factors which raise the “culpability” score include a corporation’s prior criminal record and the level of personnel involved in the criminal conduct. Mitigating factors include self-reporting, cooperation with the government, acceptance of responsibility, and—most significantly—the corporation’s implementation of an “effective program to prevent and detect violations of the law.”³⁸

*Summary of Sentencing Guidelines Revisions*³⁹

The Guidelines determine the sanctions that will be imposed in federal criminal cases whether or not they are environmentally based. However, it is widely known that the Guidelines serve a much broader function in the area of corporate compliance programs. Since 1991, the Guidelines have provided a concrete financial benefit to companies that implement compliance programs by allowing judges to show leniency to such companies at sentencing. The leniency is based on whether or not the company’s compliance plan passed muster with the Guidelines’ criteria for an “effective program to prevent and detect violations of law.”

The Guidelines’ criteria for sentencing quickly became the criteria to determine which cases were selected for enforcement, and how seriously a particular violation may be viewed. Simply put, companies with compliance plans that did not meet the basic Guidelines requirements in the view of government personnel were almost automatically viewed as outliers seeking to avoid the legal responsibilities imposed by government regulations.

For the first time since 1991, the Guidelines that address the requirements for an effective compliance plan have been revised. The changes to the Organizational Guidelines were partly in response to the new requirements imposed by Sarbanes-Oxley.⁴⁰ The U.S. Sentencing Commission, the quasi-legislative body that drafts the Guidelines, revised Chapter Eight of the Guidelines, the “Organizational Guidelines,” which govern the sentencing of companies.

The provisions now require new efforts in order for the government to consider that a corporate compliance plan is “effective” in preventing and detecting violations of law. The amendments require corporate directors and executives to undertake a far greater responsibility and oversight role in the design and implementation of compliance plans and for the first time require that companies show that they have taken steps to promote an “organizational culture” that encourages a commitment to compliance. While the Court ruled in 2005 that federal judges may now only consider the Guidelines to be “advisory” in nature,⁴¹ it is not likely to diminish the importance of the Guidelines to organizations, particularly in the area of compliance. “In exercising discretion when sentencing, courts will almost certainly be asked to consider whether organizations have met these criteria as a good faith part of their compliance programs.”⁴²

The Guidelines do the following:

- Require the organization to “promote an organizational culture that encourages ethical conduct and a commitment to compliance with the law”;

³⁷Miller & Kritz, *New Developments in Corporate Criminal Liability: The Benefits and Risks of Compliance Programs*, Morrison & Foerster, Feb. 1992.

³⁸Miller & Kritz, *New Developments in Corporate Criminal Liability: The Benefits and Risks of Compliance Programs*, Morrison & Foerster, Feb. 1992.

³⁹See Steven Solow, *Environmental Management Systems: Not Just for Environmental Compliance Anymore*, *Executive Couns.*, Oct. 2004, at 39. The following on the Sentencing Guidelines revisions are primarily excerpted from that article with permission of the author.

⁴⁰See discussion at § 8:23.

⁴¹See *U.S. v. Booker*, 543 U.S. 220, 125 S. Ct. 738, 160 L. Ed. 2d 621 (2005) and *U.S. v. Fanfan*, 542 U.S. 956, 125 S. Ct. 12, 159 L. Ed. 2d 838 (2004).

⁴²U.S. Supreme Court Holds Sentencing Guidelines Advisory, Not Mandatory, Hunton & Williams Client Alert (Jan. 2005), available at <http://www.hunton.com> (last visited Aug. 22, 2005).

- More specifically define the term “standards and procedures” as “standards of conduct and internal controls that are reasonably capable of reducing the likelihood of criminal conduct”;
- Replace the general requirement that high-level individuals be assigned overall responsibilities with more specific requirements that clarify the roles and reporting responsibilities of an organization’s compliance authorities;
- Require more aggressive efforts by an organization to determine when an employee with substantial authority over a compliance area has a history of engaging in illegal activities or other conduct inconsistent with an effect compliance and ethics program;
- Require training for and the dissemination of training materials to all levels of an organization’s employees and agents, including upper level management;
- Mandate the use of auditing and monitoring systems designed to detect criminal conduct;
- Require a periodic evaluation of the compliance program;
- Require that organizations provide a means, which may include the use of anonymous or confidential reporting, to enable employees and agents “to seek guidance regarding the potential or actual criminal conduct without fear of retaliation”; and
- Enforce compliance stands through “appropriate incentives,” in addition to disciplinary actions.

The EMS and those charged with its implementation should consider these changes and determine whether or not the existing program satisfies these requirements. Simply put, even a fairly well-functioning EMS will be considered suspect in the event of a violation if it does not address each of the new Guidelines provisions.

§ 8:21 Determining and assuring compliance—In general

To avoid civil and criminal liability, it is critical that a method exist for determining compliance or at least whether potential noncompliance problems exist. An environmental audit/assessment program, such as that set forth above, provides a method for determining compliance. It focuses on how to ensure the early identification of actual or potential compliance problems, how to make sure that management is aware of the status of operations, and how to ensure the appropriate resolution of problems. The risk of inadvertent violations and enforcement are therefore reduced.

§ 8:22 Determining and assuring compliance—Certifications

An audit/assessment may provide the basis for a certification by a company official on the accuracy and completeness of a permit application. Some of the environmental statutes requiring permits, such as the Clean Water Act and the Resource Conservation and Recovery Act (RCRA), provide criminal penalties for making false statements on permit applications, and provisions in the federal criminal code can also apply.¹

§ 8:23 Determining and assuring compliance—SEC disclosures

Publicly held companies must also identify environmental problems to ensure timely and accurate reports under the securities and exchange laws and SEC regulations. An SEC finding that a company failed to disclose environmentally related matters, thereby deceiving investors, could jeopardize the company’s ability to raise capital through new stock offerings or debt instruments. It can also result in

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¹See, e.g., 18 U.S.C.A. § 1001.

SEC initiation of costly and time-consuming administrative proceedings. Any such action by the SEC can give rise to shareholders' class actions and derivative suits. Thus, SEC enforcement of environmental laws and regulations, although indirect, is potentially more powerful than that of direct agency enforcement of environmental laws and regulations. Included within the scope of required SEC reporting are environmentally related matters, such as: (1) two-year estimates of capital expenditures for environmental compliance, or for a longer period if such estimates have been developed and a failure to disclose would be misleading; (2) particular types of environmental proceedings;¹ and (3) circumstances under which companies must disclose their policies or approaches concerning environmental compliance.

With respect to proceedings, any governmental administrative or judicial proceeding arising or known to be contemplated under any federal, state, or local provisions regulating the discharge of materials into the environment or otherwise relating to the protection of the environment must be disclosed if any one of three conditions exist. Any private or governmental proceeding that is material to the business or financial condition of the corporation must be reported.² Any private or governmental proceeding for damages, potential monetary sanctions, capital expenditures, deferred charges or charges to income is reportable if the amount involved (exclusive of interest and costs) exceeds 10% of the current assets of the corporation.³ And any governmental proceeding must be reported if monetary sanctions (exclusive of interest and costs) will or reasonably are expected to exceed \$100,000. (Stated another way, such an environmental proceeding need not be reported if there is a reasonable belief that the proceeding will result in fines of less than \$100,000 and is not otherwise material to the business or financial condition of the company.)

It is important to remember that environmentally related proceedings are not limited to those initiated by an agency or private individual, but include actions initiated by the corporation alone, with another company, or as a named party in a proceeding initiated by an industry trade association, if the result of the action meets any of the reporting conditions. This would include actions such as a rule challenge of a request for an administrative hearing.

Although not required, any disclosure or comments by the company concerning its environmental policy must be accurate. If the company's policy is likely to result in enforcement actions and fines, however, the policy and an estimate of the fines must also be disclosed.

The SEC's May 1989 interpretative release concerning the disclosure required in Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A) in SEC filings further details the scope of disclosure.⁴ The MD&A release states that "once management knows of a potentially material environmental problem, it must disclose it unless it can determine that the problem is not reasonably likely to cause a material effect, either because the event is not likely to hap-

[Section 8:23]

¹Although special rules apply to environmental proceedings, in all cases any legal proceeding material to the business or financial condition of the company, whether it arises from an environmental claim or otherwise, must be disclosed. See 17 C.F.R. § 229.103; Securities Act of 1933 Release No. 6130, Securities Exchange Act of 1934 Release No. 16224 (Sept. 27, 1979), 18 SEC Docket 453.

²17 C.F.R. § 229.103(5)(A). A material proceeding is one to which a reasonable investor is substantially likely to attach importance in determining whether to purchase any security of the corporation. 17 C.F.R. § 230.405.

³17 C.F.R. § 229.103(5)(B).

⁴54 Fed. Reg. 22427 (May 24, 1989). For a detailed discussion of this release and SEC reporting in general, see Archer et al., SEC Reporting of Environmental Liabilities, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 10105 (Mar. 1990).

pen or if it does happen, the effect is not likely to be material.”⁵ Thus, in preparing SEC filings, data developed during routine audits/assessments and audits/assessments made for acquisition and sale of properties becomes important. “Individuals preparing SEC filings should also be aware that outside consultants as well as inside departments often prepare cost estimates during due diligence reviews for acquisitions and refinancing.”⁶ Also note that in preparing documentation of the determinations required under the MD&A release, “management should be aware that documents prepared during in-house or outside investigations of environmental problems may not be privileged. Even if certain documents are privileged, the facts they contain may ultimately be discovered. Registrants should be careful not to make admissions of liability in documents prepared to facilitate decision-making regarding SEC filings.”⁷

The SEC has clarified its views as to ascertaining “unascertainables” in its Staff Accounting Bulletin No. 92.⁸ That bulletin notes that paragraph 8 (“Accounting for Contingencies”) of the Statement of Financial Accounting Standards No. 5, commonly known as SFAS 5, states that “an estimated loss from a loss contingency shall be accrued by a charge to income if it is probable that a liability has been incurred and *the amount of the loss can be reasonably estimated.*”⁹ Determining what can “reasonably be estimated” is a difficult area and the SEC has indicated in this bulletin that an environmental liability should be evaluated independently from any potential claim for recovery. Thus, the SEC now requires that contingent liabilities be disclosed on the face of the balance sheet and separate from the amount of claims for recovery from insurance carriers or other third parties. Notes to a balance sheet must include “information necessary to an understanding of the material uncertainties affecting both the measurement of the liability and the realization of recoveries.”¹⁰

The SEC gives some very general guidance with respect to quantifying the extent of environmental or product liability, methods of remedy, and amounts of related costs when such estimates “frequently prove to be different from the ultimate outcome.”¹¹ The SEC’s response is that the measurement of liability “should be based on currently available facts, existing technology, and presently enacted laws and regulations, and should take into consideration the likely effects of inflation and other societal and economic factors.”¹² If management is able to determine that the amount falls into a range and there is no better estimate within the range, then the “registrant should recognize the minimum amount of the range.”¹³

The basis for measuring environmental liability is very important and is worth quoting in detail.

⁵54 Fed. Reg. 22427 (May 24, 1989).

⁶Archer et al., SEC Reporting of Environmental Liabilities, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 10105, 10107 (Mar. 1990).

⁷Archer et al., SEC Reporting of Environmental Liabilities, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 10105, 10108 (Mar. 1990). In 1993 the SEC clarified its views regarding ascertaining “unascertainables.” See SEC, Staff Accounting Bulletin No. 92 (June 8, 1993). For a discussion of this bulletin and its effect on disclosing environmental liability, see Friedman, *Practical Guide to Environmental Management* 206–16 (Environmental Law Institute, 11th ed. 2011); see also Friedman, *Accounting for Unascertainables*, Corp. *Envtl. Strategy*, Oct. 1993, at 59, 60–61.

⁸This paragraph and the four paragraphs following it are taken from Friedman, *Accounting for Unascertainables*, Corp. *Envtl. Strategy*, Oct. 1993, at 60–61. See also Lisa J. Sotto, *Companies That Fail to Make Adequate Disclosure of Potential Liabilities Have Become the Objects of Increased SEC Scrutiny*, Nat’l L.J., Dec. 4, 1995, at B5.

⁹SEC, Staff Accounting Bulletin No. 92, June 8, 1993, at 6.

¹⁰SEC, Staff Accounting Bulletin No. 92, June 8, 1993, at 6.

¹¹SEC, Staff Accounting Bulletin No. 92, June 8, 1993, at 8.

¹²SEC, Staff Accounting Bulletin No. 92, June 8, 1993, at 8.

¹³SEC, Staff Accounting Bulletin No. 92, June 8, 1993, at 8.

In measuring its environmental liability, a registrant should consider available evidence including the registrant's prior experience in remediation of contaminated sites, other companies' cleanup experience, and data released by the Environmental Protection Agency or other organizations. Information necessary to support a reasonable estimate or range of loss may be available prior to the performance of any detailed remediation study. Even in situations in which the registrant has not determined the specific strategy for remediation, estimates of the costs associated with the various alternative remediation strategies considered for a site may be available or reasonably estimable. While the range of costs associated with the alternatives may be broad, the minimum clean-up cost is unlikely to be zero.¹⁴

The trend is toward increasing disclosure of environmental liability. Note that “[m]ost insurance carriers have modified their standard D&O policies to include a broad pollution exclusion that expressly *denies coverage for claims under securities law alleging inadequate environmental disclosure.*”¹⁵ On June 30, 1995, the American Institute of Certified Public Accountants issued a draft statement of position titled “Environmental Remediation Liabilities” for public companies. The draft statement presumed an unfavorable outcome with respect to challenges to strict liability and took the auditor “through every aspect of an efficient audit” under CERCLA.¹⁶ This approach does not recognize, as do environmental professionals, that CERCLA’s “monolithic uniformity breaks down in the face of facts peculiar to the particular problem to be addressed.”¹⁷ On October 10, 1996, the Institute published its final statement of position (SOP 96-1) on environmental liabilities. This statement was approved by the Financial Accounting Standards Board and became effective for fiscal years beginning after December 1, 1996.¹⁸ The statement indicates that “the ‘reasonably estimable’ criterion is met when a *range* of loss can be reasonably estimated”¹⁹ and “expenses associated with a particular phase or component of the overall cleanup must be accrued at the time they become individually estimable.”²⁰ This document should be examined closely.

In 2003, the SEC reiterated its 2001 advice “Cautionary Advice Regarding Disclosure About Critical Accounting Policies.” “The advice reminded companies that SEC rules governing the Management Discussion & Analysis filing require disclosure about ‘trends, event, or uncertainties’ that could have a material impact on reported financial information. Environmental uncertainties are cited as an example.”²¹ “The SEC review of Fortune 500 disclosures [in 2003] found specifically that environmental exposures and liabilities were frequently deficient.”²²

Companies should ensure that their environmental management staff identifies

¹⁴SEC, Staff Accounting Bulletin No. 92, June 8, 1993, at 9. For a detailed discussion on disclosure, see Armao and Griffith, *The SEC’s Increasing Emphasis on Disclosing Environmental Liabilities*, 11 *Nat. Resources & Env’t* 31 (1997).

¹⁵Tom McMahon, *Forget Past: Disclosure Is Inevitable Wave of Future*, *Envtl. F.*, Sept./Oct. 2004, at 22 (emphasis in original).

¹⁶Thomas M. Skove, *Proposed Accounting Guidance for Environmental Remediation Liabilities*, 26 *Env’t Rep. (BNA)* 1980–81 (Feb. 9, 1996).

¹⁷Thomas M. Skove, *Proposed Accounting Guidance for Environmental Remediation Liabilities*, 26 *Env’t Rep. (BNA)* 1980–81 (Feb. 9, 1996).

¹⁸For a detailed description, see *Recent Developments in Accounting Rules Concerning Environmental Cleanup Liabilities*, in *Environmental Practice Briefing*, Shearman & Sterling Client Publication (Spring 1997).

¹⁹*Recent Developments in Accounting Rules Concerning Environmental Cleanup Liabilities*, in *Environmental Practice Briefing*, Shearman & Sterling Client Publication (Spring 1997), at 2.

²⁰*Recent Developments in Accounting Rules Concerning Environmental Cleanup Liabilities*, in *Environmental Practice Briefing*, Shearman & Sterling Client Publication (Spring 1997), at 2.

²¹Tom McMahon, *Forget Past: Disclosure Is Inevitable Wave of Future*, *Envtl. F.*, Sept./Oct. 2004, at 22.

²²Robert Repetto, *Are Companies Coming Clean?*, *Envtl. F.*, Sept./Oct. 2004, at 19, 27.

potentially material environmental exposures and develops objective quantitative estimates of potentially material environmental exposures and objective quantitative estimates of potential financial impacts under reasonable alternative scenarios. Companies should include senior environmental affairs managers in the development and review of disclosure statements. The audit function should ensure that systems are in place to produce adequate information regarding known material environmental exposures and that such information is delivered to senior management and properly disclosed.²³

Sarbanes-Oxley

As many others have noted, the Sarbanes-Oxley Act of 2002 is primarily about disclosure, imposing enhanced responsibility for disclosures upon top corporate officials.²⁴ It puts increased pressure on corporate accountants and attorneys to push information “up the chain.” It requires CEOs and CFOs to certify, among other things, that the company has adequate “disclosure controls and procedures.” Sarbanes-Oxley also requires CEOs and CFOs to evaluate disclosure controls every 90 days and disclose to the company’s auditors and to the board’s audit committee all significant deficiencies and weaknesses in the design or operations of the controls.

These new obligations are placed on top of the more than 20-year-old SEC requirements regarding the disclosures of environmental liabilities. Three existing SEC regulations and one financial accounting standard require the disclosure of “material” environmental liabilities. However, the SEC has never expressly delineated the matters it considers “material” to the financial condition of a company, and Sarbanes-Oxley has not provided such a definition either. Rather, the SEC relies on case law holding that a fact is “material” if a reasonable investor would take it into account in making an investment decision.²⁵

The U.S. Supreme court has twice ruled on the issue. In a 1976 case, it concluded that an omission would be material if there is a substantial likelihood it would be viewed by a reasonable investor “as having significantly altered the ‘total mix’ of information made available.”²⁶ Similarly, in a 1988 case, the Court declined to establish a bright-line rule for materiality, finding that it “will depend at any given time upon a balancing of both the indicated probability that the event will occur and the anticipated magnitude of the event in light of the totality of the company activity.”²⁷

“Materiality” of an environmental liability may be affected by several factors. The size of the company may carry significant weight; the failure to process an environmental complaint would be viewed quite differently at a large company that processes 100 such complaints each year, than at a small company that typically processes only two. Other factors may include whether the matter involves a regulatory compliance issue, or whether the matter involves concealment of an unlawful act. As summarized by Caroline Hermann, formerly of ELI:

In general, information is material if there is a substantial likelihood that a reasonable investor would find the information important to make a well-informed business investment decision. Determinations of materiality require ‘delicate audits/assessments of the

²³Robert Repetto, *Are Companies Coming Clean?*, *Envtl. F.*, Sept./Oct. 2004, at 27.

²⁴See Steven Solow, *Environmental Management Systems: Not Just for Environmental Compliance Anymore*, *Executive Couns.*, Oct. 2004, at 39. A substantial portion of the following on Sarbanes-Oxley is primarily excerpted from that article with permission of the author. See also Caroline B.C. Hermann, *Corporate Environmental Disclosure Requirements*, 35 *ELR* 10308 (May 2005) and Jeffrey Gracer and Lawrence Schnapf, *Special Committee on Environmental Disclosure 2004 Annual Report The Year in Review 2004*, at 156–59, *ABA Section of Environment, Energy and Resources Law* (2005).

²⁵SEC, *Staff Accounting Bulletin No. 92*, June 8, 1993, at 6.

²⁶*TSC Industries, Inc. v. Northway, Inc.*, 426 U.S. 438, 449, 96 S. Ct. 2126, 48 L. Ed. 2d 757, *Fed. Sec. L. Rep. (CCH) P 95615* (1976).

²⁷*Basic Inc. v. Levinson*, 485 U.S. 224, 108 S. Ct. 978, 99 L. Ed. 2d 194, *Fed. Sec. L. Rep. (CCH) P 93645*, 24 *Fed. R. Evid. Serv.* 961, 10 *Fed. R. Serv.* 3d 308 (1988).

inferences a reasonable shareholder would draw from a given set of facts and the significance of these inferences to him.’ Materiality, as defined, is murky at best. Attempts to quantify materiality have used a rule of thumb, for example, to disclose claims equaling \$100,000 or more, or 10% of a company’s assets in a current or pending legal proceeding. However, the SEC cautions against relying solely on such benchmarks because they have no basis in law or in accounting standards. Instead ‘evaluation of materiality requires a registrant and its auditors to consider *all* the relevant circumstances, and that there are numerous circumstances in which misstatements below 5% could well be material’²⁸

Professor Mitch Crusto discusses the issues of “materiality” in detail.²⁹ He includes a proposal presented by the American Society of Testing and Materials (ASTM) “which would require a cumulative audit/assessment of the financial importance of all environmental liabilities for ‘materiality.’”³⁰ and concludes that “while Sarbanes-Oxley does not expressly address corporate environmental disclosure, large economic entities, include publicly traded corporations and the federal government should adopt the ASTM CMS over voluntarily published green reports.”³¹ “[I]t would be another important means of promoting investor confidence and facilitating a full evaluation of the true cost of environmental compliance and remediation. In addition to private enterprises, CMS would also be a useful tool for the federal government to evaluate and manage its enormous environmental liabilities.”³²

Note that the issue of financial disclosure and materiality is further complicated by an interpretation by the Financial Accounting Standards Board (FASB). Its standard, FAS 143 became effective in December 2003, which “treats accounting for asset retirement obligations (AROs).”³³ “In a nutshell, FAS 143 requires companies to recognize the fair value of an ARO in the period in which it is incurred, if a reasonable estimate of fair value can be made. A company’s property, plant and equipment are all examples of long-lived assets that may be subject to so-called retirement obligations, which includes abandonment, recycling and disposal.”³⁴ Companies tried to avoid FAS 143 by arguing that FAS 143 “did not apply to ‘conditional’ asset retirement obligations (so-called CAROs), that is obligations for which the timing or method of the retirement was dependant on a future event out of the company’s control.”³⁵ The response of the FASB was to issue “interpretation No. 47 (FIN 47) which became effective for fiscal years ending after December 15, 2005. FIN 47 makes it clear that liability recognition for CAROs includes a broad swath of

²⁸Caroline B.C. Hermann, Corporate Environmental Disclosure Requirements, 35 ELR 10308 (May 2005) (emphasis in original) (citations omitted).

²⁹Mitchell F. Crusto, Endangered Green Reports: “Cumulative Materiality” in Corporate Environmental Disclosure After Sarbanes-Oxley, 35 ELR 10666 (Oct. 2005).

³⁰Mitchell F. Crusto, Endangered Green Reports: Cumulative Materiality” in Corporate Environmental Disclosure After Sarbanes-Oxley, 35 ELR 10666, 10674–75 (Oct. 2005).

³¹Mitchell F. Crusto, Endangered Green Reports: Cumulative Materiality” in Corporate Environmental Disclosure After Sarbanes-Oxley, 35 ELR 10666, 10674–75 (Oct. 2005).

³²Mitchell F. Crusto, Endangered Green Reports: Cumulative Materiality” in Corporate Environmental Disclosure After Sarbanes-Oxley, 35 ELR 10666, 10678 (Oct. 2005).

³³Jeffrey A. Smith, New Standards for Financial Reporting of Environmental Liabilities: Introduction and Overview, ABA Special Comm. on Env’tl. Disclosure Newsletter, Oct. 2005, at 2–3. That newsletter contains a variety of other articles that deal in detail with conditional asset retirement obligations.

³⁴Jeffrey A. Smith, New Standards for Financial Reporting of Environmental Liabilities: Introduction and Overview, ABA Special Comm. on Env’tl. Disclosure Newsletter, Oct. 2005, at 4.

³⁵Jeffrey A. Smith, New Standards for Financial Reporting of Environmental Liabilities: Introduction and Overview, ABA Special Comm. on Env’tl. Disclosure Newsletter, Oct. 2005, at 4.

environmental conditions, and that recognition is appropriate if the fair value of liability can reasonably be estimated.”³⁶

Sarbanes-Oxley has made the process of determining whether environmental costs and liabilities are “material” a matter of potentially ruinous personal liability for the highest level of corporate officers. Under the provisions of that law, anyone who certifies a periodic report that does not comport with all applicable requirements is subject to fines and imprisonment—up to a \$1 million fine and 10 years of imprisonment for a “knowing” offense, and up to a \$5 million fine and 20 years of imprisonment for a “willful” offense.

In addition, Sarbanes-Oxley contains two new criminal provisions that are not limited to SEC-related matters. A new whistle-blower protection law provides for fines and prison sentences for retaliation against an informant who provides information relating to the possible commission of any federal offense. A second provision prescribes up to 20 years of imprisonment for destroying documents in order to obstruct a federal investigation, or even in anticipation of a federal legal proceeding. Importantly, this broad new provision allows individuals to be prosecuted even if no official proceeding had begun, as long as the government can prove that the person destroyed records in contemplation of some official proceeding in the future. Note the importance of conducting a careful review of a company’s records management program, above and beyond the EMS, given that it creates the potential for criminal liability for the destruction of documents in the ordinary course of a company’s business.

Sarbanes-Oxley has also spawned a new era of cooperation between the U.S. Environmental Protection Agency and the SEC, as previously discussed. In July 2004, the Government Accountability Office (GAO) published a report,³⁷ stating “that there is inconsistency in reporting among companies, even among those in the same industry group. The report is unclear about whether this inconsistency results from significantly different circumstances for individual companies or if companies are applying the disclosure requirements differently. Consequently, investors cannot easily evaluate an organization’s environmental risks.”³⁸ The Report does find that “[w]ithout more compelling evidence that environmental disclosure is inadequate, the need for changes, guidance or increased monitoring and enforcement is unclear.”³⁹ However, the Report also recommends that the SEC and EPA “improve coordination to ensure that the SEC takes better advantage of EPA data relevant to environmental disclosure. In light of this report, it is likely that environmental disclosures in SEC filings may face increased scrutiny—from the SEC, EPA, and the GAO—during the Obama Administration.”⁴⁰ EPA is now seeking to enhance the sharing of information about EPA enforcement actions against publicly traded companies with the SEC and the public.

The disclosure requirements and penalties of Sarbanes-Oxley, along with

³⁶Jeffrey A. Smith, *New Standards for Financial Reporting of Environmental Liabilities: Introduction and Overview*, ABA Special Comm. on Env’tl. Disclosure Newsletter, Oct. 2005, at 4.

³⁷United States Government Accountability Office, “Environmental Disclosure: SEC Should Explore Ways to Improve Tracking and Transparency of Information,” GAO-04-808 (July 2004).

³⁸The Sarbanes-Oxley Act: What Else Will This Change for Environmental Staff, *Managing Environmental Performance*, Oct. 2004, at 3, available at <http://www.trinityconsultants.com>. See also Jeffrey Gracer and Lawrence Schnapf, *Special Committee on Environmental Disclosure 2004 Annual Report The Year in Review 2004*, at 159, ABA Section of Environment, Energy and Resources Law (2005).

³⁹Jeffrey Gracer and Lawrence Schnapf, *Special Committee on Environmental Disclosure 2004 Annual Report The Year in Review 2004*, at 159, ABA Section of Environment, Energy and Resources Law (2005).

⁴⁰Sidley & Austin, *GAO Report Calls for SEC and EPA Cooperation on Environmental Disclosure*, *Environmental Advisory* (2004), available at <http://www.sidley.com>.

heightened government and shareholder attention to environmental liabilities, have prompted many companies to consider whether their EMS is providing an acceptable level of compliance and whether it is pushing information necessary for SEC filings up the corporate ladder. “No longer can companies subjectively determine whether an environmental matter materially affects earnings. Now, under the Sarbanes-Oxley Act, companies must go beyond a mere baseline requirement, and consider material known trends as well as uncertainties for inclusion in annual and quarterly reports.”⁴¹

In short, managers can no longer be satisfied if their EMS provides only compliance controls. They must also be confident that the EMS will allow the company’s top managers to certify that adequate “disclosure controls and procedures” are in place regarding potential and actual material environmental liabilities.

This tightening interpretation of what financial information must be disclosed greatly increases the potential liability exposure for failure to disclose or properly accrue. Legal involvement is critical as these issues are examined.

Note that in July 2004, the U.S. Government Accountability Office (GAO) expressed concern about the current state of environmental disclosure, noting inconsistencies in reporting among companies, even among those in the same industry group.⁴²

EPA and the SEC have a cooperative agreement that allows the SEC access to EPA data to audit in essence the adequacy of the data a company releases. Under the agreement, the SEC has offered to perform “full disclosures” of any corporation for EPA and EPA allows the SEC access to various EPA files. EPA has agreed to provide the SEC with six categories of information on a quarterly basis. The types of information to be provided are:

- (1) Names of parties receiving Superfund notice letters identifying them as potentially liable for the cost of a Superfund cleanup (source: Superfund enforcement tracking system);
- (2) List of all filed (but not concluded) RCRA and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) cases (source: Consolidated Enforcement Docket);
- (3) List of all recently concluded civil cases under federal environmental laws (source: Consolidated Enforcement Docket);
- (4) List of all filed criminal cases under federal environmental laws (source: Criminal Enforcement Docket);
- (5) List of all facilities barred from government contractors under the Clean Water Act; and
- (6) List of all RCRA facilities subject to cleanup requirements (source: Corrective Action Reporting System).

In exchange, the SEC stated it would “consider targeting Environmental Disclosures” for its enforcement efforts, according to an EPA source.⁴³

§ 8:24 Other benefits

Ensuring compliance is one of the most important and useful purposes of an environmental audit/assessment program, but the results of audits/assessments provide other benefits as well. Environmental considerations can play a significant role in a company’s business planning, including financial planning, new product

⁴¹Caroline B.C. Hermann, Corporate Environmental Disclosure Requirements, 35 ELR 10308, 10309 (May 2005).

⁴²See Environmental Disclosure: SEC Should Explore Ways to Improve Tracking and Transparency of Information, GAO-04-808 (July 2004).

⁴³Harrelson, EPA Agrees to Information Exchange with SEC, Inside EPA Superfund Report, Mar. 28, 1990, at 2. See discussion of Sarbanes-Oxley in this section.

lines and expansions, and risk management. An environmental audit/assessment program provides both corrective and preventive assistance by identifying potential problem areas or new requirements that may require immediate or long-term capital or operating expenditures. A company's considerations for modifying or expanding current operations or going into new business lines also benefit from the audit/assessment program. New products may be subject to current or proposed regulations that may affect the cost of production and ability to market. For example, a new chemical substance may be subject to a Toxic Substances Control Act section 5(e) order limiting the substance's use or requiring very extensive safety requirements on its manufacture or processing, which would have to be factored into the company's economic considerations.

A modification to or expansion of an existing operation can trigger significant environmental issues. The location of a facility in an attainment or nonattainment area may require extensive preconstruction review under the Clean Air Act. Similarly, a location on or near a former waste disposal site can result in expensive and long-term remedial measures at the site.

With the increasing importance of and difficulty in obtaining liability insurance, an environmental audit/assessment program can assist risk management decisionmaking for the amounts and types of insurance coverage needed. For example, RCRA requires "financial assurance" from owners or operators of hazardous waste treatment, storage or disposal facilities to cover closure and postclosure care, as well as liabilities arising from accidents. The audit/assessment program can provide the information necessary to secure such financial assurances, either through insurance, bonds, or other methods acceptable to the agencies.

Audits/Assessments can raise the consciousness of the employees to the importance of compliance and the risk of noncompliance. This increased awareness can result in better environmental performance. Also, the employees' performance in assuring and maintaining compliance can be used as a factor in evaluating that employee for salary increases and promotions. A clearly identified and implemented environmental program also can help employee morale and recruitment.

An audit/assessment program can provide the basis for positive public relations where no problems exist or for situations where problems are found, but are being promptly and effectively corrected. A company will also have the ability to respond promptly to the media in the case of an emergency or crisis arising from an environmental incident because it will have readily available information from the audit/assessment program. While a public relations effort will not itself solve any environmental problem, it can help address the problem of a bad image that results from an actual or perceived poor environmental compliance record. A bad image can result in unwanted press and media attention, tie up management time responding to inquiries, and adversely affect the business sales and stock values.

Related to general business planning, environmental considerations are an important factor in acquisitions and divestitures. By helping to identify and evaluate environmental contingencies, the audit/assessment can provide information on which assets of the company should be sold or whether to buy all or part of another company. A more detailed discussion and guidelines on this topic are contained in § 8:25.

Finally, environmental audits/assessments provide information about a company's operations, including problems and compliance status, that can be of great help in evaluating the impact of new environmental laws and regulations. This can enable the company to comment effectively on, or even challenge, the constant stream of laws and regulations proposed and enacted.

IV. ENVIRONMENTAL EVALUATIONS FOR ACQUISITIONS AND DIVESTITURES

§ 8:25 Introduction

The following sets forth guidelines for identifying and resolving environmental issues raised by the acquisition of real property or facilities, including the acquisition of all or part of a company that owns or leases such property, or did so in the past. Specifically, the guidelines assist in identifying potential environmental liabilities that could be incurred due to acquisition, and will help minimize those risks. A company planning to divest operations can use these guidelines for the same purpose as a company planning to acquire: the identification and resolution of environmental problems. The review can also assist the divesting company in avoiding inaccurate representations about its assets.

The guidelines provide an outline of the process involved and address the actions to be considered in all cases. Not all of the outline actions may be required in a particular case; conversely, a case may present circumstances requiring additional actions. In all cases, however, an action plan should be developed from the guidelines and then implemented.

Note that the following are “guidelines.” It may be difficult to obtain the suggested information because of reluctance to disclose and/or deadline pressures. There are usually more “unknowns” than you or your client would prefer in developing appropriate data for an acquisition.

§ 8:26 Identification of potential liabilities—Site and facility audits/assessments

A critical step before acquiring any property, facility, or company that owns property or facilities is to conduct a physical site audit/assessment of all sites at which present or past operations could conceivably have caused environmental contamination. Such audits/assessments are essential to identify potential liabilities under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), and other federal and state laws. Such site audits/assessments should be conducted at every facility that is to be acquired. If an entire company is being acquired, each facility it owns should be assessed; each facility it leases or operates should be assessed as well, and each facility it has owned, leased, or operated in the past should also be assessed, if possible.

Preferably, physical site audits/assessments should be performed by both legal and technical experts. Experience and expertise are needed to judge whether a facility requires physical audit/assessment, and if so, how that audit/assessment should be done and what it should examine.

Certain information should be obtained from the company or facility management prior to the actual visit. This includes general identifying information (for example, facility name and location), a description of the principal operations, and copies of all relevant environmental policies, procedures, and guidelines. A list of all specific federal, state, and local environmental regulations, including standards or guidelines applicable to the facility’s operations, should also be acquired. The actual site audit/assessment could include sampling and analysis of groundwater, soil, the physical structures themselves, and, where applicable, an analysis of the surface waters and sediment, ambient air, or specifically permitted emission sources.

Preliminary site audits/assessments may be made early in the investigation. A final site audit/assessment, including sampling analysis, should not be undertaken until the review of records and permits has been completed. These document reviews are essential aids in locating possible contaminated areas on the property. The location of such areas, in turn, is a major factor in planning and executing the actual sampling and analysis program.

§ 8:27 Identification of potential liabilities—Review of licenses and permits

It is important to review and evaluate the licenses and permits both possessed and required by facilities. Any pending application for environmental permits or licenses should also be included. The review must consider not only existing requirements but also impending or potential future requirements. The review of permits and licenses should include (as applicable): RCRA, National Pollutant Discharge Elimination System, underground injection control, Clean Air Act, underground storage tank, and pretreatment requirements.

In addition to identifying what permits exist or are required, consideration should be given to whether their limitations are achievable and acceptable. Relevant questions are (1) whether permit limits will allow expansions or modifications of operations, and if so, whether more stringent parameters will be imposed; (2) identification of federal, state or local hurdles; (3) whether the permits can be transferred or whether the new owner or operator must apply for new ones; (4) ascertainment of applicable public notice, comment, and hearing procedures; (5) whether new permit programs are likely to apply soon; and (6) whether “interim program permits” are likely to become more stringent or costly in the future, or whether they might lapse altogether.

§ 8:28 Identification of potential liabilities—Regulatory history and current status

For facilities that are subject to one or more regulatory authorities, it is important to determine the history of compliance. The facility’s own management and files should be reviewed, and contact should be made with all regulatory authorities that have jurisdiction over the facility. The review should include an audit/assessment of (1) any permit violations, with or without fine or penalties; (2) exceedances or excursions above applicable parameters, such as in monthly discharge monitoring reports; (3) discharges that do not exceed daily maximums or monthly averages, but are at or near the limit; and (4) management practices. Is the facility well-managed and well-run, for example, as against RCRA, Department of Transportation, Occupational Safety and Health Administration (OSHA), or Mining Safety and Health Administration standards? Or is it just fortunate that the facility has not been inspected? Are all required programs in place, such as RCRA groundwater monitoring, OSHA hazard communication, and spill prevention plans? Are these programs well designed? In general, it should be determined how the facility is regarded by applicable regulatory authorities. If the facility is viewed as a problem, will the authority be pleased to see new ownership, or is the activity or operation *per se* unwelcome in that area? It is important to know whether a new owner will receive a fresh start from the regulatory authorities.

Other appropriate questions concern whether the facility is the object of local citizen or environmental group attention. If so, is the attention favorable or unfavorable? Have there been any citizen or employee complaints within the last three years concerning environmental activities at the facility? If so, what is their current status? Are movements afoot to close or restrict the facility’s operations? Does the facility generate air or water emissions that expose the local population? If so, is there evidence of local sensitivity? In general, what is the facility’s standing in its community?

A number of other topics should also be included in evaluating the compliance history. All applicable recordkeeping and reporting requirements should be reviewed and compared to actual practice at the facility. The review should include all information on the current status and copies of relevant documents on any of the following for the immediately preceding five years: (1) orders, citations, notices of violation or similar administrative actions, or civil or criminal actions filed against the

company with respect to any facility not being in compliance with regulations, standards or permits; (2) threatened or known to be contemplated enforcement actions; (3) compliance schedules, consent orders, judgments, waivers, or variances related to compliance with any environmental program; and (4) fines or penalties levied or paid for any of the above matters.

Information on the last federal, state, or local agency inspection that included environmental matters should be reviewed, including the date, a copy of any reports, whether any action was required of the company, and, if so, its current status. This list is not all inclusive; therefore, it must be recognized that there are many other areas for which data can be included or is appropriate in the compliance history and current status review.

§ 8:29 Identification of potential liabilities—Prior ownership and operations

For any facility that is or ever was used for operations that could have caused environmental contamination, it is important to reconstruct a chain of title for the past history of the site. This history should include a determination of the operations performed at the site during each period, and by whom (owner or lessee) those operations were performed. This historical survey should seek both evidence that contamination may exist and the identities of companies responsible for such contamination. Those companies might still exist and might be co-responsible for any contamination.

§ 8:30 Identification of potential liabilities—Potential off-site liabilities

Under RCRA and CERCLA, the facility (or its corporate or individual owner) may have liability at every site where the facility's wastes were ever disposed. Thus, it is essential to compile as complete a list as possible of all the wastes ever generated at a site, and of all the sites to which such wastes were shipped. Moreover, some products as well as wastes can lead to off-site RCRA or CERCLA liability. These products include recyclable materials, electrical transformers, and certain pesticide manufacturing equipment. Documentation of such items should be sought, and if found, should be tracked. Sources of pertinent records include: the facility's customer lists and billing files, shipping files, hazardous waste manifests, and state and federal hazardous waste manifest files obtained through the Freedom of Information Act. Customer lists, and more particularly lists of recyclers and waste disposal sites, should be reviewed carefully. Present or future Superfund sites may appear on these lists.

§ 8:31 Identification of potential liabilities—Insurance coverage

All of the company's or facility's insurance policies should be compiled for as many years into the past as possible. Any previous owner's insurance coverage should also be identified if possible. Such insurance coverage information is very important as a possible defense to potential site-contamination, toxic tort, and off-site Superfund liabilities. Unfortunately, most companies have very poor files on past insurance policies and insurance companies themselves are almost never willing to help. Insurance agents and brokers should be consulted, but although they will sometimes help, they tend to protect the insurance companies, who are their real clients. State and federal government files are useful for required insurance coverages. Sometimes local attorneys or court files will reveal leads to the identity of insurance companies providing coverage in the past. Such policies, when located, should be analyzed for coverages, exclusions, limits, and terms. As much of an historical overview as possible should be constructed.

§ 8:32 Possible risk-mitigation mechanisms

Depending on the particular circumstances of each case, and upon the nature of

the potential liability in question, there are a number of mechanisms that can be employed to reduce risks, or to at least spread risks among several parties.

§ 8:33 Possible risk-mitigation mechanisms—Structure of the transaction

The consummation of an acquisition can in some cases be tailored to reduce risks. There is a nearly infinite variety of forms of acquisitions, but all have risks as well as benefits. If, for example, a company's physical assets are what is desired, a purchase of assets only may be possible. In some states a company that purchases all the assets of another and carries on its same business is considered to have succeeded to its liabilities, just as with a stock purchase. Counsel should be consulted, and individual state laws must be reviewed on this and related issues.¹

§ 8:34 Possible risk-mitigation mechanisms—Contract provisions

Contract clauses, such as warranties, indemnifications, and specific allocations of future liabilities resulting from past activities or preexisting contamination should always be considered and if appropriate used in any acquisition or sale. Such contract clauses, assuming they can be bargained for, can provide 100% coverage against risks—but with two enormous provisos: (1) Such contractual arrangements never bind the government, and are unlikely to affect the rights of private third parties who may be injured. At most, such clauses give the party sued by the government or a private plaintiff an action over and against the other party to the contract; and (2) Such clauses are only as good as the financial soundness of the other party. An ironclad, 100% indemnification agreement by a defunct or insolvent company is worthless. Note that it is also important to understand the scope of the warranty offered and notice requirements. Nonetheless, except where it is clear that the buyer or seller is judgment proof, an effort should always be made to address environmental conditions and liabilities in the purchase contract and to apportion them in an agreed-upon manner.

In addition to the use of various contract clauses in appropriate cases, every acquisition should be accompanied by written representations made by the seller and his or her attorneys and accountants concerning the condition of the property, the compliance status of the facility, and existing or threatened environmental litigation. These representations will form the basis for any necessary future discussions or negotiations of environmental liabilities. In extreme cases, these representations can also serve as a basis for an effort to void the transaction for fraud or misrepresentation.

§ 8:35 Possible risk-mitigation mechanisms—Prior agreements with regulatory authorities

For business reasons, there may be cases in which it is desirable to purchase a facility that is having some degree of difficulty with a regulatory authority or permit program. For example, permit revocation may be threatened or a facility may be hopelessly behind schedule under a consent order. In such cases, an effort should be made prior to purchase to obtain agreements from the appropriate authorities that a new schedule will be set. The purchaser will then have a fresh start with an achievable schedule. Similarly, an agreement could be sought concerning a cleanup plan that would satisfy the authorities for sites that have existing contamination.

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¹In some cases, a variety of subsidiaries and related corporate structures can be used to accomplish acquisitions with some risk-reducing effect. For instance, "A Corp." could spin off "B Corp." (previously a division of "A Corp.") as a wholly owned subsidiary for the purpose of acquiring "C Corp." or a specific asset of "C Corp." There can be both pros and cons to such arrangements, depending on the facts of each potential transaction from both business and liability standpoints, and they should be considered in detail.

The regulatory authority may be willing to be quite flexible in such matters as the alternative will often be that the seller will close its doors. This, in turn, would leave the government with a contaminated site that it would have to clean up, or would close a source of employment that is important to the locality. In any event, such advance discussions are invaluable for letting the would-be buyer know what burdens it would be assuming.

§ 8:36 Possible risk-mitigation mechanisms—Insurance coverage

Finally, insurance can provide significant protection against both site cleanup (on-site and off-site) and toxic tort liabilities. The purchasing company itself should have appropriate coverage with adequate limits. The acquired company's own insurance coverages, however, are almost equally significant because "occurrence based" policies can provide coverage for present or future liabilities where the "occurrence"—an act of disposal, or a manufacturing operation that caused site contamination or slow-developing personal injuries—happened years earlier under the previous ownership.

V. ENVIRONMENTAL AUDITING AND ENVIRONMENTAL MANAGEMENT

§ 8:37 Management systems

"Auditing" is only one aspect of responsible environmental management. There has been a great deal of focus on auditing as a means to reduce EPA inspections and ensure legal compliance.¹ Some advocate exhaustive facility reviews as part of the audit. This would involve a large team² and extensive checklists and record reviews. Clearly, if there is an audit system, facility reviews are necessary, and these reviews should be management-system oriented.³ Massive reviews can be reserved only for the exceptional case, or at the initiation of a program to understand the basic problems at a facility. A number of companies focus on systems and the determination of major flaws. This approach allows the more frequent use of the audit on a more cost-effective basis. Once the basic role of facilities is established and understood in the environmental area, the facility audit is merely a cross-check to determine that the systems are performing adequately. Thus, to focus on auditing alone, without other strong programs and procedures, is an error. Auditing can provide only limited control and awareness of potential issues. It is merely a snapshot of existing controls at a facility at the time of the audit. Without other management systems, the audit is a very limited part of modern environmental management.

§ 8:38 Management role

Environmental auditing has generally not been like financial auditing, which is conducted under formal procedures pursuant to rules and standards allowing for

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¹EPA has published a bibliography of articles on auditing and environmental management. The Annotated Bibliography on Environmental Auditing (Mar. 1988) is available from EPA's Office of Enforcement and Compliance Assurance. While the list is somewhat out of date, the basic principles are still valid.

²Olin Chemical Corporation, for example, followed this approach. See Friedman, *Organizing and Managing Effective Corporate Environmental Programs*, *Envtl. F.*, May 1984, at 40, 58.

³See Friedman, *Organizing and Managing Effective Corporate Environmental Programs*, *Envtl. F.*, May 1984; Kent, *Internal Environmental Review Programs—Pitfalls and Benefits*, *J. Water Pollution Control Fed'n*, Mar. 1985, at 191.

comparisons and judgments of compliance¹ although there is increasing pressure, particularly with the advent of Sarbanes-Oxley, to consider more specific and detailed standards. As the financial audit has progressed and become more detailed, should not the same concepts be applied to the environmental audit? The “standards” for environmental auditing (as well as safety and health) developed by the Board of Environmental, Health and Safety Audit Certifications (BEAC) in 1999² were extensively revised in 2008. They are much more detailed, and the revisions considered many of the concepts in Sarbanes-Oxley. “[I]n response to the Sarbanes-Oxley Act of 2002, boards of directors and senior management are relying on the completeness and professional competence of EH&S audits just as they do with respect to their financial audits.”³ This structured approach, which is more akin to a financial “audit,” is not always necessary. Environmental regulations are not always specific and vary considerably both by location and industry. In some cases it is not clear whether certain regulations even apply to a certain facility. While there may be times when an outside contractor or lawyer-controlled “audit” may be necessary, it should not be viewed as a “full employment” program for either group. Indeed, these programs can usually be handled in house by relatively small corporations and can be done effectively with proper initial guidance.

§ 8:39 Auditing goals

To be an effective management tool—which should be the purpose of environmental auditing—auditing must be examined in the context of responsible management. Management goals should include the following:

(1) The development and implementation of corporate-wide policies, programs, and guidelines to provide independent assurances that the corporation is properly addressing environmental concerns. “Independent” does not mean that there must be certification by outside counsel or auditors; the whole purpose of auditing and other management programs is to ensure that the corporation is responding quickly and effectively to environmental issues and concerns. If the reviews and controls are provided by staff groups not directly involved in operations, this normally will provide the necessary independence.¹

(2) A system for prompt identification of problems and advice to management on the issue and the approach being taken to solve the problem.

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¹See Friedman, *Organizing and Managing Effective Corporate Environmental Programs*, *Envtl. F.*, May 1984; Kent, *Internal Environmental Review Programs—Pitfalls and Benefits*, *J. Water Pollution Control Fed'n*, Mar. 1985, at 191.

²See *Standards for the Professional Practice of Environmental, Health and Safety Auditing*, Forward at 3, at <http://www.beac.org/>: “[T]he Board of Environmental Health & Safety Auditor Certifications (BEAC) was established as a joint venture of the Institute of Internal Auditors (IIA) and the Environmental Auditing Roundtable (EAR) to provide certification programs for the professional practice of environmental, health and safety (EH&S) auditing.” The revised standards can be found at the BEAC Web site, <http://www.beac.org/>. The author, Frank B. Friedman is a member of the four-person Standards Board of the BEAC that has drafted the proposed revised standards. The standards are also included as Appendix L to Friedman, *Practical Guide to Environmental Management* (Environmental Law Institute, 11th edition 2011).

³Introduction to the revised Performance and Program Standards for the Professional Practice of Environmental, Health & Safety Auditing at viii, available at: <http://www.beac.org>.

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¹Occidental Petroleum Corporation has a unique dual relationship of the Vice President for Health, Environment and Safety reporting to an Executive Vice President and an Environmental Committee of its Board of Directors. At Elf Atochem, North America, Inc., the Senior Vice President for Health, Environment and Safety reported directly to the President and Chief Executive Officer, and is a member of the Executive Committee, which is the highest governing body of the company’s U.S. affiliate.

(3) The maintenance of a system for independently determining the status of compliance with environmental requirements by all facilities and subsidiaries of the corporation and for ensuring that any required actions are taken.

(4) The development and implementation of mechanisms to identify emerging and future environmental issues, as well as for coordinating planning for responses to such issues where more than one division is involved.

(5) The minimization of liability exposure of the corporation, its officers, and employees.

Whether one uses the term “audit” or “assessment” (as discussed previously, an “assessment” is less formal and relies more on individual judgment but should also be “independent”), the basic criteria for judging the quality of a program are “top management support; an audit manager or team independent of production responsibilities; a structured program with written audit procedures; a system for reporting audit findings to senior management; and a corrective action program.”²

§ 8:40 Dealing with legal concerns

In practice, the biggest barrier discouraging some companies from conducting audits/assessments and implementing other management programs that document problems is fear of legal exposure. The smoking gun is every attorney’s nightmare, but smoking guns are only a problem if uncorrected. The decision to have such programs is also the decision to do something about the problems discovered. While initial auditing/assessment programs and other information-based management programs should be developed cautiously, the benefits of review in reducing present and future liabilities can far outweigh potential legal risks. As discussed in § 8:44, there are unfortunately too many instances in which agencies have attempted to use audits for enforcement purposes.

Nevertheless, the experience of many companies with audit/assessment programs indicates that significant legal problems rarely arise. Usually, these legal risks can be handled easily if counsel ensures that the audit/assessment team understands its responsibilities, such as its charter, obligations, operating procedures, how to deal with areas in litigation, what items are to be written down and how to write reports, what procedures to follow when potential violations exist, and agrees on basic definitions.¹ The reports do not always need to be reviewed by lawyers in an effort to create an attorney-client privilege or attorney work product (although a company should not rule out audits/assessments under attorney-client privilege if there is potential for significant legal exposure). The primary concern is to have these documents as a management tool and to avoid the potential “that the Law Department could become a bottleneck, and thus impede corrective action.”² Note that many of these programs are designed to deal with matters that are required by law to be reported to agencies, such as permit excursions.³ Consequently, additional legal exposure is usually quite limited. There are sound reasons for utilizing audits/assessments: They are an excellent management tool for ensuring compliance. The

²See K. Blumenfeld & M. Haddad, *Beyond the Battleground: A (Non) Regulatory Perspective on Environmental Auditing* (EPA Draft 1983), reprinted in *Environmental Auditing Handbook: A Guide to Corporate and Environmental Risk Management* (L. Harrison ed., 1984).

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¹See Giannotti, *Compliance With EPA’s Laws and Regulations, Organizing Corporate Compliance Efforts for Corporate Counsel Seminar* (June 9–10, 1983) (a paper from an ABA National Institute sponsored by Section of Corporation, Banking and Business Law, and the Section on Litigation); see also Gibson & Farenthold, *New Perspectives on Corporate Risk and Ways to Reduce It* (pts. 1 & 2), *Envtl. F.*, Mar. 1983, at 39–41, Apr. 1983, at 37–44.

²Kent, *Internal Environmental Review Programs—Pitfalls and Benefits*, *J. Water Pollution Control Fed’n*, Mar. 1985, at 192.

³“Excursion” is defined in *Occidental Petroleum Corporation procedures* as:

value in having such a system “will be the fact that the corporation will be less apt to be prosecuted criminally and less apt to be subjected to punitive damages when sued by private parties.”⁴ This is an important consideration, especially in light of the trend toward criminal prosecution.⁵ In addition, there is substantial precedent indicating that corporate officers can be held vicariously liable for the conduct of subordinate employees, and a purposeful failure to investigate or deliberate ignorance has been interpreted to be “knowledge” for purposes of criminal liability.⁶

There is also a trend to expand tort liability laws throughout the country to approximate “absolute liability” regardless of fault for injuries from products and exposure to allegedly hazardous or carcinogenic substances. Thus, the potential exposure in the law for businesses certainly increases the need for awareness and the necessity to develop strong compliance programs.

§ 8:41 Summary

Both from a liability exposure perspective and from the need to develop good management systems, some audit/assessment system should be implemented even in a small organization to ensure that management is made aware of potential environmental problems and is committed to solving them. Immediately taking care of such problems, using an environmental review or audit program as part of an overall system, is both cost effective and will reduce long-term liability and environmental cost.

VI. ENVIRONMENTAL AUDITING—EPA POLICY

§ 8:42 Introduction

In order to fully understand EPA’s audit policy and its implementation, it is important to trace the policy’s history since its inception. EPA issued its original

[A]ny emission, discharge, or other release of material which is outside the parameters established in an agency-issued permit which limits the amount of such materials which can be discharged. This includes releases determined to be excursions based on measurements by official test procedures and reported to the agency. Excursions recorded by other means and which are not reported to the agency should be separately identified and reported.

Friedman, *Organizing and Managing Effective Environmental Programs*, *Envtl. F.*, May 1984, at 45.

In addition, “significant matters” must also be reported under Occidental procedures. Events or situations may be considered significant if they may result in capital expenditures or potential costs exceeding a certain dollar amount. Any legal action by or against the company, any adverse publicity or adverse community relations, any identified risk to the environment, or any problems for which a remedial technology or cost of correction cannot be identified all can be significant, regardless of potential costs and liabilities. A significant matter arising from an accident or an incident must be reported immediately to corporate headquarters, while any other significant matter must be reported as soon as possible during working hours. The corporate department then makes a recommendation to the division and advises corporate management of the item and the recommended action. Friedman, *Organizing and Managing Effective Environmental Programs*, *Envtl. F.*, May 1984, at 43.

⁴Kent, *Internal Environmental Review Programs—Pitfalls and Benefits*, *J. Water Pollution Control Fed’n*, Mar. 1985, at 193.

⁵See generally Frank Friedman, *Is This Job Worth It?*, *Envtl. F.*, May/June 1991, at 20; Greenhouse, *Responsibility for Job Safety*, *N.Y. Times*, June 25, 1985, at 30, col. 1.

⁶See, e.g., *U.S. v. Johnson & Towers, Inc.*, 741 F.2d 662, 21 *Env’t. Rep. Cas.* (BNA) 1433, 14 *Envtl. L. Rep.* 20634 (3d Cir. 1984); RCRA § 3008(f), 42 U.S.C.A. § 6982(f) (setting forth special rules for establishing criminal liability for a knowing endangerment violation); see also *Restatement Second, Torts* § 288(c) (1977). The Restatement has adopted the view that “compliance with a legislative enactment or administrative regulation does not prevent a finding of negligence where a reasonable man would take additional precautions.” *Restatement Second, Torts* § 288(c) (1977). While the Restatement view is not necessarily the view of many states, it does indicate potential additional exposure.

policy statement on environmental auditing in July 1986.¹ The policy was summarized by EPA as follows:

It is EPA policy to encourage the use of environmental auditing by regulated entities to help achieve and maintain compliance with environmental laws and regulations, as well as to help identify and correct unregulated environmental hazards

This policy statement specifically:

- Encourages regulated entities to develop, implement and upgrade environmental auditing programs;
- Discusses when the Agency may or may not request audit reports;
- Explains how EPA's inspection and enforcement activities may respond to regulated entities' efforts to assure compliance through auditing;
- Endorses environmental auditing at federal facilities;
- Encourages state and local environmental auditing initiatives; and
- Outlines elements of effective audit programs.²

The Agency cautioned, however, that "the existence of an auditing program does not create any defense to, or otherwise limit, the responsibility of any regulated entity to comply with applicable regulatory requirements."³

§ 8:43 The 1986 policy statement

EPA's 1986 policy statement was the first formal endorsement of environmental auditing programs. While providing its definition of an environmental audit,¹ and the many benefits that can come from a program, the Agency was quick to point out that audits do not replace other activities required by law (for example, emissions monitoring) or regulatory agency inspections.

In encouraging the use of auditing, EPA specifically stated that it would not interfere with or dictate environmental management practices; auditing should be a voluntary practice. EPA's 1986 policy did not rule out the possibility that the Agency would request audit reports, although it acknowledged that routine requests would inhibit auditing programs. Thus, under the 1986 policy, audit reports would be requested only on a case-by-case basis.² The standards EPA used to determine whether an audit report would be requested in a particular case, as articulated in the policy statement, was "where the Agency determines it is needed to accomplish a statutory mission, or where the government deems it to be material to a criminal investigation."³ Specific examples of audits that would be requested would be those conducted under consent decrees or other settlement agreements; where a company has placed its management practices at issue by raising them as a defense; or where

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¹51 Fed. Reg. 25004 (July 9, 1986). The interim policy statement was published at 50 Fed. Reg. 46504 to 46508 (Nov. 8, 1985).

²51 Fed. Reg. 25004 (July 9, 1986).

³51 Fed. Reg. 25004 (July 9, 1986).

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¹EPA defines environmental auditing as "a systematic, documented, periodic, and objective review by regulated entities of facility operations and practices related to meeting environmental requirements." 51 Fed. Reg. 25004, 25006 (July 9, 1986). The term "regulated entities" includes private firms and public agencies, as well as federal, state, and local agencies. 51 Fed. Reg. 25004, 25006 (July 9, 1986).

²51 Fed. Reg. 25004, 25007 (July 9, 1986).

³51 Fed. Reg. 25004, 25007 (July 9, 1986).

a state of mind or intent are a relevant element of inquiry, such as during a criminal investigation.⁴

EPA also stated that an audit program would not result in any agreement not to conduct inspections, reduce enforcement, or give any other incentives. The Agency did indicate, however, that because an audit program would aid an entity in improved compliance, the program would improve environmental performance.⁵ Inasmuch as the Agency's enforcement policy considered efforts to avoid and promptly correct environmental problems, "EPA may exercise its discretion" as to an entity's implementation of an audit program that aids in those goals.⁶

EPA also stated that auditing generally would not be mandated, but the policy statement provided for exceptions. Specifically, EPA could require auditing as part of a settlement.⁷ According to the 1986 policy, mandated auditing was most likely to result from situations in which a pattern of violations could be attributed to the absence or poor workings of an environmental management system, or where the type or nature of violations indicated that similar problems may exist or were likely to occur.⁸

EPA's 1986 policy statement also applied to federal agencies, which were encouraged to implement auditing programs. It was noted, however, that the Freedom of Information Act would govern any disclosure of audit reports or audit-generated information requested from federal agencies by the public.⁹ Finally, EPA noted that its policy was not intended to preempt or preclude states from developing other approaches to environmental auditing.¹⁰

§ 8:44 The 1995 interim policy statement

In April 1995, EPA issued an interim policy on voluntary auditing and disclosure, effective March 31, 1995.¹ The 1995 interim policy was widely recognized as an improvement over its predecessor because it addressed several of the key concerns industry expressed over the years regarding EPA's 1986 environmental auditing policy. However, there were many issues that EPA either did not address or failed to address adequately.

Some background might be helpful to understand the shortcomings of the 1995 interim policy. The significant concerns that industry, states, and others have raised regarding EPA's prior policy have been the subject of much discussion and will not be repeated here. However, one key concern, as articulated by a former Chief of the Environmental Crimes Section at the Department of Justice, is worth noting in detail:

[T]hough EPA appears to shun the use of "mere" anecdotal evidence that prosecutors and investigators use internal audits as leverage to obtain plea bargains or civil settlements on the government's terms, such evidence exists in significant enough amounts that EPA cannot merely brush it aside as fiction. From my own experience, . . . I can attest to several instances where the seized audit report played a pivotal role in a criminal investigation. The experience of having a prosecutor, who is hell-bent on making a

⁴51 Fed. Reg. 25004, 25007 (July 9, 1986).

⁵51 Fed. Reg. 25004, 25007 (July 9, 1986).

⁶51 Fed. Reg. 25004, 25007 (July 9, 1986).

⁷51 Fed. Reg. 25004, 25007 (July 9, 1986).

⁸51 Fed. Reg. 25004, 25007 (July 9, 1986).

⁹51 Fed. Reg. 25004, 25008 (July 9, 1986).

¹⁰51 Fed. Reg. 25004, 25008 (July 9, 1986).

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¹EPA, Voluntary Environmental Self-Policing and Self-Disclosure Interim Policy Statement, 60 Fed. Reg. 16875 (Apr. 3, 1995).

criminal case, go over an internal audit line by line with the company's audit team and line management before the grand jury is not a pleasant one, and not calculated to advance the notion that a wide-open auditing program is beneficial. Therefore, while EPA may be able to fairly claim that it rarely, if ever, uses a disclosure based on an environmental audit to actually prosecute a company, such a claim says nothing about the seizure of audits and the use of them during criminal investigations. . . . Undoubtedly, there are many other experienced prosecutors and defense attorneys . . . that can document similar practices which ultimately deter voluntary auditing and disclosure.

On the other hand, of course, there are many instances where disclosures as a result of audits have been made, and EPA . . . has treated companies fairly and appropriately. But it is, to a large degree, an arbitrary process that leads to the broad-based perception that a full-blown auditing program leaves a company vulnerable to the whims of an enforcement system where a "body count" of convictions and penalties is often times the sole measure of success.²

The 1995 interim policy was intended to address concerns such as this and to ensure that proactive companies with voluntary self-auditing programs would not be penalized for undertaking such activities. Under the interim policy, EPA would have substantially reduced civil penalties for entities that voluntarily disclosed and promptly corrected violations identified through self-evaluations, if they met other stated conditions. EPA would have, in most cases, eliminated the "gravity" (punitive) component of the penalty if there was "full cooperation" (as interpreted by EPA). The Agency, however, would have continued to seek the economic benefit, if any, derived from the noncompliance. Moreover, cases involving severe harm to public health or the environment were not eligible for reduced penalties.

Similarly, EPA would not recommend that the Department of Justice bring criminal cases against regulated entities that voluntarily disclosed and promptly corrected violations identified through self-evaluations, if they satisfied certain other conditions. EPA ordinarily will not request voluntary audit reports to trigger civil or criminal investigations unless it has other, independent information that indicates that a violation may have occurred. This, in essence, is a restatement of its 1986 policy.

Notwithstanding EPA's considerable efforts to address concerns regarding its prior auditing policy in the 1995 interim policy, significant questions were raised.

First, although a step in the right direction, it is questionable whether penalty mitigation is an adequate substitute for environmental audit protection and the presumption of immunity. Transactionally, the initiation of an enforcement action, even if the penalty amount is greatly reduced, causes a company to incur considerable costs, e.g., adverse publicity and legal fees, many of which can be difficult to quantify.

Second, the definition of "environmental audit report" in the interim policy was too narrow. It expressly excluded the "factual information underlying or testimonial evidence relating to such information." The breadth of this exclusion could eviscerate the effect of the policy.

Third, the interim policy did not appear to protect violations that are legally required to be self-reported, but would otherwise not have been discovered in the absence of the audit. Because the universe of violations falling into this category is open-ended, this could act as a real deterrent to voluntary auditing.

Fourth, the interim policy was apparently developed by EPA's enforcement staff, with little or no formal involvement by other policy offices. It begs the question, however, why EPA did not previously solicit the views of other program offices.

Fifth, the policy was intended only as guidance. As such, EPA enforcement staff would not be required to follow it, and many in the regulated community feared that, in fact, they would not.

²Joseph G. Block, Testimony at EPA Public Meeting on Auditing Policy 10-11 (July 28, 1994).

Sixth, the interim policy did not protect against suits by private litigants (due to the lack of privilege), nor did it protect individuals or a company (due to lack of immunity). Apparently, EPA believes that granting a privilege runs counter to opening up environmental decision making and that a privilege can be used to shield bad actors. Many states with self-evaluative privilege laws are miffed by the implication that they are incapable of addressing these concerns. In fact, EPA reaffirmed a commitment to review provisions in states with privilege laws in connection with its approval of delegated Resource Conservation and Recovery Act, Clean Water Act, and Clean Air Act programs. The tenor of this reaffirmation runs completely counter to the movement to delegate more enforcement authority to the states.

Thus, although the interim policy represented progress, the consensus at the time apparently was that EPA's work was nowhere near finished. From industry's standpoint, penalty mitigation is not enough; an audit policy needs to include a presumption of immunity. The concern was that the guidance would leave too many opportunities for overzealous officials and prosecutors to render ad hoc decisions for all the wrong reasons. Moreover, because state privilege laws are not about to disappear, EPA needs to understand the bases for industry's concerns and recognize that the only reason these state laws are on the books is the perception that EPA dropped the ball. There may be evildoers who go unpunished—this happens now and will occur under any system—but overall compliance and protection of the environment will increase.

§ 8:45 The 1996 voluntary disclosure and audit policy¹

On December 22, 1995, EPA published its Final Policy Statement on environmental audits and self-policing, effective January 22, 1996.² The final policy offered incentives, primarily in the form of penalty reductions, to encourage corporations and public agencies to conduct voluntary environmental compliance audits and to correct and report any violations they discover as a result. EPA issued the policy as guidance, not a binding rulemaking. EPA asserted, however, that Agency personnel will be expected to follow the policy in settlement agreements and that EPA “will take steps to assure national consistency.”³

To benefit from the incentives, a company had to meet most or all of the following nine conditions: (1) it must discover the violation either through an “environmental audit” or “due diligence” (an entity's systematic efforts to prevent, detect, and correct violations through a broadly defined environmental management system); (2) discovery and reporting must be “voluntary”; (3) discovery must be followed by prompt, written disclosure within ten days of discovery or any shorter period required by law; (4) the company must discover and report the violation before commencement of any government investigation, citizen suit, third-party complaint, or “imminent discovery of the violation by a regulatory agency”; (5) the company must correct the violation within 60 days of discovery or notify EPA that remediation will take longer; (6) the company must agree to take steps to prevent recurrence of the violation, including improving its audit system; (7) the company must not have had

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¹The following discussion is taken, in large part, from the 1995 Annual Report of the Special Committee on Corporate Counsel of the American Bar Association's Section on Natural Resources, Energy, and Environmental Law, contributed by Gary Rovner and edited by Pamela A. Lacey of Cofield Ungaretti & Harris, with assistance from Charlotte H. Copperthite of Minerals Technologies, Inc., Paul W. Herring of Maxus Energy Corp., and Frank B. Friedman, originally published in 2XII Natural Resources, Energy, and Environmental Law 1995: The Year in Review 377–78 (1996) (Vol. XII) Copyright © 1996 by The American Bar Association. Reprinted by permission.

²60 Fed. Reg. 66706 (Dec. 12, 1995).

³60 Fed. Reg. 66706, 66710 (Dec. 12, 1995).

the same or a closely related violation within the past three years at the same facility, or a company-wide pattern of similar violations at the parent level over the past five years (which, in effect, gives no credit for significant upgrades or improvements in company-wide environmental management systems and compliance during that time); (8) the violation must not have violated a judicial or administrative order or consent agreement, or resulted in or threatened an imminent and substantial endangerment; and (9) the company must cooperate with EPA by providing access to company employees and documents.

If a company met *all* of the above conditions, EPA would not seek gravity-based penalties. If a company met *all but the first* condition, EPA would reduce the gravity-based penalty by 75%. However, EPA retained discretion to recover any economic benefit of the noncompliance to preserve a “level playing field.”⁴

The “pattern of violations” issue is an area of major concern to the regulated community. EPA’s Office of Enforcement and Compliance Assurance will target a company as a “national violator” if the company, based on Agency records, is having similar problems in different facilities in several states.⁵ This could be an “apples and oranges” situation, depending on how closely the violations are defined. In one matter before the EPA Environmental Appeals Board, the Agency has taken the position that a continuing violation not previously discovered by a corporation was a “repeat” violation and, therefore, not subject to the policy.⁶

The final policy also stated that EPA will not recommend to the Department of Justice that criminal charges be brought against any company, provided: (1) the company meets all nine conditions above; (2) there is no evidence of “a prevalent management philosophy or practice that concealed or condoned environmental violations”; and (3) high-level managers were not consciously involved in or willfully blind to the violations. The policy also expressly reserves EPA’s power to prosecute responsible individual managers and officers.

From industry’s standpoint there were still many areas of concern. The policy indicated that a company must “fully disclose[] a specific violation within ten days (or such shorter period provided by law) after it has *discovered* that the violation has occurred or *may have occurred* in writing to EPA.”⁷ The catch-22 is determining both what is “discovered” or “may have occurred.” Determining when that time line begins—particularly when there is a need to do some preliminary investigating—is tricky. Reporting too early and setting the regulatory engine in motion is not advisable, but reporting too late avoided use of the policy. The Agency had indicated that it “may” accept late disclosures, but that still gave “little comfort.”⁸ “One plausible explanation for this apparent contradiction was that EPA would insist on disclosure within 10 days where the uncertainty has to do with interpreting regulatory requirements (a realm within which ‘definitive determinations’ often are made by regulatory authorities), while greater delays will be tolerated where the uncertainty has to do with factual circumstances requiring investigation by the entity.”⁹

A significant ambiguity in the policy was its exclusion of violations that “may

⁴60 Fed. Reg. 66706, 66712 (Dec. 12, 1995).

⁵EPA Enforcement Office Targets Companies with Recurring Violations, *Envtl. Pol’y Alert*, Jan. 31, 1996, at 39.

⁶In re Harmon Elec., Inc., RCRA Appeal No. 94-4 (EPA *Envtl. Appeals Bd.* May 1, 1996); see EAB Hears Arguments in Audit Policy Case; Company Argues Actions Merit Penalty Decrease, 27 *Env’t Rep. (BNA)* 232–33 (May 10, 1996).

⁷60 Fed. Reg. 66706, 66711 (Dec. 12, 1995) (emphasis added).

⁸Final EPA Policy on Voluntary Audits Draws Praise, Criticism From Attorneys, 20 *Chem. Reg. Rep. (BNA)* 1251 (Jan. 26, 1996).

⁹James T. Banks, EPA’s New Enforcement Policy: At Last, A Reliable Roadmap to Civil Penalty Mitigation for Self-Disclosed Violations, 26 *Envtl. L. Rep. (Envtl. L. Inst.)* 10227, 10234 (May 1996). This article does an excellent job of describing and analyzing the policy in detail.

have presented an imminent and substantial endangerment to human health or the environment.”¹⁰ Federal statutes such as RCRA contain imminent and substantial endangerment language. Noting that “[j]udicial decision interpreting [such] provisions have been interpreted broadly,”¹¹ private attorney James Stewart also claims:

[S]uch broad and liberal interpretations of the imminent and substantial endangerment language may have some justification under RCRA or other substantive environmental provisions. The use of such language in the Final Environmental Audit Policy, however, gives EPA almost unfettered discretion to classify a violation as one that may have presented an imminent and substantial endangerment so as to be outside of the protections of the Policy. This ambiguity and broad discretion adds to the uncertainty of whether any particular violation discovered in an environmental audit and self-reported to EPA will fall within the Final Environmental Audit Policy’s protection.¹²

On the bright side, a major improvement in the policy was the Agency’s willingness to accept “due diligence” as a basis for penalty mitigation. Because of their importance and the fact that *all* of these measures must be complied with to obtain a 75% reduction of the gravity element of the total penalty, it is important to know what constitutes due diligence under the policy:

“Due Diligence” encompasses the regulated entity’s systematic efforts, appropriate to the size and nature of its business, to prevent, detect, and correct violations through all of the following:

- (a) Compliance policies, standards, and procedures that identify how employees and agents are to meet the requirements of laws, regulations, permits, and other sources of authority for environmental requirements;
- (b) Assignment of overall responsibility for overseeing compliance with policies, standards, and procedures, and assignment of specific responsibility for assuring compliance at each facility or operation;
- (c) Mechanisms for systematically assuring that compliance policies, standards, and procedures are being carried out, including monitoring and auditing systems reasonably designed to detect and correct violations, periodic evaluation of the overall performance of the compliance management system, and a means for employees or agents to report violations of environmental requirements without fear of retaliation;
- (d) Efforts to communicate effectively the regulated entity’s standards and procedures to all employees and other agents;
- (e) Appropriate incentives to managers and employees to perform in accordance with the compliance policies, standards, and procedures, including consistent enforcement through appropriate disciplinary mechanisms; and
- (f) Procedures for the prompt and appropriate correction of any violations, and any necessary modifications to the regulated entity’s program to prevent future violations.¹³

EPA further announced that it would continue its policy to refrain from routinely requesting voluntary audit reports. However, if EPA has independent evidence of a violation, it may seek an audit report to support its enforcement action.¹⁴ In the preamble to the policy, EPA asserted that its review of the criminal docket “did not

¹⁰60 Fed. Reg. 66706, 66712 (Dec. 12, 1995).

¹¹James Stewart, Environmental Audits and Voluntary Disclosure Issues, Remarks at the A.B.A. Section on Natural Resources, Energy, and Environmental Law’s 25th Annual Conference on Environmental Law, Keystone, Colo. (Mar. 21–24, 1996).

¹²James Stewart, Environmental Audits and Voluntary Disclosure Issues, Remarks at the A.B.A. Section on Natural Resources, Energy, and Environmental Law’s 25th Annual Conference on Environmental Law, Keystone, Colo. (Mar. 21–24, 1996).

¹³60 Fed. Reg. 66706, 66710 to 66711 (Dec. 12, 1995).

¹⁴It may be possible to protect environmental audit reports under the attorney-client privilege in some circumstances. In addition, some courts have recognized a limited self-evaluative privilege as a

reveal a single criminal prosecution for violations discovered as a result of an audit self-disclosed to the government.”¹⁵ Yet, in some recent cases, EPA has used self-disclosed audit reports to expand and support criminal enforcement actions. EPA also indicated that it remains strongly opposed to federal and state audit privilege legislation and reserves its rights to bring independent actions against regulated entities in states with privilege laws.¹⁶

§ 8:46 Elements of an effective environmental auditing program

EPA’s 1986 policy statement sets forth seven elements the Agency has identified as those most likely to result in an effective program. These elements, set out in an Appendix to the 1986 policy and still valid today, are as follows: (1) explicit top management support for environmental auditing and commitment to follow-up on audit findings; (2) an environmental auditing function independent of audited activities; (3) adequate team staffing and auditor training; (4) explicit audit program objectives, scope, resources, and frequency; (5) a process that collects, analyzes, interprets and documents information that is sufficient, reliable, relevant, and useful to achieve audit objectives; (6) a process that includes specific procedures to prepare promptly candid, clear, and appropriate written reports on audit findings, corrective actions, and schedules for implementation; and (7) a process that includes quality assurance procedures to assure the accuracy and thoroughness of environmental audits.¹ The audit/assessment program outlined in § 8:2 above meets and exceeds in all categories the program EPA has outlined as being “effective.”

On May 17, 1999, EPA issued proposed revisions to the audit policy.² It extended the period for reporting from 10 days to 21 days after a discovery by an “employee.”³ An interesting question is whether this should be after disclosure to a responsible manager. EPA will also consider expanding this deadline to allow for additional facilities to be audited.

EPA also indicated that full cooperation does not require a waiver of all legal rights, but it is hard in reading the proposed policy to find which rights are not waived. EPA retains its exclusion for multi-violators (regardless of when previous violations occurred) and violations that may cause imminent and substantial hazards. An additional preclusion is if a company is subject to an EPA multi-facility review, regardless of whether the company knows about the review, although this is somewhat modified in the revised final policy.⁴

matter of federal common law. See, e.g., *Reichhold Chemicals, Inc. v. Textron, Inc.*, 157 F.R.D. 522, 39 Env’t. Rep. Cas. (BNA) 1328, 29 Fed. R. Serv. 3d 1153, 25 Env’t. L. Rep. 20307 (N.D. Fla. 1994).

¹⁵60 Fed. Reg. 66706, 66708 (Dec. 12, 1995).

¹⁶Indeed, several EPA regions as well as headquarters weighed removing delegated authority from certain state air programs, claiming a lack of authority by the states to enforce them fully. See *EPA Weighs Blocking Air Permit Delegation to States With Audit Laws*, Env’t. Pol’y Alert, Mar. 27, 1996, at 16; *State Immunity Laws for Audits Could Hurt Program Delegation*, Official Says, 26 Env’t Rep. (BNA) 2253 (Mar. 29, 1996). EPA has decided to approve state air programs in states with such legislation on an “interim” basis. *EPA to Okay Interim Permit Programs Despite Audit Privilege Laws*, Env’t. Pol’y Alert, Apr. 10, 1996, at 15. As of mid-1996, both Idaho’s and Michigan’s interim approval had been conditioned as a result of their state audit statutes.

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¹51 Fed. Reg. 25004, 25008 to 25009 (July 19, 1986).

²Evaluation of “Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations” Policy Statement, 64 Fed. Reg. 26745 (May 17, 1999).

³64 Fed. Reg. 26745, 26753 (May 17, 1999).

⁴64 Fed. Reg. at 19622.

On August 1, 2008, EPA published an Interim Approach to Applying the Audit Policy to New Owners.⁵⁶ Among the improvements for new owners is the availability of a 45-day period after closing to disclose violations discovered pre-closing, or up to 21 days after discovery of the violation, whichever is longer.⁷ The policy provides any new owner who may be concerned about its inability to meet these “prompt disclosure” deadlines the opportunity, within nine months of acquiring the new facility, to enter into an audit agreement with the EPA to “stop the clock” and readjust deadlines based on the entities’ individual circumstances.⁸

EPA also indicated that full cooperation does not require a waiver of all legal rights, but it is hard in reading the proposed policy to find which rights are not waived. EPA still retains its exclusion for multi-violators (regardless of when previous violations occurred) and violations that may cause imminent and substantial hazards. An additional preclusion is if a company is subject to an EPA multi-facility review, regardless of whether the company knows or does not know about the review.

VII. INTERNATIONAL ENVIRONMENTAL REVIEW

§ 8:47 In general

International operations are undergoing increased scrutiny in major corporations. There was a growing recognition prior to the Bhopal tragedy that safety and environmental issues associated with international operations could subject a corporation to potential liability exposure. Bhopal brought this recognition to the forefront for senior management. Many if not most major companies with international operations have extended their health, safety, and environmental audits or audits/assessments to their international operations. Most have also found that in completing these reviews, it does not pay to make any significant distinction between the standards demanded for domestic and international facilities. The recognition of international operations has accelerated in recent years as more and more manufacturing operations have closed down in the U.S. and relocated elsewhere. U.S. EHS managers are spending an increasing amount of their time in assuring responsible EHS management in overseas operations and improving recognition of the importance of these concerns by senior management.

In the mid-1980s, approximately fifteen U.S. companies with international interest joined in an effort known as the Global Environmental Management Initiative (GEMI). This effort, undertaken jointly with the International Chamber of Commerce and United Nations Environmental Programme, is designed to develop guidelines for international business and to promote, assemble, and create worldwide critical thinking on environmental management techniques, systems, and results, and to share this thinking with the public.¹

In a growing number of instances, there is little if any difference between domes-

⁵⁶73 Fed. Reg. 44991 (Aug. 1, 2008).

⁷EPA Audit Policy Changes Ease Industry Fears Over Merger Impacts, *Env'tl. Pol'y Alert*, Dec. 3, 2008, at 45.

⁸The interim policy provides: “For violations discovered pre-closing, prompt disclosure to EPA would have to be made within 45 days after the transaction closing to be considered for new owner incentives. For violations discovered post-closing, the new owner would have to disclose violations within 21 days after discovery or within 45 days after the transaction closing, whichever time period is longer.” 73 Fed. Reg. at 45001.

¹73 Fed. Reg. at 45001.

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¹A coalition of environmental, church, and environmentally concerned investment organizations also published a set of principles designed “to encourage companies ‘to make a public accounting of the planet’s ecological problems—and to pledge to do better.’” See generally Berz, *Keep Risk Reduction*

tic and foreign laws and regulations. The European Union (EU) has adopted strict air and water quality standards, and disposal of hazardous waste is also heavily regulated in most European countries. In many South American and Asian countries, the laws and regulations are rapidly changing to approximate U.S. standards closely. Enforcement has not yet caught up with the laws and regulations in many of those countries, but when enforcement occurs, it will usually be against foreign-owned facilities.

Above all, and regardless of the legal requirements, a corporation should be guided by the simplistic principle established in a popular commercial for an oil filter: "Pay me now or pay me later." If the laws or regulations will eventually require retrofitting, it is appropriate to make the necessary changes *now*, rather than to spend much more later on.

The best means of avoiding these future problems is to establish an international policy in which the standard of protection for human health and the environment is the equivalent to that which the company maintains at its home locations. Such a policy does not mean a slavish copying of all U.S. or European (EU) laws and regulations, as there is ample evidence with respect to some of these laws and regulations (particularly those that are technology based) that there are equivalent means that will just as adequately protect human health and the environment. If, however, control requirements or procedures are or will be inconsistent with those followed in the United States or EU, a responsible expert (either in house or outside) should document for the permanent records of the corporation why the inconsistent requirements or procedures afford equivalent protection and are compatible with the corporation's environmental policy.

In most instances with respect to this request for documentation, an interesting phenomenon will take place: The number of requests for an "exception" to such a policy will be minimal. Most environmental controls do not necessarily involve large and expensive equipment installations but rather consist of tighter practices and procedures. Even where equipment is involved, it may result in sufficient savings in terms of reducing loss of product, raw material, and so on, that it is good business on simple economic terms. In other instances, although difficult to quantify, the actual cost of equipment and installation is substantially less than in the United States. This is not because the actual hardware costs less, but rather that extensive administrative costs (including technical consultants, lawyers, and prolonged paperwork endemic in the United States) are much less prevalent in international operations. In addition, most U.S. companies include basic pollution control as part of their normal design and in many instances it is easier to use off-the-shelf design rather than redesign purposely to eliminate pollution control devices.

As for personnel safety, in reviewing operations for guarding and personnel protection, all the incentives are to demand the best levels of protection. Industrial hygiene in some instances suffers because of the lack of suitable testing equipment and of local personnel capable of completing the appropriate monitoring. However, in most instances this is not a major problem.

In the environmental area, the development of the program needs to include a system, usually as part of the regular environmental audit or audit/assessment, that includes prompt follow-up and action with respect to any issues identified, and a reporting procedure and timetable for implementing the program.

In developing an international environmental program, one potentially useful approach would be to establish the following milestone steps.

Decisions in the Board Room, *Env'tl. F.*, Mar./Apr. 1990, at 32. These principles, developed by the Social Investment Forum and its Coalition for Environmentally Responsible Economies Project (CERES), were known as the Valdez Principles (named after the massive oil spill resulting from a tanker accident in Valdez, Alaska) and are now known, after revision, as the CERES principles.

1. *List local standards for discharges to all media.* In many cases no numerical local standards exist, and you must establish standards on a site-by-site basis through interpretation and discussion with local officials.

2. *Determine typical U.S. or EU standards for discharges to all media.* In many cases no single “typical U.S. or EU standard” exists. Standards for water are normally based on the capabilities of technology. Air emission standards are usually based on ambient air quality.

3. *Formulate equivalent standards using professional expertise.* Use the local and typical U.S. or EU standards to develop equivalent standards. If local standards are more demanding, they will govern. If typical U.S. or EU standards are more demanding and are scientifically sound, they will govern. It is vital to document the logic you use in setting equivalents. In this regard, it is helpful to identify the intent of the U.S. or EU standards.

4. *Establish equivalent standards with the plant, considering site-specific conditions.* Once equivalent standards are formulated, the plants must review and agree to the numbers, just as a U.S. or EU plant does in negotiating a permit with a U.S. or EU agency. In most instances there is little room for negotiation, but the plant may raise factors that would make compliance with a particular standard unnecessary. The basis for such variances should be documented. Similarly, plants will often need to do sampling and analysis, perhaps on a seasonal basis, before they can determine whether they can meet particular standards. Sampling and analysis requirements, too, are in line with U.S. or EU practices. Note that “impossibility” is not an acceptable argument when the discharge would result in an unacceptable adverse environmental or health effect.

5. *Develop sampling/analytical protocols for the equivalent standards.* Even when a plant has agreed to equivalent standards, sampling or analytical procedures must be established. For example, for a parameter as simple as pH, the frequency and type of measurement (*e.g.*, continuous versus daily/weekly grab sampling) must be resolved and the necessary procedures established. Remember that if the procedures that would ordinarily be used are sophisticated EPA or state procedures, the required equipment may not be readily available to service the foreign locations.

6. *Monitor and report against the equivalent standards.* Although monitoring and reporting should be routine, it does take time to collect meaningful data, and it should be expected that some monitoring will show exceedances of equivalent standards. When this occurs, corrective action should be considered and documented.

7. *Where necessary, establish and track to completion action plans to correct exceedances of equivalent standards.* It may take some time, possibly several years, to complete the engineering design, preparation of authorizations for expenditures, equipment purchase, construction, and start-up necessary to achieve compliance.

Developing and implementing such a program does not occur overnight. It is usually easier in the safety area to maintain high standards than in the environmental area, although constant vigilance is necessary in areas where, for example, local customs do not normally include wearing hard hats, safety glasses, respiratory masks, safety shoes, and other safety equipment. In addition, local customs or religions sometimes include fatalistic or macho attitudes that must also be overcome in improving safety awareness. While people in the United States are commonly familiar with mechanical equipment and vehicles, moving from a simple agrarian economy to one handling sophisticated equipment or vehicles creates major problems of training and awareness.

In some instances in the environmental area, there is no ready solution. For example, many parts of the world lack hazardous waste disposal areas that environmental professionals deem acceptable in the long term.

In summary, the minimum and overriding consideration in determining equivalence is that any operation, activity, or product, when properly handled

should not cause a significant or permanent adverse effect on human health and the environment. Where adverse effects are foreseen or do result, ameliorative action must be taken to avoid or correct the adverse effects.

The previously discussed principles for health, safety, and environmental policies, although difficult in themselves, are much easier to implement when your company is the sole owner and operator of the facility. There is no easy way to implement such policies in joint ventures, particularly when the partner is a host state or state-controlled quasi corporation with a significant minority or even a controlling interest.

There are arguments for not entering joint ventures where there could be a substantial amount of liability exposure if your company cannot adequately control potential harmful exposure to workers and the surrounding public. This kind of leveraging factor on a business decision is not common, but it should not be ignored. However, the usual situation is convincing either a governmental or private joint venture partner that a company's domestic health, environment, and safety policies should be implemented. The easiest way is to establish that policy as part of the basis for the joint venture. As noted earlier, tying it to a company policy protecting health and safety rather than to direct compliance with U.S. laws avoids offending local sensibilities and nationalism (*e.g.*, perceived insults to local laws and regulations).

Sophisticated local private investors may be persuaded by the “pay me now or pay me later” concept and indeed that specific language can be an effective sales tool to demonstrate the cost effectiveness of such a policy. It also helps mitigate the perceived resentment of other corporations in host states who are unwilling to adopt more stringent internal regulation. The gradual introduction of certain health and safety concepts sometimes helps in their acceptance, as may the use of examples of practices in plants in similar climates, such as the use of hard hats and safety shoes in tropical climates.

Many countries provide criminal penalties for injuries and fatalities. In such instances it is particularly important when the joint venture is a government entity to document in the permanent records of the corporation requests for improved safety practices and programs to the recalcitrant partner, in the event that the refusal by the partner to approve implementation leads to an unfortunate accident.

§ 8:48 International Environmental Law: A Global Audit/Assessment¹

This section offers a global audit/assessment of the record and promise of international environmental law to the beginning of the millennium. It first presents several overall accounts of the contribution of international environmental law. Herein are described the complexities of undertaking global evaluations. After summarizing the negative and positive evaluations, the section takes a closer look at five case studies, and then lays out a description of a set of characteristics linked to effective law. Thereafter it looks forward, reviewing conditions that are expected in the policy world in which international environmental law evolves. They address the functions of science in the law, the roles of private industry, and perspectives on how to attain desirable international outcomes. The section then presents a set of recommendations for improving the effectiveness of the law, recognizing the considerable challenges of fostering change in complex systems. Several of these ac-

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¹By Joseph DiMento. Joseph DiMento is a professor of law and society and planning at University of California at Irvine (UCI). He serves as Head of the Focused Research Group in International Environmental Cooperation and as Director of the UCI Newkirk Center for Science and Society. Professor DiMento is the author of numerous books and articles on domestic and international environmental law, including *Environmental Law and American Business*; *Dilemma of Compliance*.

count for changes expected in international policymaking; others are considered necessary independent of anticipated changes.

An Accounting: Successes and Failures in International Environmental Law

International environmental law contains a broad range of instruments. Assessing it is complex not only because of its scope but also because of distinctions among the instruments. Some instruments aim at most to be policy prescriptions without the same referents as hard law provisions, which generally are clear and substantive about what is required. Some are frameworks, articulating broad principles that will guide future international legal considerations. Many are hybrids with characteristics of framework development, policy promotion, and hard law.

Audit/Assessment is also complicated by the varying criteria used to define success and the seriously inadequate data and institutions for generating better data. The *Global Environment Outlook 2000* (xvii) found:

The monitoring and data collection infrastructure of most developing countries is severely handicapped or non-existent due to limitations in resources, personnel and equipment. Constraints are also faced by international organizations. Keeping well-trained personnel in publicly funded institutions is difficult. In some cases, there is no organization mandated to collect and report time-series data internationally on specific issues on a regular basis Data are reported for different geographical areas by different agencies and organizations. As a result, it may be impossible to use and compare otherwise valuable aggregated datasets in global and regional audits/assessments [and] . . . the data management infrastructure of many countries is weak and data reporting is fragmented.²

Nonetheless, evaluations can be made. At the millennium, many observers, including several leading international law experts, concluded that the great inventory of treaties, conventions, international tribunal decisions, custom, agreements, soft law principles, and other instruments aggregate in substance to less than the sum of the parts, and the sum itself is disturbingly inadequate. As we shall see, however, this general conclusion masks several elements of a history of success in some areas.

Negative Audits/Assessments

It is common to reach conclusions about this body of law that point to its weaknesses, its lacunae, its failures. Marti Koskenniemi, professor and member of the Ministry of Foreign Affairs of Finland, stated that the tendency toward:

the massive increase in international legislation during the last quarter of a century, particularly in the environmental field has not created a new world order. In fact, the gap between law in books and how states act may now appear wider than at any other time in history—the more rules there are, the more occasion there is to break them. After years of active standard-setting, global and regional organizations stand somewhat baffled in front of a reality that has sometimes little in common with the objectives expressed in the inflated language of their major conventions and declarations.³

Koskenniemi's view has been characterized as approaching the "nihilistic." He believes that most international environmental law bears a minimal relationship with general international law. Furthermore, dispute settlement clauses are more a reflection "of ritual than any realistic belief that compliance problems should, or could, be dealt with through the doctrines of fault and attributability which

²United Nations Environment Programme, *Global Environment Outlook 2000* (xvii).

³Marti Koskenniemi, *New Institutions and Procedures for Implementation Control and Reaction*, in *Greening International Institutions* 236 (Jacob Werksmann ed., 1996).

characterize the legal doctrine of state responsibility.”⁴ Worse yet, even if compliance was achieved, the compliance is with law that cannot solve the problem that it putatively addresses. The Italian international scholar Gaja agrees.⁵

Pallemaerts⁶ is also highly critical, claiming that international environmental law has been regressive. He attempts to show how the concept and ideology of “sustainable development” undermines the autonomy of environmental law as a body of rules and standards created to prevent environmentally destructive activity. There may even be reason to fear that the Rio meeting of the U.N. Conference on Environment and Development⁷ was the beginning of the decline of international environmental law as a separate branch of international law. Pallemaerts worries that international environmental law could become a mere appendage of international development law. It would then be subordinated to economic considerations.

Stefano Nesor, a leading Italian and European Union lawyer and lecturer, argues that international law has wrongly responded to the desires of Western environmentalists.⁸ In doing so, it has sacrificed work on solvable pressing and real environmental problems in the Third World, the poor and developing countries, to focus on speculative global disasters that could affect future generations. John W. Meyer and his colleagues conclude that the “environmental sector,” which includes law, “is clearly ineffective in comparison to the rapidly expanding claims on it.”⁹

Professor Larry Susskind of the Massachusetts Institute of Technology, a pioneer in audits/assessments aimed at reaching environmental goals, maintains in a treatise seeking a new approach to negotiating environmental agreements that knowledgeable observers agree that the most notable global treaties have failed to reverse environmental deterioration.¹⁰ Those who look to reform international environmental law will

see glaring weaknesses: the rules are very sketchy; no one is really in charge; much of the negotiation process is ad hoc and unregulated; there is no central authority to manage the process or compel compliance; and the dispute resolution mechanisms available through the International Court of Justice are not definitive.¹¹

British international relations and legal specialists Andrew Hurrell and Benedict Kingsbury similarly conclude that the majority of international environmental agreements they studied had not substantially improved environmental conditions.¹²

The Environmental Law Network International is pessimistic: the law often is worded in “vague and cautious” terms, raising the question of the extent to which the international enterprise is only “symbolic legislation . . . without . . . creating

⁴Marti Koskenniemi, *New Institutions and Procedures for Implementation Control and Reaction*, in *Greening International Institutions* 247 (Jacob Werksmann ed., 1996).

⁵Giorgio Gaja, *Evoluzione e Tendenze Attuali del Diritto Internazionale Dell’Ambiente* (1998) (Remarks presented at *Ambiente e Diritto*, Florence, Italy, June 11, 1998).

⁶Marc Pallemaerts, *International Environmental Law from Stockholm to Rio: Back to the Future?*, in *Greening International Law* 18–19 (Philippe Sands ed., 1993).

⁷Agenda 21, U.N. Doc. A/CONF.151/26 (1992), available at <http://www.un.org/esa/sustdev/documents/agenda21/index.htm> [hereinafter UNCED Agenda 21].

⁸Nesor, *Environmentalism and the Disaster Strategy*, 19 *UCLA J. Envtl. L. & Pol’y* 211–30 (2001).

⁹John W. Meyer et al., *The Structuring of a World Environmental Regime, 1870 to 1990*, 51 *Int’l Org.* 623, 647 (1997).

¹⁰Larry E. Susskind, *Environmental Diplomacy: Negotiating More Effective Global Agreements* 16 (1994).

¹¹Larry E. Susskind, *Environmental Diplomacy: Negotiating More Effective Global Agreements* 29 (1994).

¹²*The International Politics of the Environment* (Andrew Hurrell & Benedict Kingsbury eds., 1992).

binding rules with teeth capable of setting concrete and precise standards of environmental behaviour and conduct.”¹³ German international lawyer and political scientist Frank Biermann characterizes the legal and policy framework for the management of global marine pollution as insufficient, “a patch work approach” that lacks significant coordination and sufficient cooperation between the northern and southern hemispheres.¹⁴

Professor of public international environmental law Gunther Handl first acknowledges that the U.N. Conference on Environment and Development (UNCED):

has had a tremendous impact in terms of raising global environmental consciousness, setting in motion or accelerating the search for solutions to global environmental problems, and refocusing attention on the necessity for a more equitable distribution of resources among nations. It has helped narrow . . . the gap between the concepts of environment and development and has made a major contribution to . . . empowerment of nonstate actors.¹⁵

But he concludes that “a careful analysis provides a much less reassuring picture,” pointing to weaknesses in the Climate Change Convention, polarization over issues at sessions of the U.N. Conference on Straddling Stocks and Highly Migratory Fish, and problems in movement toward a global forest convention.¹⁶

Philippe Sands, a leading figure in the field, barrister and Legal Director of the Foundation for International Environmental Law and Development, concludes that mechanisms for improving compliance are underutilized and questions whether law can address the growing range of challenging environmental issues.¹⁷ Not optimistic about UNCED, he argues that it will likely not significantly improve existing arrangements. Further, he suggests that domestic compliance with environmental obligations is inadequate and compliance with international obligations is largely absent. Many states fail to meet the most basic requirements of the law, such as reporting, and substantive obligations remain unimplemented. The data he presents are discouraging: only 19 of the 64 parties to the 1972 London Convention reported on the number and types of dumping permits they issued in 1987; only 13 of the 57 parties to the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) reported violations and penalties they had imposed in 1989; only 25 of the more than 100 parties to the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)¹⁸ submitted reports on 1989 import and export certificates for listed endangered species.¹⁹

Others similarly conclude that effective enforcement of the treaties has been lacking²⁰ and that there simply are too many treaties, engendering a kind of “treaty

¹³Environmental Law Network International, *Practical Implications of Environmental Law Principles 2* (1999).

¹⁴Frank Biermann, *Land in Sight for Marine Environmentalists?*, 1 *Revue De Droit Int'l* 35, 46 (Jan.-Apr. 1998).

¹⁵Handl, *Controlling Implementation and Compliance with International Environmental Commitments: The Rocky Road from Rio*, 5 *Colo. J. Int'l Env'tl. L. & Policy* 305, 306 (1994).

¹⁶Handl, *Controlling Implementation and Compliance with International Environmental Commitments: The Rocky Road from Rio*, 5 *Colo. J. Int'l Env'tl. L. & Policy* 305, 306 (1994).

¹⁷Philippe Sands, *Principles of International Law 1: Frameworks, Standards, and Implementation* 143-48 (1995).

¹⁸Mar. 3, 1973, 993 U.N.T.S., 12 I.L.M. 1085.

¹⁹Mar. 3, 1973, 993 U.N.T.S., 12 I.L.M. 1085.

²⁰Kelly, *Overcoming Obstacles to the Effective Implementation of International Environmental Agreements*, 9 *Geo. Int'l Env'tl. L. Rev.* 447, 448 (1997).

congestion.”²¹ An analysis by the U.S. General Accounting Office of implementation also is quite negative: “many reports are submitted late or incomplete, or are not submitted at all.”²² Almost half of the reports to the Montreal Protocol Secretariat had information gaps. Equally if not more discouraging responses were reported for MARPOL, CITES, and the International Tropical Timber Agreement. The GAO further noted that those nations that carry out agreements may be put at a competitive disadvantage compared with countries that do not because of the high costs involved in coming into compliance. After citing some success in the number of international environmental instruments being concluded, David Freestone, a professor at the University of Hull and a legal advisor to the World Bank, warns that if they are not implemented, they “may not simply be worthless: they may be worse than worthless if they give the impression that all is well when the opposite is in fact true.”²³

At the regional level, audits/assessments are more varied but still critical. Stanley Johnson and Guy Corcelle conclude about the European Union:

Generally speaking, numerous weaknesses and gaps in the implementation of environmental directives have been noted by the Commission: often inclusion of these directives in national law is delayed; they are often only partially incorporated; in practice, the directives have been considered as recommendations, rather than provisions having a restrictive legal power; in some cases even the decisions of the Court of Justice recognizing an infraction on the part of a Member State, have not been followed.²⁴

Enforcement procedures within the European Community, both at national and at community levels, are ineffective;²⁵ definitions within European law remain elusive; and it is characterized by “messiness in certain areas and absurdities in others,” although the case with European waste law may ultimately make for a more balanced audit/assessment.²⁶

In a criticism that she generalizes to the United Nations Environment Programme (UNEP), Gabriella Kitting, a British political scientist and international relations specialist, notes the potential weakness of focusing on compliance rather than the effectiveness of international environmental law.²⁷ About the Mediterranean Action Plan (MAP) she observes, “If cooperation rather than implementation is seen as the aim of MAP, it can be described as a successful agreement. Unfortunately, cooperation without implementation does not improve the state of the marine environment. Thus, MAP lacks effectiveness.”²⁸ Explicitly addressing progress in environmental terms, American environmental conservation professor John Carroll concluded of the International Joint Commission that “in broader societal concerns of water and

²¹Kelly, *Overcoming Obstacles to the Effective Implementation of International Environmental Agreements*, 9 *Geo. Int'l Env'tl. L. Rev.* 447, 448 (1997); Weiss, *International Environmental Law: Contemporary Issues and the Emergence of a New World Order*, 81 *Geo. L.J.* 675–710 (1993).

²²U.S. General Accounting Office, *International Environment: Strengthening the Implementation of Environmental Agreements* 3–4 (1992) (report to congressional requesters).

²³*International Law and Sustainable Development: Past Achievements and Future Challenges* 360 (Alan Boyle & David Freestone eds., 1999).

²⁴Stanley Johnson & Guy Corcelle, *The Environmental Policy of the European Communities* 340 (1992).

²⁵Philippe Sands, *Principles of International Law 1: Frameworks, Standards, and Implementation* 143–48 (1995).

²⁶Tromans, *EC Waste Law: A Complete Mess?*, 13 *J. Env'tl. L.* 133, 156. (2001).

²⁷Kutting, *Mediterranean Pollution: International Cooperation and the Control of Pollution from Land-Based Sources*, 18 *Marine Pol'y* 233, 238 (1994).

²⁸Kutting, *Mediterranean Pollution: International Cooperation and the Control of Pollution from Land-Based Sources*, 18 *Marine Pol'y* 233, 238 (1994).

air pollution, it has achieved little of significance *when measured against getting the problem solved*, and that should be the only real measure.”²⁹

Some observers attend to the weakest parts of treaties and generalize therefrom. They see vague definitions such as the undeveloped “ecosystem approach” in the Convention on the Conservation of Antarctic Marine Living Resources;³⁰ loopholes, such as through bilateral agreements in the Basel Convention; incentives to defect from the Montreal Protocol and absence of effective compliance-promoting mechanisms; failure to address air pollution emissions from vessels under MARPOL and related regimes; creation of polarization rather than consensus with the Straddling Stocks and Highly Migratory Fish Treaty and its failure to address protection of the 90% of the world’s fisheries within the 200-mile exclusive economic zones of coastal nations; the possibility of trade between members and nonmembers of CITES, its provision allowing downgrading of species from extremely endangered to threatened, and failure to provide adequate financing to meet obligations; ineffective monitoring and management under certain fish protection conventions; and vote buying, expensive use of scientific research, and aboriginal catch exemptions under the international whaling regime.

In addition, the Commission on Sustainable Development has made only modest progress in implementing Agenda 21, and its activities have been decried as “depressingly slow”³¹ and remaining in a very preliminary stage.³² The Bamako Convention³³ has a noble objective and contains a precautionary principle, but it lacks an effective monitoring and enforcement mechanism, commitment from some African states, and sufficient funding.³⁴ The International Convention for the Conservation of Atlantic Tuna³⁵ has been ineffective in reversing the trend of declining tuna stocks in part because some fishing nations did not sign the treaty. Among those that did are countries, such as the United States, that have not been sufficiently influenced by the regime’s compliance rules. Quotas set by participating parties have been unlawful. For example, the U.S. quota was set at three times its allocation.³⁶ True, a trade measure element exists in the regime, but it is focused on nonmembers.

Peter Dauvergne, an environmental policy analyst from Australia, is anticipatorily pessimistic on forestry:

Even if current efforts to develop a global forest convention are successful, even as governments embrace new environmental institutions and laws, and even as international activist groups and local nongovernmental groups gain influence, genuine reforms will still occur slowly, perhaps too slowly to save the remaining old-growth tropical forests of the Asia-Pacific.³⁷

²⁹John Carroll, *International Environmental Diplomacy* 276 (1988).

³⁰Catherine Redgwell, *Protection of Ecosystems Under International Law: Lessons from Antarctica*, in *International Law and Sustainable Development: Past Achievements and Future Challenges* (Alan Boyle & David Freestone eds, 1999).

³¹Handl, *Controlling Implementation and Compliance with International Environmental Commitments: The Rocky Road from Rio*, 5 *Colo. J. Int’l Env’tl. L. & Policy* 305, 307 (1994).

³²Bergesen and Botnen, *Sustainable Principles or Sustainable Institutions? The Long Way from UNCED to the Commission on Sustainable Development*, 1 *F. Dev. Stud.* 35 (1996).

³³Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes Within Africa, Jan. 30, 1991, 30 *I.L.M.* 773.

³⁴Schneider, *The Basel Convention Ban on Hazardous Waste Exports: Paradigm of Efficacy or Exercise in Futility?*, 20 *Suffolk Transnat’l L. Rev.* 247, 265 (1996).

³⁵*International Convention for the Conservation of Atlantic Tuna*, May 14, 1966, 673 *U.N.T.S.* 63.

³⁶Nickler, *A Tragedy of the Common in Coastal Fisheries: Contending Prescriptions for Conservation, and the Case of the Atlanta Blue Fin Tuna*, 26 *B.C. Env’tl. Aff. L. Rev.* 549, 576 (1999).

³⁷Dauvergne, *Globalisation and Deforestation in the Asia-Pacific*, 7 *Env’tl. Pol.* 114, 116 (1998).

By 2000, internationally traded tropical timber was to come entirely from sustainable sources.³⁸ That goal has not been met.

Anecdotes fuel these negative audits/assessments. The standoff between the United States and Canada on overfishing in the Pacific Northwest has been embarrassing. Canadian fishermen were a graphic reminder of the fragile nature of international environmental law, as they encircled American ships with their small vessels to block them from leaving the bay.

Other examples are regressive: Germany's plan to phase out a water pollution tax established in 1976, an action incompatible with principle 16 of the Rio Declaration and chapters 4 and 18 of Agenda 21,³⁹ the European Union's (EU's) failure to adopt an EU-wide carbon tax, despite the European Community's political commitment to stabilize carbon dioxide emissions at 1990 levels by the year 2000;⁴⁰ the American reliance on voluntary cooperation by business and industry for reducing greenhouse gas emissions;⁴¹ and the failure at the U.N. Conference on Environment and Development to produce a global forests convention.⁴²

The 1991 Air Quality Agreement between the United States and Canada lacks external control over environmental impact audit/assessment. Neither it nor the U.N. Economic Commission for Europe Convention on Environmental Impact Audit/Assessment⁴³ has substantive value if the procedural obligations (consultations or conciliation) are unsuccessful. Indeed, in a survey the Secretariat of the United Nations "was unable to uncover any instance where an activity was enjoined on account of the environmental risks it entailed, even though such requests had at times been made."⁴⁴

The 1986 Convention on Early Notification of a Nuclear Accident⁴⁵ allows a state to evade its duties by concluding that the accident is not "radiologically significant."⁴⁶ With regard to a procedural obligation provided by treaty, pertaining to the exchange of information, Okowa summarized:

The determination of breach of obligations of this character is bound to be problematic in so far as their performance cannot be tested objectively. There are no uniform principles or rules regulating the collection or dissemination of information. A State may decide to supply minimal information, or install inadequate monitoring equipment, but in the absence of institutional or third party mechanisms or criteria for determining the level of compliance it would be very difficult to make out a case of breach.⁴⁷

The provisions regarding land-based sources of marine pollution in the controver-

³⁸Humphreys, *The Global Politics of Forest Conservations Since the UNCED*, 5 *Envtl. Pol.* 231 (1996).

³⁹Handl, *Controlling Implementation and Compliance with International Environmental Commitments: The Rocky Road from Rio*, 5 *Colo. J. Int'l Env'tl. L. & Policy* 305, 308 (1994); U.N. Conference on Environment and Development (UNCED), Agenda 21, U.N. Doc. A/CONF.151.26 (1992).

⁴⁰Handl, *Controlling Implementation and Compliance with International Environmental Commitments: The Rocky Road from Rio*, 5 *Colo. J. Int'l Env'tl. L. & Policy* 305, 308 (1994).

⁴¹Gunther Handl, *Controlling Implementation and Compliance with International Environmental Commitments: The Rocky Road from Rio*, 5 *Colo. J. Int'l Env'tl. L. & Policy* 305, 308 (1994).

⁴²Humphreys, *The Global Politics of Forest Conservations Since the UNCED*, 5 *Envtl. Pol.* 231 (1996).

⁴³U.N. Economic Commission for Europe Convention on Environmental Impact Audit/Assessment in a Transboundary Context, Feb. 25, 1991, 30 *I.L.M.* 802.

⁴⁴Phoebe Okowa, *Procedural Obligations in International Environmental Agreements*, in *British Yearbook of International Law* 288 (Ian Brownlie & James Crawford eds., 1997).

⁴⁵Convention on the Early Notification of a Nuclear Accident, Sept. 26, 1986, 25 *I.L.M.* 1370.

⁴⁶Phoebe Okowa, *Procedural Obligations in International Environmental Agreements*, in *British Yearbook of International Law* 297 (Ian Brownlie & James Crawford eds., 1997).

⁴⁷Phoebe Okowa, *Procedural Obligations in International Environmental Agreements*, in *British Yearbook of International Law* 301 (Ian Brownlie & James Crawford eds., 1997).

sial Law of the Sea Treaty (UNCLOS)⁴⁸ are strikingly weak, “certainly the weakest formulations to be found in international legal documents.”⁴⁹ UNCLOS articles 207 and 212 may be understood only as a general rule of state conduct whose content is still determined by the individual will of states⁵⁰ and collective scientific interests of the community of nations as a whole are not protected.⁵¹ UNCLOS had devoted little attention to the conservation and management of high-seas fish stocks. From 1982, fishing outside the 200-mile zone increased as nations sought new areas to exploit. Concomitantly, there was mismanagement and overexploitation of resources within the 200-mile limit, renewing pressures on those fish stocks that straddle the 200-mile boundaries,⁵² although the protection of these stocks has been addressed in an agreement that came into force almost two decades after UNCLOS. The continued hegemony of the flag state in respect to prosecution of violations of fisheries conservation measures on the high seas is another defect.⁵³ Furthermore, the UNCLOS mechanisms for dispute settlement have contributed to the proliferation of international tribunals, whose uncoordinated actions can fragment both substantive law and procedures for settling disputes.⁵⁴

With the exception of the European treaty regimes, the 40 regional seas environmental treaties have not been effective. The regimes are characterized by a vagueness similar to UNCLOS articles 207 and 212. The Antarctic Treaty System⁵⁵ has prohibited mining under a comprehensive environmental protection regime, but a long-run solution for stopping the evolution of mineral exploitation is not in sight. The protocol’s 50-year ban rule has temporarily resolved some discrepancies, but this issue can be reopened at any time and certainly will be in the future.⁵⁶

Positive Overall Audits/Assessments

Other audits/assessments are more positive. Sands counters his own dismal statistics on compliance in general with much more encouraging data for the International Whaling Commission and the Montreal Protocol.⁵⁷ Susskind points to countries previously uncaring about natural resource management that now make explicit commitments to be responsible.⁵⁸ He also cites the increased number of whales, the recognition of wetlands preservation and the rescue of 30 million hectares of wetlands (an area the size of Italy), control of mineral development in the Antarctic, protection of 80 “natural world heritage” sites, and clear delineation

⁴⁸United Nations Convention on the Law of the Sea, Dec. 10, 1982, 33 I.L.M. 1309.

⁴⁹Biermann, Land in Sight for Marine Environmentalists?, 1 *Revue De Droit Int’l* 35, 39 (Jan.-Apr. 1998).

⁵⁰Biermann, Land in Sight for Marine Environmentalists?, 1 *Revue De Droit Int’l* 35, 39 (Jan.-Apr. 1998).

⁵¹Burke, Importance of the 1982 U.N. Convention on the Law of the Sea and Its Future Development, 27 *Ocean Dev. & Int’l L.* 1 (1997).

⁵²Peter G. Davies & Catherine Redgwell, The International Legal Regulation of Straddling Fish Stocks, in *British Yearbook of International Law* 200 (1997).

⁵³Peter G. Davies & Catherine Redgwell, The International Legal Regulation of Straddling Fish Stocks, in *British Yearbook of International Law* 273 (1997).

⁵⁴Boyle, Dispute Settlement and the Law of the Sea: Problems of Fragmentation and Jurisdiction, 46 *Int’l & Comp. L. Q.* 37 (1997).

⁵⁵See Antarctic Treaty (1980), 402 UNTS 71; Scientific Committee on Antarctic Research, The Antarctic Treaty System: An Introduction, at http://www.scar.org/Treaty/treaty_.htm.

⁵⁶Governing the Antarctic: The Effectiveness and Legitimacy of the Antarctic Treaty System 293 (Olav Stokke Schram & Davor Vidas, eds., 1997).

⁵⁷Philippe Sands, *Greening International Law* 147 (1993).

⁵⁸Larry E. Susskind, *Environmental Diplomacy: Negotiating More Effective Global Agreements* 17–18 (1994).

of migratory flyways.⁵⁹ Also, many provisions of the Law of the Sea have come into practice. Susskind's list goes on and includes reference to the ozone treaties and those on hazardous waste transport.⁶⁰ International law jurist Jose De Yturriaga also locates strengths in his audit/assessment of the Law of the Sea.⁶¹

Scovazzi concludes that "There is hardly any doubt that treaties are considered to be the best tools in improving the protection of the environment at the international level."⁶² The *Global Environment Outlook* concluded: "World-wide, the greatest progress has been in the realm of institutional developments, international co-operation, public participation, and the emergence of private-sector action. Legal frameworks, economic instruments, environmentally sound technologies, and cleaner production processes have been developed and applied. Environmental impact audits/assessments have become standard tools."⁶³ The policy grandfather of domestic environmental impact audit/assessment law, Lynton Caldwell, has in his later analyses praised the contribution of international global law.⁶⁴ He recognizes a body of precedent-setting law and practice as having the character of an international constitution for the world environment.

Juxtaposing his audit/assessment with Henry Kissinger's view of diplomacy as the exercise of competitive power politics among nations, *New York Times* environmental reporter Philip Shabecoff states that:

the rise of green diplomacy in the latter part of the 1980s seemed to reflect something different: a growing awareness of a new *realpolitik* that must be addressed not by competition but by cooperation and not by unilateral exercise of sovereign power but by pooling that power to confront the complex array of environmental and economic problems that threaten all nations.⁶⁵

He enumerated the targets of international environmental law to demonstrate its importance: nothing is more real than poverty and hunger, disease caused by polluted water, massive relocations of people to avoid scarcity, and global climate change and ozone depletion.

The Environmental Law Network International balances some of its negative analysis, noting that environmental law principles "are by no means devoid of legal force and effect."⁶⁶ The International Court of Justice (ICJ) has given weight to certain of those principles, as have individual nation-state courts, including the German Federal Constitutional Court. Although the ICJ's pronouncements are more recommendatory than prescriptive, such as in the Gabcikovo-Nagymaros case be-

⁵⁹Larry E. Susskind, *Environmental Diplomacy: Negotiating More Effective Global Agreements* 17 (1994).

⁶⁰Nonetheless, Susskind gives "several reasons to be pessimistic about the prospects for achieving the level of cooperation required to manage shared (or common) resources like the ocean, space, Antarctica, the atmosphere, or the diversity of species." Larry E. Susskind, *Environmental Diplomacy: Negotiating More Effective Global Agreements* 18 (1994). They are the north-south split on these issues, the persistence (he calls it "stubborn") of national sovereignty, and the lack of incentives for nations to bargain.

⁶¹Jose A De Yturriaga, *The International Regime of Fisheries: From UNCLOS 1982 to the Sea* (1997).

⁶²*World Treaties for the Protection of the Environment* 28 (Tullio Scovazzi & Tullio Treves eds., 1992).

⁶³United Nations Environment Programme, *The Global Environment Outlook 2* (1997) [hereinafter *Global Environment Outlook 1997*].

⁶⁴Caldwell, *Is World Law an Emerging Reality? Environmental Law in a Transnational World*, *Colo. J. Int'l Envtl. L. & Pol'y* 1 (1999) (online symposium Jan. 15–30, 1999).

⁶⁵Philip Shabecoff, *A New Name for Peace: International Environmentalism, Sustainable Development, and Democracy* 116 (1996).

⁶⁶Environmental Law Network International, *Practical Implications of Environmental Law Principles 2* (1999).

tween Hungary and Czechoslovakia-Slovakia over damming of the Danube and interpretation of a treaty on locks and other facilities, the U.N. judicial organ is helpful in promoting “a process of ongoing negotiations geared toward achieving a political result that is mutually acceptable.”⁶⁷

Hilary French, an environmental policy analyst with Environmental Defense, attributing a long list of achievements at least in part to international agreements, noted that sulfur dioxide emissions fell substantially in Europe from 1980 to 1990, the health threat of radiation from atmospheric testing decreased dramatically since the 1963 test ban, and the percentage of “clean and safe” beaches in the Mediterranean grew impressively since the adoption of the 1975 Mediterranean Action Plan.⁶⁸ Also, whale harvests have fallen from tens of thousands to tens since the International Whaling Commission tightened its regulations; poaching of elephants dropped precipitously in Africa since 1989; Antarctica has been protected from mining, military activities, and other environmentally degrading actions; and hazardous waste imports have fallen. Nonetheless, for each success, French names a rather daunting “remaining challenge.”⁶⁹

Christopher Stone, a leading American authority on environmental and international environmental law, in a comprehensive treatment of law and other institutions as means of protecting the global environment, identifies several significant weaknesses in environmental treaties, most notably vagueness in language, and then concludes:

the notion of more ambitious multilateral conventions will and should go forward Nonetheless . . . no one should doubt that even without “hard” sanctions backing them up, treaties, and even vague, aspirational declarations of principle, have significant effects on patterns of behavior in the international community. Indeed, no one should doubt the salutary effects in the mere process of bringing diplomats together to discuss global problems.⁷⁰

Other analysts focus on the strengths of particular treaties, such as: the effective use of trade-related environmental measures (TREM)s to promote compliance in the Basel Convention, numerous innovations including the funding mechanism for TREMs in the Montreal Protocol, and effective regulation of the international trade in pesticides. Peter Hough concluded that (unlike other pesticide-related issues such as industrial safety and environmental pollution) “the rules established by UNEP and the FAO [Food and Agriculture Organization] have been observed by both the chemical industry and government and have had an impact on political behavior.”⁷¹ Hough’s audit/assessment is important because the most powerful affected actors—the agrochemical industry and the United States and Great Britain—did not sup-

⁶⁷Oxman, *International Decisions (Gabcikovo-Nagymaros Project)*, 92 *Am. J. Int’l L.* 273, 278 (1998).

⁶⁸French, *From Discord to Accord*, 72 *Nat’l F.* 37 (1992).

⁶⁹Others find overall audit/assessment too difficult: “International environmental law is so many-sided that a simple description of its status is impossible. The picture is in fact rather contradictory; in some respects dynamic and innovative; in other respects extremely cautious and conservative. On some issues there have been important achievements; on others a frustrating inertia and even setbacks.” Hans Christian Bugge, *International Environmental Law—Status and Challenges*, in *International Environmental Law* 53 (Hans Christian Bugge & Erling Selvig eds., 1995).

⁷⁰Christopher Stone, *The Gnat Is Older Than the Man: Global Environment and Human Agenda* 119–20 (1993).

⁷¹Hough, *Stemming the Flow of Poison: The Role of UNEP and the FAO in Regulating the International Trade in Pesticides*, 13 *Int’l Rel.* 69,79 (1996).

port the establishment of the FAO and UNEP rules, which appeared, they proclaimed, “not to be in their interests.”⁷²

In their thorough review of 14 case studies, David Victor, Kal Raustiala, and Eugene Skolnikoff, innovative scholars in the field of international regulatory effectiveness, concluded that for most of the eight areas of regulation they identify, “regulated behavior has changed markedly in the past two decades.”⁷³ They cite virtual elimination of ozone-depleting substances, dramatic decreases in emissions of sulfur dioxide, stabilization of emissions of nitrogen oxides, the banning of hazardous chemicals and pesticides, protection of whales, and elimination of dumping at sea of high-level radioactive wastes—all at least in part related to implementation of international environmental law. Edith Brown Weiss and Jon J. Jacobson, leading figures, respectively, in the fields of environmental law and international trade law, at about the same time concluded that compliance with the World Heritage Convention has been quite respectable; that notwithstanding some weaknesses, CITES has been linked to an end of trade in some species; that despite major problems with compliance, the London Dumping Convention has been relatively successful, with decreases measured in the millions of tons of dumped wastes; and that the Montreal Protocol has been unusually effective.⁷⁴ Pieter Van Heijnsbergen, a lecturer and member of the Commission on Environmental Law of the World Conservation Union, also concluded that CITES “functions well,” despite noting that a third of the parties do not have adequate implementing legislation and that the convention does not have a binding dispute resolution mechanism.⁷⁵

A quarter-century after the UNEP Regional Seas Program was initiated, Boyle and Freestone found a mixed record that included some positive results.⁷⁶ The Mediterranean Action Plan (MAP) has established, with “a measure of success,” the legal and institutional basis for coordination of national programs and measures. Potentially divisive issues, such as interregime control of land-based pollutants, have been addressed through the MAP process. The Kuwait Action Area agreement has successfully introduced environmental impact audit/assessment into its region and has fostered an innovative approach to control of land-based pollution. Similar successes with regional control of land-based and other emissions have been achieved in the North Atlantic and the Baltic Sea. Nonetheless, again, there are “major short-comings” in all the regional arrangements, including poor implementation capability, insufficient attention to dispute resolution, and neglect of civil-liability strategies.

As to oil pollution of the seas, Ronald Mitchell, the international public policy expert and professor of political science, contrasting the MARPOL regime to that of an earlier convention, found that MARPOL has achieved nearly universal compliance.⁷⁷ He gave several explanations for its success: transparency of actions, provision of potent and credible sanctions, and reduced implementation costs for

⁷²In a provocative conclusion, Hough states: “Thus the issue contradicts the traditional belief that regimes are established in order to maximize the interests of dominant actors and it appears that norms of behavior in international politics, on which regimes develop, can have their source in morality as much as in the priorities of the powerful.” Hough, *Stemming the Flow of Poison: The Role of UNEP and the FAO in Regulating the International Trade in Pesticides*, 13 *Int'l Rel.* 69,79 (1996).

⁷³David G. Victor, Kal Raustiala, & Eugene B. Skolnikoff, *The Implementation and Effectiveness of International Environmental Commitments: Theory and Practice 2* (1998).

⁷⁴Edith Brown Weiss & Harold K. Jacobson, *Engaging Countries: Strengthening Compliance with International Environmental Accords* (1998).

⁷⁵P. Van Heijnsbergen, *International Legal Protection of Wild Fauna and Flora* 217 (1997).

⁷⁶*International Law and Sustainable Development: Past Achievements and Future Challenges* 360 (Alan Boyle & David Freestone eds., 1999).

⁷⁷Ronald Mitchell, *Regime Design Matters: International Oil Pollution and Treaty Compliance*, 48 *Int'l Org.* 425 (1994).

states because MARPOL builds on established infrastructures. Emeka Duruigbo, a Canadian law professor and human rights specialist, also recognizes the value of MARPOL's compliance-promoting devices (with near universal installation of ballast tanks and oil washing), although he notes challenges to enforcement related to limitations on jurisdiction, part of a "predicament" that hangs "like an albatross around the neck of international law generally."⁷⁸

Okowa's audit/assessment of the procedural requirements of consultation is fairly positive, and her overall conclusion regarding this type of treaty obligation ("procedural environmental") is at least mixed:

In many contexts the obligations are not defined with precision, and much uncertainty persists as to their essential components As found in treaty regimes, [however,] there is little doubt that these obligations have legal force for the parties to them. To that extent the obligations they impose are strictly speaking justiciable, notwithstanding their general imprecision As independent legal duties, procedural obligations are likely to influence the behaviour of even the most reluctant of States.⁷⁹

Audits/Assessments of soft law, customary law, and framework law also vary. The campaign to control high-seas pelagic driftnet fishing through nonbinding legal means "seems to have succeeded."⁸⁰ U.N. resolutions are being reevaluated with increasing respect for their effectiveness.⁸¹ The International Law Commission concluded that "there is overwhelming support for the doctrine of equitable utilization as a general guiding principle of law for the determination of the rights of States in respect of the non-navigational uses of international watercourses."⁸² But Andre Nollkaemper, a professor of public international law from Amsterdam, characterized the doctrine as "highly indeterminate," based on an unwieldy weighting of 17 factors. It is "an open-ended framework for political compromise without an independent legal identity The flexibility of the principle means that it easily dwindles into a 'might-is-right' paradigm."⁸³ Helge Bergesen and Trond Botnen conclude that the activities of the Commission on Sustainable Development have remained in a very preliminary stage.⁸⁴ Robert A. Kaplan concludes that customary law has not been able to address adequately the challenge of subseabed nuclear waste disposal.⁸⁵

A Closer Look: Five Case Studies

These very different audits/assessments reflect the variable success of individual efforts, but they also underscore the different criteria for evaluating success, different understandings of the goal of an international law of the environment, and dif-

⁷⁸Duruigbo, *Reforming the International Law and Policy on Marine Oil Pollution*, 31 *J. Mar. L. & Com.* 65 (2000).

⁷⁹Phoebe Okowa, *Procedural Obligations in International Environmental Agreements*, in *British Yearbook of International Law* 334–35 (Ian Brownlie & James Crawford eds., 1997).

⁸⁰Donald R. Rothwell, *The General Assembly Ban on Driftnet Fishing*, in *Commitment and Compliance: The Role of Non-Binding Norms in the International Legal System* 145 (D. Shelton ed., 2000).

⁸¹*Commitment and Compliance: The Role of Non-Binding Norms in the International Legal System* (Dinah Shelton ed., 2000).

⁸²A. Nollkaemper, *The Contribution of the International Law Commission to International Water Law: Does It Reverse the Flight from Substance?*, in *Netherlands Yearbook of International Law* 39, 44 (1996).

⁸³A. Nollkaemper, *The Contribution of the International Law Commission to International Water Law: Does It Reverse the Flight from Substance?*, in *Netherlands Yearbook of International Law* 39, 46 (1996).

⁸⁴Bergesen and Botnen, *Sustainable Principles or Sustainable Institutions? The Long Way from UNCED to the Commission on Sustainable Development*, 1 *F. Dev. Stud.* 35 (1996).

⁸⁵Kaplan, *Into the Abyss: International Regulation of Subseabed Nuclear Waste Disposal*, 139 *U. Pa. L. Rev.* 769 (1991).

ferent accounting schemes. Another way of looking at the record is offered by detailed case studies that examine evaluative criteria and give a more textured picture of success and failure and the methods used to reach those conclusions. The following cases cover international attempts to protect the air (Montreal Protocol and its amendments),⁸⁶ water (Black Sea Environmental Programme), and land (Basel Convention)⁸⁷ and, more generally, environmental protection and enforcement (the NAFTA-related North American Agreement on Environmental Cooperation).⁸⁸ Global climate change is the focus of the last study, which addresses earth systems more generally.

Air: The Montreal Protocol and Its Amendments

No consensus has emerged on which international environmental law has been the most successful. Among the most broadly acclaimed treaties, however, is the Montreal Protocol and its amendments. The protocol, which aims to reduce the release of gaseous chemicals that damage stratospheric ozone, is hailed as a model for north-south cooperation on global environmental problems.

Certain chemicals used in industrial and industrializing societies have caused an increase in the amount of ultraviolet radiation that reaches the earth's surface. Refrigerants (chlorofluorocarbons (CFCs)) used in private homes and automobiles, flame retardants (halons) found in fire extinguishers, and other gases react with ultraviolet radiation when they reach the stratosphere. Chlorine free radicals are released by the ultraviolet radiation, and a series of chemical reactions is catalyzed. "The natural stratospheric removal processes for ozone are then supplemented by chlorine-based sequences The average ozone molecule survives for a short time and less ozone is present than before."⁸⁹ The reactions upset the natural processes of ozone creation, destruction, and re-creation. (A single chlorine atom can destroy thousands of ozone molecules in the stratosphere.) As a result, the protective layer of ozone that surrounds the earth is weakened and the earth's surface is exposed to elevated levels of ultraviolet radiation. Increased exposure to ultraviolet radiation induces cataracts, suppresses or destroys the human immune system, and causes some forms of skin cancer. It endangers many species of phytoplankton, essential to the survival of nearly all fish populations. Man-made materials also suffer damage.

None of this was known when CFCs were first produced in 1928. According to the standards used at the time to test new chemicals, CFCs were thought to be safe. They were not toxic. They were not flammable, and they are chemically stable in the lower atmosphere. The inventor of the first CFC compound sought to illustrate its safety by inhaling its vapors and using his CFC-loaded breath to blow out the flame of a candle.⁹⁰

By the eighties, use of CFCs and other ozone-depleting substances was well established in industrialized countries. Their production and use in developing countries had been small by comparison, but absent the presence of accessible and affordable alternatives, these nations would be likely to increase use greatly. Scientific understanding of the nature, magnitude, and consequences of the CFC problem was growing, but the issue was still controversial in the seventies. In 1974, Mario

⁸⁶Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, 26 I.L.M. 1550.

⁸⁷Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, 28 I.L.M. 657.

⁸⁸North American Agreement on Environmental Cooperation, Sept. 9 and Sept. 13, 1993, 32 I.L.M. 1480.

⁸⁹Rowland, Atmospheric Changes Caused by Human Activities: From Science to Regulation, 27 Ecology L.Q. 1261, 1269 (2001).

⁹⁰Karen Litfin, Ozone Discourses: Science and Politics in Global Environmental Cooperation 58 (1994).

Molina and F. Sherwood Rowland published a paper showing the chemical process by which CFCs, which remain in the atmosphere for decades, could cause continued damage to stratospheric ozone. The paper launched a heated scientific debate, and industrial acceptance of the existence of risk was slow. As of 1980, leaders at DuPont, the world's largest CFC producer, maintained that the environmental threat posed by CFCs was not established well enough to warrant continuing research on replacement compounds.⁹¹

Later, when the dangers were recognized, it was clear that the possible effects of reduced levels of stratospheric ozone could not be controlled by any nation in isolation. Without international cooperation, efforts to cut back on production in one country would likely be offset by activities elsewhere. Some effects of ozone depletion are concentrated in particular nations, but others are more diffuse. Many political leaders were beginning to conclude that an international agreement was essential to reduce the likelihood and magnitude of potentially devastating damage to life around the globe.

International Environmental Law Response

In 1976 the Governing Council of UNEP organized a meeting of intergovernmental organizations (IGOs) and nongovernmental organizations (NGOs) to review information about the ozone layer, and one year later UNEP began working on ways to address the ozone issue. It created a Coordination Committee on the ozone layer in collaboration with the World Meteorological Organization. This group of IGO, NGO, and national and scientific organization representatives was to produce a semiannual audit/assessment of the depletion of the ozone layer and its effects. There followed several important events. In 1985 the Vienna Convention on the Protection of the Ozone Layer was adopted. It called for cooperation on many matters: on research and information exchange on human effects on the ozone layer and human health effects of modification of the layer; on formulation of protocols and annexes; on basic scientific research; and on exchange of relevant scientific, technical, socioeconomic, commercial, and legal information.⁹² It established a conference of the parties to adopt protocols. It described how amendments to the convention would be made by consensus, except, "as a last resort," by a three-fourths majority of parties present and voting; how amendments to any protocol were to be made; and how annexes were to be adopted and amended. Settlement of disputes would be by negotiation, good offices, or mediation by a third party, and arbitration or submission to the ICJ.

The convention solidified the commitment to find ways to protect the ozone layer and improve understanding of stratospheric ozone reduction, but it contained no specific CFC standards or regulations. As late as December 1986, only half a dozen nations had ratified it. The next two years witnessed greater public interest in the ozone problem, further scientific publications reporting on its severity, the recognition by industry (most notably DuPont) that CFC substitutes could be developed within a small number of years, and continued expert workshop activity under the auspices of UNEP.

In 1987, governments of developed and developing countries agreed to the Montreal Protocol on Substances that Deplete the Ozone Layer, despite continuing uncertainty about the existence of damage to the ozone layer and conflicting political interests over possible courses of action. Under article 8 of the Montreal Protocol, parties must establish means of determining noncompliance with the protocol and they must also determine how to treat noncompliance. The Copenhagen Amend-

⁹¹Karen Litfin, *Ozone Discourses: Science and Politics in Global Environmental Cooperation* 70 (1994).

⁹²Vienna Convention for the Protection of the Ozone Layer art. 4, Mar. 22, 1985, 26 I.L.M. 1529.

ments⁹³ met this requirement by creating an implementation committee constituted of 10 parties and giving that committee the authority to receive submissions by a party regarding reservations about another party's implementation of protocol obligations. The committee makes recommendations to the Meeting of the Parties. In Copenhagen hydrochlorofluorocarbons (HCFCs) and other substances were added to the list of controlled substances. The 1997 Montreal Amendments determined several measures that the Meeting of the Parties would be able to take in cases of noncompliance, namely: suspend protocol privileges, issue warnings, and provide financial and technical assistance. This is done through the Montreal Protocol Multilateral Fund, the institutional characteristics of which are laid out in article 10 of the 1990 London Amendments.⁹⁴

There are several fundamental requirements of the protocol regime. Specific timetables for restrictions have been created, and a phaseout or ban of most of the ozone-depleting substances (ODSs) has been adopted; for some substances the requirement is a freeze on production. Cooperation in scientific research and exchange of information are promoted. Abatement measures for ODSs have been adopted. Those substances now include CFCs, halons, carbon tetrachloride, methyl chloroform, fully halogenated CFC, HCFC, hydrobromide fluorocarbons, and methyl bromide. A permanent funding entity is in place and trade restrictions can be imposed for noncompliance. Member countries commit to establish licensing systems for trade, and a mechanism for avoiding disputes and settling them when they are not avoidable, the noncompliance procedure has been initiated. The regime adopted the revolutionary concept in international law of simplified majority decision-making, and no reservation is allowed. The ozone regime, in addition to the state parties, includes the Meeting of the Parties, the Implementation Committee, and the UNEP Ozone Secretariat, which is empowered, among other matters, to initiate a formal dispute resolution procedure, a first in international law.⁹⁵

Ambassador Richard Benedick, who led the United States participation in the negotiations for the Vienna Convention and the Montreal Protocol, said that negotiations were characterized by "a sense of history making."⁹⁶ At the conclusion of the negotiation of the Montreal Protocol, Mostafa Tolba, the UNEP executive director whose strong personality had helped build support for substantive commitments in the protocol, stated that "the environment can be a bridge between the worlds of East and West, and of North and South This Protocol is a point of departure . . . the beginning of the real work to come."⁹⁷ This agreement was achieved despite the lack of measurable evidence of damage to the ozone layer at the time.⁹⁸

Audit/Assessment: Physical Parameters

The Montreal Protocol and its amendments will lead to a reduction in the magnitude of loss of stratospheric ozone in the 21st century provided that signatory nations comply with their commitments. Because the ozone-depleting substances that are currently in the stratosphere will continue to affect stratospheric ozone for

⁹³Copenhagen Amendments to the Montreal Protocol on Substances that Deplete the Ozone Layer, Nov. 23, 1992, 32 I.L.M. 874.

⁹⁴London Amendments to the Montreal Protocol on Substances that Deplete the Ozone Layer, June 29, 1990, 30 I.L.M. 539.

⁹⁵Yoshida, *Soft Enforcement of Treaties: The Montreal Protocol's Noncompliance Procedure and the Functions of Internal International Institutions*, 10 *Colo. J. Int'l L. & Pol'y* 95 (1999).

⁹⁶Mostafa K. Tolba, *Global Environmental Diplomacy* (1998).

⁹⁷Richard Eliot Benedick, *Ozone Diplomacy* (1991), as cited in David Hunter, James Salzman & Durwood Zaelke, *International Environmental Law and Policy* 214 (1998).

⁹⁸David Hunter, James Salzman & Durwood Zaelke, *International Environmental Law and Policy* 545 (1998).

a number of decades, the problem has not been eliminated.⁹⁹ Assuming that all commitments made in the Montreal Protocol and its amendments are met, the ozone layer is predicted to stabilize near the year 2050,¹⁰⁰ although some analysts conclude that it will be the middle of the century before an adequate comprehensive audit/assessment of the regime's impact can be undertaken.¹⁰¹

In the United States, many organizations that have used large amounts of substances regulated by the Montreal Protocol are now exemplary in their compliance, especially McDonald's (no more CFCs in packaging), Whirlpool (CFC-free refrigerants), and the U.S. military (phaseout of halons in fire-fighting equipment) (World Resources Institute 1996). There have been some problems associated with the incentive-based mechanisms for industrial compliance, most notably the black market in chlorofluorocarbons. DeSombre (2001) argues that changing economic, technological, and regulatory conditions will reduce the magnitude of the problems over time.¹⁰² Other challenges, however, are not based on bad faith but are simply reflections of capacity to implement. The United Kingdom, for example, faced with destroying CFCs in the foam of millions of refrigerators, lacks adequate facilities to perform the task.¹⁰³

Meanwhile, measurements of CFCs in the atmosphere indicate continued growth in absolute terms but a decrease in the rate at which CFCs are added to existing levels.¹⁰⁴ Evidence from the U.S. National Aeronautics and Space Administration and the National Oceanic and Atmosphere Administration shows that the loss of stratospheric ozone continues to affect all latitudes outside the tropics, with areas near the South Pole experiencing the greatest losses.¹⁰⁵

⁹⁹Statement by David Hofmann, director of the Climate Monitoring and Diagnostics Lab in Boulder, Colorado, as cited in Environmental News Network, Oct. 7, 1998:

According to the WMO/UNEP 1998 Audit/Assessment of Ozone Depletion . . . the Antarctic ozone hole will remain severe for the next 10 to 20 years. Following this period a slow healing is expected with full recovery predicted to occur in the 2050 time frame. Climate change, which is predicted to include a colder stratosphere, will affect the rate of recovery, Hofmann said.

¹⁰⁰David Hunter, James Salzman & Durwood Zaelke, *International Environmental Law and Policy* 576 (1998).

¹⁰¹Sims, *The Unsheltering Sky: China, India, and the Montreal Protocol*, 24 *Pol'y Stud. J.* 201–14 (1996).

¹⁰²See also Landers, Jr., *The Black Market Trade in Chlorofluorocarbons: The Montreal Protocol Makes Banned Refrigerants a Hot Commodity*, 26 *Ga. J. Int'l & Comp. L.* 457 (1997).

¹⁰³Tracey, *Ozone Depletion: Britain Faces Refrigerator Crisis under EU Law Requiring CFC Removal*, 24 *Int'l Env't Rep. (BNA)* 1089 (Dec. 5, 2001).

¹⁰⁴Excerpt from Center for International Earth Science Information Network (CIESIN):

Trends in CFCs have shown a nearly constant increase at all monitoring locations. The vast majority of CFC production is in the Northern Hemisphere but, due to their stability, CFCs become well-mixed in the troposphere. CFC-11 and CFC-12 have been increasing globally at a rate of approximately 3.7% to 4.0% per year from the late 1970s through the late 1980s . . . however, Elkins et al. (1993) indicate a slowdown in the increase of CFC-11 and CFC-12. Global rates have shown decreasing growth from 11.1 parts per trillion per year (ppt/yr) during the mid 1980s to 2.7 ppt/yr for CFC-11, and 19.5 ppt/yr in the mid 1980s to 10.5 ppt/yr for CFC-12. These trends coincide with industry reports of decreased production of these compounds. If such trends continue, peak levels of chlorine in the stratosphere may be reached before the turn of the century and a downturn may follow.

Center for International Earth Science Information Network, *Measurements and Trends in Ozone and Chlorofluorocarbon Levels* (1996), available at <http://www.ciesin.org/TG/OZ/trends.html>.

¹⁰⁵Excerpt from CIESIN:

The most widely used source of ozone data is the TOMS data set. In an analysis of 13 years of daily ozone measurements from 1979 to 1991, Stolarski et al. (1991) show statistically significant decreases in total column ozone at all latitudes outside the tropical regions in "Total Ozone Trends Deduced from Nimbus-7 TOMS Data." Greatest loss is observed at high latitudes due to the unique conditions that lead to polar ozone depletion. Losses in the Antarctic show a maximum downward trend of approximately 3% per year during the spring months over the course of TOMS observations. Ozone loss at mid-latitudes ranges from 0.20.8% decrease per year. More recent TOMS data analysis by Gleason et al. (1993) in "Record Low Ozone in 1992" shows globally

The worst year to that point for the size of the ozone hole was 1998.¹⁰⁶ Because temperatures in the stratosphere over the South Pole were warmer in 1999, the ozone hole did not grow as large as it did in 1998.¹⁰⁷ Global climate change is expected to contribute to the size of the ozone hole. Although global climate change is anticipated to increase average temperatures near the earth's surface, it is expected to decrease temperatures in the stratosphere. Colder temperatures in the stratosphere create conditions conducive to larger losses in stratospheric ozone due to CFCs and other ozone-depleting substances.¹⁰⁸

Audit/Assessment: The Contribution of International Environmental Law

Expert audits/assessments of the effectiveness of the ozone regime are predominantly positive. The Vienna Convention and the Montreal Protocol and subsequent amendments are structured so that efforts to address stratospheric ozone reduction can evolve with improvements in scientific understanding of the situation and political willingness to act. Flexibility of the regime has enabled international cooperation to reduce the use of ozone-depleting substances. The flexibility is made possible by three characteristics of the agreement: the convention-protocol structure, the adjustment system, and the role of the administrative bodies created to implement the protocol.¹⁰⁹ Success of the regime derives in part from UNEP's decision to involve both environmental NGOs and industry groups, in this case a concentrated class.¹¹⁰

The convention-protocol structure involves progressive levels of political commitment and technical specificity. Through the convention, signatory parties agree to support a general idea and to participate in periodic negotiations over details. The details are noted in the protocols and their amendments subsequently negotiated. Parties are obliged to comply with the convention, protocols, and amendments agreed to prior to their ratification, but they can choose among subsequent protocols and amendments.

The adjustment system, in contrast, allows substantial scientific but limited political flexibility. To adjust the specific commitments of the Montreal Protocol (e.g., the time frame for ending the use of a chemical), a majority of developed and a majority of developing countries (provided that their numbers combine to equal at least two thirds of the parties to the agreement) must vote in favor. If they do, then all of the signatory parties are obliged to comply, whether they voted in favor of the change or not.

The organizations created by the Montreal Protocol to oversee implementation and the expenditure of funds have been very effective in insisting on coordination among work programs and in reporting efforts and concerns at each meeting of the parties. In addition, the parties have established a number of subsidiary bodies, which facilitate ongoing working-level communication on new issues.

averaged ozone levels reached all-time lows during 1992. Measurements from the National Aeronautic and Space Administration's Stratospheric Aerosol and Gas Experiment (SAGE) and ozone sonde launches have indicated that depletion has occurred primarily at low stratospheric altitudes, between 17 and 25 km.

Center for International Earth Science Information Network, Measurements and Trends in Ozone and Chlorofluorocarbon Levels (1996), available at <http://www.ciesin.org/TG/OZ/trends.html>.

¹⁰⁶Environmental News Network, Oct. 7, 1998.

¹⁰⁷Associated Press, Ozone, Oct. 7, 1999.

¹⁰⁸Environmental News Network, Oct. 7, 1998.

¹⁰⁹DeSombre, *The Experience of the Montreal Protocol: Particularly Remarkable and Remarkably Particular*, 19 *UCLA J. Envtl. L & Pol'y* 49 (2001).

¹¹⁰Petsonk, *The Rise of the United Nations Environment Programme (UNEP) in the Development of International Environmental Law*, 5 *Am. J. Int'l L. & Pol'y* 367 (1990).

Another feature of the Montreal Protocol's flexibility is its noncompliance procedure. It enables a fast and conciliatory approach to noncompliance.¹¹¹ Under the procedure, parties that do not comply with their commitments are subjected to informal persuasion and a "politics of shame." This strategy relies on public reporting, economic incentives, and multilateral pressure from other signatory parties. The noncompliance procedure regime is a dispute avoidance and settlement mechanism internal to the regime, based on a collective reaction rather than confrontational bilateralism common to formal dispute settlement mechanisms. Yoshida (1999) considers it more flexible, simple, and rapid than traditional judicial settlements and claims that it demonstrates great respect for the sovereignty of member states.¹¹² Flexibility is also evident in the protocol's use of economic incentives to promote industrial development of technologically derived alternatives and the participation of developing countries in the phaseout of ozone-depleting substances.

Perhaps the most important means by which the protocol solicits a poorer country's participation is its willingness to hold industrialized and developing countries to different standards. For instance, less developed countries consuming ozone-depleting substances below a specified level (0.3 kilograms per capita) can delay compliance with their commitments under the protocol for 10 years beyond their scheduled implementation dates.¹¹³ In addition, the protocol fund helps developing countries meet the costs incurred by eschewing the use of ODSs. The protocol also contains technology transfer mechanisms to facilitate the diffusion of replacement technologies to developing countries. Nonetheless, there are varying degrees of responsiveness among developing nations, linked in part to differing audits/assessments about north-south relations encompassed in the regime. China, for example, was more accepting than India of the Montreal Protocol.¹¹⁴

The Montreal Protocol, as the first "precautionary treaty," provides a precedent that diplomats can draw on in future negotiations on global environmental problems fraught with scientific uncertainty.¹¹⁵ In particular, it employs technology-forcing mechanisms to enable implementation as future hazards and circumstances require.¹¹⁶ The protocol regime entities have been active and effective. By the end of 1997, for example, the Meeting of the Parties, in accordance with the Rules of Procedure, had already made more than 200 decisions, many of them related to noncompliance and ODS regulation.¹¹⁷

Even Lipschutz, who is skeptical about traditional top-down treaty-based regimes, concedes that the Montreal Protocol "seems to have worked."¹¹⁸ "The ozone agreements have been ratified by most of the countries of the world and include provision for the transfer of technology and resources to Third World countries that might otherwise find themselves put at an economic and technical disadvantage by the

¹¹¹Yoshida, *Soft Enforcement of Treaties: The Montreal Protocol's Noncompliance Procedure and the Functions of Internal International Institutions*, 10 *Colo. J. Int'l L. & Pol'y* 95 (1999).

¹¹²Yoshida, *Soft Enforcement of Treaties: The Montreal Protocol's Noncompliance Procedure and the Functions of Internal International Institutions*, 10 *Colo. J. Int'l L. & Pol'y* 95 (1999).

¹¹³Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, arts. 5, 26 I.L.M. 1550.

¹¹⁴Sims, *The Unsheltering Sky: China, India, and the Montreal Protocol*, 24 *Pol'y Stud. J.* 201 (1996).

¹¹⁵David Hunter, James Salzman & Durwood Zaelke, *International Environmental Law and Policy* 214 (1998).

¹¹⁶David Hunter, James Salzman & Durwood Zaelke, *International Environmental Law and Policy* 545 (1998).

¹¹⁷Yoshida, *Soft Enforcement of Treaties: The Montreal Protocol's Noncompliance Procedure and the Functions of Internal International Institutions*, 10 *Colo. J. Int'l L. & Pol'y* 95, 118 (1999).

¹¹⁸Ronnie D. Lipschutz, *Global Civil Society and Global Environmental Governance* 27 (1996).

ban on ozone-depleting substances.”¹¹⁹ Technology Analyst Alan Miller and Atmospheric Scientist Mack McFarland are sufficiently positive to advise that the climate-change regime might do well to explore characteristics of Montreal: (1) the power of scientific consensus, even when under conditions of some uncertainty, (2) the value of affected industries working with government and environmentalists, (3) the economic benefits of early action, and (4) the need for recognition of the impacts on developing countries.¹²⁰

There have been criticisms of the regime. There is a risk of noncompliance with its rules because it is not everywhere clear what compliance means.¹²¹ Norms are not well defined. Furthermore, the choice of the World Bank as the main implementing agency of the fund has been strongly attacked because, allegedly, the bank continues to fund projects that use technologies that rely on ozone-depleting substances. The bank also reportedly established markets in the south for destructive, obsolete technologies.¹²² The financial assistance mechanism sets a precedent and creates expectations for similar subsidies in other environmental agreements. A demand by developing countries for financial and technical help may be construed as a failure to take responsibility for a share of the costs of protecting the global environment. In a political atmosphere in some nations of waning support for overseas development assistance, these demands can weaken diplomatic support for international environmental agreements. Furthermore, if the assistance decreases the amount of profit obtainable from research investment in replacement substances, it will reduce the incentive for industrialized countries to develop new technologies and undermine research efforts in developing nations as well. Provision of subsidies may also result in perverse rewards for developing countries to increase production of ODSs in the short run. China exploited such an opportunity for short-term gains from ODS production.¹²³ Finally, although experts differ, some observers feel that illegal CFC trade is inevitable and will continue because of problems inherent in the regime, such as exemptions for recycled CFCs¹²⁴ and a grace period for developing countries.¹²⁵

Conclusions

The Montreal Protocol with its amendments is a historic precedent. In the face of a severe global environmental problem steeped in scientific uncertainty, industrialized and developing nations agreed to an innovative arrangement. One of the new principles set forth by the protocol is the idea that nations should take precautions against plausible environmental threats even if irrefutable evidence of their existence is not yet forthcoming. Another principle applies to the distribution of costs and benefits across nations that bear common but differentiated responsibilities for past and future threats to the global environment. This approach is characterized by differentiated commitments among signatory nations and technology transfer to assist developing nations to reduce the environmental damage that their

¹¹⁹Ronnie D. Lipschutz, *Global Civil Society and Global Environmental Governance* 27 (1996).

¹²⁰Miller and McFarland, *World Responds to Climate Change and Ozone Loss*, 11 *F. Applied Res. & Pub. Pol'y* 55 (1996).

¹²¹Yoshida, *Soft Enforcement of Treaties: The Montreal Protocol's Noncompliance Procedure and the Functions of Internal International Institutions*, 10 *Colo. J. Int'l L. & Pol'y* 95 (1999).

¹²²Greenpeace, *Money to Burn: The World Bank, Chemical Companies, and Ozone Depletion*, 1 *Greenpeace Newsletter* 4 (1994).

¹²³DeSombre, *The Experience of the Montreal Protocol: Particularly Remarkable and Remarkably Particular*, 19 *UCLA J. Envtl. L & Pol'y* 49 (2001).

¹²⁴Clapp, *The Illegal CFC Trade: An Unexpected Wrinkle in the Ozone Protection Regime*, 9 *Int'l Envtl. Aff.* 259 (1997).

¹²⁵Papasavva and Moomaw, *Adverse Implications of the Montreal Protocol Grace Period for Developing Countries*, 9 *Int'l Envtl. Aff.* 219 (1997).

industrialization is likely to cause. Because of the development of a black market in ozone-depleting substances, the ozone layer is unlikely to stabilize as soon as scientists had predicted. As subsequent provisions of the agreement come into force, however, black-market demand is expected to subside. Also of central concern to policymakers in the international arena are the possible countervailing effects of controls on certain climate-change gases.

In addition to the flexibility that allows the regime to incorporate an evolving scientific consensus and the regime's use of innovative strategies to promote compliance, a few other factors help explain the considerable success of the Montreal Protocol. The goals of the agreement are clear, precise, and straightforward, and their realization is subject to objective evaluation. Entry into the agreement was not a major obstacle to the agreement's creation. Through an innovative multilateral fund, support has been adequate to help meet defined goals. The Secretariat and its subsidiary bodies have been professional and effective. The approach to dispute resolution is clear, recognizing increasing outside assistance if required. The regime builds on ever-developing political acceptability linked to the private sector's recognition of the importance of the ODS problem and industry's role in creating substitutes.

Water and the Great Seas: The Black Sea Environmental Programme

The Black Sea efforts represent one of more than forty in the UNEP Regional Seas Programme. The Black Sea Environmental Programme is not the most developed, and it is not representative of the degree of success reached in other seas; however, its history is useful for describing the challenges to a regional water effort and for isolating the factors linked to the success of such a regime.

The Black Sea region denotes the six riparian states, a presently unrecognized former Soviet republic (also riparian), and the neighboring states that are part of the mammoth watershed of the Black Sea. The riparians are Bulgaria, Georgia (Abkhazia), Romania, the Russian Federation, Ukraine, and Turkey. Major rivers that drain into the sea include the Danube, Dnieper, and Don, which rank second, third, and fourth among major European rivers. The sea's surface area is one fifth the size of its catchment area, and its depth in parts exceeds two kilometers. The only ocean outlet to this gigantic water resource is the narrow and shallow 19-mile-long Bosphorus Channel, established as an international sea lane under a 1936 convention. The environmental problems associated with the Black Sea are immense, and its environmental management is a formidable task.

While scientists analyze and debate just exactly how serious the situation is, pollution and ecological degradation of the Black Sea is on almost every list of major environmental problems in the world.

Under the Soviet system (which in a sense was an international effort, albeit a peculiarly centralized one), a large number of specialists in all areas of relevance to water-body management worked on Black Sea environmental problems; however, connections between their work and official decision-making were not strong. As a Georgian retrospective summarized:

National environmental legislation was often based upon objectives and standards which were too strict to be enforced or were not linked to effective economic instruments such as fines or permit charges. As a result of years of isolation, many institutions lacked the modern equipment and know-how necessary to face the challenge of providing reliable information on the state of the environment itself.¹²⁶

The problems were even greater than this summary suggests, involving lack of coordination among the Soviet states and their neighbors, lack of public participa-

¹²⁶Republic of Georgia, *Verification of Compliance with International Environmental Accords*, in *State of the Environment Georgia* (1996).

tion, nontransparency of decision making, and absence of other factors that promote implementation, such as a modern regulatory approach, technical assistance, and adequate funding.

The environmental problem in the Black Sea is multifaceted, ranging from loss of landscape to the extinction of species. The Black Sea's ecosystem has changed "irreversibly,"¹²⁷ and by the early nineties, terms such as "dead," "close to collapse," and "unholy mess" were common descriptors of the status of this giant and beautiful natural resource. Widespread pollution discourages or destroys recreation, tourism, biodiversity, fishing, and water quality. The destruction of the fish species alone in the sea is "one of the greatest ecological catastrophes" of our time.¹²⁸

The riparians include Turkey and nations whose cleanup technologies, monitoring stations, and environmental laboratories are in considerable disrepair. As the watershed area (the drain) for more than 30 rivers, the sea receives the effluents of 160 million people from 17 nations, one third of Europe. It is also polluted by oil and the radiation fallout from the accident at Chernobyl and, by some accounts, by heavy metals including chrome, copper, mercury, lead, and zinc.¹²⁹

A great quantity of organic matter from rivers feeds the Black Sea. In the Bosphorous Strait alone the untreated sewage of 10 million people is regularly dumped, and that represents only about 6% of the pollutants received into the Black Sea.¹³⁰ Dissolved oxygen cannot complete the process of decomposition. Organic material strips oxygen from sulfate ions, creating hydrogen sulfide, a toxic gas. The Black Sea "is the single largest reservoir of hydrogen sulfide and the biggest natural anoxic basin in the world. To a depth of 150-200 meters, the sea is teeming with life, but below that level, the water is 'anoxic' or 'dead.' " With no oxygen there are no fish, shellfish, or bacteria,¹³¹ a condition that in part dates back to the waning of the last ice age as rising waters from the Mediterranean entered the Black Sea basin.¹³²

The loss of biodiversity is a major problem resulting from eutrophication, "clearly the main ecological concern in the Black Sea."¹³³ Eutrophication is the overfertilization of a water body with nitrogen and phosphorous compounds. In the Black Sea, that results from fertilizers and urban and industrial sewage. An overproduction of phytoplankton and reduced sea grass and algae result in a concomitant loss of crustaceans, fish, and mollusks. Besides, *Mnemiopsis leidyi* was introduced into the region by accident from the eastern seaboard of America in the ballast water of a ship. This jellyfish-like species consumes fish larvae and tiny animals that small fish feed on. The species reached a mass of 900 million tons, which is ten times the annual fish harvest worldwide. Many fish species were pushed to extinction, and the fish catch in the sea degenerated to 250,000 tons in 1991 from a total of 850,000

¹²⁷Global Environment Facility, Black Sea Environmental Program Coordination Unit Black Sea Transboundary Diagnostic Analysis 139 (1997).

¹²⁸Colin Woodard, Black Sea as Ecological Disaster? (1997).

¹²⁹Sampson III, Black Sea Environmental Cooperation: States and "The Most Seriously Degraded Regional Sea," 9 Bogazici J. Rev. Soc., Econ. & Admin. Stud. 51 (1995). Early reports of pollution by heavy metals and pesticides are countered by the Black Sea Transboundary Diagnostic Analysis, which concludes that "the concentration of . . . pesticides and PCBs . . . was found to be rather low in most cases . . . [and] it is quite apparent that the Black Sea is not generally polluted by heavy metals." Global Environment Facility, Black Sea Environmental Program Coordination Unit Black Sea Transboundary Diagnostic Analysis 74 (1997).

¹³⁰Martin Sampson III, Environmental Aspects of Migration in the Black Sea Region (1996) (paper presented at the Conference on Migration and Security in Istanbul, Sept. 1996).

¹³¹Global Learn, The Black Sea, at <http://www.globalearn.org>.

¹³²Robert D. Ballard, Deep Black Sea, 199 National Geographic 52 (2001).

¹³³Global Environment Facility, Black Sea Environmental Program Coordination Unit Black Sea Transboundary Diagnostic Analysis 139 (1997).

tons less than a decade earlier. One estimate is that the number of fish species in the sea dropped from around 25 to only three to five in the 10-year period from 1986, when the sea had five times the fish production of the Mediterranean, to 1996.¹³⁴ Giant sturgeon are endangered, other sturgeon species are depleted, and many other species are either depleted or in serious decline. In addition to pollution effects, sturgeon and shad cannot run upstream to breed because of damming of the big rivers that drain into the sea.

Tanker and operational accidents have been sources of oil pollution (about 45,000 tons annually), as has the direct dumping of solid waste into the sea or onto wetlands. The pollution from rapid oil industry development (1,500 tankers and tens of thousands of other cargo boats carrying 32 million tons of oil pass through the Bosphorous Straits in each direction annually), sedimentation, beach erosion, and the overall absence of coastal zone conservation are also strongly felt. About 82 million tons of hazardous and explosive materials also pass through the strait each year.¹³⁵

International Environmental Law Response

The Black Sea Environmental Programme (BSEP), developed under the auspices of UNEP and the Global Environmental Facility (GEF), is one response to the sea's degradation. The program was established in the early nineties and modeled on the 1976 Barcelona Convention for the Mediterranean Sea.¹³⁶ Bulgaria, Georgia, Romania, the Russian Federation, Ukraine, and Turkey signed the Convention for the Protection of the Black Sea Against Pollution in April 1992 in Bucharest,¹³⁷ and it was rapidly ratified. The Ministerial Declaration on the Protection of the Black Sea¹³⁸ followed; it was signed in April 1993 in Odessa. Reflecting the thrust of the Agenda for the 21st Century adopted at the Rio Summit in 1992, it declared among other goals "protection, preservation and, where necessary, rehabilitation of the marine environment and the sustainable management of the Black Sea."¹³⁹ Furthermore, countries were to elaborate and implement national integrated management policies, including legislative measures and economic instruments, in order to ensure sustainable development. The declaration encourages public participation (including by NGOs), the precautionary principle, use of economic incentives to promote environmental protection, environmental impact audit/assessment, environmental accounting, and coordination of regional activities.

The Bucharest Convention on the Protection of the Black Sea Against Pollution entered into force on 15 January 1994. Other affiliate international legal instruments that make up the BSEP regime include the Protocol on Protection of the Black Sea Marine Environment Against Pollution from Land-Based Sources,¹⁴⁰ the Protocol on Co-operation in Combating Pollution of the Black Sea Marine Environ-

¹³⁴Conclusions regarding the status of a species differ, and the 1997 Black Sea Environmental Programme, Annual Report states that 33 species exist in the Black Sea, with four species providing 80.4% of the total catch. UNDP et al, Black Sea Environmental Programme: 1997 Annual Report (1998).

¹³⁵Molly Moore, *Is the Bosphorus Taking on More Than It Can Handle?*, Int'l Herald Trib., Nov. 17, 2000.

¹³⁶Convention for the Protection of the Mediterranean Sea Against Pollution, Feb. 16, 1976, 15 I.L.M. 290.

¹³⁷Convention on the Protection of the Black Sea Against Pollution, Apr. 21, 1992, 32 I.L.M. 1101.

¹³⁸Ministerial Declaration of Black Sea, Apr. 7, 1993, 23 E.P.L. 235.

¹³⁹Molly Moore, *Is the Bosphorus Taking on More Than It Can Handle?*, Int'l Herald Trib., Nov. 17, 2000.

¹⁴⁰Apr. 21, 1992.

ment by Oil and Other Harmful Substances in Emergency Situations,¹⁴¹ and the Protocol on the Protection of the Black Sea Marine Environment Against Pollution by Dumping (not yet in force).¹⁴²

Initially GEF, the European Union, Austria, Canada, Japan, the Netherlands, Norway, and Switzerland provided funding. Funding also comes from UNEP and is to be contributed by the member countries.¹⁴³ The Program Coordination Unit of the BSEP was located in Istanbul. In spring 1998, it was replaced by the Project Implementation Unit, co-managed by the U.N. Development Programme, with the hope that it becomes a precursor to a secretariat to be financed by the member countries.

The regime that evolved was noteworthy for at least two reasons. First, it came into being very quickly. Nation-states that were on opposite sides in the Cold War developed ways (theoretically, at least) to cooperate a few short years after Turkey and the former Soviet Union states developed formal relations. Second, rather than easing into the world of international environmental law, the parties become the first to adopt a regional seas agreement built on the principles of Rio.

In 1993, three objectives of the BSEP were highlighted: improve the capacity of Black Sea countries to assess and manage the environment, support the development and implementation of new environmental policies and law, and promote sound environmental investments. Activity centers to be hosted by the individual Black Sea countries were created.¹⁴⁴

In October 1996, the Black Sea border countries signed the Strategic Action Plan.¹⁴⁵ Its preamble reaffirms the commitment of the member states to the rehabilitation and protection of the Black Sea and the sustainable development of its resources. One element of the short plan, which the BSEP describes as a flexible document responsive to contingencies, sets out principles seen as the basis for international cooperation. In addition to reaffirming ideas in the 1993 Ministerial Declaration, it emphasizes regional cooperative and coordinated activity and enhanced transparency through rights of access to information and improved public awareness.¹⁴⁶

Audit/Assessment: Physical Parameters

There is some scientific debate about several aspects of the Black Sea's environmental status, including the extent of the human contribution to the hydrogen sulfide cycles and the amenability to midscale interventions. Another area of scientific uncertainty is the discharge of chemical and microbiological contamination in coastal and marine areas. Only in recent years has there been movement to-

¹⁴¹Apr. 21, 1992.

¹⁴²Apr. 21, 1992.

¹⁴³Personal communication with Program Coordination Unit staff member, Aug. 28, 1998. See also UNDP et al, *Black Sea Environmental Programme: 1997 Annual Report* iii (1998). In late 2001, the European Union announced that Black Sea countries will voluntarily implement the EU's water directive. *Environmental News Network*, Nov. 2, 2001.

¹⁴⁴Their foci ranged from biodiversity at Batumi, Georgia, to integrated coastal zone management in Russia. A similar program coordinating national efforts has also been created for the Caspian Sea. Sievers, *The Caspian, Regional Seas, and the Case for a Cultural Study of Law*, 13 *Geo. Int'l Envtl. L. Rev.* 361 (2001).

¹⁴⁵BSEP, *Strategic Action Plan for the Rehabilitation and Protection of the Black Sea* (1996).

¹⁴⁶Specifically, article 67 of the Strategic Action Plan states, "By 1998, all Black Sea coastal states will adopt criteria for environmental impact audits/assessments and environmental audits that will be compulsory for all public and private projects. The coastal states will cooperate to harmonize these criteria by 1999 and where possible, to introduce strategic environmental audits/assessments." BSEP, *Strategic Action Plan for the Rehabilitation and Protection of the Black Sea* art 67 (1996).

ward standardization of the protocols and methodologies for scientific investigation, even within the participating nations.¹⁴⁷

As of 1996, a BSEP report could provide a somewhat more encouraging perspective of the physical status of the sea. The *Black Sea Transboundary Diagnostic Analysis* “clearly demonstrates that the Black Sea environment can still be restored and protected.” The Strategic Action Plan of 1996 concluded that “environmental monitoring conducted over the past four-five years . . . reflects perceptible and continued improvements in the state of some localized components of the Black Sea ecosystem.” Furthermore, there are reports that *Mnemiopsis*, although still a plague, is in decline and that water quality along the Turkish coast is within national limits, not a “desperate situation.”¹⁴⁸ Improvements have not been linked explicitly to international environmental law, however, and may be a result of other factors, such as the extraordinary economic downturn in the former Soviet Union after the collapse of communism.

Audit/Assessment: The Contribution of International Environmental Law

The program has had serious problems with implementation, including very slow realization of the commitment to modest funding by the member states. At his departure, its first head gave the program an extraordinarily candid evaluation:

The truth . . . is that very little has been done to fulfill the initial commitment made to the people of the Black Sea countries when their six legislative assemblies ratified the convention in 1993 . . . decisions taken through democratic processes have been disregarded and political momentum has been lost . . . This scenario is a depressing one.¹⁴⁹

Some factors linked to successful implementation of international environmental law are clearly present in the Black Sea regime, not only in relationship to the specific entity but also in the larger context of institutional initiatives. The analysis of other elements suggests, at least for now, slow movement toward international water cooperation in the sea. “BSEP appears to have contributed little to overall regional awareness about environmental problems or their solutions, except for people who have participated directly in the BSEP education and publicity efforts.”¹⁵⁰

Major barriers to cooperation include the emergence of two types of inward-looking movements in the region, nationalism and religious fundamentalism. Also, the infrastructure for communicating across national boundaries, even when the intention is established, is very limited.¹⁵¹ Furthermore, economic conditions hinder the realization of the full potentials of the scientific and environmental communities in the former Soviet states. A leading example is Romania, where economic problems combined with concerns over sovereignty threaten to make the Black Sea program largely a “dead letter.”¹⁵² Finally, as in many other regional treaties, dispute resolution methods are not developed.¹⁵³

There are some other countervailing forces in the region that make prospects for

¹⁴⁷Sampson III, *Black Sea Environmental Cooperation: States and “The Most Seriously Degraded Regional Sea,”* 9 *Bogazici J. Rev. Soc., Econ. & Admin. Stud.* 51 (1995).

¹⁴⁸Ozturk and Tanik, *Waste Water Management Strategies for the Black Sea Coast of Turkey*, 39 *Water Sci. Tech.* 169, 172 (1999).

¹⁴⁹UNDP et al., *Black Sea Environmental Programme: 1997 Annual Report* (1998).

¹⁵⁰Martin Sampson III, *Black Sea Environmental Cooperation: Toward a Fourth Track*, in *Protecting Regional Seas and Fostering Environmental Cooperation in Europe: Conference Proceedings 76* (Stacy D. Van Deveer et al. eds., 1999).

¹⁵¹Martin Sampson III, *Environmental Aspects of Migration in the Black Sea Region* (1996).

¹⁵²Oldson, *Background to Catastrophe: Romanian Modernization Policies and the Environment*, 30 *East Eur. Q.* 517 (1997).

¹⁵³Brunnee and Toope conclude that:

the refinement and implementation of new regimes more promising. Among them are:

1. Scientific findings on the nature and scope of the environmental challenge: The search for better data, more precise models, better equipment to test models, and basic science to underpin the models is an opportunity for cooperation recognized by most actual and potential participants in the Black Sea processes. The region has a rich resource of scientific expertise. Besides, the international community, environmentally progressive nation-states, and U.N. organizations have targeted the Black Sea as an area deserving major contributions of technical expertise and funding.

2. Shared perspectives: The Black Sea has had immense historical importance for each of the riparians. Common understandings on the environmental challenge may be more readily achieved than on other matters of international policy, on which cultural, ethnic, and religious differences make consensus difficult. Also, there is increasing interest, shared by each of the riparians, in economic development. The relative success of the BSEP, a parallel regional effort, demonstrates that trade and commerce may be effective vehicles for promoting cooperation.

3. Further, the Black Sea regime, at least *de jure*, recognizes new principles of international environmental law. Numerous new NGOs are rapidly appearing in the region. Removing obstacles to their participation in decision-making may be an effective means for reaching environmental goals, more so than creating official new government structures¹⁵⁴ or adopting additional agreements. Under evolving national and transboundary legal systems, this may mean granting legal standing to parties, individuals, and NGOs not formerly recognized in the decision-making structures of some of the parties.¹⁵⁵

4. Epistemic communities may further develop. Epistemic communities are

despite the numerous dispute settlement provisions included in international environmental treaties, these mechanisms are not widely employed. Dispute avoidance schemes linked to river commissions, such as consultation mechanisms and prior notification rules, have proven useful, but most third-party dispute settlement processes remain unused.

Brunnee and Toope, *Environmental Security and Freshwater Resources: Ecosystem Regime Building*, 91 *Am. J. Int'l L.* 2629, 2647 (1997). The availability of domestic and international fora to parties outside the jurisdiction where the environmental problem occurred is a matter of international law addressed in a variety of ways. Under the NAFTA regime described later in this section, individuals, nongovernmental organizations, and others may initiate a submission alleging that any of the three parties to the Environmental Side Agreement has failed to enforce its environmental law effectively. In the European Community, see Esty and Geradin, *Market Access, Competitiveness, and Harmonization: Environmental Protection in Regional Trade Agreements*, 21 *Harv. Envtl. L. Rev.* 265, 309 (1997), and the Treaty Establishing the European Community, Feb. 7, 1992, OJ (C 224) 1 CMLR 573 (1992), art. 169. In this regard a reported legal action by scientists from the Black Sea nations against Austria and Germany is illuminating. The action would challenge nitrogen discharges by the two countries into the Danube, more than 200 tons a year, which is 35% of the Black Sea total receipt. The discharges may violate the European Union's directives on wastewater and nitrogen and thereby embarrass nations that take pride in pursuing strong environmental protection policies within their own borders and in other international contexts. The decision to pursue a legal action was reportedly made by a group of scientists and religious leaders. There are conflicting views of what actually was proposed.

¹⁵⁴Laurence D. Mee, in UNDP et al, *Black Sea Environmental Programme: 1997 Annual Report* (1998).

¹⁵⁵Brunnee and Toope conclude that "despite the numerous dispute settlement provisions included in international environmental treaties, these mechanisms are not widely employed." Dispute avoidance schemes linked to river commissions, such as consultation mechanisms and prior notification rules, have proven useful, but most third-party dispute settlement processes remain unused. Brunnee and Toope, *Environmental Security and Freshwater Resources: Ecosystem Regime Building*, 91 *Am. J. Int'l L.* 2629, 2647 (1997). The availability of domestic and international fora to parties outside the jurisdiction where the environmental problem occurred is a matter of international law addressed in a variety of ways. Under the NAFTA regime described in a later section, individuals, NGOs, and others may initiate a submission alleging that any of the three parties to the Environmental Side Agreement has failed to enforce its environmental law effectively. In the European Community, see Esty and

communities without borders—of scientists, lawyers, engineers, or other specialists. Their members share core beliefs and understandings and have strong alignments with objectives that transcend their affiliation with a political jurisdiction or position.¹⁵⁶ In the Black Sea region, at least for certain goals, they may play somewhat the same function as they did in the early years of the Mediterranean Action Plan. They may demonstrate how to cooperate on international matters. They may create new understandings of appropriate responses to environmental degradation, making policy choices a bit easier for government officials. They may give governments supporting rationales to take difficult, even unpopular, steps to control pollution. They may attract much-needed funding as outside groups become impressed with regional cooperation. They may offer a means for transferring technology. The fragility or strength of the BSEP depends in significant part on the commitment of leaders in the area. These leaders are involved in a two-level game: one level is international, the other domestic. At home, there are several constraints on a leader's ability to cooperate across national boundaries. The economic and political challenges in the Black Sea region, with problems of currency devaluation, ethnic conflicts, and priority setting, serve as significant obstacles to an official's attention to water issues. So too does the extreme weakness of the environmental sector in each of the Black Sea governments.¹⁵⁷ Significantly, even some MARPOL provisions and those of other agreements related to oil pollution management have not been implemented in the past several years. With the death of President Turgut Ozal of Turkey, there remained little political push for Black Sea environmental cooperation;¹⁵⁸ however, support of environmental protection is now attractive in the region, both to please emerging green domestic constituencies and for extraregional motives, such as to gain admission to the European Union and access to the GEF and other international environmental funds.

Conclusions

BSEP incorporates, at least at a rhetorical level, elements of a new understanding of transboundary interaction structured by international environmental law. It institutionalizes procedures that can be the core of productive linkages among Black Sea nations, the type of ongoing iteration essential to international cooperation. International law has made a preliminary modest contribution to improving the region's environmental quality. Sound environmental management of the Black Sea, however, remains an immense challenge. It was so under previous regimes, and there are many reasons to hold only limited expectations about major shifts under the embryonic international environmental law.

The BSEP has not had ongoing strong NGO involvement from the parties

Geradin, *Market Access, Competitiveness, and Harmonization: Environmental Protection in Regional Trade Agreements*, 21 *Harv. Env'tl. L. Rev.* 265, 309 (1997); *Treaty Establishing the European Community*, Feb. 7, 1992, OJ (C 224) 1 CMLR 573 (1992), article 169. In this regard a reported legal action by scientists from the Black Sea nations against Austria and Germany is illuminating. The action would challenge nitrogen discharges by the two countries into the Danube, more than 200 tons a year, which is 35% of the Black Sea total receipt. The discharges may violate the European Union's directives on wastewater and nitrogen and thereby embarrass nations that take pride in pursuing strong environmental protection policies within their own borders and in other international contexts. The decision to pursue a legal action was reportedly made by a group of scientists and religious leaders. There are conflicting views of what actually was proposed (Laurence D. Mee in UNDP et al, *Black Sea Environmental Programme: 1997 Annual Report* (1998)).

¹⁵⁶Peter M. Haas, *Saving the Mediterranean: The Politics of International Environmental Cooperation* (1990).

¹⁵⁷Mee in UNDP et al, *Black Sea Environmental Programme: 1997 Annual Report* ii (1998).

¹⁵⁸Martin Sampson III, *Black Sea Environmental Cooperation: Toward a Fourth Track*, in *Protecting Regional Seas and Fostering Environmental Cooperation in Europe: Conference Proceedings 76* (Stacy D. Van Deveer et al. eds., 1999).

themselves, and the dispute resolution process has not been developed. The regime has made environmental impact audit/assessment a centerpiece as a legal goal, but not in practice. Means of promoting compliance are nicely stated, but they have not been sufficiently implemented. Furthermore, although entry into the agreement was made easy in part through the flexibility built into instruments, there is little political commitment to even the limited steps necessary to make a difference on the ground. Additionally, the sometimes embryonic political and legal systems of the parties have made it difficult to monitor actual commitment. Finally, funding has been miserably inadequate, and an effective secretariat has not yet evolved.

On the positive side, BSEP's goal-setting has generally benefited from agreement on the appropriate science to aid in decision making. There is at least a commitment to the generation of relevant scientific information through cooperative means, and a community of Black Sea scientists has at times been useful. Environmental impact audit/assessment and NGO involvement are formally provided for, giving the regime some potential if other factors can be addressed. External interest in the region, both for environmental and sociopolitical reasons, also suggests that funding may become available.

Land: The Basel Convention

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal¹⁵⁹ is the major legal response of the international community to the problems caused by the annual worldwide production of 400 million tons of wastes that are toxic, poisonous, explosive, corrosive, flammable, ecotoxic, or infectious. Improper disposal results in soil contamination, underground water degradation from leachate and runoff, and destruction of habitat for fish and animals. It is also linked to increased cancer and birth defects.¹⁶⁰ Management problems result in large part from the extraordinary gap in the cost of disposal in developed and developing countries and the serious challenges involved in monitoring movement of dangerous wastes.

Prior to Basel, there were many scandalous stories of developed countries' attempts to get rid of hazardous waste at the expense of developing nations. The Koko case is one such episode. In 1988 a farm in Koko, a small town in Nigeria, was used as the dumping ground for 18,000 drums of waste, including polychlorinated biphenyls (PCBs), asbestos, and perhaps dioxin, from Italy. The waste arrived, as wastes had been arriving in other parts of Africa from the United States, France, and other developed nations, based on an agreement with an unscrupulous businessman. For about \$100 per month he would store the materials on one of his commercial properties. The barrels were labeled as substances "relating to the building trade, and as residual and allied chemicals."

An official government response to the illegal dumping followed the publication of an article in a Lagos newspaper based on a tip by Nigerian students. The resulting cleanup led to the hospitalization of many workers, and one report linked the toxicity at the dumpsite to a cluster of premature births.¹⁶¹

To communicate their outrage and to pressure the Italians to remove the waste, the Nigerians seized control of an Italian ship. The international media also placed pressure on Italy to respond. The Italians then removed the waste from Nigeria. Signifying international censure, one waste-laden ship was denied entry into the United States and a number of European ports. It took over a year for the Italians,

¹⁵⁹Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, 28 I.L.M. 657.

¹⁶⁰Abrams, Regulating the International Hazardous Waste Trade: A Proposed Global Solution, 28 Colum. J. Transnat'l L. 801 (1990).

¹⁶¹Nigeria-Italy Waste Trade, at <http://www.american.edu/ted/nigeria.htm>.

facing protests at home over water contamination linked to disposal of the materials, to find resting grounds for all of the materials.

To prevent the human and environmental toll associated with the Koko case and others, Nigeria banned the importation of hazardous waste. Cameroon did the same. In both countries the penalty for violating this ban is death.¹⁶²

Shortly before the Koko contamination, a shipload of hazardous waste from the United States was caught in a similar international scandal. The *Khian Sea* left port with 15,000 tons of incinerator ash containing low concentrations of heavy metals from Philadelphia. After being denied permission to dump its cargo in the Bahamas, the ship moved on to Haiti. The captain told Haitian authorities that the cargo was fertilizer ash and received permission to unload. One fifth of the cargo had been put ashore before the Haitians learned what the material was. Compelled to leave, the ship tried various other ports over an 18-month period but was unable to gain admission. Somewhere along the way, the cargo was illegally dumped, and the ship arrived in Singapore unburdened.¹⁶³

Other cases involve developed nations as victims. In 1983, 41 barrels of topsoil contaminated with dioxin were found in a barn in northern France. They were products of a notorious chemical plant explosion that had occurred in Seveso, Italy, years earlier, materials transported without notice across European national boundaries.¹⁶⁴

The bizarre world of hazardous waste pollution results from a number of factors. A few sites are capable of proper disposal of hazardous waste, as political opposition holds up their construction. Additionally, the nature of the facilities needed makes sanctioned disposal very expensive. Most significant, the opportunities for immense profit are considerable, as the cost of disposal in industrialized nations can be 50 times that in developing nations.¹⁶⁵ Disposal cost in Africa in the eighties averaged between \$2.50 and \$50 per ton; in OECD countries it ranged up to \$2,000 per ton.¹⁶⁶ In 1988, Guinea-Bissau was offered \$600 million, an amount five times that nation's gross national product, to accept private companies' toxic wastes from Europe and the United States.

International Environmental Law Response

In 1982, UNEP addressed the international transportation and disposal of toxic wastes after a group of environmental experts met in Montevideo, Paraguay. In 1985, it issued the Cairo Guidelines and Principles for the Environmentally Sound Management of Hazardous Wastes.¹⁶⁷ Two years later UNEP established a draft Convention on the Transboundary Shipment of Hazardous Waste and created an ad

¹⁶²Charles P. Wallace, *Asia Tires of Being the Toxic Waste Dumping Ground for the Rest of the World*, L.A. Times, Mar. 23, 1994; Ovink, *Transboundary Shipments of Toxic Waste: The Basel and Bamako Conventions, Do Third World Countries Have a Choice?*, 13 Dick. J. Int'l L. 281 (1995), as cited in David Hunter, James Salzman & Durwood Zaelke, *International Environmental Law and Policy* 860 (1998).

¹⁶³International Environment Reporter, Oct. 14, 1987, 504; Allen, *Slowing Europe's Hazardous Waste Trade: Implementing the Basel Convention into European Union Law*, 6 Colo. J. Int'l Envtl. L. & Pol'y 164 (1995); Gudofsky, *Transboundary Shipments of Hazardous Waste for Recycling and Recovery Operations*, 24 Stan. J. Int'l L. 219 (1998).

¹⁶⁴Abrams, *Regulating the International Hazardous Waste Trade: A Proposed Global Solution*, 28 Colum. J. Transnat'l L. 801 (1990).

¹⁶⁵David Hunter, James Salzman & Durwood Zaelke, *International Environmental Law and Policy* 858 (1998).

¹⁶⁶Jonathan Krueger, *The Basel Convention and Transboundary Movements of Hazardous Wastes, Energy, and Environmental Programme. Briefing* 45 (1998); Mostafa K. Tolba & Iwona Rummel-Bulska, *Global Environmental Diplomacy: Negotiating Environmental Agreements for the World 1973 to 1992* (1998).

¹⁶⁷Basic Document 5.3, June 17, 1987.

hoc working group composed of legal and technical specialists. The group analyzed several UNEP drafts and ultimately developed a final recommendation for the Basel Convention. It needed to address both the strong preference by developing countries for a ban on hazardous waste transfers from the north to the south and the OECD regulatory orientation favoring notification and consent. After two years of debate, 34 nations signed the Basel Convention on 22 March 1989. It entered into force 5 May 1992. By 2002, the number of parties to the convention had reached 150.

The Basel Convention regulates the transport and disposal of hazardous and other wastes and seeks to make transport a matter of public record. "Hazardous" is defined by the originating, receiving, and transit countries. The goal is to protect human health and the environment from the dangers of such wastes. The principle underlying the convention is that wastes should be disposed of in the state where they were generated. Basel ultimately seeks to have parties take appropriate measures to ensure that the generation of hazardous and other waste is reduced to a minimum. The convention restates the right of every state to ban the entry or disposal of foreign hazardous wastes in its territory,¹⁶⁸ either by reference to categories set out in an annex (1), unless they do not possess the characteristics listed in another annex (3), or if so classified by national legislation.¹⁶⁹ Exports to Antarctica are prohibited.¹⁷⁰

Many obligations also apply to "other wastes," listed in annex 2, which encompasses household wastes or residue from the incineration of such wastes.¹⁷¹ Radioactive wastes and wastes discharged from the normal operation of ships so long as they are regulated by other international instruments are not covered by Basel. Subsequent to a period of controversy and confusion, the fourth Conference of the Parties (COP-4),¹⁷² in 1998, clarified somewhat which wastes are covered by the convention so that recyclable materials including scrap paper and scrap metal are not wastes under Basel.

Other annexes now list waste (8 and 9) by classification. Countries exercising their right to prohibit the import of hazardous wastes are to inform the other parties and to provide information on any national legislation pertaining to the definition of hazardous wastes.¹⁷³ Each party must prohibit the export of such wastes to any state that has notified the party of its prohibition.¹⁷⁴ Under Basel, "disposal" is broadly defined to include not only disposal but also recovery and recycling. Countries may enter regional agreements with nonparty countries. Thus, for example, the United States, although not a party to the treaty, can continue to trade in recyclable wastes with OECD countries.

¹⁶⁸Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, art. 4(1), 28 I.L.M. 657.

¹⁶⁹Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, art. 1, 28 I.L.M. 657.

¹⁷⁰Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, art. 4(6), 28 I.L.M. 657.

¹⁷¹Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, art. 1, 28 I.L.M. 657.

¹⁷²Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Waste and Their Disposal, Fourth Meeting, Feb. 23, 1998.

¹⁷³Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, art. 3, 28 I.L.M. 657.

¹⁷⁴Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, art. 4, 28 I.L.M. 657.

Any waste transported or disposed of in contravention of the convention is considered an illegal traffic and can be made a criminal offense,¹⁷⁵ although the convention does not contain enforcement provisions and relies on parties to take domestic measures. Movement of waste is permitted only if the generating state does not have the technical capacity or sites suitable for its disposal or if the importing state needs the waste as raw material for industries engaged in recycling or recovery.¹⁷⁶ Legal movements of waste must be tracked by a written document.

A duty to re-import applies when a movement of hazardous waste has been consented to but “cannot be completed in accordance with the terms of the contract.”¹⁷⁷ Article 11 allows transfer of wastes to parties and nonparties where movements are subject to another appropriate bilateral, multilateral, or regional agreement.¹⁷⁸

The Conference of the Parties reviews implementation of the agreement and promotes harmonization of waste management policies.¹⁷⁹ Dispute resolution takes place through any means the parties choose. The convention allows the parties to agree to submit their disputes to the International Court of Justice or to arbitration as provided in annex 6.¹⁸⁰

Article 15 provides for representation:

The United Nations, its specialized agencies, and States not party to the Convention, may be observers at meetings of the Conference of the Parties. Other national, international, governmental, or non-governmental organizations that are qualified in fields relating to hazardous wastes may be admitted as observers after informing the Secretariat, unless at least one-third of the parties present objects.¹⁸¹

The convention specifies a preference that amendments be adopted by a consensus at a meeting of the Conference of the Parties, but if that should prove elusive, amendments may be adopted by a three-fourths majority of the parties present and voting.¹⁸² A further exception is that adoption may also be achieved by two thirds of the parties to the protocol to be amended who are present and voting.¹⁸³ After adoption, amendments must be ratified by a specified proportion (three fourths or two thirds, respectively) of the parties who voted to subject themselves to its provisions.

Decision 3/1 is the most controversial amendment that emerged from the decision at COP-3 to ban hazardous waste exports for final disposal from OECD, the European Community, and Liechtenstein (annex 7 countries) to nonannex 7 countries. That decision would also ban exports intended for recovery and recycling. To enter into force, the 1995 amendment must be ratified by the 62 parties present at the time of its adoption. Initial movement was slow, with only eight countries

¹⁷⁵Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, arts. 4(3), 4(4), 9, 28 I.L.M. 657.

¹⁷⁶Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, art. 4(9), 28 I.L.M. 657.

¹⁷⁷Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, art. 8, 28 I.L.M. 657.

¹⁷⁸Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, art. 11, 28 I.L.M. 657.

¹⁷⁹Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, art. 15, 28 I.L.M. 657.

¹⁸⁰Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, art. 20, 28 I.L.M. 657.

¹⁸¹Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, art. 15, 28 I.L.M. 657.

¹⁸²Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, art. 17, 28 I.L.M. 657.

¹⁸³Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, art. 17(4), 28 I.L.M. 657.

ratifying in the first three years. The Protocol on Liability and Compensation for Damage Resulting from Transboundary Movements of Hazardous Waste and Their Disposal was adopted by the parties at COP-5 in Basel in December 1999. At that time, the ministers declared minimizing hazardous wastes a major focus for the decade 2000 to 2010.¹⁸⁴

Audit/Assessment: Physical Parameters

The actual effects of Basel on the movement of hazardous waste are difficult to ascertain. A main source of information is the UNEP Secretariat of the Basel Convention, which reports on data supplied by the parties. The Secretariat cautions that “due to the differences in national definitions of hazardous wastes, variations in national reporting and the difficulties in comparing the quality and availability of accurate data, figures presented are not directly comparable.”¹⁸⁵ For the reporting year 1998, the Secretariat noted that of the 74 parties that provided information, 47 supplied data on the export of hazardous and other wastes, 20 reported that no export took place from their countries, and 23 parties gave figures for import of wastes. Total wastes exported were 4,114,722 metric tons; the import figure was 3,816,232 metric tons. The export data indicate that of the wastes that moved worldwide, 10% went for disposal and 83% were recycled.¹⁸⁶

Audit/Assessment: The Contribution of International Environmental Law

Audit/Assessment of Basel has been mixed, although recent activities of the COP generally have been supported.

On the negative side, in a thorough and balanced audit/assessment, the international law practitioner Jason Gudofsky concludes that although Basel is “the backbone of the international waste regime The Parties . . . have been gradually moving away from developing a unified system for controlling wastes and have instead bifurcated the system by creating one group of countries . . . that are entirely inaccessible to another group.”¹⁸⁷ Further, insufficient attention has been paid to recycling and recovery. In general, the convention has been widely criticized for being “curiously ambivalent on the question of distinguishing hazardous wastes that were being exported for purposes of final disposal (e.g., landfill or injection) from those that were destined for reclamation, recycling or other methods of resource

¹⁸⁴Basel Parties Call for Minimizing Waste, Improving Capacity-Building for Handling, 22 Int'l Env't Rep. (BNA) 975 (Dec. 8, 1999).

¹⁸⁵Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, 28 I.L.M. 657.

¹⁸⁶The difference between the export and import figures is approximately 8%. The amounts reported for the previous year, 1997, were considerably smaller, but that is probably mainly a reflection of the fewer countries reporting. The total waste exported was 1,890,000 metric tons, and total waste imported was 2,171,000 metric tons. The 1998 export data do not account for the 7% of wastes remaining after disposal and recycling. The import data have a gap of 13%; reported was 14% for disposal and 73% for recycling. The Secretariat also reported a difference of about 23% between the total quantities reported by exporting and importing parties for disposal operations and an 18% difference for recycling operations. Countries reporting varied in size, region, and economic conditions and did not include the United States.

In 1998, the countries listed in the Secretariat's Country Fact Sheets were Albania, Algeria, Andorra, Antigua and Barbuda, Argentina, Australia, Austria, Bahrain, Belgium, Benin, Bolivia, Brazil, Bulgaria, Burundi, Canada, Chile, China, Colombia, Croatia, Cuba, Cyprus, Czech Republic, Denmark, El Salvador, Estonia, Finland, Gambia, Germany, Greece, Hungary, Iceland, Indonesia, Iran, Ireland, Japan, Kuwait, Kyrgyzstan, Latvia, Lebanon, Lithuania, Luxembourg, Malawi, Malaysia, Micronesia (Federated States of), Moldova, Monaco, Mongolia, Morocco, Netherlands, New Zealand, Nigeria, Norway, Oman, Panama, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Saint Lucia, Senegal, Seychelles, Slovakia, Sri Lanka, Switzerland, Thailand, Turkey, Turkmenistan, Uganda, United Kingdom, Uzbekistan, Viet Nam, and the former Yugoslav Republic of Macedonia.

¹⁸⁷Gudofsky, *Transboundary Shipments of Hazardous Waste for Recycling and Recovery Operations*, 24 Stan. J. Int'l L. 219, 285 (1998).

recovery.”¹⁸⁸ Some parties recognized potential benefits of recycling, others predicted “sham recycling.”

The convention fails to address the principle of liability both with regard to actors (generator, exporter, receiver) and with regard to type (fault-based or strict liability).¹⁸⁹ Parties supposedly are to cooperate to develop a protocol to establish rules and procedures for liability and for damages arising from the transboundary movement of hazardous wastes;¹⁹⁰ however, Basel does not answer the question of who should pay for damages.¹⁹¹ Critics question the wisdom of imposing fault on nation-states rather than on multinational corporations that violate the convention. A more effective regime would focus on building capacity to help all countries to manage and dispose of wastes safely rather than on the relatively rare sensational incidence of illegal transboundary transport.¹⁹² Furthermore, the Secretariat based in Geneva has limited supervisory functions and is underfunded,¹⁹³ and the Trust Fund established in 1992 suffers from late and missing payments.

Moreover, aspects of the convention counter the overall objectives of the agreement. For example, the preamble includes vague language: “Convinced that hazardous wastes and other wastes should, as far as is compatible with environmentally sound and efficient management, be disposed of in the State where they are generated” and “Taking into account also the limited capabilities of the developing countries to manage hazardous wastes and other wastes.”¹⁹⁴ Similar phrases appear throughout the agreement: “take such steps as are necessary,”¹⁹⁵ “to the maximum consistent with the environmentally sound and efficient management of such wastes,”¹⁹⁶ “shall take appropriate legal, administrative and other measures,”¹⁹⁷ “in accordance with other criteria to be decided by the Parties.”¹⁹⁸ The definition of hazardous waste itself is problematic since the convention allows nation-state variability in definition.

The convention’s early versions were laden with such ambiguities and loopholes. The classification scheme for wastes is susceptible to divergent interpretation and

¹⁸⁸O’Reilly and Cuzze, *Trash or Treasure? Industrial Recycling and International Barriers to the Movement of Hazardous Wastes*, 22 *J. Corp. L.* 507, 515. (1997).

¹⁸⁹Hackett, *An Audit/Assessment of the Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal*, 5 *Am. U. J. Int’l L. & Pol’y* 291 (1990); Schneider, *The Basel Convention Ban on Hazardous Waste Exports: Paradigm of Efficacy or Exercise in Futility?*, 20 *Suffolk Transnat’l L. Rev.* 247 (1996); David Hunter, James Salzman & Durwood Zaelke, *International Environmental Law and Policy* 214 (1998).

¹⁹⁰Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, art. 12, 28 *I.L.M.* 657.

¹⁹¹Hackett, *An Audit/Assessment of the Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal*, 5 *Am. U. J. Int’l L. & Pol’y* 291 (1990).

¹⁹²David Hunter, James Salzman & Durwood Zaelke, *International Environmental Law and Policy* 214 (1998).

¹⁹³Jonathan Krueger, *The Basel Convention and Transboundary Movements of Hazardous Wastes, Energy, and Environmental Programme. Briefing* 45 (1998).

¹⁹⁴Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, preamble, 28 *I.L.M.* 657.

¹⁹⁵Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, art. 4(2)(c), 28 *I.L.M.* 657.

¹⁹⁶Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, art. 4(2)(d), 28 *I.L.M.* 657.

¹⁹⁷Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, art. 4(4), 28 *I.L.M.* 657.

¹⁹⁸Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, art. 4(9)(c), 28 *I.L.M.* 657.

engenders confusion,¹⁹⁹ although at COP-4 a list drawn up by a technical working group was accepted. There is insufficient involvement of NGOs²⁰⁰ and no executive body for enforcement. Margurite Cusack, then a student of environmental law, has been wide-ranging in criticism: “The Basel Convention has legitimized the international toxic waste game and proclaimed industrial nations the winners Supporters . . . are not challenging the fundamental bipolar economic inequities that force Third World nations to accept shipment of toxic wastes.”²⁰¹

Furthermore, the ban under Decision 3/1 does not reflect a true consensus among developing countries. It unreasonably assumes that all non-OECD countries are and will remain incapable of processing recyclable wastes,²⁰² leading some countries and analysts to conclude that needy economies will be deprived of the benefits of receiving imported wastes that can be economically and safely recycled.²⁰³ These countries are joined here by some environmentalists who bemoan the possible decline in recycling, including forcing the use of virgin materials. Business interests also conclude that revisions are necessary to make clear which are “benign wastes” that can be exported.²⁰⁴ Finally, a ban on trade in recyclable wastes may violate important trade principles as a nonenvironmentally based barrier.²⁰⁵

On the positive side, “It is generally accepted that the Basel Convention has helped to eliminate the most harmful of international hazardous waste transfers destined for final disposal,” and environmentalists characterize the “Basel Ban” as the most significant environmental achievement since the Rio Earth Summit in 1992.²⁰⁶ There now is international consensus that rich countries should not send hazardous wastes to poorer countries for final disposal.

Other audits/assessments of Basel praise the scope of its objectives. Because its scale includes a large number of countries, world economic forces and political pressures favor compliance. Also, the regime establishes a framework for a common definition for hazardous waste. Compliance with the tracking system for waste meeting the Basel definition is enforceable under domestic law of the party in which the international transportation of hazardous waste was instigated. For example, individuals illegally exporting hazardous waste from the United States to another country are subject to U.S. criminal law. Under this system two men who knowingly exported hazardous waste from the United States to Pakistan without obtaining the required consent from the importing country were convicted by a U.S. federal jury for violations of the U.S. Resource Conservation and Recovery Act.²⁰⁷ This enforcement system was employed and convictions achieved even though the United States is not a party to the agreement.

¹⁹⁹Schneider, *The Basel Convention Ban on Hazardous Waste Exports: Paradigm of Efficacy or Exercise in Futility?* 20 *Suffolk Transnat'l L. Rev.* 247, 268 (1996).

²⁰⁰Schneider, *The Basel Convention Ban on Hazardous Waste Exports: Paradigm of Efficacy or Exercise in Futility?* 20 *Suffolk Transnat'l L. Rev.* 247, 268 (1996).

²⁰¹Cusack, *International Law and the Transboundary Shipment of Hazardous Waste to the Third World: Will the Basel Convention Make a Difference?*, 5 *Am. U. J. Int'l Pol'y* 393, 420 (1990).

²⁰²Deborah Zamora Grout, *The Benefits of Basel*, *Envtl. Forum* 19 (Jan.-Feb. 1999).

²⁰³Waugh, *Where Do We Go from Here? Legal Controls and Future Strategies for Addressing the Transportation of Hazardous Wastes across International Borders*, 11 *Fordham Env'tl. L.J.* 477 (2000).

²⁰⁴O'Reilly and Cuzze, *Trash or Treasure? Industrial Recycling and International Barriers to the Movement of Hazardous Wastes*, 22 *J. Corp. L.* 507, 515. (1997).

²⁰⁵Deborah Zamora Grout, *The Benefits of Basel*, *Envtl. Forum* 19 (Jan.-Feb. 1999).

²⁰⁶Jonathan Krueger, *The Basel Convention and Transboundary Movements of Hazardous Wastes, Energy, and Environmental Programme. Briefing* 45 (1998).

²⁰⁷Henry Weinstein, *2 Found Guilty of Exporting Toxic Waste*, *L.A. Times*, Apr. 16, 1993; 42 U.S.C.A. §§ 6901 to 6992k; RCRA §§ 1001 to 11011.

Tolba and Rummel-Bulska, active leaders in the Basel negotiations, conclude: “We believe a reasonable goal was achieved: a flexible treaty that can be amended or adjusted in view of new facts or new information.”²⁰⁸

“Positive,” of course, is a relative term. The Secretariat reported in October 1999 on the “growing commitment of the Parties to report on articles 13 and 16 of the Convention.”²⁰⁹ The evidence was the 63 responses received by late 1999 to a 1997 questionnaire seeking information on, among other items, transboundary movements, measures for implementation of Basel, and sources of advice and expertise. The number of responses grew to 74 parties for 1998; thus, just over half of the total number of parties met the modest commitment of reporting.

Conclusions

By regulating the transport of hazardous waste and requiring prior informed consent from importing nations, the Basel Convention facilitates the collection of information on the location of dangerous material. Although it does not reflect a true consensus and it contains a number of ambiguities, Basel provides an increasingly standardized definition of hazardous waste and a clear mechanism for determining enforcement jurisdiction. Its Secretariat has performed its modest obligations relatively effectively. The convention itself is designed to allow ease of entry. More difficult issues are subject to later amendments by parties who find its goals palatable. Nongovernmental organizations have not been uniformly pleased with Basel’s progress, but they have de jure been given rights as observers. The Basel Convention does not yet, however, protect developing countries from the risk of becoming colonized by other people’s hazardous waste. Nor does it substantially alter the economic incentives that make such a scenario attractive to unscrupulous individuals. It does not fully address the polluter-pays principle. Nor does it utilize the most advanced understandings of the law’s compliance-promoting potential.

Despite its initial enthusiasm and its early signing of the Basel Convention, as of December 2001 the United States has not yet enacted domestic implementing legislation. Here as in other areas of international law, the question arises whether a treaty bypassed by the world’s leading power can be effective. In the case of Basel, considerations are unique and countervailing. Because the United States is responsible for such a large proportion of the world’s hazardous waste (e.g., in 1995 it produced 279 million tons of hazardous waste and exported 226,000 tons of it),²¹⁰ its failure to ratify the Basel Convention can undermine the treaty’s potential to operate effectively. In any event, refusal to participate weakens the ability of the United States to influence international environmental law on waste transport.

The absence of the United States may also reduce the amount of hazardous waste that can be legally transported across national boundaries. Recall that parties to the Basel Convention are prohibited from transporting hazardous waste to or from nonparties unless a separate agreement with the nonparty has been made. Such agreements must be compatible with the Basel agreement if they predate Basel, or they must require procedures that are more stringent than Basel if they postdate Basel. Parties are required to notify the Basel Secretariat of the existence of agreements between parties and nonparties. Where agreements or arrangements have not been made, the nonparty status of the United States prevents the possibility of legal transport of hazardous waste between the United States and other nations.

²⁰⁸Mostafa K. Tolba & Iwona Rummel-Bulska, *Global Environmental Diplomacy: Negotiating Environmental Agreements for the World 1973 to 1992* 116 (1998).

²⁰⁹Basel Secretariat, 1999 Compilation Part 1: Reporting and Transmission of Information under the Basel Convention for the Year 1997 (1999) (excluding statistics on generation and transboundary movements of hazardous wastes and other wastes) (Basel Convention Series/SBC 99/011).

²¹⁰U.S. EPA, *International Trade in Hazardous Waste: An Overview. Enforcement and Compliance Assurance 222A* (1998) (EPA-305-K-98-001).

The United States has entered into a multilateral agreement among OECD countries regarding recyclable wastes and bilateral agreements with Canada, Mexico, Malaysia, and Costa Rica (U.S. EPA 1998).²¹¹

Incentives for U.S. ratification are limited. Only 1% of U.S. hazardous waste is exported, and 95% of that 1% goes to Canada and Mexico. Ratification may make the United States more susceptible to private legal actions both by domestic parties and foreign plaintiffs under the Alien Tort Statute.²¹² Changes in domestic law needed prior to ratification (including in the U.S. Resource Conservation and Recovery Act) are complex and cumbersome.

General Environmental Protection and Enforcement: The North American Agreement on Environmental Cooperation

Pressure groups, including environmental NGOs, linked the international trade of goods and services to environmental degradation, if not disaster, during negotiations for the North American Free Trade Agreement (NAFTA)²¹³ among Canada, Mexico, and the United States. In response to these concerns, the North American Agreement on Environmental Cooperation (NAAEC), or the Environmental Side Agreement,²¹⁴ was entered at the same time as NAFTA.

NAFTA and the Environmental Side Agreement were developed in the face of growing concern about the effects on the environment of liberalized international trade. One fear was that environmentally insensitive growth would become unstoppable, especially though not exclusively at national borders. A second worry was that green firms would be less competitive than nonconcerned businesses, thereby weakening incentives for compliance. Also, national laws and policies would be compromised by trade liberalization, a fear exacerbated by the 1991 ruling by the GATT dispute-resolution panel on the tuna and dolphin case.²¹⁵ The panel declared that the U.S. Marine Mammal Protection Act,²¹⁶ intended to protect dolphins from harm from certain kinds of nets used in tuna fishing, constituted an unacceptable barrier against Mexican trade. In addition, trade liberalization raised the possibility that polluting industries would flee jurisdictions with high environmental standards for lax jurisdictions, resulting in a net increase in pollution from a global perspective and greater unemployment in the community intent on protecting its air, water, and soil from contamination.

Despite controversy, negotiations for NAFTA were completed in August 1992. Signed four months later, NAFTA created the world's largest free trade zone, containing 370 million people and more than \$6.5 trillion in goods and services each year.²¹⁷ Reflecting political pressures, NAFTA was the first trade agreement to address the environment directly. It contains provisions governing environment and

²¹¹For a discussion of the effects of nonratification of Basel, see Bradford, *The United States, China, and the Basel Convention on the Transboundary Movements of Hazardous Wastes and Their Disposal*, 8 *Fordham Envtl. L.J.* 305 (1997).

²¹²Lee Ann Rogus, *The Basel Convention and the United States*, in *New England International and Comparative Law Annual* (1996).

²¹³North American Free Trade Agreement, Dec. 17, 1992, 32 *I.L.M.* 605 (entered into force Jan. 1, 1994).

²¹⁴North American Agreement on Environmental Cooperation, Sept. 9 and Sept. 14, 1993, 32 *I.L.M.* 1480 (entered into force Jan. 1, 1994).

²¹⁵United States Restrictions on Tuna from Mexico, Aug. 16, 1991, GATT B.I.S.D. (39th Supp.) at 155 (1991), reprinted in 30 *I.L.M.* 1594 (1991).

²¹⁶16 U.S.C.A. §§ 1361 to 1421h, MMPA §§ 2 to 409.

²¹⁷Trade with Canada and Mexico accounts for approximately one third of all U.S. exports and 27% of all U.S. imports. Simos and Triantis, *International Economic Outlook*, 14 *J. Bus. Forecasting Methods & Sys.* 30 (1995).

investment,²¹⁸ food and safety standards,²¹⁹ and other environmental standards.²²⁰ It also lists three international environmental agreements that take precedence over NAFTA, particularly in regard to dispute resolution procedures.²²¹ These are the Montreal Protocol, the Convention on International Trade in Endangered Species, and the Basel Convention on Hazardous Wastes.

Many influential environmental groups felt that NAFTA had not adequately addressed environmental issues.²²² In addition, the processes set up under NAFTA were seen as insufficiently transparent and representative and, therefore, undemocratic.²²³ Some environmentalists began shifting focus to negotiations for the side agreement, seeing it as a vehicle to remedy some of NAFTA's omissions.

International Environmental Law Response

William J. Clinton, as the U.S. president-elect, had promised to negotiate and sign the environmental (and a labor) side agreement before the promulgation of NAFTA.²²⁴ With divided environmental group support, Canada, the United States, and Mexico signed the NAFTA Environmental Side Agreement on 13 September 1993. Subsequently, NAFTA and the side agreements were ratified and promulgated by the legislatures of the parties.

The objectives of the environmental agreement are general and broad and are carried out through several distinct programs. The goals are to foster protection and improvement of the environment, to promote sustainable development based on cooperation and mutually supportive environmental and economic policies, and to increase cooperation to better conserve, protect, and enhance the environment. To further those objectives, the Environmental Side Agreement establishes the Commission for Environmental Cooperation (CEC), composed of a council, the Joint Public Advisory Committee (JPAC), and the Secretariat. The CEC Council consists of one cabinet-level (or equivalent) representative from each party. The JPAC is responsible for facilitating public participation and communication regarding CEC activities. It consists of 15 presidential appointees, five from each party. The Secretariat is the administrative arm of the CEC. It is responsible for implementing the agreement, including undertaking studies and audits/assessments and overseeing the consideration of submissions (as specified in articles 14 and 15) asserting that a party "is failing to effectively enforce its environmental law." Such submissions are a form of complaint made by private citizens and NGOs. The most severe penalty under this NAFTA procedure, if such an assertion is substantiated, is release of a factual record to the public. "Factual record" is not defined in the agreement, but in practice it has contained a summary of the submission, a summary of the challenged party's response, a summary "of all other relevant factual information," and annexes that give a chronology of the case and maps of the area involved. Part 5 of the side agreement provides for a party to allege that there has been a persistent pattern of failure by another party to enforce its environmental law effectively. Under it, a party could be fined and ultimately denied NAFTA free trade privileges up to the amount of the unpaid fine.

²¹⁸North American Free Trade Agreement, Dec. 17, 1992, arts. 1114, 2101(3), 32 I.L.M. 605.

²¹⁹North American Free Trade Agreement, Dec. 17, 1992, ch. 7, 32 I.L.M. 605.

²²⁰North American Free Trade Agreement, Dec. 17, 1992, ch. 9, 32 I.L.M. 605.

²²¹North American Free Trade Agreement, Dec. 17, 1992, art. 104, 32 I.L.M. 605.

²²²See Janine H. Ferretti, Statement on Behalf of Pollution Probe before the Standing Senate Committee on Foreign Affairs on the North American Free Trade Agreement and the Promotion of Sustainable Development, Feb. 25, 1992, especially regarding the imposition of U.S. risk-benefit analysis onto Canadian health and safety regulations.

²²³Greenpeace, All Talk, No Teeth: NAAEC Sidesteps the Environment (1993) (posted electronic conference trade, <mailto:www.library@conf.igc.apc.org>).

²²⁴Winham, Enforcement of Environmental Measures: Negotiating the NAFTA Environmental Side Agreement, 3 J. Env't & Dev. 29 (1994).

Audit/Assessment: Physical Parameters

“Many environmental indicators in the North American region are worsening, and these alarming trends are particularly evident at the U.S.-Mexico border, an area that figured prominently in the political debate leading to NAFTA’s adoption,”²²⁵ summarized a leading student of NAFTA institutions. Mumme noted, however, that the chain of causation is not easily tied to NAFTA’s Environmental Side Agreement. The situation may be due more to economic and social trends already at work in 1994. NAFTA, he notes, strengthened governmental commitments to environmental protection within the North American region, “commitments that otherwise might not have been attainable.”²²⁶

An analysis of physical effects of an international instrument as general and as complex as the side agreement must rely on approximations and models and relationships that can be described in theory but not empirically by means of convincing statistics. Data can be compiled, but they say very little about the influence of an agreement that is not specific to a particular place or physical resource. Some information, however, is available. The CEC did conclude that pollution releases from industrial sites in Canada and the United States increased 1.2% from 1995 to 1997, reversing progress seen in earlier years. Direct releases decreased 9%, but transfers of toxic pollutants to offsite facilities for treatment rose 27%.²²⁷ Such data, however, are virtually irrelevant to the analysis of the side agreement’s effects.

The CEC’s own attempt to address the impact of NAFTA on environmental parameters resulted in a highly intricate description of possible relationships in an early report and a set of evaluative papers in 2000. These papers addressed fisheries, the forestry sector (including the export of finished wood products), North American air pollution, transboundary shipment of hazardous wastes, and wastewater treatment. Again, limited access to data and the complexities of the links made for few convincing conclusions. For example, regarding fisheries, one paper concluded that NAFTA “could have either a positive, negative, or negligible environmental impact.”²²⁸ The paper on forests was somewhat more conclusive, reasoning that tariff elimination under NAFTA itself would have a degrading effect on Mexican forests and that the industry likely will oppose national forestry regulations in order to stay competitive. Some commentators concluded that the NAAEC framework was not sufficiently developed to fulfill the side agreement’s mandate to protect the North American environment.

The side agreement submission process is likely to have little direct impact on environmental quality. Beatriz Bugeda, a Mexican environmental lawyer and an early student of NAFTA institutions, cites as an example the Cozumel case, which involved challenges under article 14 to the construction of a 1,800-foot pier for luxury cruise liners near a coral outcropping off the Yucatan Peninsula.²²⁹ Environmental groups charged that the project was initiated without a declaration of environmental impacts and was located within the limits of a protected coastal

²²⁵Stephen Mumme & Terry Sprouse, *Beyond BECC: Envisioning Needed Institutional Reforms for Environmental Protection on the Mexico-U.S. Border*, in *Handbook of Global Environmental Policy and Administration* (Dennis L. Soden & Bret S. Steel eds., 1999).

²²⁶Stephen Mumme & Terry Sprouse, *Beyond BECC: Envisioning Needed Institutional Reforms for Environmental Protection on the Mexico-U.S. Border*, in *Handbook of Global Environmental Policy and Administration* (Dennis L. Soden & Bret S. Steel eds., 1999).

²²⁷Susan Braninga, *Pollution Releases Increase Slightly from U.S. Canadian Industries*, CEC Says, 23 *Int’l Env’t Rep.* 453 (June 7, 2000).

²²⁸Grace V. Chomo & Michael J. Ferrantino, *NAFTA Environmental Impacts on North American Fisheries*, in *Environment and Trade Series* (Commission for Environmental Cooperation 2000).

²²⁹Bugeda, *Is NAFTA Up to its Green Expectations? Effective Law Enforcement under the North American Agreement on Environmental Cooperation*, 32 *U. Rich. L. Rev.* 1591 (1999).

zone. The release of the factual record “had very little impact on the environmental community, and none whatsoever on the tourist project in Cozumel.”²³⁰

Audit/Assessment: Contribution to International Environmental Law

Audit/Assessment of the NAAEC has been mixed, with an initial criticism of its weaknesses evolving into a conclusion that if looked at broadly, its effects on environmental cooperation and ultimately on the North American environment may be positive.

There are several noted weaknesses of the agreement. Its definitions of “environmental law” are problematic; most important, it excludes laws regulating the harvesting of natural resources. The agreement is unclear as to whether strip mining, soil conservation, energy extraction, coastal fishing, and sustainable timber harvesting are included or excluded.²³¹ In general, submissions on timber harvesting have been ruled to be outside CEC purview, but submissions regarding coastal fishing have not been rejected on such grounds.²³² In 1999, a submission against the United States was filed, linking timber harvesting to the death of migratory bird species, and a factual record was ordered.²³³

The term “failure to effectively enforce” has created implementation challenges, and the submission process has generated several citizen initiatives but relatively little action by governments.²³⁴ Applying definitions internationally also raises

²³⁰Bugeda, *Is NAFTA Up to its Green Expectations? Effective Law Enforcement under the North American Agreement on Environmental Cooperation*, 32 U. Rich. L. Rev. 1591 (1999).

²³¹Charnovitz, *The NAFTA Environmental Side Agreement: Implications for Environmental Cooperation, Trade Policy, and American Treaty-making*, 8 Temp. Int'l & Comp. L.J. 257, 267 (1994).

²³²For example, regarding SEM-98-002, the CEC ruled as follows:

On 23 June 1998 the Secretariat determined not to review the Submission because it did not refer to environmental law as defined by the NAAEC. The subject matter of the submission is a commercial forestry dispute under law that, because of its primary purpose (managing the commercial exploitation of natural resources), is expressly excluded from Article 14 review by the definition of environmental law in Article 45(2)(b) of the Agreement.

Commission for Environmental Cooperation, *Public Registry of Submissions on Enforcement Matters* (2000), available at <http://www.cec.org>. In response to a submission alleging that Canada had “jeopardized the future of Canada’s east coast fisheries” (SEM-97-004), however, the CEC made the following determination:

Under the circumstances, the submission does not appear to have raised the issue of non-enforcement in a timely manner in light of the temporal requirement of Article 14(1) established by the use of the words “is failing.” The significant delay between the time of the alleged failure to enforce and the filing of the submission contravenes the purpose and intent of Article 14(1) in light of the circumstances described below.

²³³According to the CEC, the submission (SEM-99-002) alleges that the Migratory Bird Treaty Act implements four international treaties, including agreements with Canada and Mexico, aimed at protecting migratory birds, and in § 703 prohibits any person from killing or “taking” migratory birds “by any means or in any manner,” unless the U.S. Fish and Wildlife Service issues a valid permit. The submission alleges that “the United States deliberately refuses, however, to enforce this clear statutory prohibition as it relates to loggers, logging companies, and logging contractors.” The CEC did not rule that this submission is beyond its purview; rather in December 1999 it requested a response from the United States.

²³⁴As of June 2002, a total of 34 citizen submissions on enforcement matters had been filed with the CEC, and five factual records had been ordered. Three factual records had already been completed and released: SEM-96-001 “Cozumel,” SEM-97-001 “B.C. Aboriginal Fisheries,” and SEM-98-007 “Metalesy Derivados.” Submissions have varied considerably. As noted in the text, “Cozumel” involved challenges to the environmental evaluation process of a public harbor terminal for tourist cruises on the Island of Cozumel in Quintana Roo, Mexico. In the fisheries submission the submitters alleged that the Canadian government is failing to enforce a section of the Fisheries Act and to utilize its powers pursuant to another law to ensure the protection of fish and fish habitat in British Columbia’s rivers from ongoing and repeated environmental damage caused by hydroelectric dams.

challenges. A government is the expert on its own law.²³⁵ A dispute system based on second-guessing a country's conclusions involves complex matters of judgment. A reasonable exercise of prosecutorial discretion and deference to bona fide resource allocation decisions are allowed under the agreement; however, this deference makes it more difficult to demonstrate noncompliance.²³⁶ In practice, the submission process has provoked Mexican, Canadian, and U.S. government opposition in which they deny its applicability to the issues involved.

The general nature of certain duties under the agreement also makes judging implementation difficult. An example is the obligation to "strengthen cooperation on the development and continuing improvement of environmental laws and regulations."²³⁷ Other duties are discretionary: the agreement lists eighteen issues for which the council may consider and develop recommendations.²³⁸ Furthermore, the principles laid out in the preamble to the agreement conflict; they "reflect the intrinsic difficulty of integrating environmental concerns into international trade law."²³⁹ Vague language such as that indicating that the council "may consider and develop recommendations" also is a barrier to tracking successful implementation.²⁴⁰

Because of differences in domestic environmental law in the three countries, determinations of harmonization and of the failure to enforce are problematic matters for international organizations. What is "downward movement" in environmental protection, which the agreement is intended to counter, when the law requires environmental audit/assessment or lays out procedural rules for participation?

Support for development of NAFTA side institutions has been limited. Agency positions within the United States about the value of, and means of implementing, the agreement are ambivalent and mixed. There is strong interest in protecting domestic missions, including the U.S. State Department, the U.S. Trade Representative, and the U.S. Environmental Protection Agency. The political side, in efforts both to shield ministers from demanding, overly sensitive or overly powerful positions and to protect against unacceptably independent acts of the CEC Council, has constrained the ministers. Many government officials in fact are not bothered by slow institutional development. Some American environmental and labor groups saw in NAFTA "the first hemispheric link between trade and social policy," but governments, Mexican officials in particular, felt that an American social agenda was forced on them. Greater integration such as in the European Community is not a goal.²⁴¹

Experts criticize the absence of independence of the Secretariat,²⁴² failure to make clear whether the council or Secretariat has a legal personality such as exists for other international organizations, and failure of the organizations to act indepen-

²³⁵Charnovitz, *The NAFTA Environmental Side Agreement: Implications for Environmental Cooperation, Trade Policy, and American Treaty-making*, 8 *Temp. Int'l & Comp. L.J.* 257, 267 (1994).

²³⁶Charnovitz, *The NAFTA Environmental Side Agreement: Implications for Environmental Cooperation, Trade Policy, and American Treaty-making*, 8 *Temp. Int'l & Comp. L.J.* 257, 280 (1994).

²³⁷Charnovitz, *The NAFTA Environmental Side Agreement: Implications for Environmental Cooperation, Trade Policy, and American Treaty-making*, 8 *Temp. Int'l & Comp. L.J.* 257, 280 (1994).

²³⁸Charnovitz, *The NAFTA Environmental Side Agreement: Implications for Environmental Cooperation, Trade Policy, and American Treaty-making*, 8 *Temp. Int'l & Comp. L.J.* 257, 263 (1994).

²³⁹Pierce Marc Johnson & Andr Beaulieu, *The Environment and NAFTA: Understanding and Implementing the New Continental Law* 141 (1996).

²⁴⁰North American Agreement on Environmental Cooperation, Sept 9 and Sept. 14, 1993, art. 9(2), 32 *I.L.M.* 1480 (entered into force Jan. 1, 1994).

²⁴¹*Economist*, Feb. 18, 1994.

²⁴²Charnovitz, *The NAFTA Environmental Side Agreement: Implications for Environmental Cooperation, Trade Policy, and American Treaty-making*, 8 *Temp. Int'l & Comp. L.J.* 257, 265 (1994); Barbara Hogenboom, *Mexico and the NAFTA Environment Debate: The Transnational Politics of Economic Integration* 221 (1998).

dently of governments. The provision for citizen submissions diminishes the control that the CEC has over the types of issues that it must address, exposing it to more criticism than if regulation were limited to governments.²⁴³ Finally, the CEC has no explicit role in the important work of the NAFTA committees on sanitary and phytosanitary measures and standards-related measures.

The enforcement strategies incorporated in the agreement are soft teeth, but opinion differs on whether such soft teeth are necessary for the agreement to be successful. A representative of the World Wildlife Fund concluded that “NAFTA’s so-called teeth are small, soft, and way in the back of the mouth,” and that is how it should be.²⁴⁴ Stone, however, finds the sanctioning mechanism possibly “worse than weak; it may actually provide perverse incentives. A Party that toughens its laws increases the risk of being judged a persistent non-enforcer.”²⁴⁵ The enforcement approach is “more like a tunnel hole . . . than a loop hole.”²⁴⁶ Further, the NAFTA regime offers a strong defense for enforcement laxity. Mexico can argue that its failure to enforce the law results from a commitment of its limited resources to more pressing problems. Imposing trade sanctions against a country that failed to enforce its environmental laws is a protracted and cumbersome process;²⁴⁷ it takes, at a minimum, 755 days from the initiation of a complaint. Even then the agreement lacks any real commitment to action beyond consultation. Nonetheless and somewhat ironically, both private environmentalists and the JPAC expressed grave disapproval to the CEC of “secret negotiations” in 1999 over possible change in the guidelines for submissions under articles 14 and 15 on enforcement matters. Although flawed, the guidelines could only be made weaker by party intervention without involvement by the NGO communities.²⁴⁸

Facing the strong and nontransparent dispute resolution processes under NAFTA proper, the side agreement does not achieve a balance between promoting trade and protecting the environment. The NAFTA processes allow companies to challenge imposition of environmental protections that they interpret as disguised barriers to trade. If such barriers are found by an appointed panel, the government enforcing those rules faces significant costs, payments that would not be likely under domestic laws on infringement of property rights.²⁴⁹

By other, positive accounts, the side agreement is an initiative that meets critical criteria for effective international environmental law.

The submission process does focus international attention on the environmental records of the parties. Although specific CEC conclusions may not dramatically af-

²⁴³Mumme and Duncan, *The Commission for Environmental Cooperation and Environmental Management in the Americas*, 39 *J. Interamerican Stud. & World Aff.* 41 (1998).

²⁴⁴International Environment Reporter, Dec. 16, 1994, D3.

²⁴⁵Christopher Stone, *The NAFTA Environmental Side Agreement (pre-conference Comments, Third Generation of International Environmental Law, at the University of California Irvine)* (1999).

²⁴⁶Marianne Lavelle, *Poisoned Waters*, *Nat. L. J.*, Mar. 14, 1994.

²⁴⁷Charnovitz, *The NAFTA Environmental Side Agreement: Implications for Environmental Cooperation, Trade Policy, and American Treaty-making*, 8 *Temp. Int’l & Comp. L.J.* 257, 270 (1994).

²⁴⁸In June 2000, the Council approved a new role for the JPAC in reviewing issues about the submissions process.

²⁴⁹The conflict has arisen in a number of cases. One involved Canada’s attempt to ban the cross-border movement of hazardous wastes, including polychlorinated biphenyls (PCBs). Operating under the provisions of NAFTA chapter 11, a dispute resolution panel indicated that Canada’s regulation treated a U.S. business differently from Canadian investors. Another case involved the claim of a Canadian business, Methanex Corporation, that the United States must pay almost \$1 billion because California planned to remove the toxic chemical methyl tertiary butyl ether (MTBE) from gasoline to prevent water contamination. A third involved U.S. attempts to regulate Mexican truck movement into the United States in a broad manner rather than on a case-by-case basis. Allegedly, the United States was limiting access for safety reasons. In yet another conflict, an American firm recovered millions in damages against Mexico for that country’s attempts to regulate a waste disposal facility.

fect the outcome of any one case, the attention that Mexico, Canada, and the United States receive regarding enforcement positively influences their decisions regarding environmental protection. Submissions can also foster cooperation among challenging entities. Jointly, Canadian, Mexican, and U.S. NGOs have brought several of the CEC complaints. What's more, although individual challenges may lack merit or be considered trivial (one asserted that the construction of a paved, multipurpose bicycle path through the Jamaica Bay Wildlife Refuge, in Queens, New York, will "destroy critical habitat for endangered and threatened species and . . . result in the taking of migratory birds"), the dozens of actions add up to a report card and force governments to review environmental policy implementation. If the parties make even a modest commitment to continuing implementation, the agreement "will directly and durably undermine the idea that environmental enforcement is a reserved domestic jurisdiction solely with the exclusive sovereignty of the parties That is not very far from saying that environmental policy is no longer a strictly sovereign matter within the NAFTA area."²⁵⁰

Cooperative activity that the agreement has engendered may be more significant than the submission process. The side agreement has potential to make a contribution to environmental protection in North America by focusing on matters other than immediate physical change or number of cases filed. Its organizations facilitate environmental problem-solving by state and local governments and NGOs, providing them with modest amounts of money, expertise, and organizational capacity. Its institutions allow for a degree of influence for the previously unheard, such as Mexican farmers.²⁵¹ The CEC has promoted several joint efforts among enforcement officials. For example, it has helped enforcers control illegal big game hunting and game farming, understand better the legal framework for hunting in North America, and find ways to counter import and export fraud and smuggling. The CEC has brought together promoters of organic agriculture to promote sustainable crops, such as shade-grown coffee. The agreement also helps development of epistemic communities that have worked on plans for pervasive environmental contaminants and studies of means to protect ecosystems.

Conclusions

The Environmental Side Agreement, one part of the institutional arrangement that evolved from the NAFTA considerations, has achieved some important goals and retains a promise for achieving greater environmental protection. Several factors help explain its relative success. It has benefited from the parties' agreement on appropriate science to aid in decision-making and the generation of scientific information through cooperative efforts. It has allowed for considerable NGO involvement. It has taken environmental impact audit/assessment seriously, both in its constituent actions, including review of a party's activities when challenged under submissions, and also as a fundamental element of the regime's architecture: the environmental impacts of NAFTA, difficult to conceptualize let alone measure, are nonetheless a fundamental spotlight of the CEC's concerns.

To the extent that the agreement has been disappointing, certain factors have been at play. NGO involvement in the public advisory committee has been inefficient at times. The means of promoting compliance that NGOs emphasize are not innovative. Rather, they rely on a cumbersome adversary process with almost meaningless sanctions, themselves highly improbable in most cases. Furthermore, the goals of the agreement, while clear, are imprecise. Although entry into the agreement was not a major obstacle to its creation, the provincial legal system of

²⁵⁰Pierce Marc Johnson & Andr Beaulieu, *The Environment and NAFTA: Understanding and Implementing the New Continental Law* 257 (1996).

²⁵¹MWilder, *Border Farmers, Water Contamination, and the NAAEC Environmental Side Accord to NAFTA*, 40 *Nat. Resources J.* 873 (2000).

Canada has made that country's participation less than smooth. Finally, while funding has been adequate to help assemble a relatively effective Secretariat, it is insufficient for achieving the comprehensive goals of the agreement.

Global Climate Change

Sources of greenhouse gases contributing to global climate change are so numerous that they are virtually uncountable. The effects of global climate change are just beginning to be felt. The causal links among emissions, climate destabilization, and environmental damage have only recently become matters of scientific consensus. Impacts, which include some benefits, are relevant to most peoples of and places in the world. Institutions at several levels of government and many nongovernmental organizations have now recognized climate change as an international problem.

Correlates of climate change, including carbon dioxide and other greenhouse gases (methane, nitrous oxide, CFCs, HFCs, PFCs, sulfur hexafluoride), as well as black carbon soot, have increased substantially in the last hundred years. With these higher concentrations have come reductions in the flow of infrared energy to space. Thus, the earth receives somewhat more energy than it radiates. In the long run, the earth must shed energy into space at the same rate that it absorbs it from the sun.

Climate change can be driven by an imbalance between the energy the earth receives from the sun, largely as visible light, and the energy it radiates back to space as invisible infrared light. The "greenhouse effect" is caused by the presence in the air of gases and clouds that absorb some of the infrared light flowing upward and radiate it back downward. The warming influence of this re-radiated energy is opposed by substances at the surface and in the atmosphere that reflect sunlight directly back into space. These include snow and desert sand, as well as clouds and aerosols.²⁵²

Estimating the effects of greenhouse gases on the earth's weather and climate systems is complex, and even now some of the audit/assessment remains controversial. Nonetheless, advances in the science and technology underlying climate models have facilitated consensus building within the scientific community, although more research is needed before regional climatic surprises can be more confidently predicted.²⁵³ There is still some debate over the extent of change in global temperature that is man-made, but there is no serious doubt that "the balance of evidence suggests a discernible human influence on global climate."²⁵⁴ Knowledge about the dynamics of climate change is converging, although questions about what interventions will be successful over what periods of time generate serious disagreements across scientific disciplines, including in the social sciences, and across parties.

In 1988, the UNEP and the World Meteorological Association (WMO) created the Intergovernmental Panel on Climate Change (IPCC) to assess available information on global climate change.²⁵⁵ In its Second Audit/Assessment Report, released in 1995, the panel concluded that the global average surface temperature had increased

²⁵²Jacoby, Prinn and Schmalensee, *Kyoto's Unfinished Business*, 77 *Foreign Aff.* 54, 56 (1998).

²⁵³IPCC, *The Second Audit/Assessment Synthesis of Scientific-Technical Information Relevant to Interpreting Article 2 of the UN Framework Convention on Climate Change* § 2.12 (1995).

²⁵⁴IPCC Working Group I, *Summary for Policy Makers: The Science of Climate Change* § 4 (2001).

²⁵⁵IPCC assesses scientific, technical, and socioeconomic information relevant for the understanding of the risk of human-induced climate change. It does not carry out new research or monitor climate-related data. It bases its audit/assessment on published and peer-reviewed scientific technical literature. Intergovernmental Panel on Climate Change, *About IPCC*, available at <http://www.ipcc.ch/about/about.htm>.

0.3 to 0.6 degrees Celsius and sea level had risen 10 to 25 cm in the 20th century.²⁵⁶ The IPCC then predicted that global average temperatures would increase by about 1 to 3.5 degrees Celsius and sea level would rise by 15 to 95 cm in the next 100 years. For the next century (from 1990 to 2100) the range of predictions based on recent audits/assessments was: temperature increases of 1.9 to 2.9 degrees centigrade and sea level rises of 46 to 58 centimeters. These changes are predicted to increase the number of heat-induced deaths, the spread of disease, threats to food security, water resource problems, and a decline in the viability of important natural ecosystems.²⁵⁷ By 2000 in the Third Audit/Assessment, the report had changed its prediction to an increase of 1.5 to 6 degrees centigrade by 2100, almost twice the previous IPCC predictions.²⁵⁸

The effects of global climate change may actually be aggravated by progress in the control of other emissions. The *Global Environment Outlook* reported that if emissions of gases associated with acid rain were reduced while those of greenhouse gases were not, “decreasing sulfur dioxide particle concentrations would ‘unmask’ the warming caused by greenhouse gases, leading to even greater increases in global temperature affecting both industrial and developing nations.”²⁵⁹ Levels of greenhouse gases in the atmosphere have increased substantially since about A.D. 1750: carbon dioxide from 280 to 360 parts per million by volume, methane from 700 to 1,720 parts per billion by volume, and nitrous oxide from 275 to about 310 parts per billion by volume.²⁶⁰

Developed countries have played the leading role in emissions linked to climate change. A major cause has been the burning of fossil fuels. In 1990, the United States was responsible for roughly a quarter (23%) of global carbon emissions each year. The European Union contributed another 13%. The total contribution of industrialized nations, which account for one fifth of the world’s population, was about two thirds of the total global emissions of carbon dioxide.²⁶¹

U.S. emissions of carbon dioxide per unit of gross national product (GNP) are greater than all other nations, except China if GNP is measured in purchasing power parity exchange rates (World Resources Institute 1996).²⁶² Many developing countries have rain forests that provide important carbon absorption functions in the global climate system (sometimes called sinks). Nonetheless, developing nations are expected to release a growing proportion of global greenhouse gas emissions in the coming decades. China alone will emit more of these gases by the end of the century than the whole world does today.

The International Environmental Law Response

Over the last few decades scientific and political debate on climate change has

²⁵⁶IPCC, The Second Audit/Assessment Synthesis of Scientific-Technical Information Relevant to Interpreting Article 2 of the UN Framework Convention on Climate Change § 2.4 (1995).

²⁵⁷IPCC Working Group II, Summary for Policymakers: Scientific-Technical Analyses of Impacts, Adaptations, and Mitigation of Climate Change (1995).

²⁵⁸IPCC Working Group I, Summary for Policy Makers: The Science of Climate Change § 4 (2001).

²⁵⁹United Nations Environment Programme, The Global Environment Outlook 228 (1997).

²⁶⁰IPCC, The Second Audit/Assessment Synthesis of Scientific-Technical Information Relevant to Interpreting Article 2 of the UN Framework Convention on Climate Change § 2.3 (1995).

²⁶¹Carbon emissions per capita per year were 5.3 metric tons in the United States (the highest per capita carbon dioxide emission rate in the world), 1.0 metric ton in Argentina, and 0.1 metric ton in Paraguay. The average for industrial nations was 3.1 metric tons. Herber and Raga, An International Carbon Tax to Combat Global Warming: An Economic and Political Analysis of the European Union Proposal, 54 Am. J. Econ. & Soc. 257 (1995).

²⁶²The U.S. Energy Department has predicted that for the near future, U.S. emissions of carbon dioxide and other heat-trapping greenhouse gases from energy use will grow faster than previously expected. N.Y. Times, Nov. 13, 1997.

influenced and been catalyzed by milestones in the creation of an international legal response. The perception of an emerging scientific consensus on the existence and severity of the problem, the possibility that multinational corporations may profit through the manufacture and sale of innovative clean technology, and the political willingness of some historically egregious emitters of greenhouse gases (e.g., developed countries) to commit to legally binding reductions of emissions have influenced the development of the international response.

In 1979, the concern among scientists regarding global climate change prompted the WMO and other international organizations to sponsor the First World Climate Conference, held in Geneva. Its focus was scientific modeling of the potential effects of global climate change on natural resources (such as agriculture, fishing, forestry), hydrology, and urban life. Conference participants endorsed the “Declaration of the World Climate Conference.”²⁶³ The declaration stressed the role of carbon dioxide in global warming and identified the leading causes of its release into the atmosphere (e.g., the use of fossil fuels and deforestation). Furthermore, it asked that governments around the world “prevent potential man-made changes in climate that might be adverse to the well-being of humanity.” Conference participants also supported the WMO suggestion to establish a new program for climate research. This suggestion led to the creation of the World Climate Programme.

In 1987, the World Commission on Environment and Development, formed by the United Nations General Assembly, issued *Our Common Future* (the Brundtland Commission Report).²⁶⁴ In its wake the IPCC built on the World Climate Programme foundation, endorsing sustainable development. Popular concern over global climate change grew from other events, including the success of the Montreal Protocol, the North American heat wave and drought in 1988, press coverage of the concept (*Time* magazine named Earth the “Planet of the Year”), a number of important consensus-building international conferences, the release of the IPCC’s First Audit/Assessment Report in 1990,²⁶⁵ and, in 1998, the devastation caused by Hurricane Mitch in the Caribbean and Central America.²⁶⁶

The Second World Climate Conference, held in November 1990 in Geneva, attracted 137 nations and the European Community. It marked the arrival of global climate change on the worldwide political agenda. Participating nations were unable to endorse specific targets for reducing emissions, but they did agree on a number of concepts, including the view that global climate change is a “common concern of humankind” and that equity and the principle of “common but differentiated responsibilities” should figure prominently in future negotiations. They also endorsed the precautionary principle, an evolving notion of preventive policy, and stressed the importance of sustainable development. The “Declaration of the Second World Climate Conference” recorded these and other areas of agreement.

In December 1990, the United Nations General Assembly created the Intergovernmental Negotiating Committee (INC) for the Framework Convention on Climate Change (FCCC). One hundred and fifty nations signed up. The INC was charged with producing a draft consensus document in time for the 1992 Rio Conference. They had less than a year and a half to make their deadline.

²⁶³IUCC, *The First World Climate Conference*. Geneva: Information Unit on Climate Change (1979).

²⁶⁴World Commission on Environment and Development, *Our Common Future* (1988) [hereinafter *The Brundtland Report*].

²⁶⁵Bodansky, Book Review, 192 *Am. J. Int’l L.* 172 (1997) (reviewing Joyeeta Gupta, *The Climate Change Convention and Developing Countries: From Conflict to Consensus* (1997)).

²⁶⁶Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Waste and Their Disposal, Fourth Meeting, Report of the Conference of the Parties on Its Fourth Session, 2–14 (1998); Buenos Aires. Addendum, Part 2: Action Taken by the Conference of the Parties at Its Fourth Session (1999).

Through the five negotiating sessions of the INC, several innovative policy mechanisms were proposed. A carbon tax imposed by each member state, emissions trading, and joint implementation²⁶⁷ were among the most important and popular, although controversial, ideas. Fairness questions arose over each of these proposals. The negotiations proved too contentious to enable the INC to include firm limits on emissions by the time of the Rio Conference. Most prominently, the United States refused to agree to stabilize emissions at 1990 levels by the year 2000.²⁶⁸ Conflicting interpretations of the science underlying global climate change were used to justify changes in the policy stances of the United States and some nation-states.

At Rio the great majority of participating parties adopted the framework. Delegates from 154 nations signed the convention, characterized by a nonbinding aim to reduce greenhouse gases. But the initiative was weakened by the United States position on an abatement target. The framework did include the idea that global climate change was a “common concern of humankind” and that equity, “common but differentiated responsibilities,”²⁶⁹ sustainable development, and the precautionary principle should characterize any international response.²⁷⁰

Common but differentiated responsibilities were assigned according to the leadership principle:

Each of these Parties shall adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs. These policies and measures will demonstrate that developed countries are taking the lead in modifying longer-term trends in anthropogenic emissions consistent with the objective of the Convention.²⁷¹

As international leaders, developed countries (also referred to as annex 1 parties)²⁷² were expected to provide the “agreed full incremental cost” of developing countries’ treaty compliance, including money for the transfer of technology.²⁷³ Furthermore, the signatory nations agreed that annex 1 parties would adopt policies and measures to reduce greenhouse gases “with the aim of returning individually or jointly to their 1990 levels of these anthropogenic emissions of carbon dioxide and other

²⁶⁷The distinction between trading and joint implementation arose after the first COP vowed to ban trading as a means of meeting quantitative commitments under the joint implementation provisions of the framework. Driesen, *Free Lunch or Cheap Fix? The Emissions Trading Idea and the Climate Change Convention*, N. 37 26 B.C. Env’tl. Aff. L. Rev. 1 (Fall 1998).

²⁶⁸According to one estimate (International Energy Agency), this and related decisions suggested that by the beginning of the millennium U.S. emissions would be 16% higher than they were in 1990. Driesen, *Free Lunch or Cheap Fix? The Emissions Trading Idea and the Climate Change Convention*, N. 37 26 B.C. Env’tl. Aff. L. Rev. 1 (Fall 1998).

²⁶⁹United Nations Framework Convention on Climate Change, May 9, 1992, art. 3.1, 32 I.L.M. 848 (entered into force, Mar. 21, 2002).

²⁷⁰From FCCC article 3.3: “The Parties should take precautionary measures to anticipate, prevent, or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures.” United Nations Framework Convention on Climate Change, May 9, 1992, art. 3.3, 32 I.L.M. 848.

²⁷¹United Nations Framework Convention on Climate Change, May 9, 1992, art. 4.2.a, 32 I.L.M. 848.

²⁷²The 39 annex 1 parties include Australia, Austria, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Estonia, European Community, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Monaco, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, United Kingdom of Great Britain and Northern Ireland, and United States of America.

²⁷³United Nations Framework Convention on Climate Change, May 9, 1992, art. 4.3, 32 I.L.M. 848.

greenhouse gases not controlled by the Montreal Protocol.”²⁷⁴ For developing countries, the FCCC encourages voluntary commitments to reduce greenhouse gas emissions (article 4.2.g).²⁷⁵

In addition to the leadership principle, the FCCC holds that response measures “should be cost-effective so as to ensure global benefits at the lowest possible cost.”²⁷⁶ The framework also recognizes that greenhouse gas emissions can be “addressed” through “the conservation and enhancement, as appropriate, of sinks” (article 4.1.d).²⁷⁷

Following the entry into force of the FCCC in May 1994, the Conference of the Parties process organized implementation and negotiation efforts.²⁷⁸ The first conference (COP-1) was held in Berlin in March 1995. Participants agreed to establish a negotiating process to strengthen the FCCC commitments to reduce global greenhouse gas emissions for the period following 2000. The document that authorized and defined the purpose of that negotiating process was called the Berlin Mandate. It elaborated policies and measures “to set quantified limitation and reduction objectives within specified time-frames such as 2005, 2010, and 2020.” It also required that the negotiations be based on an equitable distribution of burdens and benefits, acknowledge the principle of common but differentiated responsibilities, and refrain from adding any new commitments for parties not included in annex 1. Newly industrializing nations (Brazil, India, and China are among the most significant from the environmental perspective) would continue to be exempt from future, legally binding agreements to reduce emissions.

It was also in 1995 that the IPCC published the Second Audit/Assessment Report (SAR).²⁷⁹ Based on peer review by 2,000 experts, it concluded that the balance of evidence suggests that humans do in fact influence the global climate.

At COP-2 in Geneva, in July 1996, the European Union, as well as a number of its member states, was a strong advocate for the Second Audit/Assessment Report and argued that it should be used as the basis for the work of the Berlin Mandate. A number of oil-producing countries (Nigeria, Syria, Kuwait, and the Russian Federation, among others) opposed using the SAR as the basis for policy.

Despite conflicting views, representatives did agree to hold COP-3 in Kyoto, Japan, and to “take note” of a COP-2 summary statement, which they called the Geneva Declaration. Among other things, it encouraged countries to recognize and

²⁷⁴United Nations Framework Convention on Climate Change, May 9, 1992, art. 4.2.b, 32 I.L.M. 848.

²⁷⁵“Any Party not included in Annex I may, in its instrument of ratification, acceptance, approval or accession, or at any time thereafter, notify the Depository that it intends to be bound by subparagraphs (a) and (b) above. The Depository shall inform the other signatories and Parties of any such notification.” United Nations Framework Convention on Climate Change, May 9, 1992, art. 4.2(g), 32 I.L.M. 848; see also United Nations Framework Convention on Climate Change, May 9, 1992, art. 12.4:

Developing country Parties may, on a voluntary basis, propose projects for financing, including specific technologies, materials, equipment, techniques or practices that would be needed to implement such projects, along with, if possible, an estimate of all incremental costs, of the reductions of emissions and increments of removals of greenhouse gases, as well as an estimate of the consequent benefits.

United Nations Framework Convention on Climate Change, May 9, 1992, art. 12.4.

²⁷⁶United Nations Framework Convention on Climate Change, May 9, 1992, art. 3.3, 32 I.L.M. 848.

²⁷⁷“Sinks” are locations or chemical configurations that result in effective removal of pollution from biological, chemical, and physical processes. For example, forests act as a sink for carbon dioxide.

²⁷⁸Although the COP process replaced the INC, the INC continued to meet up until the first COP (COP-1) to facilitate start-up issues of the FCCC. Daniel Bodansky, *The History and Legal Structure of the Global Climate Change Regime* § 4.1.5, in *International Relations and Global Climate Change* (Detlef Sprinz & Urs Luterbacher eds., 1997) (PIK Report 21), available at http://www.pik-potsdam.de/reports/pr.21/pr21_1.htm.

²⁷⁹IPCC, *Second Audit/Assessment Report: Climate Change* (1995).

endorse the SAR, . . . noting in particular its findings that the balance of evidence suggests a discernible human influence on climate and that significant reductions in net GHG [greenhouse gas] emissions are possible and feasible; believe that the findings of the SAR indicate dangerous interference with the climate system; . . . recognize the need for continuing IPCC studies to minimize uncertainty; and reaffirm existing commitments to the FCCC, especially of Annex I Parties.²⁸⁰

In December 1997, about 10,000 delegates, observers, and media representatives gathered in Kyoto, Japan. The negotiation text prepared under the Berlin Mandate served as the basis for a COP-3 agreement known as the Kyoto Protocol to the Framework Convention on Climate Change. In the 27 articles of the Kyoto Protocol, annex 1 countries agreed to reduce greenhouse gas emissions by “assigned amounts” specific to each country:

The parties included in Annex I shall, individually or jointly, ensure that their aggregate anthropogenic carbon dioxide equivalent emissions . . . do not exceed their assigned amounts . . . with a view to reducing their overall emissions of such gases by at least 5% below 1990 levels in the commitment period 2008 to 2012.²⁸¹

Annex 1 countries are mostly industrialized and some central European nations. Annex 2 countries do not include the latter. Their “reduction commitments” range from 92% (change from the base year) to 108% (for Australia). No developing country that signed the FCCC, including China, committed to any assigned amount or quantitative limit on greenhouse gas emissions. The role of developing countries in reducing greenhouse gases is not specified in the Kyoto Protocol other than as potential partners in efforts by annex 1 countries to meet their commitments (articles 4 and 6)²⁸² and as recipients of technology transfer.²⁸³ Developing countries are mentioned as potentially subject to undesirable side effects that may result from reduction of greenhouse gases. To guard against such outcomes, article 2.3 of the Kyoto Protocol requires annex 1 countries to “strive to implement policies and measures under this Article in such a way as to minimize adverse effects, including the adverse effects of climate change, effects on international trade, and social, environmental and economic impacts on other Parties, especially developing country Parties.”²⁸⁴ Similarly, article 3.14 of the protocol requires annex 1 countries to “strive to implement the commitments mentioned in paragraph 1 above in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties.”²⁸⁵

After a 1998 meeting in Argentina, the Fifth Conference of the parties took place in Bonn, Germany, in 1999. It addressed details of emissions trading, the clean development mechanism (CDM), joint implementation (the so-called flexibility mechanisms), accounting of greenhouse gas emissions, and development of a “cred-

²⁸⁰Conference of the Parties to the United Nations Framework Convention on Climate Change, Report of the Conference of the Parties on its Second Session: The Geneva Ministerial Declaration, U.N. Doc. FCCC/CP/1996/15/Add.1 (1996).

²⁸¹Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997, art. 3.1, 37 I.L.M. 22, U.N. Doc. FCCC/CP/L.7/Add I.

²⁸²The Kyoto Protocol specifies, among other requirements, that only projects that provide “a reduction in emissions by sources, or an enhancement of removals by sinks, that is additional to any that would otherwise occur” may be used to meet annex 1 reduction commitments. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997, art. 6.1.b.

²⁸³Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997, art. 3.14.

²⁸⁴Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997, art. 2(3).

²⁸⁵Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997, art. 2(3).

ible” compliance system.²⁸⁶ Emissions trading occurs among industrialized nations. Joint implementation offers emission reduction units for financing projects in other developed countries (such as power plant conversions). The CDM provides credit (certified emissions reductions, or CERs) for financing emission-reducing or emissions-avoiding projects in developing countries.

In November 2000 at COP-6, parties met in The Hague to move the general language of the Kyoto Protocol to specifics on how the goals of the regime would be met. On the one hand, and as characterized by much of the news media, the meetings were a failure.²⁸⁷ The percentage of a nation’s goals that could be met by use of the flexibility mechanisms, the extent to which sinks could be counted against emissions limitations, and the nature and application of compliance-promoting mechanisms divided the participants. Blame was assigned variously to the refusal of the Americans to recognize the need for at least some changes in their profligate use of energy, to the inflexibility of the European Union or the failure of their lead nation (France) to comprehend details of the highly technical proposals, to the extreme proposals made by the Saudis for compensating oil-exporting nations that would be economically hurt by decreased reliance on fossil fuels, or to the inertia of less developed nations that continued to insist that they need do little to solve the problem since they do not cause it.

With the inauguration of George W. Bush as president, the United States decided that it was not interested in the Kyoto Protocol because that instrument was “fatally flawed.” Nonetheless, when 180 nations met again in Bonn in July 2001 to complete COP-6, 178 of them reached a compromise agreement. Attributed in part to the persistent efforts of the chairman of the conference and the willingness of Europe to make concessions to Japan, the conference agreed to several points. Emission credits will be earned for carbon sinks and can include revegetation and management of grazing lands, forests, and croplands, but sinks can account for only a fraction of a nation’s target. Developed parties are to refrain from using nuclear facilities in their CDMs. Rights to emit will be tradable; those nations that do not meet their own targets can purchase rights from those that have exceeded theirs. The flexibility mechanisms all are to be supplemental to domestic actions. The aim of the program to address noncompliance with emission limitations will be to insure “environmental integrity,” not “reparation of damage to the environment,” a phrase that was deleted from the regime’s language. Enforcement was limited to the notion of increasing emission reductions in a later phase for every ton emitted above a party’s target. Three new funds were created that will assist developing countries: an adaptation fund, one for assisting with implementing climate-related measures, and a third for the least developed countries. In November 2001, COP-7 met in Marrakech, where steps were taken (based on a compromise between Australia, Canada, Japan, and Russia on one side and the European Union on the other) to develop a compliance-promoting mechanism and to determine credit mechanisms under the flexibility programs.

Audit/Assessment: Physical Parameters

Most observers conclude that full implementation of the Kyoto Protocol is insufficient to control the negative effects of change. More significant, however, is the fact that critically important nations are not meeting even their 2008 to 2012 goals under the modest targets, sometimes missing by giant margins. Furthermore, unless the term is to be stripped of any common meaning, the goal of “demonstrable progress” by 2005 is not met. Beyond these official data are numerous scientific observations and anecdotes related to the physical audit/assessment: the disappear-

²⁸⁶FCCC Secretariat, Press Release, Ministerial Talks on Climate Change Set for 2–4 November in Bonn (June 11, 1999).

²⁸⁷Corriere della Sera, Nov. 26, 2000; International Herald Tribune, Nov. 27, 2000.

ance of glaciers, blooming trees and flowers during autumns in the temperate zone, the lengthening of the growing season in some regions, the early arrival of migratory birds.

In areas where there have been emission reductions and deceleration of emissions increases, these have not uniformly been linked to the effect of law. For example, Russia and other former Soviet states experienced an immense economic downturn in the reporting periods.

The relationships between goal-setting for climate change and the actual atmospheric results are so complex that we can draw very few convincing conclusions, but it is clear that progress, if that term can be applied at all, is limited. To be fair, some of the emissions increases were set in place before the regime was conceptualized. Also, changes in the Kyoto part of the regime are possible and are generally predicted; of 75 participants in a high-level meeting on climate change, fewer than 10 saw the Kyoto Protocol as the final agreement on greenhouse gas controls, and most expected a future replacement measure.²⁸⁸

Audit/Assessment: The Contribution of International Environmental Law

In considering the climate change case, this section addresses a regime that includes the law of the FCCC and of the Kyoto Protocol and its refinements in numerous Conferences of the Parties. The regime has recognized the need in international environmental law for innovations in compliance promotion. These include allowing the involvement of NGOs, providing financial and other economic incentives for participation, emphasizing education, and recognizing that for many nations self-interest ultimately will call for the control and management of global warming. Innovations offered include the flexibility devices. Market mechanisms are generously recognized. Furthermore, the regime attracts the participation of many nations by requiring little of them and provides for their reporting before they need to commit to controls.

The Secretariat has performed in a professional manner, and the Conference of the Parties strategy has been able to respond to some, although not all, challenges to ongoing cooperation. It recognizes the need in international environmental law for indefinite iterations among countries to resolve differences. Overall the COP approach reflects a general ability of even large numbers of nation-states to work over long periods of time toward cooperative outcomes. The regime has credible and impressive links to the evolving scientific information base. There is an appropriate adoption of principles of soft law, including the precautionary principle and that of common but differentiated responsibilities of countries. Definitions are relatively clearly articulated, and a financial mechanism is being provided. Furthermore, the design builds on an evolving acceptance by the private sector of the problem and the alternatives to its control.

Yet there are very large weaknesses. Ease of entry is countered by ease of exit, as the decisions by the United States and later Australia to abandon the Kyoto process demonstrated dramatically. Emission limitations are both unrealistic in the short run and inadequate in the long run. It is not clear what ultimately will be done to enforce obligations, reflecting a desire to avoid difficult choices about what must be done. The same can be said for the consideration of regulatory measures and for what many consider inevitable, a global carbon tax. Some acceptable approaches under the flexibility devices may be in conflict with international trade law.²⁸⁹

Most fundamentally, the regime has not evolved to influence sufficiently, through

²⁸⁸Pew Center on Global Climate Change, available at <http://www.pewclimate.org>.

²⁸⁹Countries that provide subsidies for energy-efficient products could be in conflict with the Agreement on Subsidies and Countervailing Measures of WTO rules, although there is an environmental protection exception. Most-favored-nation treatment may be inconsistent with a multilateral regime allowing trading only among parties to the Kyoto Protocol. The regime's compliance rules can, however,

any means, consumption by the billions of sources of greenhouse gases, and it lacks an acceptable position on equity in seeking changes in consumer patterns. Climate change affects people differentially in terms of location, age, and income.²⁹⁰ Unless there are compensatory strategies generated for the effects of cutbacks on the poor, the very young and very old, and certain geographic groups, opposition to across-the-board requirements to limit consumption could be significant.²⁹¹

Conclusion: Lessons Learned, Components of Effective Law

The overall audits/assessments presented in the beginning of this section and the five case studies suggest the immense challenges that international environmental law faces. They also reveal the diversity of analyses of the effectiveness of the law. Conclusions about the elements that make an international legal instrument effective reflect both absence of consensus on goals and differences as to the paths or influences to realize them.

There is some convergence, however, on what might be called factors linked to successful environmental law. Of course, effectiveness can mean many things. Most simply, but most ambitiously, it denotes a solution of the environmental problem that brought together the lawmakers. It can focus on changing behavior in relevant ways. It may translate to realizing declared objectives (short of or different from quantified environmental improvements) or to creating correspondence between institutional outputs and expert advice. It can mean improving environmental quality over some hypothetical state of affairs.²⁹²

However defined, the list of factors linked to effectiveness is almost embarrassingly long. Credible analysts do offer the following more manageable list. A fair amount of scientific consensus about the existence and causes of the international problem is fundamental, as is political support within the participating nations. The organizational capabilities of the secretariat and other implementing institutions should be supported. The secretariat needs to have resources and information. The regime institutions must be able to create ad hoc alliances among themselves, and the regime must have an understandable and legitimate dispute resolution process. It should be open to public and scientific input. NGO involvement of a clearly determined type is important. A modest entry commitment should suffice for participation. A compliance-promoting mechanism, whether a taxing capacity or a subsidy or trust fund, and recognition of varying capacities of developed and developing nations are essential.

The regime should be based on consensual understandings of clear policy objectives. It should ensure to all stakeholders, including NGOs and the public,

be promoted in ways that are technically consistent with WTO principles. They can be designed so as to avoid being considered a “service” and to not be “differentiated by their country of origin.” More satisfying and more compatible with progressive international law is the conclusion that efforts to promote climate stabilization are exempt from the WTO restrictions—even if they look like trade activities, which, were they not so motivated, may confront challenges. Wiser, *The Clean Development Mechanism Versus the World Trade Organization: Can Free-Market Greenhouse Gas Emissions Abatement Survive Free Trade?*, 11 *Geo. Int’l Env’tl. L. Rev.* 531 (1999). Certainly this will require creation of some means of monitoring CDM activity. More important, it will require some trust in nation-states that are asserting this exemption.

²⁹⁰Angie K. Miller, Sethi Gautam Sethi & Gary H. Wolff, *What’s Fair? Consumers and Climate Change* (2000).

²⁹¹Domestic policies considered in national law that are promising include expansion of federal weatherization assistance, location-efficient mortgages, recovery of inefficient cars and appliances, expansion of emergency management agency activities, and federal provision of health insurance. Angie K. Miller, Sethi Gautam Sethi & Gary H. Wolff, *What’s Fair? Consumers and Climate Change* (2000).

²⁹²Marc A. Levy, Robert O. Keohane & Peter M. Haas, *Improving the Effectiveness of International Environmental Institutions*, in *Institutions for the Earth: Sources of Effective International Environmental Protection* 397–426 (P. Haas, P. Keohane & R. Levy eds., 1993).

open communication and access to relevant information. It should establish and strengthen norms for cooperation, implementation, and compliance. These should be promulgated by a legitimate, competent, recognized authority with a willingness and ability to interpret treaty terms and to enforce them. Questions of liability and sanctions should be answered clearly. The institutions involved should foster collaboration and cooperation in agenda setting, negotiating, and bargaining. Public participation should be encouraged not only during policy formation but also in implementation. The treaty regime should embody consensus-building mechanisms and provide for an ongoing forum to manage issues. Finally, the regime's organizations must have sufficient human and financial resources.

International Environmental Law: Expectations and Recommendations

By several criteria the development of international environmental law has been impressive. Increasingly sophisticated instruments have been drafted. Much of the world community has accepted principles that reflect progressive, scientifically based understandings of environmental protection. Several regimes have focused on ways of successfully implementing principles of protection. Compliance-promoting ideas have been offered and employed.

Despite these overall positive conclusions, the record is rather mixed. For every few successes (reductions in whaling and in the production of ozone-depleting substances, for instance), there is a failure or at least a relatively weak initiative, such as the Basel Convention or the Forestry regime. Principles are often co-opted to favor interests incompatible with environmental protection. Some instruments are ratified but very incompletely implemented. Other initiatives, possessing characteristics of effective law, are insufficiently funded.

An evaluation of the success of international environmental law must include an analysis of effects on the physical environment itself, the concrete challenge that is the subject of the initiatives. When so understood, the question is empirical, one that in most cases is not sufficiently modeled and understood. Results come from audits/assessments of physical parameters and from expert judgments, the former being the most significant benchmark. It is a benchmark that also is difficult to quantify adequately, and tracing its roots to various phases in the evolution of a legal regime is a task filled with uncertainties.

There is nonetheless a growing understanding that, even by the most rigorous criteria, a more effective law can be realized. There is a growing appreciation that green is good, that environmental management achieves important national and corporate objectives, and that multinational organizations will increasingly accept these understandings.

Unfortunately, talking green is also good, so there has been an adoption of terminology associated with environmental protection independent of changes in performance. Expectations for the conditions in which law will be made include a greater incidence of democratic participation at the international level, greater convergence in the science that is the background for the consideration of treaties, and some convergence in the audit/assessment of the effectiveness of international environmental instruments. A more widely shared understandings of what needs to be done to create effective legal regimes is also expected. Each of these conditions has implications for the design and reform of international environmental law.

Expectations About the Policymaking Environment

The Greening of Geopolitics

Expect New Environment-Friendly Concepts and Worldviews to Enter the Everyday Discourse of International Activities, Including Politics, Trade, and Development.

The significance of international environmental protection is increasingly

recognized. There is no dearth of concepts on which to build meaningful international environmental regimes, and the concepts are moving ever more quickly into the official statements of institutions that matter. Societal conditions are creating a strong public interest in the environment, including ecosystem survival and its relationships to the health of the world population. A greening of geopolitics has been made possible by the collapse of the Soviet Union and the recognition of the limits of armed resolution of conflicts. As former Norwegian Prime Minister Brundtland noted, “already, a new awareness of global ecological interdependence is filling the political space which used to be occupied by divisive Cold War concerns.”²⁹³

An overall audit/assessment of this potential requires an analysis of the interests that international environmental law serves. Many of the new understandings will be implemented within a policymaking world that will not change dramatically over a short period of time. Forces that generated decades-old institutions likely will not respond much to the discovery of new conceptual understandings, or speculations, or models of how the world operates. These often are offered by academics, members of NGOs, and others who are usually at the periphery of actual decision-making. Mostafa Tolba said after the Stockholm Declaration that governments “need to change gears. We need a change of heart.”²⁹⁴ Such changes come, if at all, slowly and with considerable cost. Also, discourse can change dramatically without an air shed being saved, a river cleaned, or a species returned from the brink of extinction.

An underlying set of premises within the newer environmental law no doubt reflects the same interests that underscored the major environmental and economic policies of previous decades. Nonetheless, themes such as sustainable development, environmental management, privatization, and ecosystem analysis will continue to enter the vocabulary of regional and global environmental strategies.

The meteoric rise of the concept of sustainability is a case in point. The United Nations Conference on Environment and Development, through Agenda 21 and the Rio Declaration, brought the concept to the international community in an explicit way. Much earlier the groundwork was laid (without the exact term being used) for its emphasis in domestic and international affairs. It is at the very basis of UNEP by its constituent act, U.N. General Assembly Resolution 2997 (27), which stressed the need “to assist developing countries to implement environmental policies and programs that are compatible with their development plans.”²⁹⁵ In 1983, UNEP’s role in pursuing sustainability was recognized by the World Commission on Environment and Development (the Brundtland Commission), which gave the term general use. The idea was to reorient major international organizations through improved coordination and cooperation toward sustainable development.²⁹⁶ Brundtland defined this as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”²⁹⁷ UNEP in its fifteenth Governing Council attempted to clarify the idea: “Progress towards national and international equity, as well as the maintenance, rational use and enhancement of the natural resource base that underpins ecological resilience and economic growth.”

UNEP introduced the concept into planning for environmental law. The first long-term Programme for the Development and Periodic Review of Environmental Law (the Montevideo Programme) was prepared by a meeting of senior government

²⁹³Philip Shabecoff, *A New Name for Peace: International Environmentalism, Sustainable Development, and Democracy* 115 (1996).

²⁹⁴Philip Shabecoff, *A New Name for Peace: International Environmentalism, Sustainable Development, and Democracy* 45 (1996).

²⁹⁵Alexander Timoshenko & Mark Berman, *The United Nations Environment Programme and the United Nations*, in *Greening Environmental Law* 39 (Philippe Sands ed., 1993).

²⁹⁶Alexander Timoshenko & Mark Berman, *The United Nations Environment Programme and the United Nations*, in *Greening Environmental Law* 39 (Philippe Sands ed., 1993).

²⁹⁷World Commission on Environment and Development, *Our Common Future* 43-46 (1998).

environmental law experts in 1981.²⁹⁸ After Rio, the United Nations Commission on Sustainable Development was created with the power to recommend policies to the U.N. Economic and Social Council. Nation-states have also institutionalized efforts to adopt sustainability as a policy anchor. The United States, for example, formed the 25-member President's Council on Sustainable Development. In 1988, 22 directors of U.N. agencies and programs met to plan and to coordinate their activities to promote sustainability.²⁹⁹

The 1992 Biodiversity Convention defines sustainable development in its biological context: "The use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological resources, thereby maintaining its potential to meet the needs and aspirations of present and future generations."³⁰⁰ Both it and the Climate Change Convention can be seen as making sustainability part of positive law. The World Trade Organization's (WTO's) constitutional instrument refers to "optimal use of the world's resources in accordance with sustainable development."³⁰¹

The sustainability concept avers that the environment and economic growth need not be in conflict . . . without protection of ecological systems, global economic decline . . . [is] inevitable. Conversely, without economic progress, elimination of poverty, satisfaction of the material wants of people of the developing countries, and extension of human rights, efforts to protect nature and the earth's life-support systems . . . [are] doomed to failure.³⁰²

Notions of sustainability will continue to motivate the development of international law, but whether they will help create effective law will depend on whether common meanings linked to making the environment a priority are adopted. As used so far, there has been considerable skepticism. Howard Mann argues that all international law should "be seen as being for sustainable development, rather than having the legal community struggle to define a new, separate or overarching branch of law-international law of sustainable development"³⁰³ Sustainable development, furthermore, is a concept that can invite an overly anthropocentric and instrumental interpretation, which can lead to a "development-oriented view of environmental resources."³⁰⁴ It can be applied politically: "sustainable" means based on participation of local interests, but those interests may or may not conserve resources for future generations. The literature on indigenous resource exploitation suggests that these forms may generally be more sustainable, but the record is not clear. Some indigenous patterns are environmentally destructive, and "local" participation no longer equates with "indigenous" in many parts of the world.³⁰⁵ Locals may be among those most focused on short-term gains that derive from exploitation.

²⁹⁸Alexander Timoshenko & Mark Berman, *The United Nations Environment Programme and the United Nations*, in *Greening Environmental Law* 40 (Philippe Sands ed., 1993).

²⁹⁹Lynton Keith Caldwell, *International Environmental Policy: Emergence and Dimensions* 82 (1990).

³⁰⁰Convention on Biological Diversity art. 2, 31 I.L.M. 818 (1992), Signed June 5, 1992, Entered Into Force Dec. 29, 1993.

³⁰¹Agreement Establishing the Multilateral Trade Organization. *Multilateral Trade Negotiations (the Uruguay Round)*, MTN/FA, 33 I.L.M. 13 (1994).

³⁰²Philip Shabecoff, *A New Name for Peace: International Environmentalism, Sustainable Development, and Democracy* 4 (1996).

³⁰³Philippe Sands, *International Law in the Field of Sustainable Development: Emerging Legal Principles*, in *Sustainable Development and International Law* 67 (Winfried Lang ed., 1995).

³⁰⁴Handl, *Controlling Implementation and Compliance with International Environmental Commitments: The Rocky Road from Rio*, N.43 5 *Colo. J. Int'l Env'tl. L. & Policy* 305, 312 (1994).

³⁰⁵Paula Sirola, *When Rhetoric and Reality Don't Match: A Critical Analysis of Environmentalism in Indigenous Development Projects* (2001) (paper presented at The Greening X Conference, University of California, Irvine, Jan. 27, 2001).

Articulating high-sounding terms such as “sustainability” may also divert international efforts to achieve consensus on more practical matters, matters backed by science and politically acceptable, which can be effectively implemented in the mid-run. The most severe critique of sustainability holds that the environmental movement can be the handmaiden of forms of polluting development based on assertions that such development is green.

Nonetheless, different meanings of sustainability need not counter effective international environmental actions based on law. International environmental scholar Pamela Doughman suggested in a study of the use of the term by multilateral development banks, governments, NGOs, and the private sector in regard to water infrastructure projects in Mexico that variations may promote communication and, eventually, cooperation.³⁰⁶ There are more direct implications for an international environmental law. Critical analysis of such phrases—“ecosystem-based analysis,” “privatization,” and “environmental management” are similarly imprecise—is essential and is available in work by NGOs and in the academic literature. These general terms are a starting point for discussions of specific choices by states; they can be a means of bringing negotiators together at a high level of generality. They can provide ideas for joint setting of a research agenda, and they may stimulate consideration of specific strategies that environmental law can promote.

Participation of Nongovernmental Organizations

Expect That International Environmental Legal Regimes Will Embrace Forms of Participation That Will Promote Greater Compliance.

The continued involvement of new actors with interests that counter an environmentally destructive status quo can be expected. In Rio, large numbers of people with strong environmental agendas participated in the convention and in its parallel people’s version and influenced official actions. Since that time, hundreds of environmental action groups have been formed in every region of the world. In North America under the NAFTA institutions, the number of submissions brought by NGOs and private entities is striking when contrasted to the few consultations and arbitral panels assembled by the parties themselves. Green parties at the domestic level have played notable roles in influencing national legislation. They were influential in the collapse of the environmentally destructive Soviet regimes, and they have earned considerable legislative power in the United States and in Europe.

As it relates to the effectiveness of law, however, this expectation must be tempered. As recently as 1996, Koskenniemi could write, “non-governmental organizations (NGOs) do not play an official role in compliance review in any field of international law.”³⁰⁷ That is no longer precisely accurate in the international field, but environmental NGOs generally have limited roles in official proceedings. Where they are active, an international environmental law also needs to recognize that although NGOs can be productive players in treaty making, their contributions are not always positive. Many NGOs have objectives inconsistent with global environmental protection. Some are not particularly democratic, and rules for involving them in international proceedings may themselves be undemocratic. Motivations for participation include sustaining an organization independent of its impact on treaty evolution. Furthermore, competence is low in some NGOs, and even when objectives are clear and philosophical positions compatible with global stewardship, logistically it can be difficult to include large numbers of participants in the mundane tasks of instrument preparation and implementation.

³⁰⁶Pamela Mae Doughman, *Discourse, Sustainable Development, Mexico, and Water* (1999).

³⁰⁷Marti Koskenniemi, *New Institutions and Procedures for Implementation Control and Reaction*, in *Greening International Institutions* 244 (Jacob Werksmann ed., 1996).

Cooperation Based on Science

Expect Science to Establish Causal Links Sufficiently Compelling That Nation-States Will More Readily Accept Inroads Into Sovereignty.

Science will continue to move toward consensus in some areas that inform the design of international law. Epistemic communities of scientists will grow in number and influence. International organizations, such as UNEP, will promote activities furthering agreement through collaborative meetings of scientific and technical bodies.³⁰⁸

The function of science is important in creating agreement, in decreasing uncertainty, and in suggesting policy responses to global degradation. Some observers, however, have exaggerated its role. They choose to select unrepresentative examples of scientific findings that led to international policy initiatives, or they fail to consider cases where scientists disagree in fundamental ways about the importance of information. An example involved negotiations over the agreement on persistent organic pollutants (POPs). Some environmental groups, focusing on scientific information on ecological threats, called for global termination of production and use of DDT, but 400 medical researchers countered with data suggesting that DDT helps control malaria, which has approximately 3 million victims each year.³⁰⁹ Both groups are correct scientifically, but the issue is larger than finding the best data. Science cannot determine which objectives of an international environmental policy are most important.

Another example involves genetically modified crops and organisms. Here serious disagreements are found between the north and south, among the Western industrialized nations and within them. Scientific issues may over time be more amenable to empirical investigations rather than conclusions about values and priorities, but sorting one from the other is not easily done in the politically charged world of trial crops, square tomatoes, giant vegetables, and enhanced meat, poultry, and fish products.

True, the dominant scientific view internationally is that the risks of development and use of genetically modified crops and organisms are small and manageable. A type of biotechnology-plant hybridization-has a long and benign history. Critics, including some scientists, however, counter that the behavior of viral sequences encoded on plants is not well understood, that DNA migration through ecosystems has not been well studied, that secondary metabolite or protein toxins could result from gene manipulation, that the level of uncertainty in predictions of some results of experiments is very high, that risk audit/assessment criteria are not a matter of scientific consensus, and that resistance of some crops could undesirably spread to weeds.³¹⁰ Furthermore, the science that forms the basis for the conclusion that genetic modification is safe from a broad human and environmental health perspective does not offer the last word on “the broader cultural, social, and economic dimensions that are of wide concern to the public and many NGOs.”³¹¹ Laboratories that seek to learn more about the dynamics of genetic modification may be controversial when sited in developing nations without environmental impact audit/assessment guidelines.

These and other disagreements, including skepticism about the existence of objective science when economic and regulatory implications of results are great, help

³⁰⁸UNEP, *Synergies: Promoting Collaboration on Environmental Treaties* 1 (1999).

³⁰⁹International Environment Reporter, Sept. 15, 1999, at 745.

³¹⁰David Hunter, James Salzman & Durwood Zaelke, *International Environmental Law and Policy* 214 (1998).

³¹¹Nelkin, Sands and Stewart, *Genetically Modified Organisms: Forward, the International Challenge of Genetically Modified Organism Regulation*, 8 N.Y.U. *Envtl. L.J.* 523, 526 (2000).

explain the very different domestic laws on the regulation of genetically modified organisms.³¹²

The dynamic among science, policy, and law may be more complex in the context of certain environmental problems. As Levesque (2000), following international relations specialist Karen Litfin, explained for the function of scientific information in transboundary resource management between Canada and the United States:

“the power of competing knowledges—likely to be decisive of scientific uncertainty—was the critical factor” [in the outcome of the global ozone regime] . . . Atmospheric science did not provide a foundation of objective, value-free facts that resulted in international cooperation. Instead, scientific knowledge “was framed in light of specific interests and pre-existing discourses so that questions of value were rendered as questions of fact, with exogenous factors shaping the political salience of various modes of interpreting that knowledge” . . . Litfin’s study demonstrates that scientific knowledge, as opposed to epistemic communities of scientists, was critical to the outcome of the negotiations. It highlights the fact that ability of scientific knowledge to foster cooperation was mediated by how scientific information was interpreted and framed as well as by whom the knowledge was interpreted and framed.³¹³

As to the origin and development of a regional conservation initiative (Yellowstone to Yukon or Y2Y), Levesque observed:

Y2Y does not derive its power from the guidance of a consensus-based epistemic community of scientists or from the ability to coordinate consensual action based on a body of objective, value-free facts. Instead, the network’s power is derived from its ability to achieve consensus-based collaboration by interpreting and framing scientific information and knowledge in ways that reinforce and support network interests, identities and goals.³¹⁴

Other than the idiosyncratic Montreal Protocol, there are few examples of science driving international action, although in many more instances science has played a large role in promoting new official actions.

Diplomats do rely on scientists, including government-appointed experts, to undertake risk audits/assessments and to relate policy options to effective risk management.³¹⁵ Putting it more gently than some critics, Weiss noted that “on the one hand, this gives governments confidence in the outcomes, which is essential; on the other it may invite what has been termed ‘negotiated science,’ a matter about which some of the international scientific community have been particularly critical.”³¹⁶

Negotiations for the climate-change convention illustrate some of the processes of science and policy interaction. From the perspective of international environmental lawmaking, two expectations about scientific consensus need to be critically addressed. First, the science on climate change’s causes, its effects, and approaches

³¹²The Cartagena Protocol reads remarkably like the Basel Convention in audits/assessments of benefits and risks of genetically modified organisms. Among its requirements is that importing countries would be given prior notification of movements of genetically modified crops and that the importing nation’s right to regulate and to bar the organism would be recognized. Some examples of the conflict make comical fodder. A number of Greenpeace members, including a noble, were arrested in Norfolk, England, for using a mower to tear up a trial crop of maize. The crop was one of a number of government-supported genetic modification trials in England. *International Environment Reporter*, Aug. 4 1999, at 660. Even the royal family disagrees within itself about the role of genetic modification in British agriculture.

³¹³Suzanne Levesque, *From Yellowstone to Yukon: Combining Science and Activism to Shape Public Opinion and Policy* (2000) (internal citations omitted; Ph.D. diss. University of California, Irvine).

³¹⁴Suzanne Levesque, *From Yellowstone to Yukon: Combining Science and Activism to Shape Public Opinion and Policy* (2000).

³¹⁵Edith Brown Weiss, *Environmental Change and International Law* (1992).

³¹⁶Edith Brown Weiss, *Environmental Change and International Law* 15 (1992).

to successful intervention will continue to converge. Second, science will drive an effective international legal response.

Convergence is occurring for some of the science. Recent independent studies confirm that there are changes in the earth's outgoing long-wave radiation spectrum, that there is a warming trend in the surface temperature over the past 20 years, that ocean temperatures are rising, that the thickness of Arctic sea ice is declining, that the Greenland ice sheet is melting, that the ice-free season has gotten longer in the past century, and that the Himalayas are warming.

The Third Audit/Assessment Report in 2001 made several reaffirmations of the IPCC's earlier work and added new findings. It characterized its results with qualitative descriptions of their certainty. The panel stated with high confidence (i.e., with a 67% to 95% judgmental estimate) that recent regional changes in temperature have had discernible effects on many physical and biological systems and that some social and economic systems have been affected by the increasing frequency of floods and droughts.

Other IPCC conclusions also suggest convergence but underscore considerable gaps in knowledge that relates to policy response. There was high confidence in the prediction of a significant disruption of ecosystems. Large-scale changes in oceans will include increases in sea surface temperature and mean global sea level, decreases in sea ice cover, and changes in salinity, wave conditions, and ocean circulation. Heat waves in urban populations, increased stress on coral reefs, and increases in the transmission of malaria and dengue-two vector-borne infections will be experienced.

Some quantitative projections are beyond respectable challenge, but some scientists criticize the IPCC 3 results as rushed and unconvincing,³¹⁷ and certain audits/assessments related to law are made with very limited confidence. In sections they are obvious; they would not advance policymakers' inclinations to change their international obligations drastically. A few respected scientists continue to insist that there is not "any evidence that this is a serious problem."³¹⁸

Scientific consensus about predictions of effects can be achieved while scientific consensus about means to address global warming remains elusive. "Regulatory uncertainty"³¹⁹ is as much a constraint on policy choice as is scientific uncertainty. For example, COP-6³²⁰ faced with the question of how to account for the removal and storage of carbon from the atmosphere by forest sinks, was stymied by a split between parties who viewed knowledge as complete enough to include sinks in emissions reduction calculations and those who read the science either as incomplete or as identifying serious problems with reliance on sinks. Economic science also fails to converge on the value of models that describe proposed effects of different strategies, from taxes to subsidies and from trade programs to regulation. Scientific consensus likely will continue to grow, but it will constitute only one factor in choices among politically controversial control options and implementation strategies.

One can debate the notion that pure scientific findings exist and still recognize attempts to politicize science to achieve one or another end-not necessarily a less

³¹⁷Andrew C. Revkin, Report Forecasts Warming's Effects, N.Y. Times, June 12, 2000.

³¹⁸Richard S. Lindzen of the Massachusetts Institute of Technology, who is the Alfred P. Sloan professor of meteorology, argues, "We don't know what determines upper level water vapor," a factor he says is "crucial and central to the predictions of future climate change." William Stevens, The Hot Spot Approach to Saving Species, N.Y. Times, Dec. 1, 1997. Uncertainties about interactions between and among natural systems, human systems, and climate remain numerous. Andrew C. Revkin, Report Forecasts Warming's Effects, N.Y. Times, June 12, 2000.

³¹⁹Elliott, Global Climate Change and Regulatory Uncertainty, 9 Ariz. J. Int'l & Comp. L. 259 (1992).

³²⁰Held at The Hague in November 2000.

environmentally stringent end-in international environmental law and policy. Maurice Strong has said (begging the question but certainly giving understandable reasons for the absence of effective worldwide efforts at controlling environmental pollution), “Environmental problems are like a cancer spreading insidiously through the body. They will probably kill us eventually, but the symptoms are not acute enough to prod us into saving ourselves.”³²¹

Some environmentalists argue that a scientific explanation of the environmental threat is qualitatively different from that of other subjects of legal control and that it demands a different kind of international respect. Even where scientific consensus is not complete, dramatic new centralized international initiatives are warranted because ecosystem collapse and related environmental disasters suggest the compelling need for the precautionary principle. Others consider this position not only unjustified but also unscientific and dangerous, pointing as Nespor does to the history of poor prediction in the environmental policy arena. Nespor’s examples include miscalculation of coal and oil reserves, gross underestimation of food production, overly dire statements about deforestation and the contribution of chemicals to carcinogenesis, as well as exaggerated audits/assessments of the process of desertification.³²² Furthermore, advocacy of particular lifestyles may be driving interpretations of data and decisions on environmental policy. Aggressive precaution with costly side effects on economies and other social goals may follow.

Still, science may lead to greater cooperation in international environmental matters in another way. Although the science on a particular question may not be compelling, the entry into public discussion of scientific considerations of environmental problems has been dramatic; it may suggest a more general interest in actions to preserve environmental resources than either the scientific community or governments actively promote. In tracing the impressive growth of a sector of world society concerned with the environment, the “rise of scientific discourse and association has been central. It universalized and legitimated earlier and narrower conceptions of the environment as the locus of either sentiment or particular resources.”³²³ States may be pushed farther into international cooperation despite the mainline objectives of preserving sovereignty that they would seek absent popular domestic concern.

The implications of these observations are straightforward. In the limited number of circumstances of clear and consensual scientific appreciation of an environmental impact link, law will be able to guide nation-state movement to select among control strategies. In other situations, negotiators will face choices where values other than environmental protection are salient and where science is the basis of competing, not converging, advocacy.³²⁴

Corporate Advocacy of Green Management

Expect Multinational Corporations to Advocate Less Need for Regulation Because of Their Green Management Strategies.

For several reasons major private sector enterprises have recognized the value of

³²¹Philip Shabecoff, *A New Name for Peace: International Environmentalism, Sustainable Development, and Democracy* 140–41 (1996).

³²²Nespor, *Environmentalism and the Disaster Strategy*, 19 *UCLA J. Envtl. L. & Pol’y* 211–30 (2001).

³²³John W. Meyer et al., *The Structuring of a World Environmental Regime, 1870–1990*, 51 *Int’l Org.* 623, 645 (1997).

³²⁴A logical possibility in some spheres is that science will discover that legal intervention is too late. Although researchers offered the example to encourage improved resource management, in 2001 scientists reported that overfishing historically was a major cause of ecological extinction of some marine megafauna. Part of the cause was already triggered in the late aboriginal stage. C. Lazaroff, *Historic Overfishing Led to Modern Ocean Problems*, *Environment News Service*, Aug. 14, 2001.

promoting environmental protection policies.³²⁵ To a certain extent, green management of the kind espoused by Ford, DuPont, and major German and Scandinavian companies reflects the values of company executives, but the expectation articulated here is based on the more systemic factors discussed earlier. Green management can save money, it can enhance a firm's relations with its customers, it is a wise marketing technique, and it can improve a company's relationships with insurers and with domestic and international regulators.

As a case example, industry will continue to assert that climate stability can be achieved if business takes a leadership role. Strong initiatives on the part of major multinational corporations to pursue technology-trading approaches, serious commitments by leading CEOs to fundamental production changes, and consumer-driven changes in product types will be seen.

Some corporations will identify solutions to specific climate-altering problems, and markets will disseminate the innovative approaches that they identify. Ford, DuPont, Mitsubishi, BP Amoco, Royal Dutch Shell, United Technologies, and others will see the benefits of taking anticipatory measures to combat climate change.

Major European and other industrialized wealthy nations will continue to hold the position that the private sector must be deeply concerned about the environmental threat of climate change and can profit by being an early adopter. A case in point was the surprising response to the World Bank's Prototype Carbon Fund. It closed its first subscription period (15 January to 10 April 2000) with \$35 million more than expected, almost \$135 million in contributions. The fund sponsors projects designed to produce emission reductions consistent with the Kyoto Protocol. Private companies and government investors will receive a share of the reductions as credits. Canada, Finland, Japan, the Netherlands, Norway, and Sweden have led the way on this initiative.³²⁶ In the United States, the private Joyce Foundation has funded an innovative experiment in trading greenhouse gases by the Chicago Climate Exchange.

Increasing availability of critical information will make the misuse of green discourse risky, and over time the positions that a company publicizes will become part of its culture, driving the decisions and actions of new employees. A related expectation nonetheless persists: the underlying consumption-promoting ethos of the multinational corporation will be at the heart of certain types of environmental degradation. A cleaner Ford continues to affect land patterns and use natural resources in ways ultimately antithetical to climate stabilization, sustainable development, and related environmental goals.³²⁷

The implications of these corporate orientations for international environmental law are twofold. Policymakers will see an ever-expanding inventory of strategies that focus on business's contributions to global environmental stewardship. At the same time, critics will question the actual performance of these approaches and contrast them with potential results of regulation and other government-guided interventions. Policymakers will need to make difficult decisions about the nature of the legal provisions that focus on industry.

³²⁵Michael Porter, *The Competitive Advantage of Nations* (1990); Joseph F.C. DiMento, *The Global Environment and International Law* ch. 3 (2003).

³²⁶International Environment Reporter, May 4, 2000, at 352.

³²⁷In 2000, Ford announced major efforts to make mileage improvements in its sport utility vehicles. The fleet had been among the industry's most profitable, but Ford management concluded that greater company sales could make up profit differences between SUVs and more efficient vehicles and that the increased sales might evolve from a commitment to environmental improvement, International Environment Reporter, Aug. 2, 2000, at 448. Critics consider these initiatives much too modest: the average fuel economy of Ford SUVs was 16 miles per gallon at the time, and environmental organizations such as the U.S. Public Interest Research Group were advocating a standard of 45 miles per gallon. International Environment Reporter, Aug. 2, 2000, at 612.

*Innovations in Compliance Mechanisms***Expect Greater Innovation in Pursuing Compliance With International Environmental Law.**

Legal scholars, policy analysts, and government officials offer many compliance-promoting mechanisms, and several have been introduced into international instruments. They range from establishing participatory mechanisms for making treaties to identifying funds and other economic incentives, to creating ongoing compliance committees. Managerial approaches to achieving international environmental goals will be more widely advocated as criticism of regulatory strategies mounts.

This focus on compliance will nonetheless confront implementation challenges, complicated in the national arena³²⁸ and much more difficult at the supranational level—both under traditional environmental diplomacy and under the managerial innovations.

In introducing innovations, the translation of concepts into dozens of languages across hundreds of countries is an enormous challenge. Where agreement is reached about meaning of terms at one level of abstraction, making the terms significant on the ground can be difficult. Beyond these relatively cosmetic differences are serious and enduring cultural disagreements about the best practices for reaching goals under a rule of law and without developed legal systems.³²⁹ Funding may also be an obstacle to implementing innovative ideas, such as fostering NGO participation or creating compliance accounts, not only because some countries lack money but because of shifting priorities in national budgets. Furthermore, those who commit to implementing a regime must communicate needed changes to numerous agencies, regulated entities, and the public. This is not easily done in many countries.

Some implementation difficulties derive from federalism. Subfederal levels of government may have strong conflicting positions on international treaties, and in some jurisdictions those governments can block effective implementation. Witness the struggle of commonwealth versus state authority in Australia over the question of how to respond to global climate change. In Canada, the full impact of NAAEC has not been realized in part because some provincial governments have not adopted the side agreement.³³⁰

These expectations—a growing rhetoric about and some commitment to a sustainable physical environment (to greening international law), a growing consensus in some global environmental science, a greater convergence of private sector goals and the public interest in environmental protection, and increasing knowledge about ways to achieve compliance—underscore the recommendations offered below for the next generation of international environmental law.

Recommendations for the Structuring of International Environmental Law

Within the context set out above and the context of a pluralistic world of international policy, what can be done to enhance law's role in reaching global preservation? Among the array of available tools, which ones should the international community of sovereign nations select, promote, use, and enforce? Based on experience with successes, based on disappointment with failures, which characteristics of lawmaking and implementation should be emphasized?

³²⁸Jeffrey L. Pressman & Aaron Wildavsky, *Implementation: How Great Expectations in Washington Are Dashed in Oakland* (1973).

³²⁹Sievers, *The Caspian, Regional Seas, and the Case for a Cultural Study of Law*, 13 *Geo. Int'l Evtl. L. Rev.* 361 (2001).

³³⁰As of June 2002, only Alberta, Manitoba, and Quebec had signed the NAAEC side agreement. Personal communication with CEC, June 25, 2000.

Not all of the recommendations address each of the numerous international environmental quality challenges.³³¹ These range from attempts to control separate nonmalicious actions of millions of people to measures against a few individuals who destroy natural resources to achieve a financial or military advantage (international arson on oil fields, illegal movement of toxic materials). Groups of states or individual countries create harm outside their regions, on a single nation downstream or a large air shed that covers many countries. Some destruction, such as burning of the forests in Indonesia or Brazil, involves the deliberate but legal activities of small groups of people or a few nations. Some, such as dumping from cruise ships, come from daily violations of many people. Some manifest themselves immediately in clear and dramatic ways (loss of another species of once abundant fish). Some, such as global warming, will take years if not decades to register as insults.

The history of the performance of international environmental law is one of common characteristics, but it is not explainable by a single dynamic.³³² Remarkably particular at times, generally applicable at others, are factors that promote successful treaty making and implementation. Some are unique to the environmental circumstances, so that addressing them in policy for a different problem will not be useful. Others—those identified by managerial and participation-centered analyses of why nations comply, those of the regime theorists among political science, and those from organizational theory—are relevant to many efforts to influence complex behaviors. Their insights combine to approximate a midlevel theory³³³ of effectiveness of international environmental law. That theory generates some shared recommendations.

Recommendations build on knowledge of what works in the international community. These are not particularly ambitious. The most ambitious strategies are not only unrealistic but are also, in many cases, undesirable. Some should not be implemented. For example, I do not advocate creation of centralized supranational authorities with strong powers. Prerequisites for them to be effective and fair do not exist internationally. Citizens must be watchful of centralizing authority in their own states, and they need to be triply concerned about delegating authority upward to organizations that do not possess records that merit assumption of such power. Unfortunately, some elements of the less effective United Nations agencies remain cases in point.

Considerable progress has already been made. It provides the backdrop for evaluating just how much change recommendations require. As Edith Brown Weiss wrote:

The provisions in the new agreements are generally more stringent than in the previous ones; the range of subject matters is broader; and the provisions for implementation and review are more sophisticated. One encouraging observation from this experience is that the learning curve demonstrated in international environmental law is unexpectedly steep.³³⁴

Although learning by nations has been smooth, implementation has not. Furthermore, each successive attempt to assure implementation and compliance will be scanned with ever more vigilance; nations wonder if the benefits of entering international regimes are worth the sacrifices. The U.S. Senate's Byrd-Hagel resolution during the Kyoto negotiations is instructive.

The mammoth proliferation of international environmental law suggests that the

³³¹Joseph F.C. DiMento, *The Global Environment and International Law* ch. 3 (2003).

³³²Marcello Flores, *Il Secolo-Mondo: Storia del Novecento* (2002).

³³³Robert King Merton, *On Theoretical Sociology* (1967).

³³⁴Edith Brown Weiss, *Environmental Change and International Law* 11–12 (1992).

international community should have a greater experience in its workings before making large and fundamental additions to its corpus. Less frequent adoption of new instruments and more effective implementation of those that exist are needed:

International lawyers . . . should have a special interest in avoiding environmental legal window-dressing or fictitious law making: Legislation without concern for the effectiveness of the norms enacted, or the commitments states enter into, is self-defeating. More time and effort must be spent on strengthening monitoring of compliance and implementation of already existing commitments. Unless international environmental law on the whole . . . remains credible, no progress toward that goal [sustainable development] will be possible.³³⁵

There are a few other points of departure. First, international environmental law contributes to fixing a set of norms and then influences by sanctions and incentives those entities that deviate in some significant way for some significant time from those norms. Second, although there are sound arguments against centralized lawmaking, in select areas it has been effective. The conditions for such action (peacemaking in the former Yugoslavia, selective intervention in Africa) have been particular and special. Occasionally they may exist in the environmental arena. Third, many nonlegal instruments—from environmental education to green management—show promise for achieving environmental protection. To focus on the law is not to deny the utility of other methods. Rather, the purpose here is to highlight where the law has a unique function and to demonstrate how law can be used to channel some of the most effective elements of other instruments. They can then work in parallel to influence collective action. Law is not everything. It is not the only thing. Nor is it impotent (as some have argued in treatments of its deficiencies in general). It is a separate, identifiable institution that influences behavior, even very complicated behavior that creates climate change, destroys the protective ozone shield, and threatens the existence of a species.

Participation-Centered Global Lawmaking

Fundamental to the creation of effective global green law is participatory agreement making by nation-states. A further orientation toward an ongoing, egalitarian, interactive environmental diplomacy is called for. Countries thereby will learn about each other's priorities, not only as those are set out in policy briefings but in face-to-face deliberations. Values will be communicated and interpreted. Negotiators will reach conclusions about the accuracy and trustworthiness of information that is supplied by their peers. Disputes over provisions can be mediated in processes equitable to participants with vastly different international negotiating capabilities.

A discourse with few if any parallels in complexity needs to evolve: it touches on subjects as diverse as tools for monitoring pollutant emissions and effects, human rights, and specified levels of consumption and comfort. Communications must be orchestrated among large numbers of people with different professions, languages, and worldviews.

Despite globalization, including in communication, the amount of misunderstanding, ignorance, and misinterpretation of the positions of people on the other side of boundaries is significant. Perceived differences jeopardize the creation of a common understanding of treaty and other instrument choices. Transactive processes and joint participatory efforts are indispensable to the movement toward consensus in law, as in many other areas of international commerce and policy.

It can be surprising how different cultural perceptions are about the need for international intervention. At the 1999 Seattle meeting on global trade, some delegates from developing countries believed that the U.S. government was

³³⁵Handl, Controlling Implementation and Compliance with International Environmental Commitments: The Rocky Road from Rio, 5 *Colo. J. Int'l Env'tl. L. & Policy* 305, 331 (1994).

responsible for the violent street demonstrations, choreographed to justify the American position on a need for links between trade and environment and labor objectives. Also startling to Western NGOs was the position of some academics and NGO leaders from Africa, Asia, and Latin America that culminated in a statement opposed to including environmental and labor issues. Third World representatives asserted that these goals were promoted for economic gain by the wealthier nations, selectively targeting the developing world.

The tuna embargo against Mexico; the shrimp controversy involving the United States on one side and India, Malaysia, Pakistan, and Thailand on the other; the controversy over contaminants in gasoline involving Venezuela and Brazil as exporters; the concern, principally of the United States, with toxic inhalation hazards associated with inadequately packaged materials; Sweden's audit/assessment of risks associated with transport of hundreds of millions of airbag items; France's ban on chrysotile asbestos, citing a risk of cancer at any exposure; the value of flexibility mechanisms to combat climate change; the need for regulation of genetically modified organisms—each involved strongly held cultural and national differences on subjects of international environmental law.

Ignoring such differences is a formula for treaty stillbirth. Joint and iterative articulation of the nature of an international environmental problem, joint analysis of the strategies that might be used in addressing it, transactional generation of ideas on successful implementation and compliance-promoting activities are essential. Treaty making must involve both governmental negotiators open to learning (including through joint fact finding) as well as teaching and civil society. As the Salzburg Initiative noted, treaty making should implement a “bottom-up” approach to “aggregating increasingly larger clusters of countries” into coalitions that can articulate important negotiating points.³³⁶

Social science provides some theoretical basis for advocating cooperation.³³⁷ “It is a central insight of almost all approaches to international regimes that actors may cooperate and establish international regimes *without* having to sacrifice the pursuit of their own interests.”³³⁸ Gehring's work may be subject to some criticism because the cases he studied do not provide solid support of his theory;³³⁹ nonetheless, the rationale is convincing:

During negotiations the actors gradually develop similar interpretations of recognized facts. Their appraisal of the desirability of certain options for action converges, and coincident expectations of appropriate behaviour emerge on this basis. Common interpretations, views and expectations are the result of a communication process during which understanding is reached. The result is collectively accepted by the actors involved and has already passed the coordination mechanism of the regime . . . The gradual development of collectively agreed views of a social problem and its appropriate solution transforms a group of participating actors into a community.³⁴⁰

In a process that aims to exchange information, rather than impose a position,

³³⁶Larry E. Susskind, *Environmental Diplomacy: Negotiating More Effective Global Agreements* 16 (1994).

³³⁷Thomas Gehring, *Dynamic International Regimes: Institutions for International Environmental Governance* (1994); Robert O. Keohane, *Against Hierarchy: An Institutional Approach to International Environmental Protection*, in *Local Commons and Global Interdependence: Heterogeneity and Cooperation in Two Domains* (R. Keohane & Elinor Ostrom eds., 1995); Peter Haas, *Complex Cooperation: Institutions and Processes in International Resource Management* (1994).

³³⁸Thomas Gehring, *Dynamic International Regimes: Institutions for International Environmental Governance* 482 (1994).

³³⁹Ronald Mitchell, Book Review, *Int'l Envtl. Aff.* 189 (1995) (reviewing Thomas Gehring, *Dynamic International Regimes: Institutions for International Environmental Governance* (1994)).

³⁴⁰Thomas Gehring, *Dynamic International Regimes: Institutions for International Environmental Governance* 483–84 (1994).

what seems obvious to one side at the beginning becomes, under certain negotiating scenarios, more open to understanding by the other side. Compliance with a requirement is influenced by the presence or absence of an actor's participation in articulating norms and rules. This is among the most lasting findings of social psychological and organizational research.³⁴¹ It helps to explain compliance with international law by nation-states, which on the ground must participate as people in groups.³⁴² Dynamics of norm internalization occur and generalize, spread among the nested small groups in an organization, within the institutions in the nations, and within the international organization or regime. Many leading students of international law have described the dynamics of norm creation, internalization, removal of barriers linked to ignorance, and creation of legitimacy. The legal scholar Harold Koh further develops the understandings made in part by professors Chayes and Fisher in the international context, offering what he calls "the missing causal element," transnational legal process:

Such a process can be viewed as having three phases. One or more transnational actors provokes an interaction (or series of interactions) with another, which forces an interpretation or enunciation of the global norm applicable to the situation. By so doing, the moving party seeks not simply to coerce the other party, but to internalize the new interpretation of the international norm into the other party's internal normative system. The aim is to "bind" that other party to obey the interpretation as part of its internal value set. Such a transnational legal process is normative, dynamic, and constitutive. The transaction generates a legal rule which will guide future transnational interactions between the parties; future transactions will further internalize those norms; and eventually, repeated participation in the process will help to reconstitute the interests and even the identities of the participants in the process.³⁴³

Much of the research on participatory dynamics involves problems addressed at the small group and community levels. Application internationally, however, is merited for several reasons. First, the international arena is composed of dynamic aggregations of smaller-scale levels. Negotiations take place among groups and communities of experts. Second, domestic policy and lawmaking are more mature than in the international community, but they are similar in several fundamental ways. Entities that have chosen to come together to control themselves for common benefit are seeking the best ways to do so, with imperfect information and often different cultural understandings. There is a need to establish or reaffirm legitimacy. There is a need to create understandability and clarity.

These appreciations not only provide a rationale for participation-based international law but also generate tool kits and instruments of active management.³⁴⁴ They include transparency, reporting and data collection, mechanisms of verification and monitoring aids, dispute settlement fora, capacity building, and strategic review and audit/assessment. Other helpful conditions include iterative functionalism. David Lewis Feldman, an international environmental analyst, defines it as "the replication and gradual refinement of procedures, rules, and obligations negotiated by nation-states in previous agreements in larger,

³⁴¹Joseph DiMento, *Managing Environmental Change: A Legal and Behavioral Perspective* (1976); Joseph DiMento, *Environmental Law and American Business: Dilemmas of Compliance* (1986).

³⁴²Graham Allison, *Essence of Decision: Explaining the Cuban Missile Crisis* (1971).

³⁴³Koh, *Why Do Nations Obey International Law?*, 106 *Yale L.J.* 2599 (1997).

³⁴⁴Koh, *Why Do Nations Obey International Law?*, 106 *Yale L.J.* 2599 (1997); Chayes and Chayes, *Compliance Without Enforcement: State Behavior Under Regulatory Regimes*, 7 *Negotiation J.* 311 (1991); Chayes and Chayes, *On Compliance*, 47 *Int'l Org.* 175 (1993); Abram Chayes & Antonia Handler Chayes, *The New Sovereignty: Compliance with International Regulatory Agreements* (1995).

more complex contexts.”³⁴⁵ Supportive circumstances include a comparable voice among countries, an equitable commitment of resources, a careful selection of activities determined on the basis of organizational consensus and expertise, and an earned trust by a secretariat and its subsidiary bodies.

This checklist provides some of the bones of a skeleton of a lawmaking mechanism and a body of law. It needs to be fleshed out with details: What does transparency mean in the CITES context? What data collection is most important in the Black Sea international legal regime? How is confidence created among such a large number of representatives, often changing even within a nation, in a Conference of the Parties on climate change or transboundary hazardous waste?

Not only will the body of resulting law reflect achievable substantive goals, but it will also have the important additional element of implementability. Professor Ronnie Lipschutz asks about some of the activities: “The key question is: Can all of these efforts, taken together, substitute completely for international agreements on environmental cooperation? No, but it is possible that they can form the basis for systems of implementation of those agreements.”³⁴⁶

Advocating participatory treaty making in a world of billions of people may sound unrealistic. It is clear that some daunting challenges to this model exist for some international environmental goals. In confronting problems that affect hundreds of nations, using different languages, accepting responsibility differentially, emphasizing drastically different values, in facing a task that requires addressing a large number of issues, effective process models are not obvious. It is not that the Climate Change Secretariat does not know how to structure meetings, negotiations, and interactions to assure cooperative resolution; it is that no one is confident about how to do that for unprecedented environmental problems.

The November 2000 Conference of the Parties of the global climate change regime represented to some a learning process. To others it was a failure. *New York Times* columnist Andrew Revkin explained a part of the challenge:

Part of the problem was also a cultural rift, negotiators on both sides said. The European Union, where Green Party politics is a driving force, never found a way to compromise with the United States, where the environmental movement is increasingly working with industries to influence change. “It is extremely difficult to negotiate between groups where political cultures are so different,” Dominique Voynet, the French Environment Minister and a Green Party member, told the plenary sessions.³⁴⁷

It is clear, however, that interacting with people over time in structured settings entered to achieve a generally accepted outcome is more useful for creating common understandings of how to get to goals (or how to refine them) than, say, having small groups in hierarchical situations dictate ends and means through resort to their own views. The numbers of people who must be influenced are in the tens of thousands. To the extent that all regions wisely use and coordinate resources, meet regularly, focus on leading environmental problems, and mutually choose strategies that can influence behavior, a relatively small percentage of the world population can be significant. “Interaction breeds loyalties both to persons and more often to causes that may transcend a particular representative’s instructions and especially

³⁴⁵David Lewis Feldman, *Interacting Functionalism and Climate Management Organizations: From Intergovernmental Panel on Climate Change to Intergovernmental Negotiating Committee*, in *International Organizations and Environmental Policy* 188 (Robert Bartlett et al. ed., 1995).

³⁴⁶Ronnie D. Lipschutz, *Local Action, Bioregional Politics, and Transnational Collaborative Networks in Policy Responses to Global Environmental Change* 23 (1992) (paper presented to the annual meeting of the American Political Science Association, Sept. 1992).

³⁴⁷Andrew C. Revkin, *Climate Pact Eludes Major Players*, *Int’l Herald Trib.*, Nov. 27, 2000 (2000).

the vaguely expressed directives that emanate from most governments in respect of international political enterprises far from home.”³⁴⁸

Conversely, small numbers of powerful actors who choose not to participate in lawmaking can seriously counter environmental protection. The global climate treaty and the treaty on the international banning of land mines are important illustrations. Realpolitik analyses consider these efforts weak in the face of U.S. refusal to engage actively. For some law challenges it remains an open question whether progress is possible without a reorientation of a treaty-making style that aims to impose and persuade rather than to cooperate and create.

Command and Control and Regulatory Systems

There remains a selective, customized role for regulatory systems. *Global Environment Outlook* concluded that one form, called command-and-control standards in domestic settings, is “effective in many cases in terms of short-term environmental improvements,” although costs of implementation, enforcement, and compliance are high and may hinder economic development.³⁴⁹ Although such policies have proven effective for pollution control, they are less useful for resolution of problems associated with management, protection, and conservation of natural resources, “particularly when a large number of different groups and people use these resources.”³⁵⁰ Part of the reason the applicability of command and control is seen as limited is that environmental issues are said to have developed from “simple (local, attributable, quantifiable, easy-to-solve, low-risk, and with short time horizons) to complex (global, non-attributable, non-quantifiable, difficult-to-solve, high-risk, and with long time frames.”³⁵¹ The comparison may be too stark and incomplete, but this conclusion (simple to complex) is useful for sorting out the approaches that work under specified conditions and for specified environmental problems. Many environmental problems in the past clearly were high risk and had long time horizons measured by environmental impact perseverance. Also, some were not easily attributable; witness the morass in assigning liability under the U.S. Superfund law. It serves little purpose to say that today’s environmental problems are nonattributable. They are not all attributable to the same sources, but attribution can be made.³⁵² Further, many of the problems to be addressed manifest themselves not globally but in transboundary and regional contexts.

Mainstream regulatory efforts have long histories in domestic settings and in a few international settings.³⁵³ They provide certain advantages in selective and strategic applications where states have sufficiently agreed on objectives. As Downs and his colleagues remind us, we know quite a bit about the impact of enforcement coupled with managerial variables such as transparency. They contrast this knowledge with “ideas and relative prices,” which are not well-specified strategies that direct policymakers to ways to increase compliance. “We know relatively little about

³⁴⁸Paul C. Szasz, *International Norm Making*, in *Environmental Change and International Law* 74 (Edith Brown Weiss ed., 1992).

³⁴⁹United Nations Environment Programme, *The Global Environment Outlook 2* (1997).

³⁵⁰United Nations Environment Programme, *The Global Environment Outlook 2* (1997).

³⁵¹United Nations Environment Programme, *The Global Environment Outlook* 131 (1997).

³⁵²Joseph F.C. DiMento, *The Global Environment and International Law* ch. 3 (2003).

³⁵³What is regulatory is a matter of semantics. Some analysts include taxes; others do not. Jonathan Weiner lists technology-based requirements, harmonized policies, pollution taxes, fixed performance targets, tradeable allowances, as well as command and control, property rules, etc. Weiner, *Global Environmental Regulation: Instrument Choice in Legal Context*, 108 *Yale L.J.* 677 (1999).

how to use ideas to change preferences about discount rates, consumption versus savings, or the environment.³⁵⁴

One must look critically at the wholesale rejection of regulatory approaches. Where do they originate? To what are they compared? They arise in part from frustration with implementation, but implementation is often attempted by agencies that have excessive mandates and limited resources. Problems are not always inherent in the strategy itself. Sometimes command and control is theoretically contrasted with economic incentives, self-regulatory activities, environmental management, and managerial thinking, which have limited histories and lack evaluation with real world complexity.

Certain international problems cannot avoid regulatory solutions. Ozone depletion and species extinction would not have lessened without rules and sanctions. Should the dominant understanding of the causes and controls of climate change continue, a greater commitment to a regulatory regime seems inevitable. Some nations will adopt self-controlling rules without the need for supranational requirements, but others will not. External pressure will be necessary, including providing national leaders with support for a decision that (although essential) is unpopular domestically.

Even in a climate stabilization system characterized primarily by flexibility mechanisms, market force, and trading, there remains a need for some kinds of sanctions and liability rules if reports on greenhouse gas emission reductions are not accurate.³⁵⁵ Other initiatives include requiring signatories to enforce effectively their environmental laws that already regulate carbon emissions or to pursue vigorously regulatory strategies provided for but not yet implemented in domestic law.

Whether typified as regulatory or otherwise, there is a need to clarify several elements of the system for climate stabilization. We must still determine timetables, further define terms (What is a forest? Under what circumstances does it qualify as a sink?), decide percentages of commitments that can be met by alternative means, and determine who will monitor and certify emissions reductions. Finally, however characterized, rates for taxation strategies must be established, monitoring must be done, and penalties must be assessed for failure to pay.

Certainly reliance on centralized top-down control, including through a supranational authority, should be limited. Sir Crispin Tickell, a former ambassador to the United Nations from the United Kingdom, foresaw a world police force operating under the authority of the Security Council "to compel environmental rectitude," although he concedes that the thought "is somewhat distasteful."³⁵⁶ It also is highly unrealistic and fraught with serious problems of value differences and implementation challenges and should not be a part of a regulatory model. In 1989 at The Hague, the prime ministers of France, Holland, and Norway suggested considering the creation of a world environmental legislative body to draw up global regulations and impose sanctions on noncompliers. The idea did not go forward because most governments were unwilling to cede important sovereign powers. Even the sponsoring nations were confident they would never have to be bound by their own ideas.³⁵⁷ There may be extremely exceptional circumstances that justify suggestions such as Shabecoff's:

³⁵⁴Downs, Rocke and Barsoom, *Is the Good News about Compliance Good News about Cooperation?*, 50 *Int'l Org.* 379, 398 (1996).

³⁵⁵Nanda, *The Kyoto Protocol on Climate Change and the Challenges to Its Implementation: A Commentary*, 10 *Colo. J. Int'l Env'tl. L. & Pol'y* 319 (1999).

³⁵⁶Philip Shabecoff, *A New Name for Peace: International Environmentalism, Sustainable Development, and Democracy* 118 (1996).

³⁵⁷Philip Shabecoff, *A New Name for Peace: International Environmentalism, Sustainable Development, and Democracy* 121 (1996).

Military forces may increasingly be deployed to defend global security. Not only would the military engage in a precautionary role of monitoring and research but could also be called on to carry out its traditional “coercive” function to protect the global commons from destruction and to enforce international environmental treaties.³⁵⁸ Rare, indeed, are scenarios that indicate the latter actions.

An international environmental agency within the United Nations with power and authority along the lines of the International Labor Organization has also been proposed.³⁵⁹ It would rule in a super treaty system that sets environmental standards of international applicability by a two-thirds majority, and it would promote compliance. In light of the considerable power of trade and commercial enterprises, including the WTO, the proposal has some appeal. A world environmental organization could balance the excessive focus on progress measured in narrowly defined economic terms and seen as mainly linked to free trade. It could have substantial symbolic value, much like a constitutional provision for environmental protection in a domestic legal system. It could bring environmental interests nearer to an equal footing with commercial interests.

Such an organization, however, could not be effective until a consensus develops about its need, including recognition that the benefits of trade must be put into a context of localized costs. Second, it might well mushroom into a large bureaucracy that would operate heavily according to narrow political considerations, as many other international organizations do. Once established, it likely would not be sufficiently funded. This treatment would further erode the credibility of international environmental law. Furthermore, conflict with evolving and fragile but promising regional bodies is probable. A major question is what would be included and what would be outside the jurisdiction and subject matter of the organization. The parallel but much less ambitious environmental regime, the NAFTA Commission for Environmental Cooperation (CEC), in excluding several significant enterprises from the definition of environment, disappointed many initial supporters.

Command, Control, and Enforcement

The question of how compliance with the regime is to be fostered remains, whatever strategy is emphasized. Means range widely. They include domestic NGOs empowered to hold governments accountable for their actions or inactions, trade measures, citizen submission processes, direct private actor liability with subsidiary state liability invoked when a private operator cannot meet the obligation, financial guarantees such as bond posting, an international claims commission, procedural rules developed to ease barriers to effective enforcement, alternative dispute resolution techniques, and (in very limited settings) mandated criminal sanctions.

Focusing first on the most draconian choice, criminal sanctions have only a very circumscribed role in international environmental law. Nonetheless, a recognizable history of its consideration and advocacy exists. A major United Nations effort resulted in several research reports and a request to the Secretary General. This encouraged the incorporation, where appropriate, of international environmental law provisions by which states would be expected to enact sanctions under national criminal law and to examine the possibilities “of further harmonization of the provisions of existing international instruments entailing penal sanctions under national criminal law.”³⁶⁰

³⁵⁸Philip Shabecoff, *A New Name for Peace: International Environmentalism, Sustainable Development, and Democracy* 118 (1996).

³⁵⁹Daniel C. Esty, *Greening the GATT: Trade Environment and the Future* (1994); Palmer, *New Ways to Make International Environmental Law*, 86 *Am. J. Int'l L.* 259 (1992).

³⁶⁰Resolution 45/121, Dec. 14, 1990.

Many environmental conventions include penal provisions.³⁶¹ Some, such as the Basel Convention, require parties to take appropriate measures to ensure the application and the punishment of infractions. A second type, exemplified by the Convention for the Preservation of Fur Seals in the North Pacific, requires parties to enact and enforce necessary legislation to make effective the provisions “with appropriate penalties for violation.”³⁶² A third type makes violations punishable under national law. The Convention on the Physical Protection of Nuclear Materials is an example. A fourth approach focuses on legislation and other measures necessary “for the purpose of giving effect” to the agreement. There are also numerous bilateral, regional, and multilateral agreements of this kind, including a 1973 agreement to protect polar bears.³⁶³ The Convention on the Protection of the Environment Through Criminal Law of the Council of Europe would obligate signatories to impose financial sanctions or imprisonment for illegal movements of hazardous waste and would apply extraterritorially. Nonetheless, few examples can be found of actual use of criminal sanctions outside domestic law, and there is no international environmental community that is a pressure group for criminal law enforcement.

Some hope to create an international criminal forum. In 1998 the United Nations Diplomatic Conference of Plenipotentiaries on the Establishment of an International Criminal Court (the Rome Conference) adopted the Rome Statute of the International Criminal Court. The statute’s preamble affirmed “that the most serious crimes of concern to the international community as a whole must not go unpunished and that their effective prosecution must be ensured by taking measures at the national level and by enhancing international cooperation.”³⁶⁴ Article 1 established an International Criminal Court at The Hague that “may exercise its functions and powers . . . on the territory of any State Party and, by special agreement, on the territory of any other State.”³⁶⁵

Crimes within the jurisdiction of the court are limited to the most serious international offenses, such as genocide. War crimes for which the court has jurisdiction include, as relevant to the environment, “extensive destruction and appropriation of property, not justified by military necessity and carried out unlawfully and wantonly” and

intentionally launching an attack in the knowledge that such attack will cause incidental loss of life or injury to civilians or damage to civilian objects or widespread, long-term and severe damage to the natural environment which would be clearly excessive in relation to the concrete and direct overall military advantage anticipated.³⁶⁶

Among the laws that the court will consult are applicable treaties and the principles and rules of international law, including the established principles of the international law of armed conflict. In certain circumstances it will also apply general principles of law derived by the court from national legal systems, including, as appropriate, the laws of states that would normally exercise jurisdiction over the crime. This language could encompass domestic environmental crime statutes.

Certainly, some actions merit response with criminal sanctions. The application of penal law philosophically and from a policy perspective needs to be treated seriously for general deterrence purposes in cases of repeated violations.

³⁶¹Cho, *Emergence of International Environmental Criminal Law?*, 19 *UCLA J. Envtl L. & Pol’y* 11 (2001).

³⁶²Convention for the Preservation of Fur Seals, July 7, 1911, Treaty Series No. 564, 37 Statutes at Large 1542.

³⁶³Cho, *Emergence of International Environmental Criminal Law?*, 19 *UCLA J. Envtl L. & Pol’y* 11 (2001).

³⁶⁴Rome Statute of the International Criminal Court, at preamble, U.N. Doc. A/CONF.183/9 (1998) (entered into force July 1, 2002).

³⁶⁵Rome Statute of the International Criminal Court, art. 4, U.N. Doc. A/CONF.183/9 (1998).

³⁶⁶Rome Statute of the International Criminal Court, art. 8, U.N. Doc. A/CONF.183/9 (1998).

The symbolic value of the criminal sanction can be immense. As it does at the domestic level, it can communicate the importance to the international community of deliberate destruction of environmental resources. It can set out lines beyond which no civilized nation or one of its constituent entities or one of its residents can go. One such line is in the draft articles of the International Law Commission, which includes criminal responsibility for “a serious breach of an international obligation of essential importance for the safeguarding and preservation of the human environment.”³⁶⁷ Another factor equates serious deliberate environmental degradation with a violation of human rights. In the human rights sphere, there is close to consensus that criminal sanctions are appropriate for punishment of violations.

Use of the criminal sanction internationally must be viewed with very modest expectations. Among the few instances where international law has resorted to criminal sanctions, only a small number have been successful. In certain limited circumstances the world community can mobilize itself to locate alleged perpetrators of heinous international environmental crimes, achieve jurisdiction over them, subject them to fair and impartial trials, and apply meaningful criminal sanctions if the accused are found guilty. Strategies should be contextual. For deliberate destructive actions aimed at securing an unfair advantage or at meeting a military strategic objective, resort to a seated or ad hoc criminal tribunal is merited. But those conditions will be rare.

For other enforcement goals, continued movement toward civil liability is more advisable. There have been some promising steps. UNEP encourages states to develop a civil liability regime. The 1982 Jeddah Regional Convention on the Protection of the Red Sea and the Gulf of Aden Environment introduced its consideration. The Law of the Sea Convention has gone perhaps as far as any international instrument in this area:

With the objective of assuring prompt and adequate compensation in respect of all damage caused by pollution of the marine environment, States shall cooperate in the implementation of existing international law and the further development of international law relating to responsibility and liability for the audit/assessment of and compensation for damage and the settlement of related disputes, as well as, where appropriate, development of criteria and procedures for payment of adequate compensation, such as compulsory insurance or compensation funds.³⁶⁸

In 1997 the Institute of International Law adopted a resolution declaring that the “breach of an obligation of environmental protection established under international law engages responsibility of the State (international responsibility), entailing as a consequence the obligation to reestablish the original position or to pay compensation.”³⁶⁹ It called for environmental regimes to “include specific rules on responsibility and liability” and “strict liability of operators as the normal standard.”³⁷⁰

Once adequate substantive liability rules are put into law, they must be accessible. In 1960 the Paris Convention and in 1963 the Vienna Convention required victims of nuclear damage to make claims in fora extremely far from the point of damage. By their terms they do not clearly allow for claims for environmental damage, al-

³⁶⁷International Law Commission Draft Articles on State Responsibility art. 1(d) (1976).

³⁶⁸The Law of the Sea Convention, in article 235(3) of the 1982 UNCLOS, 21 I.L.M. 1245, 1315 (Nov. 1982).

³⁶⁹Institute of International Law, Responsibility and Liability Under International Law for Environmental Damage art. 1 (Sept. 4, 1997).

³⁷⁰Institute of International Law, Responsibility and Liability Under International Law for Environmental Damage arts. 2, 5 (Sept. 4, 1997).

though increased acceptance of that view has been noted.³⁷¹ In the Bhopal disaster, releases of a toxic chemical from a Union Carbide factory in India led to the death of thousands and injury to hundreds of thousands. There legal liability and access to justice were problems in India and the United States.

In general, movement toward a more formal understanding of the responsibilities of nations and the private sector adds an element of seriousness to the statements countries sign about the environment. Required is:

The establishment of procedural safeguards, presumptions, rules of evidence and interpretation which define the legal process, including the notions of fault, accountability and blameworthiness Such settlement may be weak in that there are no police to enforce it. But as it inevitably creates a norm (instead of applying one) . . . (quoting Sir Robert Jennings) “A plea that X is depleting the ozone layer may be legally less effective than a plea that, in so doing, X is not only depleting the ozone layer but also, being in breach of the 1985 Vienna Convention on the Ozone Layer, is in breach of the general international law of treaties and of its cardinal principle of *pacta sunt servanda*.”³⁷²

Hortatory approaches to increase compliance also deserve further use. These small steps can have a greater potential to be effective in certain circumstances than that of sanctioning efforts. For example, if a member of the International Labor Organization fails to carry out a recommendation of the commission, the International Labor Conference may take any action “it may deem wise and expedient to secure compliance therewith.” Reports may be required from the members and examined by a committee of experts. The experts may note with “concern” or “regret” the implementation status of a country. Annually, a committee of standards may single out serious cases of noncompliance or violation. This negative publicity holds promise for improving the behavior of a member state—and even a nonmember state.³⁷³

Hortatory statements when emphasized by respected spokespeople or energetic diplomats can also make a difference in the world’s reactions to suggested legal reforms. The leadership styles of Mostafa Tolba of UNEP and Maurice Strong are effective. Personality cannot be cloned, but it is worthwhile to seek and to support committed leaders who prioritize compliance with international agreements. Persistence and charisma effects generalize to the largest global arenas.

NGO Involvement

A proper role for NGOs must be created, but what status should NGOs be granted in negotiating treaties and in meetings of the parties?³⁷⁴ How formal a role in implementation should they assume? The amount of authority given to nonofficial actors is an important international policy matter.

Since citizen participation became widespread in the sixties in the War on Poverty in the United States, it has become a goal impossible to deny. It has meant

³⁷¹Philippe Sands, *Principles of International Law 1: Frameworks, Standards, and Implementation* 161 (1995).

³⁷²Philippe Sands, *Principles of International Law 1: Frameworks, Standards, and Implementation* 161 (1995).

³⁷³Marti Koskenniemi, *New Institutions and Procedures for Implementation Control and Reaction*, in *Greening International Institutions* 246 (Jacob Werksmann ed., 1996).

³⁷⁴The numbers of these organizations are impressive. Massam and Earl-Goulet, limiting their scope to only 14 Central and Eastern European countries, analyzed 1,700 environmental nongovernmental organizations. Massam and Goulet, *Environmental Nongovernmental Organizations in Central and Eastern Europe’s Contribution to Civil Society*, 9 *Int’l Env’tl. Aff.* 127 (1997). At about the same time—1994—the count of all intergovernmental organizations was about 1,700. Meyer, *The Structuring of a World Environmental Regime, 1870 to 1990*, 51 *Int’l Org.* 623 (1997). Meyer put the count of NGOs with liaison with the UNEP Environmental Liaison Center at more than 10,000 by the mid-1990s. Meyer, *The Structuring of a World Environmental Regime, 1870 to 1990*, 51 *Int’l Org.* 623 (1997).

creating roles for individuals and groups who do not have official governmental positions so that they can become involved in decisionmaking. Citizens engage in activities ranging from commenting in public hearings to serving on committees that have specified governmental authority. Examples of the use and misuse of this approach are legion in both the social and environmental movements.

In the newer generation of activities, organized private citizens with interests in the international environment and NGOs or environmental NGOs have places at the table with negotiators and decision makers. They (1) advise representatives to treaty making in written and verbal forms, (2) introduce scientific background materials, and (3) engage dispute resolution processes by bringing actions against parties or entities within parties for failure to meet the objectives of a treaty.

Unofficial actors may help official representatives recognize and build on innovative strategies for policy development and implementation. They may be active locally in suggesting and implementing policies that are state treaty responsibilities. They may influence green attitudes toward risky behavior and promote consumer practices that enhance the viability of legal instruments.³⁷⁵ NGOs may offer examples for national and international action. Greenpeace and other environmental NGOs have for several decades suggested policies outside the boundaries of official national positions, but they are influential in making countries' positions more environmentally aggressive. Internal politics may constrain the stances taken by nation-states at international meetings. Politics may be short-term and shortsighted and not representative of even the subject country's interests. The posture of the United States during the Earth Summit negotiations was a "textbook illustration that the *realpolitik* that motivates participants in international negotiations is not necessarily or even usually the interests of their nation. Their positions are frequently driven instead by the narrow and immediate partisan political needs of whoever is in power."³⁷⁶ NGOs can take positions that transcend the routine output of individual administrations. They can also be a force to prevent backsliding by a nation-state, to counter its free-riding (benefiting from a multilateral agreement that it does not support), and to expose instances of noncompliance.³⁷⁷

NGOs have played important roles in several international spheres. At the Rio meeting, their presence was invaluable for realizing elements of an agenda that some states had characterized as too aggressive. Organizations active at Rio were the Third World Network and the Environmental Liaison Center for the developing-country NGOs, the Environmental Law Institute, the U.S. Citizens Network, the Consortium for Action to Protect the Earth, Friends of the Earth, the Sierra Club, the Environmental Defense Fund, the Natural Resources Defense Council, the National Wildlife Federation, the National Audubon Society, the European Environment Bureau, and the Congress of NGOs (which has United Nations consultative status).³⁷⁸ NGOs were visible and involved in negotiations for the Montreal Protocol in a way modeled on CITES, which strongly endorses their participation. At the global climate change Conferences of the Parties, NGOs from all over the world are advocating positions and providing audits/assessments of scientific information and recommended strategies. They number in the hundreds, and there is a rational process for their recognition. Officially under the regime, the Conference of the Parties

³⁷⁵Drumbl, Does Sharing Know Its Limits? Thoughts on Implementing International Agreements: A Review of National Environmental Policies, 18 Va. Env'tl. L.J. 281 (1999).

³⁷⁶Philip Shabecoff, A New Name for Peace: International Environmentalism, Sustainable Development, and Democracy 136 (1996).

³⁷⁷Improving Compliance with International Environmental Law (J. Cameron, J. Werksman & P. Roderick eds., 1996).

³⁷⁸Philip Shabecoff, A New Name for Peace: International Environmentalism, Sustainable Development, and Democracy 150 (1996).

or the Secretariat can utilize NGO services, cooperation, and information,³⁷⁹ admit NGOs to sessions,³⁸⁰ engage “legal entities” to work on emission reduction programs,³⁸¹ and coordinate expert review teams that include NGO representatives.³⁸² NGOs can comment on the scientific basis for a recommendation. They sit as observers of all open meetings at the conference and have regular contact, including in environmental NGO briefings.

The Land Mines Treaty is another example of effective NGO involvement. Among the factors linked to success of this initiative (in addition to clearly specified deadlines and outcomes realizable in a reasonable period of time) was the strategic coalition of nongovernmental groups that came together with national entities; they undertook a campaign-style diplomacy that overcame the staid diplomatic resistance of some states.

NGOs can contribute distinctive skills and resources that promote international cooperation, and they may enhance the abilities of states to regulate globally,³⁸³ but the long-term effects of NGO participation on the international system are not clear. Wider participation is not an unmitigated good. While NGO participation eases political pressures (often from the same groups) and enhances the ability of states to create and maintain international regulatory rules, such participation brings with it dangers of capture, missed opportunities, and slower, more complex negotiations.³⁸⁴ In short, for environmental lawmaking, “civil society is not inherently ‘good’ and state power ‘bad.’”³⁸⁵

Several other caveats exist. NGO participation usually heightens influence of the developed nations to the further disadvantage of the Third World. Purely logistically the large numbers of NGOs may be difficult to accommodate. Where not prohibitively numerous, NGO commentary may be irrelevant or it may displace useful negotiation by states. Accommodating numerous NGO positions may result in “least common denominator” policy positions or harmonization downward of international rules.³⁸⁶ Sometimes NGO presence does not add fresh and necessary perspectives; rather, certain NGOs exist for exclusionary or nationalistic purposes. Others, especially in regions with immense competition for limited external resources, work mainly to promote their own goals. They may, as in the Caspian Sea region, effect a “negative civil society” that is no more than a “counter-productive welfare program.”³⁸⁷ Nearby, BSEP head Laurence Mee stated:

Where are the Black Sea NGOs in all of this? Sadly, their role is often as weak as the governmental agencies. In many cases, they are disconnected from the “grass roots” of society and have become special interest “clubs” of individuals who huddle together

³⁷⁹United Nations Framework Convention on Climate Change, May 9, 1992, art. 7.2(1), 32 I.L.M. 848 (entered into force, Mar. 21, 2002).

³⁸⁰United Nations Framework Convention on Climate Change, May 9, 1992, art. 7(6), 32 I.L.M. 848.

³⁸¹Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997, art. 6.3, 37 I.L.M. 22, U.N. Doc. FCCC/CP/L.7/Add I.

³⁸²Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997, art. 8, 37 I.L.M. 22, U.N. Doc. FCCC/CP/L.7/Add I.

³⁸³Charnovitz, Participation of Nongovernmental Organizations in the World Trade Organization, 17 U. Pa. J. Int'l Econ. L. 331 (1998).

³⁸⁴Raustiala, States, NGOs, and International Environmental Institutions, 41 Int'l Stud. Q. 719, 737 (1997).

³⁸⁵Raustiala, States, NGOs, and International Environmental Institutions, 41 Int'l Stud. Q. 719, 726 (1997).

³⁸⁶Raustiala, The Participatory Revolution in International Environmental Law, 21 Harv. Envtl. L. Rev. 537 (1997).

³⁸⁷Sievers, The Caspian, Regional Seas, and the Case for a Cultural Study of Law, 13 Geo. Int'l Envtl. L. Rev. 361, 394 (2001).

shielding themselves from the outside world It sometimes surprises me . . . that so much energy is put into meetings rather than “hands on” activities.³⁸⁸

If international law is to behave more like other law, NGOs should not be decision makers. Their views should be solicited, and they should be given adequate time, within reason, to present to official bodies. But NGOs are self-appointed and not necessarily democratically representative, although they must respond to the values and concerns of their members. They should not be able to bootstrap themselves into positions filled by people who must meet the stringent appointment and review processes of international law. Where NGOs promote interests not otherwise represented, however, their roles in treaty making and implementation should be more central and stronger. Third parties can legitimately and effectively represent the interests of nature and its species. Although details remain as to who should be chosen to represent, these can be addressed, as Christopher Stone has attempted to do in his call to establish a system of guardians to defend the global commons.³⁸⁹

NGOs played an appropriate role during discussions of the Montreal Protocol. The protocol was negotiated under a “polycentric model of decision making.”³⁹⁰ “Environmentalists, scientists, corporate executives, and other outside interests, including the media, were integral parts of the process, pressing their own points of view . . . a more open, democratized diplomacy, vastly different from the diplomacy of traditional *realpolitik*.”³⁹¹

NGOs can also be influential in decisions *not* to participate, as they were in response to a 1999 invitation by the Organization for Economic Cooperation and Development to discuss exemptions of certain waste shipments from the Basel Convention. They reasoned that by being involved they would be a part of a process undermining the Basel waste trade ban.³⁹²

Finally, international law can promote productive activities among NGOs, even if these are only of an advisory nature. Just as collaboration among nation-state representatives fosters appreciation of strongly held, but previously not understood, positions of other nations, NGO interactions can foster understandings needed to create and implement international law. Models include formal government-funded groups, such as the Joint Public Advisory Committee of the CEC, and more informal processes, such as that associated with the Black Sea Environmental Program or Yellowstone to Yukon program.³⁹³

Environmental Impact Audit/Assessment

Environmental impact audit/assessment (EIA) should be undertaken at several steps of regime creation. International circumstances are sufficiently distinctive to merit advocacy of analysis of proposed projects that can have a major environmental effect, despite deserved criticisms in regard to domestic law use.

Some critics consider EIA to be overly focused on process, to give to citizens the appearance of involvement in decision making while limiting their actual substantive influence, to be expensive, and to be insufficiently controlled to be actually influential. However, influencing decision-makers through information presentation,

³⁸⁸UNDP et al, Black Sea Environmental Programme: 1997 Annual Report iii (1998).

³⁸⁹Christopher Stone, *The Gnat Is Older Than the Man: Global Environment and Human Agenda* 119–20 (1993).

³⁹⁰Philip Shabecoff, *A New Name for Peace: International Environmentalism, Sustainable Development, and Democracy* 125 (1996).

³⁹¹Philip Shabecoff, *A New Name for Peace: International Environmentalism, Sustainable Development, and Democracy* 125 (1996).

³⁹²International Environment Reporter, Nov. 10, 1999, at 919.

³⁹³Suzanne Levesque, *From Yellowstone to Yukon: Combining Science and Activism to Shape Public Opinion and Policy* (2000).

turning a focus to environmentally controversial projects, calling attention to the differential environmental effects of projects across boundaries, and adding new sources of data to the decision-making record are important functions. EIA can channel discussion of highly charged international issues into manageable fora. President Clinton's November 1999 executive order, requiring environmental review of proposed trade agreements, is an example.³⁹⁴ Written reviews, undertaken early in both bilateral and multilateral negotiations, were to be monitored by both the Council on Environmental Quality and the Office of the U.S. Trade Representative and made widely available for public comment.³⁹⁵ The World Bank's attempts to address environmental impacts associated with its lending is another step toward making the bank's actions more transparent and thus more subject to evaluation.³⁹⁶

Some scholars conclude that EIA is already an element of customary international law,³⁹⁷ and regional impact audit/assessment regimes exist in a small number of settings.³⁹⁸ Experiences with EIA in the Economic Commission for Europe, OECD, the European Community, and NAAEC have been promising. The analytical framework for the latter was developed collaboratively by the parties, subjected to rigorous expert review, and customized to make application realistic. It is being applied progressively to various environmental stressors. The concept has been adopted in the Protocol on Environmental Protection to the Antarctic Treaty³⁹⁹ and is the subject of the Convention on Environmental Impact Audit/Assessment in a Transboundary Context, done at Espo, Finland, in 1991.⁴⁰⁰ That treaty would require each party to establish an EIA process that permits public participation, to undertake an EIA for listed projects that are likely to have adverse transboundary impacts, and to notify affected parties of proposed activities. Conversely, the climate change regime fails to undertake adequate environmental impact audit/assessment of proposed policy choices.⁴⁰¹ Needed is more audit/assessment of policy alternatives, including technology-based approaches and those based on new economic and ecological strategies.

Guidelines that parallel those developed by nation-states are necessary: what is a major action that affects the quality of the regional or world environment? It is also necessary to alter the rules "widely provided" that the state proposing is the only determinor of the likelihood or seriousness of adverse impact and that the conclusion of the source state is final.⁴⁰² Broad access to the creation of the audits/assessments and broad dissemination of results, including to the public, should be provided. To build a strong EIA process internationally, other questions need to be considered,⁴⁰³ but they do not raise insurmountable negotiating issues.

EIA procedures and knowledge-based strategies build on the public's right to know and to have access to relevant information about environmental issues that

³⁹⁴Environmental Review of Trade Agreements. Exec. Order No. 13141, 64 Fed. Reg. 63169 (Nov. 18, 1999).

³⁹⁵International Environment Reporter, Nov. 24, 1999, at 948.

³⁹⁶International Environment Reporter, Sept. 24, 1999, at 798.

³⁹⁷David Hunter, James Salzman & Durwood Zaelke, *International Environmental Law and Policy* 214 (1998).

³⁹⁸Knox, *The Myth and Reality of Transboundary Environmental Impact Audit/Assessment*, 96 *Am. J. Int'l L.* 291 (2002).

³⁹⁹Annex 1, Oct. 4, 1991, 30 *I.L.M.*

⁴⁰⁰Feb. 25, 1991, 30 *I.L.M.* 800.

⁴⁰¹Taylor, *Heads in the Sand as the Tide Rises: Environmental Ethics and the Law on Climate Change*, 19 *UCLA J. Envtl. L. & Pol'y* 247 (2001).

⁴⁰²Okowa, *Procedural Obligations*, in *International Environmental Agreements*, in *British Yearbook of International Law* 284 (Ian Brownlie & James Crawford eds., 1997).

⁴⁰³Which projects are of international environmental concern? At what point is international notification required? How is a response to comments defined across nation-states? Is information

affect it. The embryonic Aarhus Convention holds some promise. Aarhus provides as its objective:

In order to contribute to the protection of the right of every person of present and future generations to live in an environment adequate to his or her health and well-being, each party shall guarantee the rights of access to information, public participation in decision-making, and access to justice in environmental matters in accordance with the provisions of this Convention.⁴⁰⁴

The recommendation of more widespread use of environmental impact analysis reemphasizes the obligation of countries to consult when they are considering major actions that can have substantial environmental effects across borders.

Secretariat Design

Administrative entities for multilateral environmental agreements (MEAs) must be custom designed to help solve specific global environmental problems. Ultimately law, domestic or international, is implemented by organizations created by legislation or treaties, funded and staffed by political actors. A focus on institutional characteristics is essential for effective international environmental law. Proper design avoids excessive routinization of international law, an outcome that has taken place in some national environmental agencies. At the same time it is also important to provide for needed processes and standard operating procedures. Some routine is necessary for law to achieve credibility. Without predictability there will be very little trust in a new international entity.

One element of design is the size of international institutions; this dimension has been addressed in relationship to performance. Largeness does not necessarily indicate waste, inefficiency, mismanagement, and corruption, as developed countries have often said about the United Nations. The developing countries have raised similar concerns about the Bretton Woods organizations: the World Bank, the International Monetary Fund, and the former GATT.⁴⁰⁵ At times, however, size does correlate with complacency and inflated rhetoric about improving environmental quality. Environmental law's agents, as any other type of growing human enterprise, should be subjected to systematic analysis and evaluation.

Another issue in organizational development is whether integration or differentiation best reaches stated goals. Some analysts advocate secretariats that administer multiple environmental treaties. Except, for example, with the integrated Law of the Sea negotiations, international environmental agreements have generally followed a pattern of differentiation that has provided flexibility and efficiency. One cost of organizational differentiation is absence of coordination and treaty congestion. Sjoberg suggests, however,

Should the Conventions decide to use the GEF as an integrated financial mechanism for global environmental problems, the contours of an entirely new type of regime emerge A regime established along these lines preserves the flexibility that has been the hallmark both of the process whereby legal agreements have been created and the evolution of the GEF. Rather than create a formal organization, this regime is more decentralized and builds on linkages between units with different purposes. Its design is in line with findings in organizational theory which suggest that while a hierarchical

readily available in a national context diplomatically sensitive in an international setting? How is "environment" to be defined? Are social elements of the environment to be included?

⁴⁰⁴Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters art. I, Apr. 21, 1998, ECE/CEP/43.

⁴⁰⁵Branislav Gosovic, *The Quest for World Environmental Cooperation: The Case of the U.N. Global Environment Monitoring System* (1992).

model works well in a stable environment, an organic and decentralized form is most appropriate in areas and times of change.⁴⁰⁶

GEF itself may be a controversial choice. Many nations consider its priorities narrow or biased toward the West. In any event, further consideration of a 1991 UNEP recommendation on coordination is merited. Enhancing policy clarity and consistency is one goal, but there are others. The UNEP director proposed the creation of an intersecretariat coordinating committee to promote more effective monitoring and information dissemination, including thorough reports on means of improving verification activities. Also suggested was establishing monitoring systems even where agreements do not call for them. This idea was deferred and has limited application to instruments initiated through the U.N., but it is a relatively unpromising means of increasing knowledge about implementation of international law.⁴⁰⁷

The suggestion that secretariats should be merged and that functions should be integrated across environmental treaties comes from conclusions that some secretariats are working at cross-purposes with others, that efficiencies in allocation and use of financial resources can be achieved with integration, and that learning about systemic elements of international environmental degradation can be fostered by proximity of staffs and scientific advisors and consultants. Oil pollution's effects, fisheries knowledge, seabed resource exploitation, and conservation should be considered as one challenge, not as independent phenomena.

In theory, the suggestion is persuasive; however, a few secretariats are sufficiently successful (such as that of the Montreal Protocol) that to require a change in direction would jeopardize further progress. Moreover, the science needs to be improved before organizations are merged on the basis of understandings of the synergies in environmental degradation and repair, such as between climate change and ozone depletion. Finally, efficiencies linked to integration of functions may best come with new ideas for secretariats; otherwise there may be a tendency to duplicate, rather than to streamline organizational elements. Pluralism and competition are healthy in this early period of international environmental law and policy.

When a secretariat is professional and fair and is moving the global environmental agenda, its authority should be enhanced. This is the case, for example, with the CEC. Because of the need for political oversight, strengthening should be subject to a periodic review at the ministerial level with the default on failure to evaluate being continuation of the authority. Strengthening a secretariat involves, as for the U.N. generally, providing for a professional, independent, and motivated staff and adequate independent financing that will reduce dependence on major donors.⁴⁰⁸

In secretariat design a balance must be struck between the public's right to know and incentives to encourage national cooperation to assure that data supplied to meet treaty goals are protected. The FCCC adequately addresses this concern in article 12. The aim of some reforms is to assure that information exchange is full,

⁴⁰⁶Helen Sjoberg, *The Global Environmental Facility*, in *Greening Environmental Institutions* 161–62 (Jacob Werksmann ed., 1996).

⁴⁰⁷Designing means of coordinating IGO activities can itself be an organizational challenge. In 1978, the U.N. attempted to promote communication and information-sharing among its constituent environment-focused organizations. It created the Designated Officials on Environmental Matters, but the results have done "little in the way of priority setting, program steering or implementation design." Lamont Hempel, *Environmental Governance* 144 (1996). UNEP now is establishing the Division for Environmental Conventions. UNEP, *Synergies: Promoting Collaboration on Environmental Treaties* 1 (1999).

⁴⁰⁸Branislav Gosovic, *The Quest for World Environmental Cooperation: The Case of the U.N. Global Environment Monitoring System* 211 (1992).

open, and prompt, but secretariats must earn the reliance that nation-states put on them to care properly for sensitive and proprietary information.⁴⁰⁹

Although a single world environmental organization is not useful, international environmental law can be strengthened by organizational improvements. Existing secretariats, part of a regime of law, need to convert their missions to concrete actions that address environmental quality. To do so, several secretariat characteristics are important. Flexibility in responding to environmental problems and to changing information is high on the list. Perceived legitimacy of the secretariat is important-by those who must be managed whether they be nations, oil companies, farmers, tourists, or ordinary daily consumers of environmentally sensitive products. Openness to public input and transparency of decision-making are significant attributes. Operational capability (the wherewithal, in human and economic terms, to carry out a program) is essential as well. Without those resources the best designs can be stymied. Good professionals without considerable financial resources are more effective overall than inexperienced professionals with flush resources. Ultimately, given the immense challenges of cleaning world oceans, stopping global warming, saving endangered species, and preventing waterborne environmental health disasters, both accomplished people and considerable funds are necessary.

Creating effective secretariats admittedly is a tall order. Limitations and gaps are typically not the fault of staff or a function of mistakes in design. The issue is much larger than individual personalities or elements of organizational structure.

Effective models are not known for confronting challenges that affect hundreds of nations, using different languages, accepting responsibility differentially, emphasizing drastically different values, in facing a task that requires addressing multiple issues. To be sure, theorists have offered approaches to dealing with uncertainties, ambiguities, knowledge gaps, varying risk audits/assessments, and other characteristics of complex problems. They speak of “future-responsive-societal-learning”⁴¹⁰ and transactive management. As recommended earlier, some of these strategies need to be tried, but there is little empirical review of them, and as Italian Nobel prizewinner Carlo Rubbia noted, “there is not a mature decision-making structure that is capable of governing global environmental emergencies, to make decisions in the interests of all.”⁴¹¹

A focus related to organizational design is on the growth of the international law itself. No doubt there will be discoveries and realizations that call for new international laws. POPs is a recent example. But the international community needs to attend to making existing laws effective, to improving them, and to coordinating their implementation. Edith Brown Weiss focuses on administrative, monitoring, and financial provisions.⁴¹² She rightly says that it is time to slow the rate of negotiating international agreements, since resources needed to engage in global environmental diplomacy are burdening developing countries. The effective implementation of agreements already concluded is a priority, presaging greater reliance on soft law.

Treaty development is best facilitated after further work generates at least gen-

⁴⁰⁹Larry E. Susskind, *What Will It Take to Ensure Effective Global Environmental Management? A Reassessment of Regime-Building Accomplishments*, in *Negotiating International Regimes: Lessons Learned from the United Nations Conference on Environment and Development* (Bertram Spector et al. eds., 1994). It has never been confirmed, but some of the problems that led to the precipitous resignation and firings in the CEC Secretariat in 1998 may have had to do with information leaks or the creation of improper channels between Secretariat members and their native states.

⁴¹⁰Donald N. Michael, *On Learning to Plan and Planning to Learn* (1973).

⁴¹¹Translated by the author, from *Corriere della Sera*, 27 November 2000: “Ma, nel frattempo, non è maturata una struttura decisionale che sia capace di governare la globalizzazione delle emergenze ambientali, di prendere decisioni nell’interess di tutti.”

⁴¹²*Environmental Change and International Law 12* (Edith Brown Weiss ed., 1992).

eral agreement on priority problems. The field of biodiversity protection is both an example and a metaphor. Scientists have identified about two dozen areas, from California to the Caucasus, that they label hot spots for native species protection. These are defined, among other characteristics, as places with 1,500 or at least half a percent of the world's 300,000 plant species as native.⁴¹³ Focusing efforts, including international legal efforts, on these areas makes the biodiversity crisis more manageable and may be preferred policy. Conversely, if the hot spots degrade further, a large proportion of global biodiversity will be lost regardless of success elsewhere.⁴¹⁴ Protecting vertebrate and plant species is also said to protect insects and invertebrates.

Selectivity is attractive (perhaps essential) and generalizes theoretically to other foci of international environmental law. This idea must be analyzed critically, however. It can be abused to promote unneeded development, and it can create international environmental injustice if hot spots tend to be found only in certain regions.

Incentives for Cooperation

Most efforts at implementing international environmental law, whether generated by top-down or participatory mechanisms, benefit from the strategic use of economic and other incentives. These are of several types: subsidies, direct payments, loans, taxes, innovative trading schemes, transfers, and innovative interpretations of global property rights.

Global Environment Outlook 2000 points to a number of successes with their application at the regional level. Reporting obligations under the Montreal Protocol were met much more commonly after financial assistance was given to developing countries.⁴¹⁵ The number of parties providing data rose to 73, well above the 18 that had reported by 1992. European Union law provides several incentives to promote cooperative movement toward environmental goals.⁴¹⁶ Elsewhere, the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, the Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution, and the Cartagena Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region offer new ideas on technology transfer and technical assistance for developing countries. They address the terms under which transfer is to take place, the role of patent and other intellectual property rights, and innovative development and enhancement of endogenous technologies of developing countries.⁴¹⁷

A fully functioning environmental protection regime that exploits economic forces requires some changes in international property law under which it is now difficult to establish and protect rights. It will be necessary in climate change and in other areas of international commons regulation to develop structures to facilitate the

⁴¹³William Stevens, *The Hot Spot Approach to Saving Species*, N.Y. Times, Mar. 14, 2000).

⁴¹⁴William Stevens, *The Hot Spot Approach to Saving Species*, N.Y. Times, Mar. 14, 2000).

⁴¹⁵UNEP, *Global Environment Outlook 2000*, at 141 (1999).

⁴¹⁶The purchase price of new vehicles is dependent on their fuel-efficiency by means of a tax or subsidy. A system of tradable emissions credits allows car manufacturers more flexibility in reaching emission standards, providing for both trading and banking for future use. Koopman, *Policies to Reduce CO₂ Emissions from Cars in Europe*, 29 J. Transp. Econ. & Pol'y 53, 56 (1995).

⁴¹⁷Larry E. Susskind, *What Will It Take to Ensure Effective Global Environmental Management? A Reassessment of Regime-Building Accomplishments*, in *Negotiating International Regimes: Lessons Learned from the United Nations Conference on Environment and Development 123* (Bertram Spector et al. eds., 1994). Private economic initiatives also can foster efforts at cooperation. The strategic use of wealth by major foundations, such as Packard, and megarich individuals, such as Ted Turner and Bill Gates, can provide the means to implement cooperation where law design has been accomplished but means are scarce (in the Black Sea, for example).

exchange of rights in order to enforce rights.⁴¹⁸ The more difficult a problem is to comprehend and the broader the spread of harm, however, the more difficult it is to internalize externalities (a fundamental property goal) and to achieve collective action.⁴¹⁹ Thus environmental law and policy experts should emphasize incentives and property concepts that foster environmental improvements and technology transfer. Environmental education (including preambles to policy instruments) should recognize that developed countries are polluting out of proportion to their numbers, violating fundamental but not yet legally recognized property notions. Relevant is Garrett Hardin's conclusion about commons properties: for certain problems "mutual coercion mutually agreed upon" is essential. Customary law also provides that the "principle of permanent sovereignty over natural resources requires each state to respect all other states in the use of their natural resources, which inherently includes the obligation not to cause transboundary pollution".⁴²⁰

When the task is clear and depends less on major policy concerns of a state than on availability of resources, direct economic assistance is reasonable. Dependence on incentives, however, can communicate that nations have an obligation to comply with international environmental standards only if they are subsidized. Incentives without greater involvement in attempts to build capacity in developing countries can be counterproductive. The funding commitments in the Montreal Protocol, the FCCC, and the Biodiversity Conventions are narrow means of capacity building. Attempts to increase the number, strength, competence, and constellation of governmental and NGO actions; to make relevant information more available; and to foster institutional relationships are superior. "True capacity-building involves a reconfiguration of political, economic, and social institutions; in some cases, it may even require these institutions to be created outright".⁴²¹

Some environmentalists do not accept that the less developed countries must be

⁴¹⁸Esty, *Toward Optimal Environmental Governance*, 74 N.Y.U. L. Rev. 1495 (1999).

⁴¹⁹Esty, *Toward Optimal Environmental Governance*, 74 N.Y.U. L. Rev. 1495, 1546 (1999).

⁴²⁰Perez, *The Relationship Between "Permanent Sovereignty" and the Obligation Not to Cause Transboundary Environmental Damage*, 26 *Envtl. L.* 1187 (1996). Other specific asserted property rights need to be addressed. Some are quite technical. Under the climate change regime, for example, countries such as Russia (with economies in transition) have generated what is called hot air. Hot air is the amount by which a Kyoto target exceeds its probable emissions in the target year without climate change policies and mechanisms. These countries had agreed to reduce their emissions by an assigned amount, but many of them experienced considerable slowdowns in their economies. International law can help determine whether hot air is now property to which the transition nations are entitled. Furthermore, should the notion of hot air be generalized to developing nations because they have not been responsible for generating the climate change problems. Batruch, "Hot Air" as Precedent for Developing Countries? *Equity Considerations*, 17 *UCLA J. Envtl. L. & Pol'y* 45(1999). If hot air is property, how much should it be worth? What market should set the value? It is, in any event, highly unrealistic to think that Western nations would willingly create sufficient funds to funnel billions of dollars into Russia for this commodity. Raustiala, *The Participatory Revolution in International Environmental Law*, 21 *Harv. Envtl. L. Rev.* 537 (1997). At COP-6 an Indian professor raised the issue of ownership of the atmosphere, which can be both sink and source; he wondered who might get credit if the lower parts were declared to be a sink for methane. Raustiala, *Compliance and Effectiveness in International Regulatory Cooperation*, 32 *Case W. Res. J. Int'l L.* 387 (2000).

⁴²¹Drumbl, *Does Sharing Know Its Limits? Thoughts on Implementing International Agreements: A Review of National Environmental Policies*, 18 *Va. Envtl. L. J.*, 281, 304 (1999). Choosing strategies that are driven by incentives does not obviate the need for several other important steps in international law. Terminology in the amendment to the Montreal Protocol illustrates that reliance on economic incentives creates its own set of implementation challenges:

The parties shall establish an Executive Committee to develop and monitor the implementation of specific operational policies, guidelines and administrative arrangements, including the disbursement of resources, for the purpose of achieving the objectives of the Multilateral Fund. The Executive Committee shall discharge its tasks and responsibilities, specified in its terms of reference as agreed by the Parties, with the co-operation and assistance of the International Bank for Reconstruction and Development (World Bank), the United Nations Environmental Programme, the United Nations Development Programme or other appropriate agencies depending on their respective areas of expertise.

subsidized for movement toward environmental protection; development patterns of the industrialized nations are not an entitlement of all nations. In fact, some say, they were a mistake. What is needed is not a guilt-ridden policy that fosters further global destruction; rather, programs should admit the failures of the past and move forward both in the first and third worlds with less destructive consumer and development patterns. Incentives, subsidies, and technology should nonetheless be made available through international legal instruments. There is some possibility that replication of destructive patterns will occur, but the next generation of international environmental protection must be aware of the limitations of law to influence behaviors that are among the most fundamental of the species. If Third World countries are forced to choose between economic development and environment, the economy will prevail. Movement in the direction of enhanced protection can come only through realistic steps that recognize a politics that is not driven (in the absence of egregious environmental disasters) by environmental concerns alone. Thus subsidies and other incentives should be parts of treaties. In return, the treaties should create expectations of increased contributions by the south and be contingent on measurable progress by those nations.⁴²²

Trade Sanctions

Powerful forces of the market should be recognized in creating and implementing multilateral environmental agreements. The relationship between economics and international environmental stewardship is nowhere more important than in consideration of the use of trade sanctions. They are implicated in global environmental law in two critical ways. Trade sanctions may be employed to reach environmental objectives (trade-related environmental measures, or TREMS), and they are employed in trade agreements to punish alleged misuse of environmental law.

At least 20 treaties authorize some form of trade sanction to influence members. CITES is based centrally on regulation of trade of protected species. It also provides that parties may adopt stricter measures regarding conditions of trade of species, both included in its appendices and not so included.⁴²³ The provisions of CITES do not affect domestic measures or treaty obligations "relating to other aspects of trade," including those that address public health and other matters.⁴²⁴ The convention does not affect regional actions that maintain or remove customs control insofar

Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, art. 10(5), 26 I.L.M. 1550.

⁴²²Customary international law binds states to cooperate in the protection of the environment independent of economic exchanges. World Treaties for the Protection of the Environment 28 (Tullio Scovazzi & Tullio Treves eds., 1992). Principle 24 of the Stockholm Declaration declares:

International matters concerning the protection and improvement of the environment should be handled in a cooperative spirit by all countries, big or small, on an equal footing. Cooperation through multilateral or bilateral arrangements or other appropriate means is essential to effectively control, prevent, reduce and eliminate adverse environmental effects resulting from activities conducted in all spheres, in such a way that due account is taken of the sovereignty and interests of all States.

United Nations Conference on the Human Environment, Stockholm Declaration, princ. 24 (1973) U.N. Doc. A/CONF.48/14/rev.1. The obligation to cooperate manifests itself as "a duty to act in good faith," to meet the mutual interests of the states directly concerned and the general interest of the international community. The North Sea Continental Shelf case, a judgment of the ICJ (Reports 1969, 47), held that the parties are under an obligation not merely to go through a formal process of negotiation but also to conduct themselves so that the negotiations are meaningful. World Treaties for the Protection of the Environment 27 (Tullio Scovazzi & Tullio Treves eds., 1992).

⁴²³Convention on International Trade in Endangered Species of Wild Fauna and Flora, Mar. 3, 1973, art. 14(1), 993 U.N.T.S., 12 I.L.M. 1085.

⁴²⁴Convention on International Trade in Endangered Species of Wild Fauna and Flora, Mar. 3, 1973, art. 14(2), 993 U.N.T.S., 12 I.L.M. 1085.

as they relate to trade among the region's members.⁴²⁵ The Montreal Protocol penalizes nonparties by placing restrictions on their access to foreign markets. Noncompliance with prior informed consent requirements of the Basel Convention can lead to a ban on the importation of hazardous wastes. Other important environmental agreements with trade provisions are the Convention on Biological Diversity,⁴²⁶ the FCCC,⁴²⁷ the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade,⁴²⁸ and the Cartagena Protocol on Biosafety.⁴²⁹ Despite these potential sources of trade sanctions, the United Nations reported at the end of 1999 that "fortunately, no formal dispute has yet occurred in the WTO over the use of trade measures contained in multilateral environmental agreements."⁴³⁰

Domestic law also may authorize trade sanctions. Under the 1971 Pelly Amendment to the Fishermen's Protective Act of 1967, the United States may use sanctions for environmental violations of exporting countries.⁴³¹ Under the 1979 Packwood-Magnuson Amendment to the Fishery Conservation and Management Act of 1976, the U.S. Secretary of State must reduce a foreign state's fishing quotas in U.S.-controlled zones if the Secretary of Commerce certifies that the state is engaged in actions that diminish the effectiveness of the International Convention for the Regulation of Whaling.⁴³² Without the threatened use of trade sanctions by the United States to enforce compliance with the United Nations resolution on high-seas driftnet fishing, Japan, South Korea, and Taiwan likely would not have stopped their destructive activities.⁴³³

TREMS may directly affect violating companies. Trade bans jeopardize a firm's capacity to do business abroad. Limitation of access to major markets is a severe penalty for companies, which communicate their concerns to their governments. TREMS are controversial, however. Even if adopted, the question arises whether the penalty would actually be imposed, as opposed to becoming a symbol of a larger international relations disagreement. If imposed, the measure may not always influence actions of the noncomplying state in the direction desired. An unintended consequence is to solidify opposition to other parts of a multilateral environmental agreement.

Trade sanctions can also work at odds with environmental law. In some situations (such as GATT, its successor institution the WTO, and NAFTA), sanctions may be imposed if environmental standards are considered discriminatory trading behavior. A trading partner may allege that the environmental action is a disguised barrier to free trade, or an investor from one party can submit a claim that a puta-

⁴²⁵Convention on International Trade in Endangered Species of Wild Fauna and Flora, Mar. 3, 1973, art. 14(3), 993 U.N.T.S., 12 I.L.M. 1085.

⁴²⁶United Nations Convention on Biological Diversity, June 5, 1992, 31 I.L.M. 818 (1992).

⁴²⁷United Nations Framework Convention on Climate Change, May 9, 1992, art. 7.2(1), 32 I.L.M. 848 (entered into force, Mar. 21, 2002).

⁴²⁸Sept. 11, 1998.

⁴²⁹Jan. 29, 2000.

⁴³⁰The EU has called for trade sanctions against countries that do not ratify the POPs convention. Sara Thuria Rollin, *Industry, Government to Review Plan to Impose Trade Restrictions in Treaty*, 23 *Int'l Env't Rep. (BNA)* 315 (Apr. 12, 2000).

⁴³¹22 U.S.C.A. § 1978(b).

⁴³²International Convention for the Regulation of Whaling, Nov. 10, 1948, 161 UNTS 72; TIAS 1849.

⁴³³Zen Makuch, *The World Trade Organization and the General Agreement on Tariffs and Trade*, in *Greening International Institutions* (Jacob Werksmann ed., 1996); Rollin, *Industry, Government to Review Plan to Impose Trade Restrictions in Treaty*, 23 *Int'l Env't Rep. (BNA)* 315 (Apr. 12, 2000).

tive environmental measure is a protectionist act or even an expropriation.⁴³⁴ This may have a chilling effect on lawmakers, inhibiting them from incorporating regulatory measures and other instruments. If the challenger prevails, environmental controls may need to be lifted or the challenging party compensated.

The Charter of the International Trade Organization, which was to provide the institutional home for GATT but never entered into force, specifically allowed countries to take measures pursuant to an intergovernmental agreement relating to the conservation of fisheries, migratory birds, or wild animals.⁴³⁵ Later the WTO⁴³⁶ did take steps toward the inclusion of environmental protection and sustainable development within the world free-trade regime. For example, in the shrimp-turtles case, Thailand and other nations challenged the United States for imposing import limitations on shrimp from countries that had allegedly inadequate conservation measures for endangered turtles. The WTO's appellate body recognized the principle that unilateral measures aimed at environmental protection could be valid, although in that case the United States was initially found to have failed to meet WTO requirements.

The environmental exceptions to the requirement that a law inconsistent with trade rules must be withdrawn or changed are found in article 20 of GATT. A state wishing to use the exception must justify its use and select the least trade-restrictive measure available to achieve its objectives. Environmentalists assert that the WTO provisions on sanitary and phytosanitary regulations are too narrowly defined, that the Agreement on Technical Barriers to trade will force downward harmonization of environmental law, and that WTO dispute settlement procedures are not transparent and do not sufficiently recognize environmental interests.

The NAFTA regime takes some steps but does not go far enough in integrating trade and environmental goals with regard to phytosanitary provisions.⁴³⁷ On food and safety, NAFTA emphasizes the autonomy of each signatory to establish its own sanitary and phytosanitary standards and the right to vary them by region, provided the standards are based on "scientific principles."⁴³⁸ NAFTA Chapter 7 also requires an importer of goods from a less rigidly regulated region to prove with scientific principles that the imported goods meet the safety requirements of the more restrictive region. Other sections of NAFTA⁴³⁹ extend the assurance of autonomy from sanitary and phytosanitary to more general environmental standards. In contrast to the former, other environmental standards need not be justified by scientific principles. NAFTA provides access to formal dispute resolution procedures for

⁴³⁴North American Free Trade Agreement, Dec. 17, 1992, ch. 11, 32 I.L.M. 605.

⁴³⁵Zen Makuch, *The World Trade Organization and the General Agreement on Tariffs and Trade*, in *Greening International Institutions* 101 (Jacob Werksmann ed., 1996).

⁴³⁶Established in 1995, subsequent to the 1993 Uruguay Round of trade negotiations.

⁴³⁷The U.S. Ethyl Corporation settled for \$13 million a dispute with Canada wherein the company claimed that a Canadian fuels additive act was a blatant domestic protectionist measure. A NAFTA tribunal, in November 2000, found Canada in breach of NAFTA's investment protection provisions for temporarily banning transboundary movement of wastes containing polychlorinated biphenyls. The ruling found that the Canadian regulation treated an American company differently from Canadian businesses *International Environment Reporter*, Nov. 22, 2000, at 901. Earlier that year an arbitration panel ordered the Mexican government to pay almost \$17 million to an American company. The firm's plans to build a hazardous waste facility in San Luis Potos were blocked by Mexican officials' conclusion that the site was environmentally unsound. Rossella Brevetti & John Nagel, *Arbitration Panel Awards Metalclad Corp. \$16.7 Million in Trade Dispute with Mexico*, 23 *Int'l Env't Rep. (BNA)*, Sept. 13, 2000, at 710. There have been a handful of other demands for compensation under the NAFTA regime. Deimann, *Investing in the Environment: A Green Agenda for the Millennium Round*, 21 *Env'tl. L. Network Int'l Newsl.* 35 (1999).

⁴³⁸North American Free Trade Agreement, Dec. 17, 1992, ch. 7, 32 I.L.M. 605.

⁴³⁹North American Free Trade Agreement, Dec. 17, 1992, ch. 9, art. 904(2), 32 I.L.M. 605.

certain food and safety and environmental claims. Other articles⁴⁴⁰ encourage notification and cooperation among the three parties.

The EU has quite environmentally friendly trade rules. It has well-developed institutions that allow NGO involvement and, based on qualified majority voting, permit nations with strong environmental policies to promote them aggressively in the face of free trade challenges.⁴⁴¹ The EU has allowed dozens of actions harmonizing sanitary and phytosanitary measures upward. It permits member states to ban imports not produced according to EU environmentally sensitive processes and production methods. In certain cases the ban may be mandatory.

The EU serves as an excellent model for future trade-environment agreements. I also recommend establishing objective panels (as objective as they can be in these matters) composed of both trade and environment experts who give their views on the environmental intervention. They can determine, for instance, whether a rule is based on the best available expertise in the environmental sciences. Is it as narrowly applied as possible to achieve its aims? The burden of proof should take into consideration all relevant factors, including the nation's environmental record. In rare situations where conflicts cannot be resolved, resort could be to the environmental chamber of the ICJ.

The link between trade and the environment must put greater emphasis on the environment. In a world where trade regimes now regularly trump environmental concerns, to call for greater coordination and parity between environment and free trade is impotent without a major new commitment of states to create that parity. To make this recommendation meaningful, environmental ministries must be raised to a status comparable to that of trade and commerce. Along the way, changes in international rules on investment may further the environmental agenda; they "could turn out to be the very tool for allowing policy makers to escape their 'prisoner's dilemma' and pave the way for solutions out of the race-to-the-bottom-scenario at the trade-and-environment-interface."⁴⁴² Finally, as more world citizens begin to understand trade organizations like the WTO, more balance with nontrade societal goals is needed. Trade law "must be interpreted in light of other rules of public international law."⁴⁴³ Specifically the WTO should be pressed to pursue trade goals by emphasizing international negotiation over sanctioning.⁴⁴⁴

Recommendations in Context

Application of these recommendations must be realistic about the potential for change among international law's many subjects, from the individual to the multinational organization. Patterns that have created global environmental degradation are entrenched and not readily changeable with either encouraging statements or commands without controls and enforcement.

Some degrading actions are rational responses to systems that do not sufficiently charge for violations. Others stem from poverty. As a Mexican environmental planner said,

It is not easy to sell local citizens on a dimly perceived environmental benefit, when the

⁴⁴⁰North American Free Trade Agreement, Dec. 17, 1992, ch. 9, arts. 760, 762, 32 I.L.M. 605.

⁴⁴¹Steinberg, Trade-Environment Negotiations in the EU, NAFTA, and WTO: Regional Trade Trajectories of Rule Development, 91 Am. J. Int'l L. 231 (1997).

⁴⁴²Deimann, Investing in the Environment: A Green Agenda for the Millennium Round, 21 Envtl. L. Network Int'l Newsl. 35, 37 (1999).

⁴⁴³Pauwelyn, The Role of Public International Law in the WTO: How Far Can We Go?, 95 Am. J. Int'l L. 535, 577 (2001).

⁴⁴⁴Oesterle, Just Say "I Don't Know": A Recommendation for WTO Panels Dealing with Environmental Regulations, 3 Envtl. L. Rev. 113-30 (2001); Charnovitz, Rethinking WTO Trade Sanctions, 95 Am. J. Int'l L. 792 (2001).

alternative can put food on the poor family's table A mature turtle is worth \$50 to a poacher for its meat, skin, and eggs, and it takes him an hour of work in the cool night air to get one. To earn that much in another way, he'd have to work two weeks at minimum wage harvesting watermelons in the hot sun. What would you prefer?"⁴⁴⁵

International environmental law must go beyond adjusting the perceived costs of a violation. It must create benefits of compliance as well.

Recommendations must also address capacity to promote consensus about ownership of global resources. As the tortuous negotiations over the Law of the Sea made clear, agreement on international property rules will not come quickly, but in areas as divergent as demarking zones of territorial control and addressing the effects of deregulation and privatization, understandings of ownership effects can assist a move toward international cooperation.

Building on the concept of resources of all humankind, a system is needed to delineate natural resources that are not national resources. Resources—fish, air, water, animals, plant materials—pass back and forth through nations. The early treaties on migratory birds can serve as models. That system will come slowly, and law cannot get too far ahead of prevailing understandings. As an example, customary law of territorial seas with its jurisdictional demarcation for fishing and economic zones fails to take into account that environmental effects occur without regard to that zoning. So, too, transboundary rivers have been subject to customary property law. Even its more progressive doctrine of limited territorial sovereignty does not solve environmental problems, including upstream. Rather, it creates other problems, such as effluents in a limited national area and degradation of the groundwater.

Some advocates of a stronger international property law are clear on what needs to be done. They argue for example that all commonpool freshwater resources (those that cross political boundaries and are subject to externality problems) should be placed under international regulation.⁴⁴⁶ The lakes, rivers, aquifers, and unrelated combined groundwater need to be viewed as international water resources. Recommendations for an evolving global law, however, must realize that major international players are not yet ready to go so far.

Finally, until a major shift occurs in geopolitics, one important element of effective international environmental law will remain absent: binding jurisdiction, the inability to walk away from a legal commitment if a party chooses not to comply. That major shift is in the balance of power of nations. As long as there are countries who can abide by the rules when they choose but fear no reprisals when they do not, international environmental law will be subject to some of the criticisms with which this section began. Balance of power in modern times, however, is not only a military question. There are many forms of global influence, as the nonhostile fall of the Soviet Union, the dependence of superpowers on resource-rich states, and the adoption of treaties without participation by the United States suggest. Coalition building can create conditions in which environmental law based on the principles articulated above can succeed. To be sure, coalition building can also stymie environmental law.

Verdicts about success of an international environmental law ultimately depend on definitions. Global environmental improvement is certainly a function in some part of international law within the set of all law. Improvement will be variously understood. As we have seen, it can be seen as cooperation aimed at improvements in environmental quality. It may be viewed as creating a learning system among nations with environmental improvement as the goal. It can be defined as consensus resulting in learning that actually leads to objective improvements, though blissful

⁴⁴⁵Chris Kraul, *Mexico Gets Tough in Turtle Wars*, L.A. Times, Nov. 13, 1997.

⁴⁴⁶Benvenisti, *Collective Action in the Utilization of Shared Freshwater: The Challenges of International Water Resources Law*, 90 Am. J. Int'l L. 384 (1996).

cooperative ignorance and deliberate avoidance of difficult decisions are at least logical alternatives. It can have higher standards: substantial implementation of cooperative mechanisms that result in improvements in the air, water, flora and fauna, and natural resources as measured by commonly accepted indices. From a global perspective it means improvements in all the areas addressed in this section: the world commons, regional challenges, and across borders. If this perspective is realized, law will have played a necessary role.

VIII. CORPORATE ENVIRONMENTAL DISCLOSURE REQUIREMENTS⁴⁴⁷

§ 8:49 Generally

Publicly listed companies have been required to disclose “material” environmental information to investors for over 30 years. Environmental costs can be material when associated with air, groundwater, and waste site remediation, regulatory fines, and litigation that result in losses of millions of dollars, decreased shareholder value, and diminished corporate reputation. Such factors must be disclosed in a company’s annual and quarterly reports that are filed with the U.S. Securities and Exchange Commission (SEC). More recently, however, myriad corporate accounting scandals, which have shaken financial markets and caused a decline in investor confidence, have prompted more focus on reporting requirements geared toward establishing increased transparency and accountability. While the new regulations clearly state stiff penalties for failure to disclose, they also create uncertainty as to what, and how, management must now report. Moreover, companies engaging in multinational business must interpret an unfamiliar set of international disclosure regulations.

This Part discusses the new light shed on current environmental disclosure requirements by the passage of the U.S. Sarbanes-Oxley Act of 2002,¹ the European Union (EU) Accounts Modernisation Directive (EU Directive),² effective January 1, 2005, and the United Kingdom (UK) Companies Act and its accompanying Operating and Financial Review requirement,³ effective April 1, 2005. These regulations expand the role of auditors, and require executive certification of internal controls for timely and accurate reporting of all information, including known environmental liabilities, risks, trends, and uncertainties. The aim is to reinstate investor confidence, and strengthen shareholder rights and third-party protection in public companies.

§ 8:50 The need for accurate disclosure

Under the Securities and Exchange Act of 1933 and the Securities Exchange Act of 1934,¹ the SEC requires issuers of publicly traded securities to disclose material information. In general, information is material if there is a substantial likelihood

⁴⁴⁷By Caroline Hermann.

[Section 8:49]

¹Pub. L. No. 107-204, 116 Stat. 745 (2002).

²Directive 2003/51/EC of the European Parliament and Council of 18 June 2003 amending Directives 78/660/EEC, 83/349/EEC, 86/635/EEC, and 91/647/EEC on the annual and consolidated accounts of certain types of companies, banks, and other financial institutions and insurance undertakings, 2003 O.J. (L 178) 17.7, available at http://europa.eu.int/eur-lex/pri/en/oj/dat/2003/l_178/l_17820030717en00160022.pdf (last visited Mar. 8, 2005).

³Draft of The Companies Act 1985 (Operating and Financial Review and Directors Report etc.) Regulations 2005, available at <http://www.legislation.hms.gov.uk/si/si2005/draft/20051592.htm> (last visited Mar. 8, 2005).

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¹48 Stat. 74, 15 U.S.C.A. §§ 77a to 77mm (requiring issuers to disclose registration and sales of securities); 48 Stat. 881, 15 U.S.C.A. §§ 78a to 78kk (requiring issuers to file periodic reports).

that a reasonable investor would find the information important to make a well-informed business investment decision.² Determinations of materiality require “delicate audits/assessments of the inferences a ‘reasonable shareholder’ would draw from a given set of facts and the significance of those inferences to him.”³ Materiality, as defined, is murky at best. Attempts to quantify materiality have used a rule of thumb, for example, to disclose claims equaling \$100,000 or more, or 10%, of a company’s assets in a current or pending legal proceeding.⁴ However, the SEC cautions against relying solely on such benchmarks because they have no basis in law or in accounting standards.⁵ Instead, “evaluation of materiality requires a registrant and its auditor to consider all the relevant circumstances, and that there are numerous circumstances in which misstatements below 5% could well be material.”⁶ Failure to disclose material information or making false statements may subject companies to penalties and private law suites.

Corporate financial disclosures present a picture of a company’s current financial performance and future projections. Stakeholders, including company management, shareholders, potential investors, analysts, and regulators rely on this public information to make sound business and investment decisions. Within a company, managers and senior executives use financial information to address contingencies, track performance of its subsidiaries and the competition, manage risk, and make strategic decisions such as merging with or acquiring other companies, entering into lease agreements, or conducting property due diligence. Timely disclosure can reveal conflicts of interest, fiduciary breaches, or misfeasance, enabling the company to remedy these issues quickly. Externally, investors use the information to form a clear and comprehensive picture of a company’s financials, allowing them to make better-informed investment decisions.

Some companies actively report environmental matters, believing that well-managed financials as well as intangible drivers lead to a sustainable and competitive company. The expectation is that they will be rewarded with enhanced market and shareholder value, less stock volatility, a strong reputation, timely and effective management of risk and opportunity associated with environmental issues, and favorable response from public stakeholders seeking more corporate accountability. Many have yet to correlate reporting intangible drivers with an increased bottom line. All too often, environmental disclosure falls under the rubric of corporate social responsibility and is simply not viewed as an important driver for a company’s financial success.

In light of these new regulations, however, companies must now view their environmental policies as an integral part of their core business management. Once environmental costs and risks are disclosed, stakeholders will be armed with sound, comprehensive company information to make wise business and investment decisions, thereby contributing to strong shareholder value and markets based on financial integrity. It is in the interest of global markets to have better corporate transparency of information necessary for sound stakeholder decision-making.

²TSC Industries, Inc. v. Northway, Inc., 426 U.S. 438, 449, 96 S. Ct. 2126, 48 L. Ed. 2d 757, Fed. Sec. L. Rep. (CCH) P 95615 (1976). See also Basic Inc. v. Levinson, 485 U.S. 224, 108 S. Ct. 978, 99 L. Ed. 2d 194, Fed. Sec. L. Rep. (CCH) P 93645, 24 Fed. R. Evid. Serv. 961, 10 Fed. R. Serv. 3d 308 (1988).

³TSC Industries, Inc. v. Northway, Inc., 426 U.S. 438, 450, 96 S. Ct. 2126, 48 L. Ed. 2d 757, Fed. Sec. L. Rep. (CCH) P 95615 (1976).

⁴17 C.F.R. § 229.103.

⁵SEC, Staff Accounting Bulletin (SAB): No. 99—Materiality, SAB Release No. 99, 17 C.F.R. pt. 211 (SAB 99), available at <http://www.sec.gov/interps/account/sab99.htm> (last visited Mar. 8, 2005).

⁶SEC, Staff Accounting Bulletin (SAB): No. 99—Materiality, SAB Release No. 99, 17 C.F.R. part 211 (SAB 99) (emphasis in original).

§ 8:51 U.S. financial reporting requirements of environmental matters

With regard to disclosing material environmental matters, the SEC adopted Regulation S-K, which provides specific narrative disclosure requirements, including environmental disclosure of capital expenditures,¹ legal proceedings,² and management discussion and analysis (MD&A).³ Passage of the Sarbanes-Oxley Act of 2002 did not change the SEC's requirements of environmental disclosure under Regulation S-K. It did, however, emphasize the importance of disclosing environmental liabilities as they pertain to a company's financial condition. No longer can companies subjectively determine whether an environmental matter materially affects earnings. Now, under the Sarbanes-Oxley Act, companies must go beyond a mere baseline requirement, and consider material known trends as well as uncertainties for inclusion in annual and quarterly reports.

**§ 8:52 U.S. financial reporting requirements of environmental matters—
SEC Regulation S-K, Item 101**

Item 101 requires disclosure of the material effects of complying with environmental regulations upon capital expenditures and earnings of its registrant and subsidiaries, as well as material estimated capital expenditures for environmental control facilities.¹ Management should determine both quantitative and qualitative factors, whether a relatively minor impact on the business is important to future profitability, the pervasiveness of the matter, and the impact of the matter.² Unknown costs are difficult to estimate when they include, for example, costs from ongoing settlement negotiations or penalties stemming from a newly enacted or adopted regulation. However, to the extent a company has quantifiable environmental exposures, such as being named a potentially responsible party or is on notice for generating hazardous waste, it must report early and give a reasonable estimate of the loss.³ Moreover, if a company can estimate future material costs "for environmental control facilities for the remainder of its current fiscal year and its succeeding fiscal year and for such further periods as the registrant may deem material,"⁴ those costs must be disclosed since reasonable investors would deem it important to evaluate the future performance of the company.

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¹17 C.F.R. § 229.101 (Item 101).

²17 C.F.R. § 229.103 (Item 103).

³17 C.F.R. § 229.303 (Item 303).

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¹17 C.F.R. § 229.101(c)(1)(xii).

²17 C.F.R. § 229.101, Instructions to Item 101, 1.

³See *In re Lee Pharms.*, Exchange Act Release No. 34-39843, Release No. AE-1023, 66 S.E.C. Docket 2134, 1998 WL 164350 (Apr. 9, 1998) (whereby a company was sanctioned for misstating and omitting the fact that it was named a potentially responsible party for soil and groundwater contamination, had Superfund cleanup costs and liability estimates from its consultants, and that the U.S. Environmental Protection Agency required a site cleanup which it had yet to complete), available at <http://www.sec.gov/litigation/admin/3439843.txt> (last visited Mar. 8, 2005).

⁴17 C.F.R. § 229.101(c)(1)(xii).

**§ 8:53 U.S. financial reporting requirements of environmental matters—
SEC Regulation S-K, Item 103**

Item 103 requires material disclosure of current or pending legal proceedings to which the company or its subsidiary is a party.¹ Once a claim is regarded as material, it must be determined whether it is a claim for damages or sanctions that “exceed[s] 10% of the current assets of the registrant and its subsidiaries on a consolidated basis.”² Or, if it is a government claim involving potential monetary sanctions, it must be reported unless the registrant reasonably believes the sanctions will be less than \$100,000.³ Given the U.S. Environmental Protection Agency’s (EPA’s) recent increase of maximum penalties for daily civil violations of environmental laws to \$32,000, one may need to report a “reasonable belief” that a claim will exceed the \$100,000 threshold.⁴ Many companies may perceive environmental proceedings as “incidental to the business” and fail to disclose them. Instruction 5 of Item 103 does not exempt ordinary routine litigation if it arises under laws “enacted or adopted regulating the discharge of materials into the environment or primarily for the purpose of protecting the environment.”⁵ This ensures that environmental proceedings will be disclosed and not inadvertently omitted from the annual or periodic reports.

**§ 8:54 U.S. financial reporting requirements of environmental matters—
SEC Regulation S-K, Item 303**

Item 303 requires senior management to provide a narrative description of its discussion and analysis of a company’s financial conditions, any changes, and results of operations in its annual and periodic reports, otherwise known as MD&A.¹ This “enables investors to see the company through the eyes of management.”² The discussion should cover liquidity, capital resources, results of operations, off-balance sheet arrangements, contract obligations, and any other information “necessary to an understanding of its financial condition.”³ This includes known trends or uncertainties that management reasonably expects to have a material impact on its finances,⁴ as well as any forward-looking information.⁵

The MD&A is especially affected by the Sarbanes-Oxley Act, which emphasizes greater corporate executive oversight, and certification of accurate financials. Misstatements or omissions of material information in annual or quarterly reports lead to harsh penalties. Since the Act was passed in 2002, the SEC has issued guidance

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¹17 C.F.R. § 229.103.

²17 C.F.R. § 229.103, Instruction (B).

³17 C.F.R. § 229.103, Instruction (C).

⁴Civil Monetary Penalty Inflation Adjustment Rule, 69 Fed. Reg. 7121 (Feb. 13, 2004).

⁵17 C.F.R. § 229.103, Instructions to Item 103, 5.

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¹17 C.F.R. § 229.303.

²SEC, Interpretation: Commission Guidance Regarding Managements Discussion and Analysis of Financial Condition and Results of Operations (2003), available at <http://www.sec.gov/rules/interp/33-8350.htm> (last visited Mar. 8, 2005).

³17 C.F.R. § 229.303(a).

⁴17 C.F.R. § 229.303(a)(3)(ii).

⁵17 C.F.R. § 229.303(a), Instructions to Paragraph 303(a), 7.

on how to address material trends and uncertainties, *i.e.*, those events or uncertainties for which disclosure is required.⁶ The SEC states:

[C]ompanies should consider the substantial amount of financial and non-financial information available to them, and whether or not the available information itself is required to be disclosed. This information, over time, may reveal a trend or general pattern in activity, a departure or isolated variance from an established trend, an uncertainty, or a reasonable likelihood of the occurrence of such an event that should be disclosed.⁷

This affords potential investors the opportunity to determine “the likelihood that past performance is indicative of future performance.”⁸ In considering the non-financial information publicly available, such as scientific reports or policy studies, a company may need to report on future trends anticipated to affect a company’s financial condition, such as climate change, a new water or air quality regulatory program, unidentified contaminated sites, or as-yet-unknown environmental issues with a newly acquired property. The SEC encourages forward-looking disclosure by providing a safe harbor rule to protect reporting companies from being penalized under applicable federal securities laws for stating a trend that could prove to be false.⁹ To foreclose liability for making forward-looking statements, they must be “accompanied by meaningful cautionary statements identifying important factors that could cause actual results to differ materially from those in the forward-looking statement.”¹⁰ The SEC has also suggested that since quantifying significant effects of known material trends and uncertainties can promote understanding, they should be considered and may, in fact, be required if relevant and the information is reasonably available.¹¹

While companies are attempting to quantify impacts that have yet to occur, courts are delineating what constitutes a forward-looking statement. A recent decision from the U.S. Court of Appeals for the Seventh Circuit could discourage companies from making forward-looking statements that are inaccurate, materially misleading, and result in subsequent liability.¹² In that case, the shareholder plaintiffs sued a medical products manufacturer, Baxter International, Inc., for stating materially misleading stock price projections before the stock fell but after releasing second-quarter 2002 financial results.¹³ The lower court held that Baxter’s cautionary statements were protected by the safe harbor provision, but the Seventh Circuit reversed holding that the cautionary statements failed to include risks the company knew would affect future results. It stated that:

The problem is not that what actually happened went unmentioned; issuers need not anticipate all sources of deviations from expectations. Rather, the problem is that there is no reason (on this record) to conclude that Baxter mentioned those sources of variance

⁶SEC, Interpretation: Commission Guidance Regarding Management’s Discussion and Analysis of Financial Condition and Results of Operations (2003).

⁷SEC, Interpretation: Commission Guidance Regarding Management’s Discussion and Analysis of Financial Condition and Results of Operations (2003).

⁸SEC, Interpretation: Commission Guidance Regarding Management’s Discussion and Analysis of Financial Condition and Results of Operations (2003).

⁹17 C.F.R. § 229.303, Instructions to Paragraph (b) of Item 303, 6.

¹⁰The Private Securities Litigation Reform Act of 1995, 15 U.S.C.A. §§ 77z-2(c), 78u-5(c), 77z-2(c)(1)(A)(i).

¹¹SEC, Interpretation: Commission Guidance Regarding Management’s Discussion and Analysis of Financial Condition and Results of Operations (2003).

¹²Asher v. Baxter Intern. Inc., 377 F.3d 727, Fed. Sec. L. Rep. (CCH) P 92903 (7th Cir. 2004), as amended, (Sept. 3, 2004).

¹³Asher v. Baxter Intern. Inc., 377 F.3d 727, 728, Fed. Sec. L. Rep. (CCH) P 92903 (7th Cir. 2004), as amended, (Sept. 3, 2004) (Baxter predicted that, in 2002, the business would yield revenue growth in the “low teens” compared with growth in the “mid teens” in 2001, which the lower court determined to be a forward-looking statement.).

that (at the time of the projection) were the principal or important risks. For all we can tell, the major risks Baxter knew that it faced when it made its forecasts were exactly those that, according to the complaint, came to pass, yet the cautionary statement mentioned none of them. Moreover, the cautionary language remained fixed even as the risks changed.¹⁴

In order to invoke the safe harbor provision, forward-looking statements must be meaningful, *i.e.*, reflect company knowledge of those factors likely to affect future performance. Otherwise, projections may be considered inadequate if they are materially misleading but accompanied by a cautionary statement.

§ 8:55 U.S. financial reporting requirements of environmental matters—Sarbanes-Oxley Act of 2002

Since its passage in 2002, the Sarbanes-Oxley Act has affected environmental practitioners despite no mention of environmental disclosures in the text. Companies must reevaluate earlier subjective judgments of whether an environmental matter is material and warrants mention in an annual or quarterly report. Moreover, they must now monitor all environmental issues with increased vigilance to determine materiality, to implement an internal control process to identify and remediate environmental matters, to provide senior management with audits/assessments of the environmental matters for certification of corporate reports, as well as to respond to stakeholder demands for more corporate environmental accountability. These determinations apply not only to individual companies but also their subsidiaries, parent companies, foreign partners, and companies targeted in a merger or acquisition for which their environmental liabilities are unknown.

Section 404, or Management Audit/Assessment of Internal Controls, is referred to as “among the most important parts of the Sarbanes-Oxley Act.”¹ Corporate annual reports must contain a report stating that management has established and is maintaining an adequate internal control structure and procedures for financial reporting, and has assessed its effectiveness.² Management must evaluate the internal controls design, test the effectiveness of the implementation, and state any remediation process for compliance.³ Auditors must state their opinion of the internal controls and verify that management has assessed the effectiveness of the report.⁴ In terms of environmental reporting, companies must review current environmental liability audit/assessment and reporting procedures. This includes a review of environmental contingencies (Item 101), environmental legal proceedings (Item 103) and material known and uncertain trends (Item 303) of the annual and quarterly reports. In reviewing its MD&A, companies must identify known as well as potentially problematic areas and a remedial process. Companies must periodically update their internal controls relating to environmental issues.

Cost has been a significant factor in implementing § 404. Not only are there startup costs (with the understanding that the benefits will soon outweigh the costs), but there may also be subsequent liability costs if the internal control mechanisms do not improve a company’s financial reporting. Initially, costs for

¹⁴Asher v. Baxter Intern. Inc., 377 F.3d 727, 734, Fed. Sec. L. Rep. (CCH) P 92903 (7th Cir. 2004), as amended, (Sept. 3, 2004).

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¹Press Release, SEC, Extension of Compliance Dates for Non-Accelerated Filers and Foreign Private Issuers Regarding Internal Control Over Financial Reporting Requirements (Mar. 2, 2005) (statement of SEC Chief Accountant Donald T. Nicolaisen), available at <http://www.sec.gov/news/press/2005-25.htm> (last visited Mar. 8, 2005).

²Sarbanes-Oxley Act of 2002, Pub. L. No. 107-204, § 404(a)(1) to (2), 116 Stat. 745.

³Sarbanes-Oxley Act § 404(b).

⁴Sarbanes-Oxley Act § 404(b).

implementing internal controls were estimated at \$1 million in expenses per billion of revenue, but a recent study revealed that companies with average revenues of \$2.5 billion spent \$3.14 million for their first year of compliance, a 25% increase over the original estimate.⁵ Companies with less than \$2 billion in revenue spent \$1.8 million per billion in revenue, an 80% increase over the original estimate.⁶

The SEC requires companies to report on the effectiveness of their internal controls by March 16, 2005. Small U.S. companies and foreign companies with U.S. offerings received a one-year extension to comply with § 404's internal control provision, becoming effective July 15, 2006.⁷ The extension may have been granted due to the difficulty in crafting long-term, effective internal controls, the significant financial burden placed on companies to implement the internal controls structure, and an upcoming roundtable discussion with the SEC and industry, which may offer suggestions for more effective implementation of internal controls.⁸

A review of 2004 annual reports filed with the SEC illustrates how companies are making § 404 disclosures, and are approaching remediation of identified deficiencies.⁹ In January 2005, 27 companies with revenue of more than \$75 million disclosed material weaknesses in internal controls, versus seven companies that made similar disclosures in January 2004.¹⁰ Similarly, 23 companies reported some type of internal control weakness in February 2005, versus 18 such filings one-year prior.¹¹ Material weakness in large companies result from financial systems, such as the financial close process, accounts reconciliation, or inventory processes, while small companies appear to struggle with personnel matters, such as understaffed accounting departments, poor segregation of duties, or training and supervisory problems.¹²

In its February 2005 filing, MSC Software Corp., a business services company, stated that upon conducting an independent review, it identified material internal control weaknesses that contributed to revenue and non-revenue concerns. The deficiencies included: (1) weak oversight of internal controls; (2) insufficient independence to evaluate judgments and estimates; (3) ambiguous and inconsistent internal accounting policies and procedure; (4) inadequate monitoring and system controls in revenue data entry process; (5) insufficient documentation; and (6) insufficient skills or training in generally accepted accounting principles (GAAP).¹³ Although the filing has not appeared to affect stock value, some experts deem internal control weakness troubling since it is associated with the ethical values of management and issues of organizational integrity.¹⁴

Some company disclosures have shown remarkable detail in their filings. Hol-

⁵SOX 404 Disclosures: Costs Higher Than Expected, Compliance Wk. (Mar. 5, 2005), available at http://www.complianceweek.com/index.cfm?fuseaction=article.viewArticle&article_ID=1584 (last visited Mar. 8, 2005).

⁶SOX 404 Disclosures: Costs Higher Than Expected, Compliance Wk. (Mar. 5, 2005).

⁷Press Release, SEC, Extension of Compliance Dates for Non-Accelerated Filers and Foreign Private Issuers Regarding Internal Control Over Financial Reporting Requirements (Mar. 2, 2005).

⁸Press Release, SEC, Commission Seeks Feedback and Announces Date of Roundtable on Implementation of Sarbanes-Oxley Internal Control Provisions (Feb. 22, 2005), available at <http://www.sec.gov/news/press/2005-20.htm> (last visited Mar. 8, 2005).

⁹January Internal Control Report: Adverse Opinions Emerge, Compliance Wk. (Feb. 8, 2005), available at http://www.complianceweek.com/index.cfm?fuseaction=article.viewArticle&article_ID=1522. See also Weakness, Deficiency Disclosures in February 2005, Compliance Wk. (Mar. 8, 2005), available at http://www.complianceweek.com/index.cfm?fuseaction=article.viewArticle&article_ID=1604 (last visited Mar. 8, 2005).

¹⁰January Internal Control Report: Adverse Opinions Emerge, Compliance Wk. (Feb. 8, 2005).

¹¹Weakness, Deficiency Disclosures in February 2005, Compliance Wk. (Mar. 8, 2005).

¹²January Internal Control Report: Adverse Opinions Emerge, Compliance Wk. (Feb. 8, 2005).

¹³Weakness, Deficiency Disclosures in February 2005, Compliance Wk. (Mar. 8, 2005).

¹⁴Weakness, Deficiency Disclosures in February 2005, Compliance Wk. (Mar. 8, 2005).

linger International, a newspaper publisher, identified material weaknesses in its internal controls, including: (1) an inappropriate “tone from the top” that did not encourage a strong system of internal controls; (2) certain executive officers were not forthcoming in preparing corporate records; (3) asset extraction benefited direct and indirect controlling stockholders; (4) certain executive officers facilitated inappropriate related party transactions; (5) management blurred the distinction of the company and its subsidiaries between individual entities and unaffiliated stockholders; (6) inadequate communication with the Audit and Compensation Committee; (7) failure to retain separate legal counsel from parent companies and controlling stockholders; (8) nonexistent internal controls; and (9) an inadequate whistleblower policy.¹⁵

Other companies have identified material weaknesses and taken disclosure one step further to include a forward-looking warning. Visteon Corporation, an auto parts manufacturer, not only concluded that certain tax adjustments led to material weaknesses in its internal controls, it also stated the expectation that its auditor “will issue an adverse opinion with respect to the company’s internal controls over financial reporting, which opinion will be included in Visteon’s 2004 Form 10-K.”¹⁶

Some companies, however, merely warned of potential problems with their internal controls without providing specific examples, or remedial steps. Commercial lender CIT Group stated that a previously identified deficiency in its income tax accounting will likely be classified as a material weakness but that it “will not result in a material adjustment to the company’s reported net income for [2004].”¹⁷

Others, which warned of potential problems, chose not to identify any material weaknesses. Energy Transfer Partners merely “identified certain internal control issues which senior management believes need to be improved.”¹⁸ While these early § 404 reports may not provide methodical transparent disclosures a reasonable investor can rely on for making investment decisions, it is evident that companies are viewing disclosure of all matters as necessary for Sarbanes-Oxley compliance.

Once internal controls have been implemented, § 302, which addresses corporate responsibility for financial reports, applies. A company’s chief executive officer or chief financial officer must certify that they have reviewed the annual or quarterly report to be filed.¹⁹ Based on their knowledge, the report does not contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statement.²⁰ Further, the officers must “fairly present in all material respects the financial condition and results of operations of the issuer.”²¹ The officers report on the effectiveness of their internal controls to date,²² disclose any significant deficiencies in the internal controls or any associated fraud,²³ and identify changes that could significantly affect the internal controls subsequent to the date of their evaluation, with corrective actions.²⁴

Failure to adequately certify financial accounts or establish internal controls for accurate financial reporting can subject officers to potential civil or criminal liability

¹⁵Internal Control Disclosures in January 2005: The List, Compliance Wk. (Feb. 8, 2005), available at http://www.complianceweek.com/index.cfm?fuseaction=article.viewArticle&article_ID=1523 (last visited Mar. 8, 2005).

¹⁶Internal Control Disclosures in January 2005: The List, Compliance Wk. (Feb. 8, 2005).

¹⁷January Internal Control Report: Adverse Opinions Emerge, Compliance Wk. (Feb. 8, 2005).

¹⁸January Internal Control Report: Adverse Opinions Emerge, Compliance Wk. (Feb. 8, 2005).

¹⁹Sarbanes Oxley Act of 2002, Pub. L. No. 107-204, § 302(a)(1), 116 Stat. 745.

²⁰Sarbanes Oxley Act § 302(a)(2).

²¹Sarbanes Oxley Act § 302(a)(3).

²²Sarbanes Oxley Act § 302(a)(4).

²³Sarbanes Oxley Act § 302(a)(5).

²⁴Sarbanes Oxley Act § 302(a)(6).

under § 906.²⁵ The statement must certify that the periodic report fairly presents, in all material respects, the financial condition and results of operation of the issuer.²⁶ Failure to do so will result in a fine up to \$1 million imprisonment up to 10 years, or both.²⁷ A willful failure to certify carries a fine of not more than \$5 million imprisonment up to 20 years, or both.²⁸

§ 8:56 EU reporting requirements

Fallout from the corporate accounting debacle has reached well beyond the United States to Europe, undermining investor confidence and corporate performance of European companies with U.S. listings or SEC-registered companies.¹ Those companies are directly affected by § 106 of the Sarbanes-Oxley Act, which holds foreign auditors of SEC-registered foreign issuers subject to the Act.² For example, in January 2005, the UK retailer TM Group Holdings identified an error in accounting for property sale and operating leaseback transactions.³ Its auditors “considered that there was insufficient knowledge and experience of U.S. GAAP in the company’s corporate accounting department and [] considered this matter to be a reportable condition.”⁴ The auditors “provided an unqualified audit report on the company’s financial statements for fiscal 2002 and fiscal 2003.”⁵ Similarly, the U.S. based diagnostic substances group Immucor “identified certain weaknesses in internal control in the Italian subsidiary” and the company “has undertaken a thorough review of the books and records of the Italian subsidiary with the assistance for forensic audit personnel.”⁶ Europe responded by passing the EU Directive, and the UK responded with the Companies Act 1985, Regulation 2005, and the OFR requirement, all of which come into effect in 2005. These new regulations emphasize reporting of non-financial performance indicators, which include environmental, labor, and social issues.

§ 8:57 EU reporting requirements—The EU directive

In 2001, the European Commission determined that it lacked “harmonised authoritative guidelines in relation to environmental issues and financial reporting,”¹

²⁵Sarbanes Oxley Act § 906.

²⁶Sarbanes Oxley Act § 906(b).

²⁷Sarbanes Oxley Act § 906(c)(1).

²⁸Sarbanes Oxley Act § 906(c)(2).

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¹Sarbanes-Oxley Act § 2(a)(7) defines issuers, including foreign issuers, as any person or company who issues or proposes to issue its securities to the U.S. public or has registered securities under the U.S. Securities Exchange Act of 1934. Some foreign issuers, including companies from EU Member States and the United Kingdom, are currently lobbying the SEC to ease its disclosure rules, while other companies are considering delisting and deregistering to avoid incurring compliance costs associated with strengthening internal controls and external auditing certification.

²Sarbanes-Oxley Act § 106 defines foreign public accounting firm as “a public accounting firm that is organized and operates under the laws of a foreign government or political subdivision thereof.” Section 106(d).

³Internal Control Disclosures in January 2005: The List, Compliance Wk. (Feb. 8, 2005).

⁴Internal Control Disclosures in January 2005: The List, Compliance Wk. (Feb. 8, 2005).

⁵Internal Control Disclosures in January 2005: The List, Compliance Wk. (Feb. 8, 2005).

⁶January Internal Control Report: Adverse Opinions Emerge, Compliance Wk. (Feb. 8, 2005).

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¹Commission Recommendation 2001/453/EC of 30 May 2001 on the Recognition, Measurement, and Disclosure of Environmental Issues in the Annual Accounts and Annual Reports of Companies, 2001 O.J. (L 156) 33.

and that voluntary corporate environmental disclosure was “running at low levels.”² The disparity of different rules for different stakeholders contravened the EU move towards consistency between financial reporting by Member States, international accounting standards, and single market policies.³ The Commission recommended clarifying existing rules and providing more specific guidance on recognition, measurement, and disclosure of environmental issues in annual reports,⁴ which led to the EU Directive.

Effective January 1, 2005,⁵ the EU Directive moves the EU closer to a single capital market by formalizing individual Member States’ accounting practices with a more modern, unified set of international accounting standards.⁶ Similar to the U.S. MD&A requirement, EU listed companies⁷ must include a comprehensive analysis of its performance in the annual reports and consolidated accounts, including non-financial information to the extent it provides a balanced picture of the company’s position.⁸ Section 9 states that the annual report, in presenting a “fair review” of the company’s financial condition, should include “an analysis of environmental and social aspects necessary for an understanding of the company’s development, performance, or position” consistent with the 2001 recommendations.⁹ Company directors must exercise due care to verify the analysis of the company’s performance, and auditors must state that the report gives a “true and fair view in accordance with the relevant financial reporting framework” and clarifies the context for the auditors’ opinion.¹⁰

The EU Directive allows member states to waive the burden of providing non-financial information due to the “evolving nature of this area of financial reporting” and to implement the regulation through their own legislation.¹¹ One of the most complete local implementations of the EU Directive is the UK Companies Act revisions and new OFR requirement.

§ 8:58 EU reporting requirements—UK Companies Act and the OFR requirement

While the EU was reforming earlier directives on the annual and consolidated accounts of companies, banks, and other financial institutions and insurance undertakings, the UK was modernizing the Companies Act 1985, which created new require-

²Commission Recommendation 2001/453/EC of 30 May 2001 on the Recognition, Measurement, and Disclosure of Environmental Issues in the Annual Accounts and Annual Reports of Companies, 2001 O.J. (L 156) 33.

³See Commission Recommendation 2001/453/EC of 30 May 2001 on the Recognition, Measurement, and Disclosure of Environmental Issues in the Annual Accounts and Annual Reports of Companies, 2001 O.J. (L 156) 33.

⁴See Commission Recommendation 2001/453/EC of 30 May 2001 on the Recognition, Measurement, and Disclosure of Environmental Issues in the Annual Accounts and Annual Reports of Companies, 2001 O.J. (L 156) 33.

⁵The EU Directive was passed June 18, 2003, but implemented January 1, 2005.

⁶EU Directive § 3 states that International Accounting Standards (IAS) Regulation (1606/2002), dated July 19, 2002, will require listed companies, including banks and insurance companies, to prepare their consolidated accounts in accordance with IAS from 2005 onwards. See European Financial Reporting Advisory Group (EFRAG) homepage at <http://www.efrag.org/> (last visited Mar. 8, 2002).

⁷EU Directive § 1 defines listed companies as “[c]ommunity companies whose securities are admitted to trading on a regulated market.”

⁸EU Directive § 9.

⁹EU Directive § 9.

¹⁰EU Directive § 10.

¹¹EU Directive § 9.

ments for quoted companies.¹ It also enhanced the existing directors' report requirements for unquoted large and medium companies.²

As of April 1, 2005, directors of quoted UK companies will be required to prepare an OFR for inclusion in their annual report, similar to the MD&A.³ The law also requires auditors to review OFRs and it establishes criminal and administrative penalties for failure to submit OFRs.⁴ Similar to the U.S. regulations, the purpose of the OFR is to provide stakeholders with a balanced and comprehensive analysis of the company's current performance and main trends, which are likely to affect its future performance, upon which to make informed investment decisions.⁵ Inclusion of corporate governance issues such as environmental matters is encouraged, and issues should be included "to the extent necessary" for directors to provide the company analysis to shareholders.⁶ If the company determines that there are no environmental matters that contribute to the analysis, the directors are still required to make a positive statement as to which of the issues the statement applies.⁷ However, auditors will evaluate this decision upon "due and careful" inquiry, and determine consistency with the corporate accounts.⁸ The auditors must report any inconsistencies between their review and the submitted OFR, which will be published in the annual report.⁹ The OFR requirement, and the possibility for penalties, is expected to increase environmental disclosure significantly.¹⁰

Similar to the forward-looking statements required under U.S. requirements,¹¹ the OFR must include information about the company's future plans and prospects, specifically "main trends and factors that are likely to affect the company's future development, performance, and position."¹² Unlike the U.S. requirements, however, the OFR provides no safe harbor provision protecting directors from making statements about anticipated events that do not occur. In fact, no information about impending developments or matters in the course of negotiation needs to be disclosed

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¹Companies can be "quoted" on an interdealer quotation system or "listed" on a stock exchange, but are held to different disclosure standards. Quoted companies will be required to submit an OFR once the Companies Act 1985 (Operating and Financial Review and Directors' Report etc.) Regulation 2005 becomes effective.

²Unquoted companies will still be required to submit a directors' report (different from an OFR) but under stricter standards.

³See Explanatory Memorandum to the Draft of the Companies Act 1985 (Operating and Financial Review and Directors' Report etc.) Regulation 2005, available at <http://www.legislation.hms.gov.uk/si/si2005/draft/20051592.htm> (last visited Mar. 8, 2005).

⁴Explanatory Memorandum to the Draft of the Companies Act 1985 (Operating and Financial Review and Directors' Report etc.) Regulation 2005.

⁵Explanatory Memorandum to the Draft of the Companies Act 1985 (Operating and Financial Review and Directors' Report etc.) Regulation 2005.

⁶Explanatory Memorandum to the Draft of the Companies Act 1985 (Operating and Financial Review and Directors' Report etc.) Regulation 2005.

⁷Explanatory Memorandum to the Draft of the Companies Act 1985 (Operating and Financial Review and Directors' Report etc.) Regulation 2005.

⁸Explanatory Memorandum to the Draft of the Companies Act 1985 (Operating and Financial Review and Directors' Report etc.) Regulation 2005.

⁹Explanatory Memorandum to the Draft of the Companies Act 1985 (Operating and Financial Review and Directors' Report etc.) Regulation 2005.

¹⁰The annual accounts are audited whereas the annual report is reviewed for inconsistencies with the accounts; see U.K. Environmental Agency, Environmental Disclosures in the Annual Report and Accounts of Companies in the FTSE All Share 37 (2004), available at <http://www.environment-agency.gov.uk> (last visited Mar. 14, 2005).

¹¹17 C.F.R. § 229.303(a), Instructions to Paragraph 303(a), 7.

¹²See Explanatory Memorandum to the Draft of the Companies Act 1985 (Operating and Financial Review and Directors' Report etc.) Regulation 2005.

if it would, in the opinion of the directors, seriously prejudice the company's interests.¹³ The explanatory memoranda caution that when forward-looking statements are made in good faith but cannot be verified, directors may want to advise readers to treat the information with caution.¹⁴ The Companies Act also requires that directors exercise due care, skill, and diligence in preparing the OFR; breach of OFR requirements may lead to criminal penalties for OFRs filed after April 1, 2005, or civil penalties for OFRs filed after April 1, 2006.¹⁵ Finally, the Financial Reporting Review Panel (FRRP) and Secretary of State will enforce the regulations, and inquire about an OFR if it "appears factually wrong in a material respect" or it "contains an opinion no reasonable board could have formed if it had followed a proper process of collective and evaluating evidence."¹⁶ In short, the FRRP has the legal authority to review the company directors' report and, if necessary, go to court to compel the company to revise its report.

The OFR requirement compliments the EU Directive's requirements for more disclosure in that it allows UK companies to prepare and submit only OFRs to comply with the EU Directive; there is no longer a need to prepare a separate directors' report.¹⁷ As such, the UK has delayed implementing the EU Directive in the UK until April 1, 2005.

In contrast to the stringent disclosure requirements for quoted companies to prepare OFRs, directors of unquoted large and medium companies are required to submit the traditional directors' report, which has undergone minor changes under recent regulations promulgated under the Companies Act 1985.¹⁸ The director's report must contain an expanded fair review of their business, similar to what is required in the OFR.¹⁹ The main difference, however, is that the unquoted businesses do not need to report on trends and factors affecting the company's future development. The OFR "is more forward-looking in nature and includes information on the strategies and policies the company is deploying for long term success."²⁰ However, directors' reports still must include environmental matters "to the extent necessary" to understand the company's performance, and penalties are parallel to the OFR. Auditors' OFR duties also parallel directors' reports in that they must state that, in their opinion, the information in the reports are consistent with the company's accounts.²¹

While the OFR requirements and the EU Directive require much of the same attention to environmental disclosures as the MD&A under U.S. law, it is too soon to determine whether they will, in fact, result in more transparency for publicly listed companies.

§ 8:59 Why disclosure remains inadequate

Corporate reporting of environmental disclosures remains inadequate despite

¹³See Draft of the Companies Act 1985 (Operating and Financial Review and Directors' Report etc.) Regulations 2005, pt. 3.

¹⁴See Explanatory Memorandum to the Draft of the Companies Act 1985 (Operating and Financial Review and Directors' Report etc.) Regulation 2005.

¹⁵Explanatory Memorandum to the Draft of the Companies Act 1985 (Operating and Financial Review and Directors' Report etc.) Regulation 2005.

¹⁶Explanatory Memorandum to the Draft of the Companies Act 1985 (Operating and Financial Review and Directors' Report etc.) Regulation 2005.

¹⁷See Simmons & Simmons, Accounting Modernisation Directive Summary, at <http://www.elexica.com/fsap/account/account3.htm> (last visited Mar. 8, 2005).

¹⁸Draft of the Companies Act 1985 (Operating and Financial Review and Directors' Report etc.) Regulations 2005.

¹⁹See Simmons & Simmons, Accounting Modernisation Directive Summary.

²⁰See Simmons & Simmons, Accounting Modernisation Directive Summary.

²¹Simmons & Simmons, Accounting Modernisation Directive Summary.

new, tougher regulations. The new regulations are unclear as to what to report, and the SEC does not have a system to monitor and enforce its own environmental disclosure regulations. Beyond enforcement, however, the typical corporation does not see the value of reporting environmental issues to create long-term company and shareholder value. In other words, there exists no corporate culture to link environment performance to financial performance.

The U.S. Government Accountability Office (GAO) highlighted this disconnect in a July 2004 U.S. Senate-commissioned study on corporate environmental disclosures after the enactment of the Sarbanes-Oxley Act.¹ The Senate asked the GAO to survey a range of experts on the effectiveness of the SEC's efforts to define, monitor, and enforce environmental disclosure. Company response was that the requirements were sufficient and that "requiring additional information would not improve investor's ability to make sound investment decisions."² They stated that: (1) corporate environmental performance is disclosed in press releases or reports separate from SEC filings; (2) environmental information is less important than other types of information, such as executive compensation or board stock ownership; (3) more disclosure without assurance that the information is material would "not add value and might burden readers [with] irrelevant data"; (4) SEC disclosure requirements do not drive compliance as much as environmental regulations and market forces; and (5) aggregating similar environmental liabilities "might distort the actual risks a company faces."³ Moreover, businesses "opposed requiring more disclosure of future risks, such as the estimated costs associated with potential environmental regulations, because of the degree of uncertainty about the impact on companies' financial condition and operations."⁴ Conversely, socially responsible investor groups, researchers, and environmental nonprofits felt the requirements are "too narrowly scoped in some areas to ensure that companies are making available all of the important environmental information needed by investors."⁵

In reviewing the SEC's methodology, the GAO could not determine the extent to which companies are disclosing environmental information in their annual and quarterly reports. The SEC reviews only about 8% to 20% of the filings each year (from 1999–2003), and does not track its comments on filings to determine trends.⁶ That is, it does not maintain a database on the substance of its comments and company responses.⁷ Consequently, the GAO could not determine the effectiveness of the SEC's monitoring and enforcement efforts with regard to environmental disclosures. The report recommended that the SEC should track comments on filings to uncover common problems on which to issue guidance, create a public

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¹U.S. GAO, *Environmental Disclosure: SEC Should Explore Ways to Improve Tracking and Transparency of Information* (2004) (GAO 04-0808), available at <http://www.gao.gov/new.items/d04808.pdf> (last visited Mar. 8, 2005).

²U.S. GAO, *Environmental Disclosure: SEC Should Explore Ways to Improve Tracking and Transparency of Information* 14 (2004) (GAO 04-0808).

³U.S. GAO, *Environmental Disclosure: SEC Should Explore Ways to Improve Tracking and Transparency of Information* 15 (2004) (GAO 04-0808).

⁴U.S. GAO, *Environmental Disclosure: SEC Should Explore Ways to Improve Tracking and Transparency of Information* 15 (2004) (GAO 04-0808).

⁵U.S. GAO, *Environmental Disclosure: SEC Should Explore Ways to Improve Tracking and Transparency of Information* 13 (2004) (GAO 04-0808).

⁶U.S. GAO, *Environmental Disclosure: SEC Should Explore Ways to Improve Tracking and Transparency of Information* 23–26 (2004) (GAO 04-0808).

⁷U.S. GAO, *Environmental Disclosure: SEC Should Explore Ways to Improve Tracking and Transparency of Information* 23 (2004) (GAO 04-0808).

database for SEC comment letters, and have more formal coordination with EPA.⁸ The SEC responded to GAO's recommendations and is in the process of implementing an electronic database to analyze SEC reviews of public company filings, as well as creating a searchable database of SEC comment letters and company responses.⁹

A 2004 study by the UK Environment Agency¹⁰ on environmental disclosures found that while 89% of Financial Times Stock Exchange (FTSE) All Share companies discussed the environment in annual reports, the majority did not conduct the depth of analysis that will be required by the OFR.¹¹ Most FTSE All Share reporting of environmental interactions "lack depth, rigour, or quantification and 11 percent disclose nothing at all."¹² Only 12% of FTSE All Share companies consider environmental matters as financially material to contribute to shareholder value.¹³ The report commented directly on the failure of companies to link environmental disclosures with financial performance, stating "this lack of a direct link is disappointing. Many shareholders will be left querying the significance of environmental issues to the bottom line and consequently ignore them, unless the link is made more explicit."¹⁴

Similar to the U.S. corporate culture, it is likely that UK companies have also traditionally focused on the bottom line to the exclusion of non-financial drivers in financial statements. So long as "[t]he responsibility of a business is to make as much money as possible,"¹⁵ environmental matters will be marginalized, thereby reinforcing the idea that environmental matters do not contribute to profits and losses.

§ 8:60 Conclusion

Since the passage of the Sarbanes-Oxley Act, companies have had to implement and strengthen existing internal controls to provide to investors all relevant information necessary for complete accounting and disclosure. The corporate environmental community continues to pay close attention to disclosure requirements, which obligate reporting of hazardous waste cleanups, penalties associated with EPA regulations, the costs of retrofitting polluting facilities, and other environmental matters. However, the Act's emphasis on disclosing not just past remedial actions but also forward-looking, anticipated environmental liabilities and risks, such as the effects of climate change, or proposed laws and treaties yet to be enacted, provide a challenge to environmental practitioners, corporate management, auditors, and regulators. The new business laws contemplated by the EU and UK appear to require significant accountability and reporting by boards of directors. Time will tell whether these new reporting requirements will positively affect transparency and corporate accountability. After all, the current U.S. reporting requirements are

⁸U.S. GAO, *Environmental Disclosure: SEC Should Explore Ways to Improve Tracking and Transparency of Information* 36–37 (2004) (GAO 04-0808).

⁹Letter from William H. Donaldson, Chairman, SEC, to the Honorable Ted Stevens, Chairman, Committee on Appropriations (Oct. 5, 2004).

¹⁰U.K. Environmental Agency, *Environmental Disclosures in the Annual Report and Accounts of Companies in the FTSE All Share* 37 (2004).

¹¹U.K. Environmental Agency, *Environmental Disclosures in the Annual Report and Accounts of Companies in the FTSE All Share* 4 (2004).

¹²U.K. Environmental Agency, *Environmental Disclosures in the Annual Report and Accounts of Companies in the FTSE All Share* 4 (2004).

¹³U.K. Environmental Agency, *Environmental Disclosures in the Annual Report and Accounts of Companies in the FTSE All Share* 9 (2004).

¹⁴U.K. Environmental Agency, *Environmental Disclosures in the Annual Report and Accounts of Companies in the FTSE All Share* 9 (2004).

¹⁵Milton Friedman, *The Social Responsibility of Business Is to Increase Its Profits*, *N.Y. Times (Magazine)*, Sept. 13, 1971, at 33.

complex, hard to interpret, and continue to evolve. In the meantime, there remains a need for the SEC to provide more guidance and oversight of environmental reporting requirements to companies, which are under pressure from some stakeholders to make full disclosures. This might include more SEC review of company filings, or coordination with federal and state environmental agencies, as suggested by the GAO report. EPA already collects information on environmental remediation liabilities, which the SEC could use to evaluate whether companies are reporting adequately. Furthermore, there is a need for continued reinforcement of the belief that stakeholders are interested in eliciting information from companies about their environmental risks and liabilities. Admittedly, it is difficult to establish a connection between financial and environmental performance without more quantification of environmental costs. However, investors and analysts understand that a well-governed company is one that pays attention to environmental management since environmental risks affect a company's ability to create long-term value. Company value could decrease as a result of environmental liabilities and, therefore, access to adequate environmental information is vital for sound business decision-making. Once companies regularly include environmental costs in their required financial disclosures, stakeholders can evaluate the materiality of the liabilities on a consistent basis. Adequate environmental disclosure, then, is imperative for improving corporate governance and accountability, and reinstating investor confidence in markets.

Chapter 9

Enforcement*

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*This section written and updated with contributions from **Donald C. Baur, Susan E. Bromm, Tracy Gipson, F. Henry Habicht II, Terrell E. Hunt, Steven L. Leifer, Jeffrey G. Miller, and Cheryl E. Wasserman.**

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I. FEDERAL ENFORCEMENT

§ 9:1 Introduction

The enforcement schemes of the federal environmental regulatory statutes have evolved considerably since their inception, and are only now reaching their maturity. The enforcement provisions of the Clean Air Act Amendments of 1970¹ represented a quantum leap beyond previous enforcement powers² and set the pattern for enforcement under subsequent statutes. The enforcement provisions of each of those statutes, however, has evolved somewhat differently. In an evolutionary full circle, the 1990 amendments to the Clean Air Act adopted enforcement powers pioneered in the other statutes.³

The environmental statutes now possess an impressive array of enforcement authorities.⁴ They most often include: notices of violation, which sometimes are jurisdictional prerequisites to other enforcement actions; administrative orders requiring compliance; administrative orders assessing civil penalties; recourse to courts for civil penalties for violations and injunctive relief to require compliance; criminal sanctions for violations; and citizen suits to enforce the statutes in the

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¹The basic enforcement section is contained in Clean Air Act § 113, 42 U.S.C.A. § 7413.

²Typical of the earlier enforcement mechanisms was the former enforcement procedure in the Clean Air Act, described in *United States v. Bishop Processing Co.*, 423 F.2d 469, 470-72 (4th Cir. 1970), cert. denied, 398 U.S. 904 (1970). The proceeding was against a rendering plant causing a "horrible" interstate "stench." After five years of attempting to deal with the problem on its own, Delaware (the affected state) requested that the Secretary of Health, Education, and Welfare convene an enforcement conference under the statute. A conference held between the relevant political jurisdictions resulted in a recommendation that Maryland (the host state) require abatement of the odor. The Secretary forwarded the recommendation to Maryland and, when no remedial action was forthcoming, commenced a public hearing before a Hearing Board in which Bishop Processing participated. The Hearing Board made findings and recommendations which it forwarded to the Secretary who then instructed Bishop to abate the odor. When it did not, the Secretary requested that the Attorney General file suit. Suit was filed, three years after the administrative prerequisites were commenced. Despite the two preceding administrative proceedings, the judicial proceeding was *de novo*.

The equally cumbersome enforcement mechanisms under the former Federal Water Pollution Control Act are described in Dunkelberger, *The Federal Government's Role in Regulating Water Pollution Under The Federal Water Quality Act of 1965*, 3 Nat. Resources Law. 3 (1970); Pitts, *The Interaction of the Federal and State System: The Experience in the Central U.S.*, 3 Nat. Resources Law. 26 (1970); Stein, *The Actual Operation of the Federal Water Pollution Control Administration*, 3 Nat. Resources Law. 47 (1970). Small wonder recalcitrant polluters were seldom pursued to court.

³The criminal sanctions for the knowing endangerment provision found at Clean Air Act § 113(c)(5), 42 U.S.C.A. § 7413(c)(5), came to it by way of Resource Conservation and Recovery Act § 3007(e) and (f), 42 U.S.C.A. § 6928(e) and (f) and Clean Water Act § 309(c)(3), 33 U.S.C.A. § 1319(c)(3). The administrative civil penalty authority in Clean Air Act § 113(d), 42 U.S.C.A. § 7413(d), is derived from Clean Water Act § 309(g), 33 U.S.C.A. § 309(g).

⁴Senate Comm. on Public Works, 93d Cong., 2d Sess., 1 A Legislative History of the Clean Air Act Amendments of 1970 226 (Comm. Print 1974) [hereinafter cited as Clean Air Act Legislative History].

absence of effective government enforcement.⁵ Other less pervasive enforcement tools include: product recalls; stop sale orders; permit revocations; sewer connection bans; notices to affected parties; contract debarment; and protection of whistleblowing employees.

The statutes authorize other related remedies, such as administrative orders or injunctions to abate endangerments to health or the environment. Such remedies are beyond the scope of this section. Indeed, enforcement of nonregulatory environmental statutes, such as the National Environmental Policy Act (NEPA) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), is also beyond the present scope.

While the enforcement tools described above could be sharpened and augmented in some respects, EPA generally has sufficient enforcement authority to mount credible and effective enforcement programs if it has the will to do so. Repeated studies indicate it sometimes lacks the will to do so.⁶

§ 9:2 Bureaucratic structure

EPA's enforcement structure has changed considerably over time. Its structure at any given moment is some indication of the current status of enforcement at EPA. In the early days of the Agency there was an Office of Enforcement and General Counsel at the Washington, D.C. headquarters, headed by an Assistant Administrator, a presidential appointee. The office incorporated both the legal and the technical and policy personnel from the enforcement components of all of the programs administered by EPA. It had within it a General Counsel's Office, an Office of Water Enforcement, and a General Enforcement Office, with separate divisions for stationary air enforcement, mobile air enforcement, and pesticides enforcement. This internal structure developed over the years to reflect the development of new programs, with offices added to direct the Agency's toxics and pesticides enforcement program, its hazardous waste regulation and remediation program, and its criminal investigation program. The General Counsel's Office was removed at an early date because of the potential for conflict of interest between the functions of the General Counsel and the Enforcement Office and a fear that the combined office could too easily dominate the program offices. The unified enforcement structure was mirrored by an Enforcement Division in all but one of EPA's regional offices, combining the legal and technical enforcement staffs for all programs in the region. Most regional offices also had separate divisions responsible for field work and inspection and analytical work, including those needed for enforcement. The regional enforcement divisions reported to regional administrators rather than to the Assistant Administrator for Enforcement. The regional administrators reported directly to the Administrator, as did the Assistant Administrator. A minority of enforcement work was centralized in headquarters, e.g., automobile emissions requirements at

⁵With respect to citizen suits, see generally J. Miller, *Citizen Suits: Private Enforcement of Federal Pollution Control Laws* (1986).

⁶See Hodas, *Enforcement of Environmental Law in a Triangular Federal System: Can Three Not Be a Crowd When Enforcement Authority Is Shared by the United States, the States, and Their Citizens?*, 54 Md. L. Rev. 1552 (1995); Mintz, *Agencies, Congress, and Regulatory Enforcement: A Review of EPA's Hazardous Waste Enforcement Effort*, 18 *Envtl. L.* 683 (1988); N. Dean, *Danger on Tap: The Government's Failure to Enforce the Federal Safe Drinking Water Act* (1988); GAO, *More Effective Action by the Environmental Protection Agency Needed to Enforce Industrial Compliance with Water Pollution Control Discharge Permits*, (CED-78-168, 11/13/78); GAO *Improvements Needed in Controlling Major Air Pollution Sources* (CED-78-165, 1/2/79); GAO, *Stronger Enforcement Needed Against Misuse of Pesticides* (CED-82-5, 10/15/81); GAO, *Wastewater Discharges Are Not Complying With EPA Pollution Control Permits* (GAO-RCED-84-53, 12/2/83); see also Mintz, *EPA Enforcement: Critical Assessment Yields Mixed Review*, *Envtl. Forum*, Nov. 1984, at 12-16; Broon, *EPA Enforcement—Past, Present and Future*, *Envtl. Forum*, May 1984, at 12-22; Miller, *Decline and Fall of EPA Enforcement*, *Envtl. Analyst*, Aug. 1983.

the manufacturing level. Most enforcement was carried on at the regional level, with headquarters providing policy and some oversight.

This combined structure facilitated greater coherence and coordination of enforcement under the different statutes, resulting in more effective and efficient enforcement. It provided a focal point from which a comprehensive picture of enforcement activity throughout the Agency could be provided. And it provided one point at which there was a modicum of combining authority and responsibility for enforcement. The fact that the regional enforcement divisions reported to the regional administrators instead of to the Assistant Administrator for Enforcement prevented the true unity between authority and responsibility. But the net effect balanced administrative efficiency and effective decentralization. This combined structure was dismantled during the beginning of the Gorsuch years and replaced with a truncated enforcement office at headquarters with legal and a few policy staff from all programs. But the technical and most of the policy staff were transferred to the various program offices.

Similar transfers were made in the regional offices. Reorganizations of one sort or another occurred every three of four months. These moves were widely perceived as efforts to chill enforcement.¹ They certainly had that effect. The number of cases filed by the Department of Justice on behalf of EPA fell from 163 in 1980 to 47 in 1982.² The legal enforcement organizations in the regional offices were finally made to report to the Assistant Administrator in Washington, rather than to the regional administrators. But this did not provide much power to the Assistant Administrator, as decisions on what cases to pursue remained in the first instance with program office divisions in the regions.

The reappointment of William Ruckelshaus as Administrator in the mid-1980s restored some of the luster the Agency had lost and brought enforcement back into the mainstream. Despite periodic examinations of the enforcement structure, however, there was no attempt to recombine the severed pieces of the old Office of Enforcement until the mid-1990s. Today there is a recombined Office of Enforcement and Compliance Assurance in EPA's headquarters, housing the legal and technical staffs of all of the Agency's programs.³ Its internal structure, however, is different from the simple program-oriented structure of the past. Although there still are offices reflecting the Agency's main programs and criminal investigations, there are also offices reflecting the multimedia approach the Agency increasingly takes toward enforcement and offices directed at particular industrial sectors. The regional offices have not been required to reflect this structure and—predictably—they have not.

§ 9:3 Federalism in enforcement

The federal scheme for environmental protection is described in detail in earlier chapters.¹ With only a few exceptions, the statutes and EPA policy give the states

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¹See Mintz, *Agencies; Congress, and Regulatory Enforcement: A Review of EPA's Hazardous Waste Enforcement Effort*, 18 *Envtl. L.* 683 (1988).

²Environmental Law Institute, *Citizen Suits: An Analysis of Citizen Suit Enforcement Actions Under EPA-Administered Statutes*, at III-10, -27, -29 (1984).

³See § 4:2.

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¹See Chs 4, 7.

the principal role in enforcing environmental protection law.² This is inevitable, given the fact that the states had legislation and regulatory programs in many environmental fields before the federal government did; the very large number of sources of pollution that exist; and the varying local circumstances that affect compliance and prosecutorial discretion.

Almost without exception, however, the statutes give EPA residual or concurrent enforcement authority.³ EPA enforcement policy, and the federal law applicable to EPA's direct enforcement actions, continue to be important even in states which have assumed or have received primary enforcement authority for environmental protection programs.

In the following section,⁴ EPA's policy for overseeing state enforcement programs is described. This policy includes the criteria which EPA uses to decide whether to intervene directly where a state has concurrent authority. It amounts to a formal expression of prosecutorial discretion policy.⁵ A similar statement of EPA policy concerns its exercise of discretion with regard to enforcement when violations are discovered in the course of compliance audits conducted by regulated industry and reported to EPA.⁶ Both of these policies are supplemented by policies on the same subject by the Department of Justice.⁷ Because Justice has principal authority over criminal enforcement and principle, though lesser authority to conduct civil judicial enforcement, its policies may be as important as EPA's.

EPA's policies on the relationship between state and federal enforcement programs evolve over time, but they generally seek to impose uniform national criteria for adequacy of state programs.⁸ The relationship of federal and state enforcement may also be addressed by the agency's policies for delegation and oversight of state programs,⁹ in financial assistance agreements with states,¹⁰ and in informal Memoranda of Agreement between regional administrators and state agency heads concerning delegations, oversight, and financial assistance, all of which may specify priorities for punishment or enforcement action.¹¹ These policies and agreements may be changed without notice and are generally not enforceable; but they clarify the working relationship between EPA and state enforcement programs, and provide both tools and arguments for regulated persons who feel caught between the sometimes conflicting levels of government. The oversight policies described in the following section provide general guidelines for the complex network of policies and agreements between state and federal agencies.

In the following subsections, we will explore in detail how the federal structure affects EPA's specific enforcement authorities.

§ 9:4 Enforcement discretion

Environmental organizations sometimes complain that EPA does not bring

²See § 7:1; § 9:34. Under the Toxic Substances Control Act (TSCA), 15 U.S.C.A. §§ 2601 to 2609, state law is preempted and the states have no significant role in the federal program. See Ch 16.

³See § 9:1.

⁴See § 9:34.

⁵See § 9:4.

⁶See § 8:41.

⁷"Factors in Decisions on Criminal Prosecutions for Environmental Violations in the Context of Significant Voluntary Compliance or Disclosure Efforts by the Violator," U.S. Dep't of Justice, July 1, 1991.

⁸See generally § 9:35.

⁹See, e.g., Memorandum, Agency Policies on Delegation and Oversight: Making the State/EPA Partnership Work, from William D. Ruckelshaus, Administrator, to Assistant Administrators (Apr. 4, 1984).

¹⁰Brown, Enforcement and Liabilities, in Environmental Law Handbook 560, 564 (8th ed. 1985).

¹¹See generally § 9:34.

enforcement actions against enough violators of the environmental statutes and that, even when it does enforce, it does not seek or exact sufficient remedies and penalties. Enforcement targets complain that EPA enforces too often and seeks wholly unwarranted remedies and penalties. They also contend that EPA should enforce against other, more egregious malefactors. The common denominators between the environmental commentators and the enforcement targets are the concept of enforcement discretion and the related questions of how it is exercised and whether it is judicially recognized.

The concept of enforcement discretion is not new and is not a creation of environmental law. It is the natural result of the fact that there are more illegal acts committed than can be identified, investigated, and prosecuted with the resources society is willing to devote to the task. It is also inherent in statutes that provide a wide range of remedies for each violation and a wide range of violations for which a particular remedy may be employed. The environmental statutes provide such wide ranges. Prosecutorial discretion is not only a means to allocate scarce law enforcement resources, but also a means to afford rough justice in making the punishment fit the crime.

There has been a considerable amount of litigation over prosecutorial discretion under the environmental statutes. Most of it resulted from suits brought by environmental groups under citizen suit sections seeking orders that EPA perform what the plaintiffs alleged to be mandatory enforcement duties. Defendants in some enforcement cases brought by EPA also challenged the manner in which EPA exercised its enforcement discretion, alleging that the government was motivated to act against them by impermissible discriminatory motives.

Despite the plethora of relevant cases under the environmental statutes, any analysis of enforcement discretion must start with *Heckler v. Chaney*.¹ In this landmark 1985 case, condemned prisoners sought judicial review of a decision by the Food and Drug Administration not to enforce the Federal Food, Drug and Cosmetic Act² against states injecting a drug to execute prisoners, a use for the drug not among those approved by the FDA under the Act. The FDA's decision was challenged under the Administrative Procedure Act (APA).³ The APA does not provide jurisdiction for judicial review, *Califano v. Sanders*.⁴ Indeed, the APA in some senses restricts jurisdiction, as it did here by precluding judicial review when an "agency action is committed to agency discretion by law."⁵ Although enforcement of the environmental statutes is pursued by citizens under the citizen suit sections of those statutes, rather than under the APA, the inquiry is the same: whether the enforcement duty in question is discretionary or mandatory.⁶ If it is mandatory, courts may order the government to enforce against a violation; if it is discretionary, they may not.

It is quite possible that the death row posture of the plaintiffs in *Heckler* affected the disposition of the Court. In any event, the Court came down foursquare for enforcement discretion, noting that it had "recognized on several occasions over many years that an agency's decision not to prosecute or enforce, whether through civil or criminal process, is a decision generally committed to an agency's complete

[Section 9:4]

¹*Heckler v. Chaney*, 470 U.S. 821, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20335 (1985).

²21 U.S.C.A.A. §§ 301 et seq.

³5 U.S.C.A. §§ 501 et seq.

⁴*Califano v. Sanders*, 430 U.S. 99 (1977).

⁵5 U.S.C.A. § 701(a)(2).

⁶Under the APA there is no review of actions committed to agency discretion and under the citizen suit provisions citizen enforcement is authorized only to require an agency to take a mandatory action. See, e.g., CWA § 505(a)(2), 33 U.S.C.A. § 1365(a)(2).

discretion.”⁷ The Court in *Heckler* viewed decisions on whether or not to enforce as particularly unsuitable for judicial review because regulatory agencies simply cannot take enforcement actions against all technical violations of the statutes which they administer. It recognized that the decision to enforce or not enforce against a particular violation involved a number of considerations within the scope of administrative, rather than judicial, expertise: the existence of a violation; the probability of success in an enforcement action; the consistency of an action with the agency’s policy; the appropriateness of the remedies available; the availability of resources to pursue a remedy and the desirability of devoting resources to this, rather than another, enforcement action.

The Court nevertheless acknowledged its earlier observation in *Citizens to Preserve Overton Park v. Volpe*,⁸ that the APA’s “committed to agency discretion” exception to its general presumption in favor of judicial review of agency actions should be narrowly construed to apply only to a statutory provision framed in such broad and general terms that there is literally no law to apply. It follows that the presumption of nonreviewability of agency enforcement decisions could be overcome if a statute provided guidelines for the exercise of enforcement power. Such guidelines would give the courts law to apply in reviewing the agency’s enforcement decisions. “Congress may limit an agency’s exercise of enforcement power if it wishes, either by setting substantive priorities, or by otherwise circumscribing an agency’s power to discriminate among issues or cases it will pursue.”⁹ The Court cited as an example of such circumscription of an agency’s enforcement discretion the Labor-Management Reporting and Disclosure Act.¹⁰ That Act provides that when a union member files a complaint challenging a union election, the Secretary of Labor “shall” investigate the alleged violation and, if he finds probable cause that a violation in fact occurred, “shall” file a civil complaint.¹¹ Under the Federal Food, Drug and Cosmetic Act at issue in *Heckler*, however, the Secretary is “authorized” to conduct investigations. There is no indication of when civil prosecutions are to be commenced. If a person is convicted of a criminal violation of the Act, he “shall” be fined or imprisoned. This “shall,” however, merely mimics the usual wording of criminal provisions of the criminal code: upon conviction, a sanction must be imposed. This has nothing to do with whether or when the Secretary must initiate prosecutions. There is no legislative history or case law indicating that the Secretary is to seek criminal prosecutions for every violation. Indeed, under the Act the Secretary can only recommend a criminal prosecution; the Attorney General alone can initiate it. Under these circumstances, the Court found that decisions on whether or not to enforce the Act were not subject to review, but rather were discretionary.

Under *Heckler*, a strong presumption exists that decisions when, whether, and how to enforce are discretionary. The presumption can be overcome only by explicit statutory language or legislative history. Applying this standard, enforcement under the environmental statutes is generally discretionary, although there are significant exceptions. Judicial decisions on the question are mixed, however, and, examined closely, few do analytical justice to the question.

Most cases considering the question arise under section 309(a)(3) of the Clean Water Act. That section provides, in essence, that when EPA finds a pollution source in violation of the Act, it “shall” take enforcement action against the source

⁷*Heckler v. Chaney*, 470 U.S. 821, 831, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20335, 20336 (1985).

⁸*Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402, 1 *Envtl. L. Rep.* (Envtl. L. Inst.) 20110 (1971).

⁹*Heckler v. Chaney*, 470 U.S. 821, 831, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20335, 20336 (1985).

¹⁰29 U.S.C.A. §§ 481 et seq.

¹¹*Dunlop v. Bachowski*, 421 U.S. 560 (1975).

by either issuing an administrative order or commencing a civil action.¹² In some of the citizen actions seeking government enforcement, district courts have relied on the use of “shall” in holding or hinting that EPA has a mandatory duty under section 309 to enforce if it is presented with evidence of a violation.¹³ When presented with the further question of whether EPA’s choice of enforcement remedy is discretionary, however, even the more bellicose courts have indicated that such choice is discretionary.¹⁴ The latter point is echoed in cases where defendants have contended that administrative rather than judicial action should have been taken against them. All courts facing that question have ruled that the choice of remedy is EPA’s.¹⁵ Some of these cases have been wrongfully cited for the proposition that EPA enforcement is mandatory.¹⁶ The government’s enforcement discretion has been cited correctly in denying an injunction against an EPA criminal investigation.¹⁷

¹²CWA § 309(a)(3), 33 U.S.C.A. § 1319(a)(3). Alternatively, if the violation is of a state-issued permit, a notice of violation may be issued, to be followed by either an administrative order or a civil action if the violation persists for more than thirty days. *See* CWA § 309(a)(1), 33 U.S.C.A. § 1319(a)(1).

¹³*DuBois v. EPA*, 646 F. Supp. 741, 17 *Envtl. L. Rep. (Envtl. L. Inst.)* 20245 (W.D. Mo. 1986), *rev’d sub nom. DuBois v. Thomas*, 820 F.2d 943, 17 *Envtl. L. Rep. (Envtl. L. Inst.)* 21008 (8th Cir. 1987). Here, the district court held EPA had a mandatory duty to investigate an alleged violation of the CWA and a mandatory duty to enforce if a violation was detected. It appeared to be unaware of *Heckler v. Chaney*. Its analysis was based more on gut reaction than on legal reasoning. “The spirit of the citizen suit provisions of the FWPCA is to give ‘the little guy’ access to enforcement power of the federal government when he has discovered pollution occurring—especially in his own back yard.” *DuBois v. Thomas*, 820 F.2d 943, 944, 17 *Envtl. L. Rep. (Envtl. L. Inst.)* 21008, 20246 (8th Cir. 1987). Indeed, CWA section 505 does give “the little guy” access to the federal enforcement power when he discovers a violation—the power to sue the polluter, not EPA. The Eighth Circuit, with a *Heckler v. Chaney* analysis, had little trouble reversing. *See also Green v. Costle*, 577 F. Supp. 1225, 14 *Envtl. L. Rep. (Envtl. L. Inst.)* 20394 (W.D. Tenn. 1983); *Caldwell v. Gurley Ref. Co.*, 533 F. Supp. 252, 12 *Envtl. L. Rep. (Envtl. L. Inst.)* 20759 (E.D. Ark. 1982), *aff’d on other grounds* 755 F.2d 645, 15 *Envtl. L. Rep. (Envtl. L. Inst.)* 20316 (8th Cir. 1985); *South Carolina Wildlife Fed’n v. Alexander*, 457 F. Supp. 118, 8 *Envtl. L. Rep. (Envtl. L. Inst.)* 20757 (D.S.C. 1978); *People of the State of Illinois v. Hoffman*, 425 F. Supp. 71 (S.D. Ill. 1977). *See also* the dicta in *Illinois v. City of Milwaukee*, 599 F.2d 151, 9 *Envtl. L. Rep. (Envtl. L. Inst.)* 20347 (7th Cir. 1979), *rev’d on other grounds sub nom. City of Milwaukee v. Illinois*, 451 U.S. 304, 11 *Envtl. L. Rep. (Envtl. L. Inst.)* 20406 (1981). *See also Rivers Unlimited, Inc. v. Costle*, 15 *Envtl. L. Rep. (Envtl. L. Inst.)* 20936 (S.D. Ohio 1978) (construing CWA section 309(a)(2) as imposing a mandatory duty on EPA to assume direct enforcement responsibility in a state with an approved NPDES program when presented with evidence that widespread violations of the Act in the state result from the failure of the state to enforce). *See* the analysis on a similar issue in *National Wildlife Fed’n v. EPA*, 980 F.2d 765, 23 *Envtl. L. Rep. (Envtl. L. Inst.)* 20440 (D.C. Cir. 1992), in the discussion in this section accompanying footnote 57.

¹⁴*South Carolina Wildlife Fed’n v. Alexander*, 457 F. Supp. 118, 8 *Envtl. L. Rep. (Envtl. L. Inst.)* 20757 (D.S.C. 1978); *Green v. Costle*, 577 F. Supp. 1225, 14 *Envtl. L. Rep. (Envtl. L. Inst.)* 20394 (W.D. Tenn. 1983); and *People of the State of Illinois v. Hoffman*, 425 F. Supp. 71 (S.D. Ill. 1977) hint at this, although they were not squarely presented with the question.

¹⁵*United States v. Frezzo Bros., Inc.*, 602 F.2d 1123, 9 *Envtl. L. Rep. (Envtl. L. Inst.)* 20556 (3d Cir. 1979) (no administrative enforcement need precede criminal prosecution); *City of Colorado Springs*, 455 F. Supp. 1364 (D. Colo. 1978) (notice of violation not necessary precedent to civil action for violation of state issued permits); *United States v. Detrex Chem. Indus., Inc.*, 393 F. Supp. 735 (N.D. Ohio 1975) (administrative order and civil action may be used against the same violators); *United States v. Phelps Dodge, Inc.*, 391 F. Supp. 1181, 5 *Envtl. L. Rep. (Envtl. L. Inst.)* 20308 (D. Ariz. 1975) (administrative enforcement not necessary precedent to criminal prosecution). *See also Sierra Club v. Train*, 557 F.2d 485, 7 *Envtl. L. Rep. (Envtl. L. Inst.)* 20670 (5th Cir. 1977) (no administrative order mandatory where U.S. had already commenced civil action). *See also United States v. City of Fort Pierre*, 580 F. Supp. 1036, 14 *Envtl. L. Rep. (Envtl. L. Inst.)* 20209 (D.S.D. 1983) (absent “invidious and arbitrary” discrimination, government may prosecute one violator and not other similar violators), *rev’d*, 747 F.2d 464, 15 *Envtl. L. Rep. (Envtl. L. Inst.)* 20177 (8th Cir. 1984). For a similar case under FIFRA, *see N. Jonas & Co. v. EPA*, 666 F.2d 829, 12 *Envtl. L. Rep. (Envtl. L. Inst.)* 20255 (3d Cir. 1981).

¹⁶*See, e.g., People v. Hoffman*, 425 F. Supp. 71 (S.D. Ill. 1977) (use of *United States v. Phelps Dodge, Inc.*, 391 F. Supp. 1181, 5 *Envtl. L. Rep. (Envtl. L. Inst.)* 20308 (D. Ariz. 1975)).

¹⁷*Hartford Assoc. v. United States*, 792 F. Supp. 358, 22 *Envtl. L. Rep. (Envtl. L. Inst.)* 20881

In most of the citizen cases seeking EPA enforcement under section 309, including all court of appeals decisions, courts have ruled that EPA's decision to enforce or not enforce is discretionary.¹⁸ Their holdings appear more in line with *Heckler v. Chaney* and should prevail over the long run.

Some of the opinions holding enforcement mandatory merely focus on the wording of section 309(a)(1) and (3). Section 309(a)(1) provides that "whenever, on the basis of any information available," EPA finds a person in violation of a state-issued national pollutant discharge elimination system (NPDES) permit or CWA section 404 permit, it "shall" issue a notice of violation or issue an administrative order or commence a civil action. Section 309(a)(3) provides that "whenever, on the basis of any information available" EPA finds a person in violation of the Clean Water Act, any NPDES permit, or any state-issued CWA section 404 permit, it "shall" issue an administrative order or commence a civil action. Some district courts are content to note that "shall" is a word of command to conclude that enforcement is mandatory.¹⁹ Others take the analysis further, noting legislative history and distinctions in wording of the Act that support a mandatory reading of section 309.²⁰ A literal reading of the statute may be encouraged by *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Foundation*.²¹ But nothing in that decision suggests a retreat from *Heckler v. Chaney*.

(D.N.J. 1992).

¹⁸*K.W. Thompson Tool Co. v. United States*, 836 F.2d 721, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20729 (1st Cir. 1988) (whether and how to conduct a criminal investigation clearly discretionary); *DuBois v. EPA*, 820 F.2d 943, 17 *Envtl. L. Rep.* (Envtl. L. Inst.) 21008 (8th Cir. 1987) (no mandatory duty to investigate and enforce against alleged violation of the CWA); *Harmon Cove Condominium Ass'n v. Marsh*, 815 F.2d 949, 17 *Envtl. L. Rep.* (Envtl. L. Inst.) 20747 (3d Cir. 1987) (duty of Secretary of the Army under CWA § 404 to find a violation discretionary); *State Water Control Bd. v. Train*, 559 F.2d 921, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20571 (4th Cir. 1977) (EPA expected to decline enforcement actions against cities unable to obtain federal grants to construct sewage treatment plants.); *Sierra Club v. Train*, 557 F.2d 485, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20670 (5th Cir. 1977) (administrative order not mandatory, especially where U.S. had already commenced a civil action); *Cross Timbers Concerned Citizens v. Saginaw*, 991 F. Supp. 563, 28 *Envtl. L. Rep.* (Envtl. L. Inst.) 21090 (N.D. Tex. 1997) (enforcement against violations of general permit for confined animal feeding operation discretionary); *New Jersey Dep't of Env'tl. Protection v. Gloucester Env'tl. Mgmt. Servs., Inc.*, 668 F. Supp. 404, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20112 (D.N.J. 1987) (EPA cannot be joined as an involuntary plaintiff under Fed. R. Civ. P. Rule 19(a) in a CERCLA cleanup action, because its prosecutorial discretion is immune from judicial review.); *Zemansky v. EPA*, 16 *Envtl. L. Rep.* (Envtl. L. Inst.) 20862 (D. Alaska 1986) (no mandatory duty to enforce CWA requirements against placer miners); *Caldwell v. Gurley Refining Co.*, 533 F. Supp. 252, 12 *Envtl. L. Rep.* (Envtl. L. Inst.) 20759 (E.D. Ark. 1982) (no duty to enforce where EPA found violation of CWA), *aff'd*, 755 F.2d 645, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20316 (8th Cir. 1985); *Goodyear v. LeCraw*, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20846 (S.D. Ga. 1980) (no duty to investigate and enforce against violation of CWA § 404); *Montgomery Env'tl. Coalition v. Washington Sanitary Sewer Comm'n*, 366 F. Supp. 261, 4 *Envtl. L. Rep.* (Envtl. L. Inst.) 20182 (D.D.C. 1973). *See also* *Avoyelle Sportsmen's League, Inc. v. Marsh*, 715 F.2d 897, 13 *Envtl. L. Rep.* (Envtl. L. Inst.) 20942 (5th Cir. 1983); *Bayou Des Familles Dev. Corp. v. United States Corps of Eng'rs*, 541 F. Supp. 1025, 13 *Envtl. L. Rep.* (Envtl. L. Inst.) 20055 (E.D. La. 1982); *Committee for the Consideration of Jones Falls Sewerage Sys. v. Train*, 387 F. Supp. 526 (D. Md. 1975), *aff'd*, 539 F.2d 1006, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20703 (4th Cir. 1976).

¹⁹*See Rivers Unlimited, Inc. v. Costle*, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20930 (S.D. Ohio 1978); *People v. Hoffman*, 425 F. Supp. 71 (S.D. Ill. 1977).

²⁰*South Carolina Wildlife Fed'n v. Alexander*, 457 F. Supp. 118, 8 *Envtl. L. Rep.* (Envtl. L. Inst.) 20757 (D.S.C. 1978) is the most thoughtful and analytical of the cases in this vein. *See also* *Greene v. Costle*, 577 F. Supp. 1225, 14 *Envtl. L. Rep.* (Envtl. L. Inst.) 20394 (W.D. Tenn. 1983). None of these cases, however, discuss or deal with either the presumption of enforcement discretion or the factors supporting it.

²¹*Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found.*, 484 U.S. 49, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20142 (1987). *Gwaltney* held that the present tense of the language in CWA § 505(a)(1)(A), authorizing citizen suits against those "alleged to be in violation," precluded citizen suits against those whose violations had wholly passed. On the other hand, one of the Court's justifications for restricting citizen suits was that allowing suits against such violations would undercut EPA's exercise of its enforcement discretion. As to this reasoning, query why Congress, the Court, or EPA would believe it

The legislative history put forth in support of a mandatory reading of section 309 consists primarily of the manner in which inconsistent Senate and House bills were reconciled in the Conference Committee. With respect to the issue discussed here, both bills were comparable with respect to section 309(a), regarding notices of violation and administrative compliance orders, but differed as to section 309(b), regarding civil judicial actions. The Senate version of section 309(b) provided that EPA “shall” initiate a civil action whenever a person violates most enforceable sections of the Act.²² The House version, adopted by the Conference Committee, provided that EPA “is authorized” to bring a civil action in the same situations in which it “is authorized” to issue an administrative order. Keeping the “shall” language in section 309(a), but abandoning it in favor of the “is authorized” language in section 309(b) is read by a minority of courts to make enforcement mandatory, but the choice of remedy discretionary. Also of significance in determining the weight to be given to “shall” in section 309(a) are the use of “may” in some parts of the comparable section of the Clean Air Act, for example, CAA section 113(a)(1), and the use of “may” in other sections of the Clean Water Act, for example, CWA section 402(a)(1) which authorizes EPA to issue NPDES permits.

This legislative history does not persuasively indicate that Congress considered enforcement mandatory. Indeed, it is clear that Congress did not intend EPA to take an enforcement action against every violation. The Report accompanying the Senate Bill (which was touted as “more mandatory” than the House Bill or the compromise Act) stated:

[T]he Committee intends that the enforcement power of the federal government be *available* in cases where states . . . are not acting expeditiously and vigorously to enforce control requirements. . . . The Committee again, however, notes that the authority of the federal government should be used judiciously by the Administration in those cases deserve [sic] federal action because of their national character, scope or seriousness. . . . It is clear that the Administrator is not to establish an enforcement bureaucracy but rather to reserve his authority for cases of paramount interest.²³

This hardly denotes Congressional expectation that EPA will be the enforcement grim reaper, inexorably enforcing against all violations of the Act, however minor.

This passage is referred to, quoted in part, and relied upon by the Fifth Circuit in *Sierra Club v. Train*,²⁴ the leading case on enforcement discretion of CWA section 309. That decision also points out that reading “shall” and “may” in section 309 to make enforcement mandatory but commencement of a civil action discretionary in essence makes issuance of an administrative order mandatory.

The court reasoned that to require the issuance of administrative orders but not to require judicial action to enforce those orders when violated would be anomalous. The orders would become empty gestures. Actually, however, they would not necessarily be futile because citizens could sue violators to enforce orders and seek penalties for their violation as well as for the statutory violations underlying them.²⁵

important to preserve EPA’s enforcement discretion to address wholly passed violations, but not to preserve its discretion to address present violations?

²²See *Sierra Club v. Train*, 557 F.2d 485, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20670 (5th Cir. 1977) (analysis of legislative history, which is adopted by courts favoring the mandatory approach). See also H.R. 11896 (House bill) and S.2770 (Senate bill) (language of § 309(b)), reprinted in Environmental Policy Division, Congressional Research Service, *A History of Water Pollution Control Amendments of 1972*, 1000-04, 1633-39 (1973).

²³S. Rep. No. 92-414, 92d Cong., 2d Sess. 61 (1972), reprinted in *United States Code Congressional and Administrative News* pp 3668, 3730, (emphasis added).

²⁴*Sierra Club v. Train*, 557 F.2d 485, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20670 (5th Cir. 1977).

²⁵CWA § 505(a)(1), 33 U.S.C.A. § 1365(a)(1).

The Eighth Circuit in *DuBois v. Thomas*²⁶ builds on *Sierra Club v. Train* by adding consideration of *Heckler v. Chaney*. That, of course, should be dispositive. Unfortunately, the court did not stop there, but also accorded great weight to EPA's assertion that CWA section 309 granted it enforcement discretion. In according deference to the agency's interpretation of the CWA, it followed *Chevron U.S.A. v. NRDC*.²⁷ *Chevron* takes judicial deference to agency action to the outer limit. With regard to a matter of statutory interpretation, it holds that where congressional intent is not clear, the views of the agency administering the statute are to be followed if they are a reasonable reading of the statute. One needn't regard this as an abdication of judicial responsibility to recognize that there are some applications in which it is not appropriate. Determining whether an agency has a duty or an authority is surely one of them. This is not an issue on which an agency's particular expertise has any bearing. It is an issue on which the very nature of an administrative agency has a bearing, however. Given the chance, any agency usually will assert its authority (jurisdiction) to or beyond the legitimate limit, but acknowledge only the most slender set of duties, if any at all. The preservation of flexibility is a bureaucratic imperative. Interpretation of a statute to establish a mandatory duty to enforce is completely at odds with this. EPA can be expected to assert that its authority under CWA section 309 is discretionary—not because of EPA's expertise in water pollution control or in implementing the CWA, but because EPA wants flexibility in all things. *Heckler v. Chaney* takes enforcement discretion far enough; there is no need to invoke *Chevron*. Indeed, this is an issue on which following *Chevron* is inappropriate.

A further indication that enforcement is discretionary under section 309 is that section 505 of the Clean Water Act, the citizen suit section, contemplates that there will be cases in which neither the federal nor the state government enforces and citizens may do so. Indeed, the legislative history of the citizen suit sections makes it quite clear that citizen enforcement was contemplated as a supplement to even the most responsible federal enforcement.²⁸

Even if the “shall” in section 309(a) were meant and read literally,²⁹ it would not follow automatically that enforcement is mandatory. EPA takes an enforcement action only after it “finds” a person in violation of the Act. The section does not require EPA to investigate to determine if a violation exists or to make a finding when evidence of a violation is in its possession.

Under Clean Air Act section 113 there is also a split of authority whether enforcement is mandatory. In *Wisconsin's Environmental Decade v. Wisconsin Power & Light Co.*,³⁰ a district court held that the issuance of a notice of violation under section 113(a)(1) was mandatory. Under that paragraph, “whenever, on the basis of any information available,” EPA finds a person is in violation, it “shall” notify him of the violation and thereafter “may” issue an administrative order or “may” com-

²⁶*DuBois v. Thomas*, 820 F.2d 943, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 21008 (8th Cir. 1987).

²⁷*Chevron U.S.A. v. NRDC*, 467 U.S. 837, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20507 (1984).

²⁸Senators Hart and Muskie both argued during Senate debates that CAA section 304, the citizen suit section, was needed, in part, because no matter how well intentioned the government's enforcers, it would never have the capacity to respond to all violations. Environmental Policy Division, Congressional Research Service, A Legislative History of the Clean Air Act Amendments of 1970 280-81, 355-57 (1972).

²⁹It should be noted that three circuits have held that the word “shall” in § 309(d) means that civil penalties are mandatory against persons whom courts find to be in violation of the CWA. See *Leslie Salt Co. v. United States*, 55 F.3d 1388, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 21046 (9th Cir. 1995); *Atlantic States Legal Found. v. Tyson Foods, Inc.*, 897 F.2d 1128, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20788 (11th Cir. 1990); *Stoddard v. Western Carolina Regional Sewer Auth.*, 784 F.2d 1200, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20508 (4th Cir. 1986).

³⁰*Wisconsin's Environmental Decade v. Wisconsin Power & Light Co.*, 395 F. Supp. 313 (W.D. Wisc. 1975).

mence a civil action. The Court found the juxtaposition of “shall” and “may” in the same paragraph persuasive in concluding that the first stage of enforcement was mandatory and the second stage was not. It also held that when presented with evidence of a violation, EPA must make a finding³¹ but that a finding of no violation may not be challenged under the citizen suit section of the Clean Air Act. This provides EPA with such an easy out it undercuts the main ruling. Other cases suggesting that CAA section 113 enforcement is mandatory are also less than they seem.³² The Fifth Circuit, in *City of Seabrook v. Costle*,³³ rejected a citizen’s petition for government issuance of a notice of violation under similar circumstances. It criticized *Wisconsin’s Environmental Decade* as being without support in legislative language or history, and as avoiding any consideration of the presumption of enforcement discretion or deference to EPA’s interpretation of the Act as vesting it with discretionary enforcement powers. Indeed, the district court had not recognized the presumption or its importance. A very well-reasoned decision in the Southern District of New York held that EPA had no mandatory duty to enforce under § 113(a), even when confronted with evidence of a CAA violation.³⁴ Another case which discusses enforcement discretion under CAA section 113 concludes that EPA has considerable discretion in its choice of remedy, but does not address the issue of whether the decision to enforce is discretionary.³⁵

The most interesting potential case under CAA section 113, however, has not been squarely faced. Section 113(b) deals with civil actions. Originally, like CWA section 309, it merely authorized EPA to bring civil actions for violations of the Act. In 1977, however, it was amended to read that EPA “shall” commence a civil action for specified violations by a major stationary source and “may” commence a civil action against another stationary source for the same violations. This appears to limit EPA’s exercise of enforcement power by setting substantive priorities and circumscribing the cases it must bring in just the manner that the Court in *Heckler* specified will establish that enforcement is mandatory. If a specified violation is committed by a source in the specified major source category, a civil action is manda-

³¹For a similar holding, see *New England Legal Found. v. Costle*, 475 F. Supp. 425, 433, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20438, 20441 (D. Conn. 1979).

³²*Council of Commuter Org. v. Metropolitan Transit Auth.*, 524 F. Supp. 90, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 20342 (S.D.N.Y. 1981), dismissal aff’d, 683 F.2d 663, 12 Env’tl. L. Rep. (Env’tl. L. Inst.) 20784 (2d Cir. 1982) reached a similar conclusion to *Wisconsin’s Env’tl. Decade*. EPA had a duty to issue notices of violation once it made a finding that a violation had occurred. But the act of making a finding is itself discretionary and a finding of no violation is therefore unreviewable. In *Bethlehem Steel Co. v. EPA*, 638 F.2d 994, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20294 (7th Cir. 1980), the court held that EPA had a mandatory duty under CAA section 113 to determine, within ninety days after submittal, whether a delayed compliance order issued by a state was in conformity with CAA section 113(d). But the court artfully dodged ruling on the consequences of EPA’s failure to live up to its mandatory duty. In *Northwestern Ohio Lung Ass’n v. Costle*, Env’t Rep. Cas. (BNA) Env’t Rep. Cas. (BNA) (N.D. Ohio 1979), litigation was stayed because the government represented to the court that the filing of a civil action was imminent.

³³*City of Seabrook v. Costle*, 659 F.2d 1371, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 21068 (5th Cir. 1981). See also *Kentucky v. Ruckelshaus*, 362 F. Supp. 360, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20052 (W.D. Ky. 1973), aff’d on other grounds, 497 F.2d 1172, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20484 (6th Cir. 1974); aff’d sub nom. *Hancock v. Train*, 426 U.S. 167, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20555 (1976).

³⁴*Atlantic Terminal Urban Renewal Area Coalition v. New York City Dep’t of Env’tl. Protection*, 705 F. Supp. 998, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 21032 (S.D.N.Y. 1989).

³⁵*United States v. Associated Elec. Coop., Inc.*, 503 F. Supp. 92, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20240 (E.D. Mo. 1980). The case holds that because section 113 vests discretion in the EPA Administrator to choose a remedy and to commence a civil action, a suit cannot be brought in the name of the United States under CWA section 113. One can only surmise that the Department of Justice did not take the pleadings that led to this result seriously.

tory, while otherwise it is discretionary. Cases arising under this amended subsection, however, have been in postures where the question was not squarely posed.³⁶

Of course, EPA does not bring judicial actions against all major stationary sources violating provisions specified in section 113(b). The juxtaposition of “shall” and “may” in this subsection invites citizen suits seeking mandatory EPA enforcement against specific violating sources or systematic EPA enforcement against all such sources. In view of the substantial number of cases brought seeking to mandate EPA enforcement under the far less favorably worded CWA section 309, it is surprising such suits have not been brought under the amended Clean Air Act section 113(b). Indeed, such a suit was brought utilizing a similar wording difference in the enforcement section of SMCRA to require the Secretary of Interior to assess civil penalties against 700 mine operators. Summary judgment was granted for the plaintiffs in the district court based on the wording difference.³⁷

At the same time Congress amended section 113, it also added CAA section 120, which provided that EPA “shall assess and collect a noncompliance penalty against every person who” violates specified requirements of the Act.³⁸ Here too, the “shall” suggests a mandatory duty to enforce, although EPA does not assess section 120 penalties against all sources violating the CAA provisions specified in section 120(a)(2). Section 120 invites citizen suits to compel mandatory enforcement in the same manner as does section 113(b).

One argument that neither section 113(b) nor section 120 mandates enforcement is that, if they do, a double penalty would be required in many cases. Every time EPA would be required to assess a section 120 penalty against a source, it would also be required to sue it under section 113(b). In each instance EPA would be required to assess a penalty that would recover the economic benefit the source realized by delayed compliance under section 120 and the court would be required to take the same benefit into consideration when assessing a penalty under section 113(e). The statute appears to contemplate such a double penalty because section 120(f) specifically provides that the section 120 penalty is in addition to other sanctions in the CAA. At the same time, it is doubtful that in adding section 120 in 1977 Congress intended double recovery of the economic benefit, because that factor was not included as a consideration in determining the amount of a section 113 penalty at that time. Indeed, when Congress added section 113(e) in 1990, it also required courts to take into account “payment by the violator of penalties previously assessed for the same violation.” This might be read to mean that courts should not include consideration of the economic benefit factor in penalty assessments if a section 120

³⁶See *Northwestern Ohio Lung Ass'n v. Costle*, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 21011 (N.D. Ohio 1979). The government did not appear to challenge the plaintiff's contention that enforcement was mandatory against a major source violation and, for a variety of reasons, the court did not reach it. See also *United States v. Associated Elec. Coop., Inc.*, 503 F. Supp. 92, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20240 (E.D. Mo. 1980). The court in *Associated Electric* commented that the “Administrator may have been divested of his discretionary right to issue compliance orders in lieu of court proceedings” by the amendment. *Id.* at 94, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) at 20241. It noted that even under the mandatory civil action provision, EPA still has discretion to seek a temporary injunction, permanent injunction, civil penalties, or both an injunction and penalties.

³⁷*Save Our Cumberland Mountains, Inc. v. Watt*, 550 F. Supp. 979, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20284 (D.D.C. 1983). The court held that where the Surface Mining Control and Reclamation Act provided in 30 U.S.C.A. § 1268(a) and (h) that in cases of violations of the Act by permittees the Secretary of the Interior “may” assess penalties, but that in cases of violation of cessation orders by the Secretary, the Secretary “shall” assess penalties, the latter duty was mandatory. The decision was initially reversed on appeal for want of venue, without doing violence to the district court's ruling on the mandatory nature of enforcement. *Save Our Cumberland Mountains, Inc. v. Clark*, 725 F.2d 1434, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20205 (D.C. Cir. 1984), vacated, No. 83-1224 (D.C. Cir. 4-2-84) (en banc). The full court granted rehearing en banc and *sua sponte* vacated the panel decision. The case was thereafter settled on the basis of the district court's opinion.

³⁸CAA § 120(a)(2)(A), 42 U.S.C.A. § 7420(a)(2)(A).

penalty had already been assessed, but that courts should leave violating sources subject to a double economic benefit penalty if a section 120 proceeding is instituted after a section 113 penalty is assessed, rather than before. This result makes no sense. Taking previously assessed penalties into account when assessing a section 113 penalty is some evidence that Congress did not intend sources to be subject to penalties under both sections 113 and 120, however imperfectly expressed. This would argue against its intent to make enforcement actions under both of them mandatory.

Under RCRA section 3008(a)(1), when EPA finds a violation, it “may” issue an administrative order or “may” commence a civil action. Courts considering cases to require EPA enforcement action under RCRA found the permissive “may” dispositive that enforcement is discretionary under the statute.³⁹ The amendment of RCRA section 3007 in 1984 to require biannual inspections of RCRA permitted facilities underscores the discretionary nature of enforcement in section 3008.⁴⁰

The issue of enforcement discretion is one of the most litigated questions under the enforcement sections of the environmental statutes. Remarkably, the resulting opinions generally fail to mention or discuss the presumption of prosecutorial discretion or the factors that favor it. Only the Fifth Circuit in *City of Seabrook v. Costle* and the Eighth Circuit in *DuBois v. Thomas*, above, raise and discuss the concept at any length. They note the strength of the presumption and an important reason for it: the allocation of scarce enforcement resources to violations of significance which can be established with credible evidence. The Third Circuit in *Proffit v. Eichler* notes that it “is well settled that enforcement functions are generally considered within the discretion of executive officials,” but does not elaborate. The failure to address directly the central issue in these controversies is all the more remarkable because many of the features of the environmental statutes should make the presumption of prosecutorial discretion particularly strong.

All of the traditional variable factors that must be considered by an enforcement official in deciding whether to pursue a case are present under the environmental statutes: the severity of the violation, the deterrence value of an enforcement action, the strength of the case, the resources available, the choice of remedies and forums, and so on. But there are many factors not present in other contexts. There is a delicate federalist balance at work under most of the environmental statutes that often favors deferral to state enforcement decisions, even if those decisions at times are not to enforce. There is a broad array of remedies under the statutes. The usual administrative order, civil action, or criminal prosecution alternatives of CWA section 309, for instance, may be augmented or supplanted under some circumstances by the civil action, administrative penalty, and criminal action remedies in CWA section 311.⁴¹ Indeed, under section 311 EPA may restore damage resulting from a violation and recoup its expenses from the violator, perhaps with treble damages.⁴² It might also do so under another statute, CERCLA, and recover three times its restoration expenses.⁴³ Violations leading to criminal prosecutions under the statutes may also lead to prosecutions under more commonly used provisions of the criminal

³⁹*Proffit v. Eichler*, 14 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 10857 (E.D. Pa. 1984) (no EPA duty to enforce under RCRA). *See also* *United States v. Liviola*, 605 F. Supp. 96, 15 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20452 (N.D. Ohio 1985) (no requirement to issue administrative order before commencing civil action for penalties).

⁴⁰RCRA § 3007(e)(1), 42 U.S.C.A. § 6927(e)(1).

⁴¹*See* CWA § 311(b)(5), (6), (j), 33 U.S.C.A. § 1321(b)(5), (6), (j). Civil penalties cannot be assessed for the same discharge under CWA §§ 309 and 311, *see* CWA § 311(b)(6)(E), 33 U.S.C.A. § 1321(b)(6)(E).

⁴²*See* CWA § 311(b)(7)(B), (f)(4), 33 U.S.C.A. § 1321(b)(7)(B), (f)(4).

⁴³*See* CERCLA § 107(c)(3), 42 U.S.C.A. § 9607(c)(3).

code, for example, conspiracy, mail fraud, etc.⁴⁴ Indeed, the possibility of criminal prosecution lends particular weight to considerations of prosecutorial discretion. Most violations of the environmental statutes could result in either civil or criminal actions. A choice between the two must usually be made because of the difficulties for the government in maintaining parallel civil and criminal proceedings.⁴⁵ The choice will involve tradeoffs between the relative importance of substantive relief or deterrence, the additional investigative and evidentiary burdens of criminal prosecution, and other factors. Compliance with environmental requirements sometimes involves issues of scientific uncertainty, technological impossibility, or economic dislocation and hardship.

The above discussion considers EPA's exercise of prosecutorial discretion in individual enforcement decisions. Where those decisions were not to enforce, the courts did not look to EPA for reasoned justifications of its decisions. On the other hand, EPA often develops and publishes elaborate policies governing its exercise of enforcement discretion. Some articulate situations in which it will enforce.⁴⁶ Others articulate situations in which it will not enforce.⁴⁷ The latter occasionally appear in regulations, such as the "permit/shield" rules under the CWA and RCRA,⁴⁸ which have been upheld as within EPA's enforcement discretion.⁴⁹ EPA also seeks to alleviate concern about the apparent impossibility of compliance with its standards in some situations by assuring courts reviewing the standards that it will exercise its enforcement discretion to avoid unfair results. Courts often rely on such assurances, looking no further into the challenged requirement.⁵⁰ Indeed, they sometimes admon-

⁴⁴*E.g.*, 18 U.S.C.A. § 1001.

⁴⁵*See* § 9:29.

⁴⁶EPA has elaborate policy documents under most of the statutes it administers, establishing priorities for enforcement and appropriate enforcement responses. Under RCRA, for instance, it directs enforcement officials to take administrative, civil, or criminal action against significant non-compliers (SNCs) to secure relief both requiring compliance and assessing economic sanctions. SNCs are those 1) causing or likely to cause exposure to hazardous waste; 2) repeatedly violating RCRA; and 3) deviating substantially from RCRA requirements. U.S. EPA, Hazardous Waste Civil Enforcement Response Policy (March 15, 1996), *Env'tl. L. Rep. (Env'tl. L. Inst.) Admin. Mat.* 35645.

⁴⁷An early example was EPA's formal program of issuing no action letters to industries installing satisfactory water pollution control equipment as quickly as possible, but, through no fault of their own, not fast enough to meet the statutory deadline. *See Bethlehem Steel Co. v. Train*, 544 F.2d 657, 7 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 20019 (3d Cir. 1976); *Alton Box Bd. Co. v. EPA*, 592 F.2d 395, 9 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 20265 (7th Cir. 1979); *Monongahela Power Co. v. EPA*, 586 F.2d 318, 8 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 20884 (4th Cir. 1978).

A more recent example stems from efforts by EPA and DOJ to encourage the regulated public to develop self-auditing programs. Their encouragement takes the form of forbearance in enforcement or in the severity of sanctions sought when violations are detected in a self-audit, immediately reported, and corrected. U.S. EPA, *Incentives for Self-Policing: Discovery, Disclosure, Correction, and Prevention of Violations* (Dec. 22, 1995) *Env'tl. L. Rep. (Env'tl. L. Inst.) Admin. Mat.* 35639; U.S. EPA, *Implementation of the Environmental Protection Agency's Self-Policing Policy for Disclosures Involving Potential Criminal Violations* (Oct. 1, 1997) *Env'tl. L. Rep. (Env'tl. L. Inst.) Admin. Mat.* 35692; and U.S. DOJ, *Factors in Decisions on Criminal Prosecutions for Environmental Violations in the Context of Significant Voluntary Compliance or Disclosure Efforts by the Violator* (July 1, 1991) *Env'tl. L. Rep. (Env'tl. L. Inst.) Admin. Mat.* 35399.

⁴⁸With stated exceptions, these provisions provide that compliance with a permit issued pursuant to one of the statutes is in compliance with that statute. 40 C.F.R. §§ 122.5 and 270.4. The CWA regulation is based on a similar statutory provision, CWA § 402(k), 33 U.S.C.A. 1342(k), while the RCRA regulation has no statutory analogue.

⁴⁹*Shell Oil Co. v. EPA*, 950 F.2d 741, 22 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 20305 (D.C. Cir. 1992). The court upheld the RCRA regulations against an attack that it impermissibly constrained EPA's enforcement authority, but did not address, as unripe, an argument that it impermissibly constrained citizen enforcement under RCRA § 7002, 42 U.S.C.A. § 6972.

⁵⁰*Alabama Power Co. v. EPA*, 40 F.3d 450, 25 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 20166 (D.C. Cir. 1994) (CAA NO_x and particulate standard for coal-fired power plants); *Chemical Mfrs. Ass'n v. EPA*,

ish EPA to exercise its prosecutorial discretion in such situations.⁵¹ Other courts, however, give little weight to such agency promises of forbearance, finding them of little comfort to enforcement targets EPA may pursue and recognizing that EPA promises do not prevent citizen suits.⁵²

Starting with a presumption of prosecutorial discretion, the enforcement section of each environmental statute must be examined individually to determine if its wording or its legislative history overcome the presumption to make enforcement against particular types of violations mandatory. This should not often occur because the reasons supporting the presumption are particularly strong under the environmental statutes. After *Heckler* courts should more readily come to this conclusion. Exceptions, such as Clean Air Act sections 113(b) and 120, should be rare.

Government claims of enforcement discretion should be examined with care to determine their legitimacy. EPA, for instance, has attempted to invoke enforcement discretion to prevent judicial review of its interpretation of enforcement related provisions of a statute⁵³ and even of the enforceable standards it promulgates under a statute.⁵⁴ And it also has attempted to do so when Congress circumscribed EPA's exercise of enforcement discretion.⁵⁵ In *National Wildlife Federation v. EPA*,⁵⁶ EPA invoked prosecutorial discretion in the face of two of these obstacles. At issue were its regulations governing the revocation of state authority under § 1413 of the Safe Drinking Water Act, 42 U.S.C.A. § 300g-2. The statute gave EPA rulemaking authority to establish procedures for determining that states with authority to enforce the drinking water standards program no longer met the statutory requirements for doing so and hence lost their authority. The National Wildlife Federation challenged EPA regulations that preserved its "enforcement discretion" to allow states to continue enforcing the program, even after EPA had determined they no longer met the statutory requirements for doing so. EPA claimed enforcement discretion not to withdraw approval for unimportant or trivial failures in the state programs. But the issue was one of interpreting § 1413, not of enforcing it, and involved a rule of general applicability to all state programs rather than an action with regard to one of them. And while Congress gave EPA considerable discretion in determining whether a state program continued to meet the statutory criteria, it directed that once EPA determined the program no longer met them, EPA revoke its approval.⁵⁷ While avoiding revocation of approval for trivial and unimportant failures is the sort of

870 F.2d 177, 19 ELR 20989 (5th Cir. 1989) (CWA technology based standards for the organic chemical industry).

⁵¹*State Water Control Bd. v. Train*, 559 F.2d 921, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20571 (4th Cir. 1977) (EPA admonished not to enforce secondary treatment standards against POTWs without federal construction grants.).

⁵²*Natural Resources Defense Council v. EPA*, 859 F.2d 156, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20016 (D.C. Cir. 1988) (EPA deletion of upset exemption for water quality standard based effluent limitations from CWA § 402 permit program regulations.).

⁵³*National Wildlife Fed'n v. EPA*, 980 F.2d 765, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 20440 (D.C. Cir. 1992); *Alaska Ctr. for the Env't v. Reilly*, 762 F. Supp. 1422, 21 Env'tl. L. Rep. (Env'tl. L. Inst.) 21305 (W.D. Wash. 1991).

⁵⁴*Edison Elec. Inst. v. EPA*, 996 F.2d 326, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 21006 (D.C. Cir. 1993).

⁵⁵*National Wildlife Fed'n v. EPA*, 980 F.2d 765, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 20440 (D.C. Cir. 1992).

⁵⁶*National Wildlife Fed'n v. EPA*, 980 F.2d 765, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 20440 (D.C. Cir. 1992).

⁵⁷The court's analysis laid heavy emphasis on the statute's direction of what EPA is to do once it has "determined" a state no longer meets all the statutory criteria for approval. This lends some credence to the analysis of those courts holding that CWA § 309(a) directs EPA to take an enforcement action once it "finds" a violation. See this section notes 13-14.

factor justifying enforcement discretion, it is easily accommodated by EPA's discretion to determine whether a state program no longer meets the statutory criteria and, therefore, does not justify countering clear congressional direction once that determination has been made.

§ 9:5 Administrative enforcement remedies—Notices of violation

The federal pollution control legislation of the early 1970s was born in large measure from dissatisfaction with previous state pollution control programs and a suspicion that many states would never effectively enforce pollution control requirements.¹ The legislative process, however, forced an uneasy and evolving compromise which recognized, on the one hand, the entrenched position of state pollution control agencies and the need to temper federal mandates with local implementation and flexibility and, on the other hand, the need for strong federal enforcement by EPA as well as by the state. The resulting statutes often call for states to develop and implement pollution control programs meeting federally established standards, but provide for their enforcement by both states and EPA. This apparent anomaly results in a very real friction between state and federal bureaucracies, each jealous of its own prerogatives and suspicious of the other. The peak of this friction is often found in the bitter resentment by state officials against enforcement actions taken in their backyard by EPA.²

The notice of violation is a device intended to lessen this federalist friction. Not surprisingly, the notice first appeared as a prerequisite to federal enforcement of State Implementation Plans (SIPs) under the Clean Air Act. SIPs are state statutes and implementing regulations approved by EPA as meeting criteria for accomplishing the mandates of the CAA. Section 113(a)(1)³ provides that when EPA finds any person in violation of a SIP requirement, it shall so notify the violator and the appropriate state. The notice is to be provided thirty days in advance of taking further enforcement action. The finding of violation may be made "on the basis of any information available." On its face the notice is jurisdictional: EPA can take no further enforcement action unless the notice is given and the violation continues beyond the thirtieth day after the notice.⁴ Section 113(b)(1) reiterates that EPA may commence a civil action for penalties or injunctive relief for violations of SIPs thirty days after it has served a Notice of Violation.

§ 9:6 Administrative enforcement remedies—Notices of violation— Purpose and use

The notice of violation serves two main purposes. First, it alerts states to impending federal enforcement, allowing them to perform their primary enforcement role and to limit the federal presence within their borders. Second, it alerts the violators to impending federal enforcement, allowing them to come into compliance and avoid enforcement altogether, thus achieving compliance with a minimum use of government resources.

The notice of violation is part of the CAA's enforcement scheme for violations of state-developed requirements, not for violations of federally developed requirements such as new source performance or hazardous emission standards, federal informa-

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¹See § 9:1 note 2.

²For an early example of the heated exchange between state and federal enforcement officials see Corkin, *A State's Eye View of Pollution Control*, 1 Harv. Envtl. L. Rev. 333 (1976); Carothers, *An EPA Region's View of Pollution Control*, 1 Harv. Envtl. L. Rev. 345 (1976).

³42 U.S.C.A. § 7413(a)(1).

⁴See *Hallstrom v. Tillamock County*, 493 U.S. 20, 20 Envtl. L. Rep. (Envtl. L. Inst.) 20193 (1989).

tion gathering or inspection requirements, or the automobile emission related requirements.¹ This suggests, with one anomaly,² that the legislative purpose for the notice requirement under the CAA was to ease federalist tensions by allowing states a last opportunity to enforce, not to allow violating members of the regulated public a last, pre-enforcement chance to comply. An intent to ease federalist tensions explains why a notice is required prior to federal enforcement of state-developed requirements, but not before federal enforcement of federally-developed requirements.³ An intent to promote rapid compliance without further enforcement might explain why EPA must find that the violation continues thirty days after the notice was given before taking further enforcement action. But if that had been the congressional rationale for the notice of violation, Congress would have required that the notice be given in all cases, not just where state-developed regulations or permits were being enforced.⁴ Ironically, the device probably serves the end of achieving compliance better than the federalist purpose for which it was designed.⁵ Indeed, a notice of violation can enhance enforcement, robbing a defendant of the argument that he or she was not aware of the violation.⁶

In addition to the anomaly noted above, the notice of violation provision originally appearing in section 113 of the CAA presented substantial problems. It required that the violation continue for at least thirty days after the notice before enforcement action could be taken. That requirement insulated air pollution sources from section 113 penalties for, and prevented injunctions against, one-time or short-term violations, no matter how serious.⁷ It also cast doubt on EPA's ability to effectively

[Section 9:6]

¹CAA §§ 113(a)(3), 203, 204, 42 U.S.C.A. §§ 7413(a)(3), 7523, 7524. See *United States v. B&W Inv. Properties*, 38 F.3d 362, 25 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20012 (7th Cir. 1994).

²The anomaly is that a notice of violation appears to be a jurisdictional prerequisite for enforcement against violations of federally promulgated SIPs or portions thereof. SIPs are federally promulgated when a state fails to adopt a SIP that meets CAA criteria. Advance notice to the state of enforcement of a federally promulgated SIP serves no purpose in such cases. The state probably lacks the authority under its own law to enforce against violations of a federally promulgated SIP and state's failure to adopt a SIP is a good indication of its lack of desire to enforce it.

³But this rationale would support giving notice when enforcement of those standards has been delegated to states that have adopted the federal standards in their own state. Enforcement of both new source performance and hazardous emission standards can be delegated to states. CAA §§ 111(c), 112(d), 42 U.S.C.A. §§ 7411(c), 7412(d).

⁴But see *United States v. Louisiana-Pacific Corp.*, 682 F. Supp. 1141, 18 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20912, 20918 (D. Colo. 1988) ("Congress' intention was to give an alleged source a brief period of time within which to evaluate its options before the substantial penalties available under the act could become a possibility.").

⁵EPA recognizes this anomaly. Thus, under the CWA it often issues notices of violation to violators of EPA-issued as well as of state-issued permits, although the statute does not authorize notices of violation in the first case or compel them in the second. See *EPA Enforcement: A Progress Report Fiscal Years 1977-80* (draft not released) and § 9:7.

⁶Because most violations of the environmental statutes are strict liability offenses for purposes of civil enforcement, lack of knowledge will not often be a legal defense in civil offenses. But it may be an equitable defense at the remedy stage. A defendant claiming to be unaware of the violation because he or she was in the hospital with a heart problem, for instance, may evoke the court's sympathy, but the sympathy will not survive continued violations after receipt of a notice of violation. *United States v. Vista Paint Corp.*, 1996 WL 477053, No. EDCV 94-0127 RT (C.D. Cal. 4-16-96).

⁷Before amendment in 1990, even deliberate violations of SIPs were insulated from criminal prosecution unless they continued more than thirty days after the notice. CAA § 113(c)(1)(A), 42 U.S.C.A. § 7413(c)(1)(A). Of course emissions of this nature that presented an imminent and substantial endangerment of public health could have been enjoined without a notice of violation, indeed they could have been abated whether or not they constitute or result from violations of the SIP. CAA § 303, 42 U.S.C.A. § 7603.

enforce violations which recurred but never for more than thirty days at one time.⁸ Once pollution control equipment was installed, this enforcement flaw was particularly important since poor operation and maintenance are apt to produce intermittent, recurring violations. General principles limiting mootness to some extent helped avoid a bar on enforcement in these circumstances where the violation is one susceptible of repetition.⁹ In 1990 Congress amended § 113(a)(1) to alleviate some of these impediments to enforcement. Under the current provision, EPA must still wait thirty days after issuing an NOV before taking enforcement action against the violator of a state implementation plan. But once the thirty days has passed, EPA may take enforcement action regardless of whether the violation continues. Thus, the only significant enforcement bar during the thirty-day period is against an administrative compliance order or a temporary or preliminary injunction. But if a violation threatens to endanger public health, relief may be sought under CAA § 303¹⁰ without a notice of violation.

The requirement of two findings—one of the initial violation and a second of its continuance for more than thirty days—requires two separate sets of evidence and presents two opportunities of challenging the validity of enforcement action either during pre-enforcement review¹¹ or as a defense to judicial enforcement actions. EPA's draft omnibus enforcement amendments would correct this problem.

A notice of violation or a variant of it is required prior to EPA enforcement under two other sections of the CAA. A notice of noncompliance is required to begin the administrative assessment of penalties designed to remove the economic benefit of delayed compliance under CAA § 120.¹² Section 206(c) of the CAA¹³ also has a notice of violation provision, although in a different context. Section 206(c) provides EPA with the authority to order manufacturers to recall and repair models of motor vehicles, substantial numbers of which are found not to meet vehicle emission standards during their useful life, despite proper operation and maintenance. Prior to the issuance of such an order, EPA must notify the manufacturer and require it to submit a plan to remedy the defect at its own expense on properly used and

⁸Judicial decisions on these issues are discussed in § 9:7 notes 15-18 and accompanying text.

⁹Mootness, like standing, is a mix of deference to the constitutional case-or-controversy requirement and reluctance to clutter the courts' dockets with cases of little real impact. *See generally* C. Wright, A. Miller & I. Cooper, Federal Procedure § 3533 (1982). In *United States v. W.T. Grant Co.*, 345 U.S. 629 (1953), the United States sought injunctive relief against a defendant alleged to hold directorships in competing companies. When the defendant resigned the offending directorships and sought to dismiss the case as moot, the Court held that he had a heavy burden to demonstrate that there was no likelihood the offense would be repeated. But it also held that the trial court had substantial discretion in disposing of such cases. The concept is well developed when the government is defendant, under a doctrine recognizing that agency actions "capable of repetition, yet evading review," are not mooted by their expiration. *Southern Pac. Terminal Inc. v. ICC*, 219 U.S. 498, 515 (1911). *See National Wildlife Fed'n v. Costle*, 629 F.2d 118, 123-24, 10 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20742, 20748 (D.C. Cir. 1980); *Montgomery Env'tl. Coalition v. Costle*, 646 F.2d 578-85, 11 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20211, 20515 (D.C. Cir. 1980); *Hooker Chem. Co. v. EPA*, 642 F.2d 48, 11 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20084 (3d Cir. 1981); *Dow Chem. Co. v. EPA*, 605 F.2d 673, 9 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20640 (3d Cir. 1979).

Although not citing this line of cases or principle, one court in a citizen suit enforcement case under CWA § 505, 33 U.S.C.A. § 1365, denied a motion for summary judgment against a request for an injunction to comply with the effluent limitations of a National Pollutant Discharge Elimination System (NPDES) permit where the defendant had come into compliance with them. The plaintiff argued that substantial violations over several years belied the defendants' intent to comply in the future. The court held there was no basis to conclude that the plaintiff's request was moot. Of course the question could be revisited at trial. *Student Pub. Interest Research Group of N.J., Inc. v. AT&T Bell Laboratories*, 617 F. Supp. 1190 (D.N.J. 1985).

¹⁰42 U.S.C.A. § 7603.

¹¹*See* § 9:7 (pre-enforcement review of administrative enforcement).

¹²42 U.S.C.A. § 7420. *See* § 9:12 (administratively assessed penalties).

¹³42 U.S.C.A. § 7541(c).

maintained vehicles. Because of the notice provision, motor vehicle manufacturers have voluntarily recalled many more models (but fewer vehicles) than EPA has ordered recalled.¹⁴

The notice device has been adopted for use in three other contexts in the CAA as well as in most of the other environmental statutes. Where program implementation or enforcement has been delegated to a state, the federal statutes generally provide for resumption of direct federal implementation or enforcement upon defalcation of state efforts. This normally entails a procedure that begins with notification to the state and a finding that its failures continue beyond specified times.¹⁵ In addition, prior notification to the state, consultation with it, or a finding that the state is not acting to abate the problem, are often required before EPA can invoke its administrative or judicial remedies to abate imminent or substantial endangerments.¹⁶ Finally, the citizen's suit provisions of the various Acts normally require notice of intent to sue sixty days in advance of suit. The purpose behind this notice and the statutory conditions attached to citizen's suits are closely analogous to the purpose of and conditions surrounding notices of violations.¹⁷

The CAA notice-of-violation provision has been adopted, with variations, in the CWA, RCRA, SDWA, FIFRA, and SMCRA, as discussed below. Their adaptations have dealt with some of the problems noted above, but also have created new problems. To some measure they evidence a dual purpose behind the notice—encouraging both federalism and compliance.

Section 309(a)(1) of the CWA¹⁸ authorizes (but does not require) the issuance of a notice of violation for failure to comply with permits issued by states with approved programs, but not for failure to comply with permits issued by EPA¹⁹ or with the Act itself (as opposed to violation of a permit condition). This solves most of the problems created by the CAA notice of violation by making its use optional.²⁰ It also solves the problem caused by the precondition on enforcement that the violation continue thirty days after the notice of violation is issued. However, if notice is given, EPA is to proceed with more formal enforcement if the state fails to commence "appropriate enforcement action" within thirty days after the notice of violation is issued. While this substitution is more in accord with the purpose of fostering federalism and does not insulate short or recurring violations from enforcement, the "appropriate" state enforcement language could open a whole new vista of problems. What is appropriate enforcement action? Who determines what state enforcement action is "appropriate"—the state, EPA, the court? What if action is commenced within thirty

¹⁴From 1974 to 1980, EPA ordered recalls of over 30 models, totalling over 11 million vehicles, while, after receiving the notice, manufacturers voluntarily recalled over 100 models, totalling some 3.6 million vehicles. EPA Enforcement: Two Years of Progress 24-25; EPA Enforcement, A Progress Report 1974 to 1975 24; EPA Enforcement, A Progress Report 1976 30; EPA Enforcement, A Progress Report Fiscal Years 1977-80 23-24 (draft not released).

¹⁵42 U.S.C.A. § 1319(a)(2) (1982); CWA §§ 309(a)(2), 402(c), 404(i), 33 U.S.C.A. §§ 1319(a)(2), 1342(c), 1344(c); RCRA § 3006(e), 42 U.S.C.A. § 6926(c); FIFRA § 27, 7 U.S.C.A. § 136w-2; SMCRA § 521(b), 30 U.S.C.A. § 1271(b); CAA § 113(a)(2).

¹⁶CAA § 303, 42 U.S.C.A. § 7603; SDWA § 1431, 42 U.S.C.A. § 300i (1982). *But see* RCRA § 7003, 42 U.S.C.A. § 6973 (provides only that EPA must notify the state of the filing of a suit). CWA § 504, 33 U.S.C.A. § 1364 (1982) has no notice requirement at all.

¹⁷*See* § 13:124.

¹⁸33 U.S.C.A. § 1319(a)(1).

¹⁹For violations of conditions of state issued permits EPA may issue a notice of violation under CWA § 309(a)(1), 33 U.S.C.A. § 1319(a)(1), or proceed directly to the administrative order or judicial stage without issuing a notice. CWA § 309(a)(3), 33 U.S.C.A. § 1319(a)(3). *See* *United States v. City of Colorado Springs*, 455 F. Supp. 1365, 9 *Envtl. L. Rep.* (Envtl. L. Inst.) 20145 (D. Colo. 1978).

²⁰Congress required that enforcement actions be commenced and diligently prosecuted to avoid citizen suits after similar notice in CWA § 505(b)(1)(B), 33 U.S.C.A. § 1365(b)(1)(B), and comparable provisions of other statutes.

days but is not diligently prosecuted? What if it culminates in unsatisfactory results? The language is subjective and ambiguous. It actually could encourage defensive forum shopping and collusive, sweetheart settlements with states, thus straining the very federalist relations that notice was designed to foster.²¹ These questions should not hinder federal enforcement in any case. The language does not bar federal enforcement in the event of state action, rather it spurs further federal enforcement in the absence of state action. This is consistent with EPA's authority to proceed with an administrative order or civil judicial action without any notice in the first place.

Section 3008(a)(2) of RCRA²² follows CAA § 113 in requiring notice to the state if the violation occurs in a state with an authorized RCRA program, but not if the violation occurs in a state without such a program. The requirement may result in confusion in a state where EPA has approved a portion of the state's program but not all of it.²³ Must EPA notify such a state of a violation of a federal requirement that is not part of the approved state program before proceeding with enforcement? The notice would appear to be required, although more because of unconsidered drafting than reasoned purpose. EPA can easily avoid the question, however, by giving notice to the state in all cases. Because there is no waiting period or additional finding required between the notice and subsequent enforcement, EPA may proceed with its action literally the second after it has notified the state. This makes the notice pro forma, serving no purpose. Prior to the RCRA amendments in 1980, EPA was required to give a notice of violation to the state and the violator prior to proceeding further, regardless of where the violation occurred, and the violation had to continue more than thirty days before further federal enforcement action could be taken.²⁴ This was the only statutory provision for notices of violation that clearly served the purposes of both resolving compliance problems at an early stage and oiling the wheels of federalism. But it perpetuated most of the problems inherent in section 113 of the CAA.

§§ 1414 and 1423 of SDWA²⁵ follow the CAA model in requiring a notice of violation where the violation is in a state with an approved program. They depart from the CAA model, however, by requiring notice to both the state and the violator and by allowing federal enforcement to proceed without a subsequent finding that the violation continues for more than thirty days. They condition further federal enforcement on a finding that the state has not commenced "appropriate" enforcement action within thirty days, with all the problems that may entail. Moreover, where the violation is by a public water system, EPA must in the meantime provide both the state and the violator with such advice and technical assistance as "may be appropriate" to secure early compliance. Although there is no explicit bar against EPA's taking further enforcement action while it is giving advice or technical assistance, the advice and assistance mode is inconsistent with the enforcement mode. While this appears to hamper EPA enforcement, it is an improvement over pre-1986 authority, which required EPA to find the state response arbitrary before proceeding with federal enforcement.²⁶

²¹One of the principal responsibilities of EPA's Assistant Administrator for Enforcement and Compliance Monitoring is to establish clear policies for oversight of state enforcement programs, and such policies are stated in EPA manuals and memoranda. *See* § 9:34.

²²42 U.S.C.A. § 6928(a)(2).

²³*See* RCRA § 3006(g), 42 U.S.C.A. § 6926(g).

²⁴Except to alleviate imminent and substantial endangerments pursuant to RCRA § 7003, 42 U.S.C.A. § 6973.

²⁵42 U.S.C.A. §§ 300g-3, 300h-2.

²⁶For the previous version, *see* Pub. L. No. 93-523, § 1414(a)(1)(B) (1974).

FIFRA sections 14 and 27²⁷ also appear deferential to both states and violators in some instances. Under section 14, federal enforcement is not allowed against private applicators unless they violate the Act after receiving a written warning or a citation for prior violation. Under section 27, EPA cannot take enforcement action for a pesticide use violation without first referring the violation to the state for investigation and then cannot act if the state commences “appropriate” enforcement action within thirty days. The vagaries of this type of requirement have been discussed above. But here the notice is required whether or not the state has primary enforcement authority for pesticide use violations. If it does not, the notice serves no purpose.

The notice of violation provision of SMCRA is tilted more toward strong federal enforcement.²⁸ If the Department of Interior (DOI) determines on the basis of a federal inspection that SMCRA or a SMCRA permit is being violated it may proceed with enforcement without resort to a notice of violation. Absent a federal inspection, DOI must notify the state if the alleged violation occurs in a state with an approved program. If the state does not satisfy DOI within ten days that the state is taking appropriate action to abate the violation, DOI must make a federal inspection. This notification is waived if there is evidence that imminent and substantial endangerment exists and the state has failed to take appropriate action. This provision raises no serious impediment to federal enforcement, although the short duration of the notice period provides little opportunity for state action.

None of the statutes require a notice of violation before the initiation of a criminal prosecution. To do so would seriously depart from established criminal enforcement procedures, for example, by interfering with grand jury proceedings. Attempts to read a notice requirement into criminal enforcement have been summarily rejected.²⁹

§ 9:7 Administrative enforcement remedies—Notices of violation— Judicial interpretation

Most litigation over notices of violation has concerned whether EPA enforcement is mandatory or discretionary,¹ and whether the issuance of a notice is subject to pre-enforcement review.² The two are interrelated, because judicial review of actions committed to agency discretion is precluded by the Administrative Procedure Act

²⁷ 7 U.S.C.A. §§ 1361(a)(2), 136w-2(a).

²⁸ 30 U.S.C.A. § 1271.

²⁹ *United States v. Frezzo Brothers*, 461 F. Supp. 266, 9 *Envtl. L. Rep.* (Envtl. L. Inst.) 20139 (E.D. Pa. 1978), *aff'd*, 602 F.2d 1123, 9 *Envtl. L. Rep.* (Envtl. L. Inst.) 20556 (3d Cir. 1979); *United States v. Hudson Farms, Inc.*, 12 *Envtl. Rep. Cas.* (BNA) 1144 (E.D. Pa. 1978); *United States v. Phelps Dodge, Inc.*, 391 F. Supp. 1181, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) 20308 (D. Ariz. 1975).

[Section 9:7]

¹ *See City of Seabrook v. Costle*, 659 F.2d 1371, 11 *Envtl. L. Rep.* (Envtl. L. Inst.) 21063 (5th Cir. 1981) (authority to find violations under the CAA discretionary); *Atlantic Terminal Urban Renewal Area Coalition v. New York City Dep't of Env'tl. Protection*, 705 F. Supp. 988, 19 *Envtl. L. Rep.* (Envtl. L. Inst.) 21032 (S.D.N.Y. 1989) (authority to issue Notice of Violation discretionary); *Council of Commuter Orgs. v. Metropolitan Transit Auth.*, 524 F. Supp. 90, 12 *Envtl. L. Rep.* (Envtl. L. Inst.) 20342 (S.D.N.Y. 1981) (authority to issue notice of violation discretionary), *aff'd*, 683 F.2d 663, 12 *Envtl. L. Rep.* (Envtl. L. Inst.) 20342 (2d Cir. 1982); *Rivers Unlimited v. Costle*, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20936 (S.D. Ohio 1978) (duty to determine whether state not enforcing under the CWA mandatory); *Wisconsin's Env'tl. Decade, Inc. v. Wisconsin Power & Light Co.*, 395 F. Supp. 313 (W.D. Wisc. 1975) (duty to issue notice of violation mandatory).

² *See West Penn Power Co. v. Train*, 538 F.2d 1020, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20658 (3d Cir. 1976) (no pre-enforcement review of notice of violation on facts of case); *United States v. AM Gen. Corp.*, 808 F. Supp. 1353 (N.D. Ind. 1992) (no pre-enforcement review of Notice of Violation); *Conoco, Inc. v. Gardebring*, 503 F. Supp. 49 (N.D. Ill. 1980) (pre-enforcement review of notice of violation).

(APA).³ Courts willing to undertake pre-enforcement review have usually done so after the agency has determined a violation has occurred and issued a notice of violation. Those courts have been influenced by the view that once a finding of violation has been made to justify a notice of violation, further enforcement is mandatory.⁴ This is an unfortunate result since the view that enforcement under these statutes is mandatory is seriously flawed.⁵ If the notice serves the purpose intended, either the violator will comply or the state will initiate action within thirty days, obviating the necessity for further federal action or judicial review. In fact, most notices of violation do not lead to further enforcement.⁶ Even if federal enforcement were mandatory, pre-enforcement review at the notice of violation stage is unwise and unnecessary, for reasons discussed below. If pre-enforcement review is appropriate at all, it should be available at the administrative order stage where it would be available if and when EPA brought suit to enforce its administrative order.

One particularly troublesome aspect of pre-enforcement review at the notice of violation stage is the failure of the statutes to make clear that the quantum of evidence necessary to support the issuance of a notice of violation is commensurate with the place and purpose of the notice in the enforcement scheme. As a device to implement deference to state action and secondarily to encourage compliance without further enforcement, its effect is procedural rather than substantive. It is a very preliminary measure and should not require more than a reasonable belief that a violation has occurred or is occurring, less of a showing than necessary to justify the issuance of an administrative order or the initiation of a judicial action. Yet the statutes fail to differentiate between the evidence needed to support initiation of these different actions.⁷ Finally, because a notice of violation does not require anything of its recipient, as an order does, it is not the sort of action that is serious or consequential enough to be regarded as a final agency action or as requiring judicial review.

A similar notice of noncompliance is used to initiate the administrative assessment of civil penalties under CAA section 120. Courts have not allowed it to be subject to pre-enforcement review, recognizing that it is only a threshold determination leading to other administrative proceedings which afford judicial review at a later stage.⁸ The same analysis should lead to the same conclusion for notices of violation in other contexts.

The most litigated notice provision is the sixty day prior notice requirement in the citizen suit sections. The legislative history of those provisions is very clear that the purpose of the requirement was to prompt and allow the government to fulfill its responsibility as the primary enforcement authority.⁹ If strictly applied, it would preclude otherwise meritorious actions, such as an injunction against a violation

³5 U.S.C.A. § 701(a)(2).

⁴*Conoco, Inc. v. Gardebring*, 503 F. Supp. 49, 51–52 (N.D. Ill. 1980). *See also* *Union Elec. Co. v. EPA*, 450 F. Supp. 805, 8 *Envtl. L. Rep. (Envtl. L. Inst.)* 20625 (E.D. Mo. 1978) (court stayed further EPA enforcement after issuance of a Notice of Violation).

⁵*See* § 9:4.

⁶From 1977 to 1980 EPA issued nearly 1800 notices of violation for failure to comply with the Clean Air Act and took further enforcement action only in some 850 instances. *EPA Enforcement: A Progress Report Fiscal Years 1977-80* 38-39 (draft not released).

⁷Under the CAA, for instance, findings of violations supporting the issuance of notice of violation and administrative orders, and the initiation of judicial action are all to be supported “on the basis of any information available” to EPA. CAA § 113(a)(1), (3), 42 U.S.C.A. § 7413(a)(1), (3).

⁸*Bethlehem Steel Corp. v. EPA*, 669 F.2d 903, 12 *Envtl. L. Rep. (Envtl. L. Inst.)* 20298 (3d Cir. 1982). For a case where judicial review of a notice of noncompliance was afforded at a later stage, *see Navistar Int’l Transp. Corp. v. EPA*, 858 F.2d 282, 18 *Envtl. L. Rep. (Envtl. L. Inst.)* 21405 (6th Cir. 1988).

⁹The notice requirement was added “to further encourage and provide for agency enforcement The time between notice and filing of the action should give the administrative enforcement office

that will occur less than sixty days after notice can be given. Most litigation concerning the citizen suit notice requirement revolves around the question of whether it is a jurisdictional requirement¹⁰ and, if so, how strictly it will be applied where notice in fact exists.¹¹ The Supreme Court has determined that the sixty-day prior notice provision in the RCRA citizen suit provision, section 7002(b), is a mandatory condition precedent to filing a citizen suit.¹² Strangely enough, opinions addressing the notice provision in the citizen suit sections, on the one hand, and those addressing the notice provision in the government enforcement sections, on the other hand, each appear to be blithely ignorant of the other set of notice provisions and the cases under them. For instance, in opinions considering whether a defective EPA notice of violation would defeat its jurisdiction, the courts appeared unaware that the question had been considered repeatedly in the context of defective citizen notices of violation.¹³ Because of the similarity in purpose and structure of the two sets

an opportunity to act on the alleged violations.” S. Rep. No. 1196, 91st Cong., 2d Sess. 36, 39 (1970), *reprinted in* Natural Resources Defense Council, Inc. v. Train, 510 F.2d 692, 723, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) 20046, 20063 (D.C. Cir. 1975). Senator Muskie said in the Senate debates on September 21, 1970, that notice of citizen suits would “trigger” governmental enforcement and Senator Hart said the following day that such notice would “have the effect of prodding” governmental enforcement. *Id.* at 728-29, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) at 20066-67.

¹⁰Some courts interpret the notice strictly, as a jurisdictional prerequisite to suit. *See* *Save the Yaak Comm. v. Block*, 840 F.2d 714, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20869 (9th Cir. 1988); *Hallstrom v. Tillamook County*, 493 U.S. 20, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 20193 (1989); *Massachusetts v. United States Veterans Admin.*, 541 F.2d 119, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20666 (1st Cir. 1976); *City of Highland Park v. Train*, 519 F.2d 681, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) 20408 (7th Cir. 1974), cert. denied, 424 U.S. 927 (1975); *Reeger v. Mill Serv. Inc.*, 593 F. Supp. 360, 14 *Envtl. L. Rep.* (Envtl. L. Inst.) 20900 (W.D. Pa. 1984); *Biederman v. Scharbarth*, 483 F. Supp. 809 (E.D. Wis. 1980); *Illinois v. Rosing*, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) 20717 (N.D. Ill. 1975); *Pinkney v. Ohio EPA*, 375 F. Supp. 305, 4 *Envtl. L. Rep.* (Envtl. L. Inst.) 20460 (D. Ohio 1974); *Ventnor City v. Fri*, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) 20029 (D. N.J. 1974). The Supreme Court has hinted in dicta that the sixty day notice requirement is jurisdictional. *See* *Middlesex County Sewage Auth. v. National Sea Clammers Ass’n*, 453 U.S. 1, 14, 11 *Envtl. L. Rep.* (Envtl. L. Inst.) 20684, 20687 (1981). *But see* CAA § 113(a)(1), (3), 42 U.S.C.A. § 7413(a)(1), (3).

¹¹Many courts interpret the requirement liberally to allow citizen suits to proceed. *Profitt v. Township of Bristol*, 754 F.2d 504, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20209 (3d Cir. 1985); *Pymatuning Water Shed Citizens for Hygenic Env’t v. Eaton*, 644 F.2d 995, 11 *Envtl. L. Rep.* (Envtl. L. Inst.) 20790 (3d Cir. 1980); *NRDC v. Callaway*, 524 F.2d 79, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) 10640 (2d Cir. 1975); *Comite Pro Rescate de la Salud v. Puerto Rico Aqueduct & Sewer Auth.*, 693 F. Supp. 1324, 19 *Envtl. L. Rep.* (Envtl. L. Inst.) 20143 (D.P.R. 1988); *Merry v. Westinghouse Elec. Corp.*, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 21215 (M.D. Pa. 1988); *Nunam Kitlusi v. Arco Alaska, Inc.*, 592 F. Supp. 832, 14 *Envtl. L. Rep.* (Envtl. L. Inst.) 20619 (D. Alaska 1984); *Student Pub. Interest Research Group of N.J., Inc. v. Tenneco Polymers*, 602 F. Supp. 1394, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20309 (D.N.J. 1984); *Chesapeake Bay Found. v. Bethlehem Steel Corp.*, 22 *Envtl. Rep. Cas.* (BNA) 1984 (D. Md. 1985); *Fishel v. Westinghouse Elec. Corp.*, 617 F. Supp. 1531, 16 *Envtl. L. Rep.* (Envtl. L. Inst.) 2001 (M.D. Pa. 1985); *Student Pub. Interest Research Group of N.J., Inc. v. Monsanto Corp.*, 600 F. Supp. 1474, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20294 (D.N.J. 1985); *Student Pub. Interest Research Group of N.J. Inc. v. Georgia-Pac. Corp.*, 615 F. Supp. 1419, 16 *Envtl. L. Rep.* (Envtl. L. Inst.) 20039 (D.N.J. 1985); *Village of Kaktovic v. Corps of Engineers*, 9 *Envtl. L. Rep.* (Envtl. L. Inst.) 20117 (D. Alaska 1978); *Save our Sound Fisheries Ass’n v. Callaway*, 429 F. Supp. 1136, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20488 (D.R.I. 1977); *Metropolitan Washington Coalition for Clean Air v. District of Columbia*, 373 F. Supp. 1089, 4 *Envtl. L. Rep.* (Envtl. L. Inst.) 20651 (D.D.C. 1974), rev’d on other grounds, 511 F.2d 809, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) 20335 (D.C. Cir. 1975); *Riverside v. Ruckelshaus*, 3 *Envtl. L. Rep.* (Envtl. L. Inst.) 20043 (C.D. Cal. 1972).

¹²*Hallstrom v. Tillamook County*, 493 U.S. 20, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 20193 (1989).

¹³*United States v. Louisiana Pacific Corp.*, 682 F. Supp. 1122, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20350 (D. Colo. 1987) and 682 F. Supp. 1141, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20912 (D. Colo. 1988). Here the court dismissed in part an EPA enforcement action insofar as it alleged a different violation than cited in the notice of violation. *See also* *United States v. Ford Motor Co.*, 736 F. Supp. 1539, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 21126 (W.D. Mo. 1990) (notice of violation for violating one regulation will not sustain enforcement action for violating another regulation) and *United States v. Pan Am. Grain Mfg. Co., Inc.*, 29 F. Supp. 2d 53 (D.P.R. 1998) (allegation of violation at one of defendant’s facil-

of requirements, cross analysis might be useful in resolving some interpretive questions, for instance, whether notice of a particular violation is sufficient to issue an order addressing a subsequent violation of the same nature or a different but closely related violation.¹⁴

Where a notice of violation is required prior to further enforcement, courts have considered notice a jurisdictional requirement.¹⁵ That means under CAA section 113(a), EPA has no jurisdiction to enforce unless it first issues a notice of violation and prior to the amendment obviating the requirement, that the same violation extend for more than thirty days.¹⁶ Another court held that a notice which was defective in an immaterial manner was mere harmless error and did not defeat jurisdiction.¹⁷ Courts have held that penalties may be assessed for violations that occur prior to a notice of violation¹⁸ and that the issuance of the notice tolls the running of the statute of limitations.¹⁹ They have construed the requirement to issue a notice of violation prior to further enforcement to apply only to those violations specified in section 113(a)(1)—violations of state implementation plans.²⁰ And they have held that when CAA § 113(a)(4) requires that notices served on corporations be served on “appropriate corporate officers,” service on a plant manager is satisfactory, even when he or she is not a corporate officer as a matter of corporate law.²¹ Finally, the commencement by the state of an enforcement action during or after the notice period does not bar EPA enforcement under most of the provisions.²²

ities will not sustain enforcement action for the same violation at another of its facilities). *Navistar Int'l Transp. Corp. v. EPA*, 858 F.2d 282, 18 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 21405 (6th Cir. 1988). The court held that where the defect was harmless error it would not defeat jurisdiction.

¹⁴The questions could arise, for instance, under CAA § 113, 42 U.S.C.A. § 7413. They have not been considered in that context, but have been under the citizen suit sections. In *Fishel v. Westinghouse Elec. Corp.*, 617 F. Supp. 1531, 16 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20001 (M.D. Pa. 1985), it was held that a citizen suit complaint could allege violations that occurred between the service of the notice and the filing of the complaint. A notice of intent to sue for discharge of pollutants without a NPDES permit was held sufficient to support a complaint charging discharge in excess of those allowed in subsequently issued permit. *Nunam Kitlusisti v. Arco Alaska, Inc.*, 592 F. Supp. 832, 14 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20691 (D. Alaska 1984). See also *Rivers Unlimited v. Costle*, 15 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20936 (S.D. Ohio 1978).

¹⁵*United States v. AM Gen. Corp.*, 808 F. Supp. 1353 (N.D. Ind. 1992); *Navistar Int'l Transp. Corp. v. EPA*, 858 F.2d 282, 18 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 21405 (6th Cir. 1988); *United States v. Louisiana-Pacific Corp.*, 682 F. Supp. 1141, 18 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20912 (D. Colo. 1988).

¹⁶*United States v. Louisiana-Pacific Corp.*, 682 F. Supp. 1141, 18 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20912 (D. Colo. 1988). One defendant argued that when the same violation does not recur within the thirty-day period, EPA lacks jurisdiction to enforce when the violation recurs thereafter. This, of course, would make it virtually impossible to enforce against recurring but strategically timed violations. The court had little trouble summarily rejecting this argument on its face. Congress “did not intend to create a jurisdictional technicality that could be abused to prevent even the most reckless and chronic polluter from being brought to trial,” *United States v. Louisiana Pac. Corp.*, 682 F. Supp. 1141, 1156, 18 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20912, 20918 (D. Colo. 1988).

¹⁷*Navistar Int'l Transp. Corp. v. EPA*, 858 F.2d 282, 18 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 21405 (6th Cir. 1988).

¹⁸*United States v. SCM Corp.*, 667 F. Supp. 1110, 18 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20073 (D. Md. 1987).

¹⁹*Sierra Club v. Chevron U.S.A.*, 834 F.2d 1517, 18 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20237 (9th Cir. 1987). The case concerned a citizen suit notice of violation, but the same logic would apply to government notices of violation.

²⁰*United States v. B&W Inv. Properties*, 38 F.3d 362, 25 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20012 (7th Cir. 1994).

²¹*United States v. BP Oil Co.*, 1989 WL 83623, No. CIV. A. 86-0792 (E.D. Pa. 7-27-89).

²²Under CWA § 309(a)(1), for instance, if EPA gives a notice, an appropriate state action commenced within the 30-day period appears to forestall EPA action. But since only an “appropriate” state action will bar federal action, and the statute does not define what state action would be appropriate, EPA’s interpretation of when it may proceed with enforcement may carry heavy weight under *Chevron*

Congress, of course, knows how to impose a bar on enforcement under such circumstances when it wants to.²³

§ 9:8 Administrative enforcement remedies—Notices of violation—Conclusion

It is not at all clear that the notice of violation serves its purpose of lessening tensions in federalism. The notice undoubtedly does prompt some state enforcement action, thus lessening the federal enforcement burden. But a state which is unhappy with federal enforcement against its citizens will not be satisfied with federal enforcement just because the state has been given an opportunity to act first. The notice also undoubtedly prompts some compliance in and of itself, thus further lessening the federal enforcement burden. But in many cases it is predictable that a notice of violation will not result in compliance. In other cases it is clear that a penalty should be assessed regardless of whether compliance is soon achieved. Serious consideration should be given to eliminating the notice of violation from government enforcement sections altogether, making it discretionary as in CWA section 309, or pro forma as in RCRA section 3008. To the extent the notice requirement is retained in any meaningful fashion, the government enforcement sections should: (1) authorize the issuance of a notice of violation based only on a reasonable belief a violation has occurred or is occurring; (2) recognize that further enforcement after issuance of a notice is discretionary; (3) require that when notice is given to the state, it is also given to the alleged violator; (4) not require notice to the state where the violation is enforceable only by EPA; (5) authorize enforcement against violations regardless of whether they continue for thirty days after the notice; and (6) not condition further enforcement on the failure of the state to take appropriate enforcement action (or at the very least require not only the commencement, but also the diligent prosecution of state enforcement action). It should also be made clear that voluntary use of a notice of violation does not subject the enforcing agency to pre-enforcement review of the notice or other additional collateral attacks on its subsequent enforcement action based on the notice.

§ 9:9 Administrative enforcement remedies—Administrative compliance orders

Most of the pollution control statutes authorize regulatory agencies to issue administrative compliance orders.¹ Used effectively, they provide a quick, responsive, and flexible enforcement tool, particularly well-suited to remedying less egregious violations. Indeed, the lack of such authority (or of the authority to administratively assess penalties) may make violations of this nature virtually uncontrollable. Neither U.S. attorneys nor federal district court judges willingly spend their time on cases against small polluters alleged to have committed real but not terribly significant violations. An administrative order may prompt compliance; if it does not, the polluter's failure to comply with the order may be the type of recalcitrance necessary to interest the U.S. attorney in prosecuting the case and the judge in hearing it. Administrative orders can also be used effectively to document, underscore, and make enforceable measures voluntarily undertaken by cooperative defendants.

principles of deference. In any event, EPA can avoid the issue simply by proceeding with an enforcement action without giving a notice under § 309(a)(3). Compare SDWA § 1414(a) (under which EPA does not have the option of proceeding without a notice).

²³See, for instance, the SDWA enforcement provision, 42 U.S.C.A. § 300g-3(a)(1)(B), and the citizen suit provisions of any of the statutes, e.g., Clean Water Act § 505(b), 33 U.S.C.A. § 1365(b).

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¹Administrative compliance orders are not to be confused with administrative orders assessing penalties, discussed in § 9:12.

Over-reliance on administrative orders to the exclusion of more drastic remedies, however, softens the fiber of the regulatory program and results in the erosion of its credibility. This ultimately leads to the all too familiar pattern of a succession of orders endlessly amending and extending earlier orders.² Indeed, the effectiveness of administrative orders depends upon the perception by the regulated community that the government will not hesitate to use more drastic remedies if the order is violated.³ Administrative orders are not self-enforcing and EPA has no contempt powers. Administrative orders can only be enforced by a court.⁴

§ 9:10 Administrative enforcement remedies—Administrative compliance orders—Uses of administrative compliance orders

As with the notice of violation, CAA section 113 provides the model for many successive administrative order provisions. For violations of SIPs an administrative order may not be issued until thirty days after notice of the violation is given to the violator and the state, but one may be issued without such prerequisite for other violations.¹ Except for orders enforcing violations of hazardous emissions standards, section 113 orders do not take effect until the violator has had the opportunity to confer with EPA regarding the alleged violation.² Since the opportunity to confer focuses on the alleged violation rather than the mandates in the order, however, an offer to meet and discuss the violation, made in the notice of violation or during some other preliminary step, should satisfy that requirement and a subsequently issued order should be effective upon issuance. The ability to meet and confer with EPA prior to the effectiveness of the order raises the question of whether a respondent can get judicial review of an issue upon which it did not exhaust its administrative remedies by meeting and conferring with EPA during the pre-effectiveness period.³ Law developed in the context of reviewing other informal agency actions suggests that failure to bring issues to EPA's attention during that period may preclude subsequent judicial review.⁴

The order must state with reasonable specificity the nature of the violation and

²One commentator characterized EPA's early overreliance on administrative orders as almost a "cruel force devouring the heart of the Act." W. Rodgers, *Handbook on Environmental Law* 347 (1977). For a graphic description of this pattern in practice in a state agency context, see *Gardeski v. Colonial Sand & Stone Co.*, 501 F. Supp. 1159 (S.D.N.Y. 1980).

³In holding that the issuance of an administrative order under CWA section 309 was not mandatory, the Fifth Circuit considered the issuance of a compliance order an empty gesture unless a civil suit was required to enforce any violation of the order. *Sierra Club v. Train*, 557 F.2d 485, 7 *Envtl. L. Rep. (Envtl. L. Inst.)* 20670 (5th Cir. 1977).

⁴*Student Pub. Interest Research Group of N.J., Inc. v. Fritzche, Dodge & Olcott, Inc.*, 759 F.2d 1131 (3d Cir. 1985).

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¹Originally, an order could not be issued unless the violation continued for more than thirty days after notice was given, but that requirement was deleted in 1990. See § 9:5.

²42 U.S.C.A. § 7413(a)(4). The opportunity to confer is actually with the Administrator. The Administrator, of course, has delegated authority to confer to lower levels. Since this is not an authority granted to the Administrator, but a right granted to the violator, it is a nice question whether the Administrator can avoid conferring with a violator who is not satisfied with a lower echelon representative. The question has never been raised. One court has held that one of the few questions to be considered when the government seeks summary judgment to enforce an administrative order is whether the official issuing the order was properly authorized to do so. *United States v. Seafab Metal Corp.*, 18 *Envtl. L. Rep. (Envtl. L. Inst.)* 21024 (W.D. Wash. 1988). This implies it is proper to delegate the authority to issue an order. It would be anomalous to allow the Administrator to delegate this authority but require the Administrator to meet personally with order recipients.

³*United States v. Seafab Metal Corp.*, 18 *Envtl. L. Rep. (Envtl. L. Inst.)* 21024 (W.D. Wash. 1988).

⁴The whole purpose of the notice and comment period in informal rulemaking, for instance, is to give the agency an opportunity to solicit relevant information on the validity of the rule from the

must specify a time for compliance which is reasonable, taking into account the seriousness of the violation and any good faith efforts to comply. If an order is issued to a corporation, a copy must be issued to “appropriate corporate officers” and in all cases must be sent to the state in which the violation occurs.⁵ Orders must be issued using proper procedures,⁶ which include signing and dating.⁷

The other environmental statutes follow this pattern to varying degrees. Preconditions to the issuance of administrative orders under the statutes are discussed *supra* and will not be repeated here. Under CWA section 309(a)(4), orders addressing violations of CWA section 308⁸ (information gathering, inspections, etc.) do not take effect until the recipient has had an opportunity to discuss the violation with the Administrator. Neither legislative history nor logic reveal why this provision, copied from CAA section 113(a)(4), was narrowed to include only section 308 violations.⁹ Cessation orders under SMCRA section 521 are effective only for thirty days unless a public hearing is held. Administrative orders issued under Noise Control Act (NCA) section 11¹⁰ and RCRA section 3008 do not become effective until after notice and opportunity for a hearing, a full Administrative Procedure Act (APA) hearing under the NCA¹¹ and the equivalent under RCRA.¹² Similar hearing requirements are included in authorities to assess penalties administratively.¹³ Hearings are probably required for RCRA administrative compliance orders because those orders can also contain penalty assessments. There is no constitutional requirement for a hearing prior to the issuance of an administrative compliance order.¹⁴

Administrative orders issued under CWA sections 309 and 404,¹⁵ RCRA section 3008, and SMCRA section 521, must specify the nature of the violation and a time

interested public. Those not availing themselves of the opportunity cannot relitigate the rule again in another context. *See American Frozen Food Inst. v. Train*, 539 F.2d 107, 6 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20485 (D.C. Cir. 1976); *Nader v. NRC*, 513 F.2d 1045, 5 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20342 (D.C. Cir. 1975). There is something akin to the exhaustion of administrative remedies doctrine at work here. *See also* CAA section 307(d)(7)(B), which allows judicial review only of issues raised during the comment period, *and United States v. Chotin Transp., Inc.*, 649 F. Supp. 356, 17 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20636 (S.D. Ohio 1986), in which the court held that judicial review of a penalty assessed administratively with informal procedures was limited to the record and could not consider issues not raised before the assessing agency. CAA § 307(d)(7)(B), precludes judicial review of issues in rulemakings not raised during the public comment period.

⁵42 U.S.C.A. § 7413(a)(4).

⁶*United States v. Seafab Metal Corp.*, 18 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21024 (W.D. Wash. 1988).

⁷*United States v. Louisiana-Pacific Corp.*, 682 F. Supp. 1122, 18 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20350 (D. Colo. 1987).

⁸33 U.S.C.A. § 1318.

⁹*See* this section notes 2–4 and accompanying text (comment on consultation requirement).

¹⁰42 U.S.C.A. § 4910.

¹¹NCA § 11(d), 42 U.S.C.A. § 4910(d). An order may not be issued until after notice and opportunity for a hearing in accordance with 5 U.S.C.A. § 554.

¹²Under RCRA § 3008, 42 U.S.C.A. § 6928, an order becomes effective unless its recipient requests a public hearing within thirty days after its issuance. If a hearing is requested, the section is silent on when the order becomes effective; presumably this is determined after the hearing. EPA may subpoena witnesses and evidence and promulgate rules for discovery. Hearing procedures are set forth in 40 C.F.R. §§ 22.01 to 22.37.

¹³*See* § 9:12.

¹⁴*Asbestec Constr. Servs., Inc. v. EPA*, 849 F.2d 765, 18 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21029 (2d Cir. 1988).

¹⁵33 U.S.C.A. § 1344(s). The relationship between CWA sections 309 and 404(s) and EPA and the Corps of Engineers in the enforcement of the section 404 program is somewhat confusing. The discharge of dredged or fill material into navigable waters without or in violation of a state-issued section 404 permit is a violation of section 301. Violations of section 301 are enforceable by EPA

for compliance. SMCRA section 521 orders must also specify the remedies required and the mining or reclamation area to which the order applies. Copies of CWA sections 309 and 404 and SMCRA section 521 orders must be sent to the state in which the violation occurs and, in the case of CWA orders, to states affected by the violation. Copies of CWA sections 309 and 404 orders issued to corporations must be sent to appropriate corporate officers as well as to the corporation and service of all orders issued under those sections must be personal.¹⁶ NCA section 10(d), in contrast, contemplates administrative orders with none of the elaborations or restrictions of the other statutes, and simply authorizes the Administrator to order “such relief as he determines is necessary to protect the public health and welfare.”

In specifying a time for compliance in CWA sections 309 and 404 orders, EPA and the Corps of Engineers are to take into account the seriousness of the violation and any good faith efforts to comply. But compliance must be ordered within thirty days in section 404 orders, as was the case in all section 309 orders prior to the 1977 amendments, which subsequently limited the thirty day requirement in section 309 orders to violations of “an interim compliance schedule or operation and maintenance requirement.”¹⁷

The seriousness and good faith criteria for determining the date of compliance are not helpful. They are extremely subjective and susceptible to endlessly differing interpretations. The same indicia of seriousness and good faith could be used to argue for either a long or short compliance schedule.¹⁸ To the extent that they allow some flexibility only within a thirty day period, that flexibility is sufficiently constrained to be meaningless. Indeed, few violations of any magnitude can be abated in such a short time except by shutting down the pollution source, thus eliminating the violating discharge. Immediate cessation may be quite feasible for section 404 violations, where dredge and fill operations can be halted immediately without undue disruption until the underlying problem is sorted out. And Congress specifically contemplated immediately effective cease-operation orders for mining and reclamation operations under SMCRA section 521. But, where a factory is discharging pollutants in violation of its permit, there may be no means of correcting the violation within thirty days, short of a very protracted and disruptive shutdown. If the factory has not installed the requisite control equipment, EPA under some cir-

administratively under section 309. Section 404(s) provides the Corps of Engineers the authority only to enforce against violations of section 404 permits issued by it. The Corps therefore lacks the authority to enforce against violations of state-issued permits or for discharging without a permit. *Parkview Corp. v. Department of the Army*, 455 F. Supp. 1350, 8 *Envtl. L. Rep.* (Envtl. L. Inst.) 20834 (E.D. Wis. 1978). The Corps has apparently successfully enforced in such situations where the issue was not raised. *See, e.g., United States v. DeFelice*, 641 F.2d 1169, 11 *Envtl. L. Rep.* (Envtl. L. Inst.) 20505 (5th Cir. 1981); *United States v. D'Annolfo*, 474 F. Supp. 220 (D. Mass. 1979). EPA's enforcement authority clearly covers violations of state-issued permits as well as discharges without permits. *See* Letter from Attorney General Benjamin Civiletti to Secretary of the Army Alexander (Sept. 5, 1979).

¹⁶Although EPA employees or federal marshals may be used to serve orders, registered mail, return receipt requested, is more likely. *See* Memorandum from Assistant Administrator for Enforcement and General Counsel (Mar. 20, 1974) (“Compliance Monitoring, Administrative Orders, and Court Actions under Section 309 of the Federal Water Pollution Control Act Amendments of 1972”); Memorandum from Acting Director, Enforcement Division (Sept. 13, 1974) (“Serving of Enforcement Orders”).

¹⁷CWA § 309(a)(5)(A), 33 U.S.C.A. § 1319(a)(5)(A).

¹⁸A serious violation may result in environmental harm that should be quickly abated, arguing for a short compliance schedule. It may also take a protracted time to correct, arguing for a long schedule. RCRA § 3008, 42 U.S.C.A. § 6928, copies the criteria of seriousness of the violation and good faith efforts to comply from the Clean Air and Water Acts. *Compare Id. with* CAA § 113, 42 U.S.C.A. § 7413 and CWA § 309, 42 U.S.C.A. § 1319. Because of poor placement, RCRA § 3008 refers to setting the amount of a penalty rather than establishing the time for compliance as in the sections on which it was modeled. The criteria, however, may be more appropriate to establishing penalties than compliance schedules.

cumstances can include in the order a “reasonable” time to comply.¹⁹ But if it has installed the requisite control equipment and the violation has been caused by poor operation and maintenance, EPA must arguably order cessation of the discharge if the violation cannot otherwise be cured within thirty days.²⁰ It is doubtful that Congress contemplated this anomalous result, which forces draconian remedies for relatively less important violations, while tolerating reasonable compliance schedules for more important and deliberate ones.

In some cases, cessation of a treatment plant discharge would be unfeasible or harmful to the environment. Shutdown of an improperly operating municipal sewage treatment plant violating its effluent limitations by 10 percent would result in the discharge of totally untreated sewage or its backup within the sewer system and ultimately into residential basements. While restricting the thirty-day compliance requirement to the two instances specified is better than total application, even residual application is undesirable. From the beginning, EPA has framed devices to circumvent the irrationalities of the restriction.²¹ Its normal practice now is to issue an order requiring some discrete activity within thirty days, but also containing a schedule leading to full and final compliance. If the thirty-day compliance requirement is taken literally, this device borders on illegality,²² although it is unlikely that this issue would be subject to judicial review. Certainly the order recipient would be in a poor position to complain. But the thirty-day requirement in CWA § 309(a)(5)(A) is so poorly drafted that the device is unnecessary and the restrictions can safely be circumvented.²³

Orders are authorized in a variety of contexts, as discussed elsewhere: to abate

¹⁹Congress required that enforcement actions be commenced and diligently prosecuted to avoid citizen suits after similar notice in CWA § 505(b)(1)(B), 33 U.S.C.A. § 1365(b)(1)(B), and comparable provisions of other statutes.

²⁰Congress required that enforcement actions be commenced and diligently prosecuted to avoid citizen suits after similar notice in CWA § 505(b)(1)(B), 33 U.S.C.A. § 1365(b)(1)(B), and comparable provisions of other statutes.

²¹Memorandum from Assistant Administrator for Enforcement and General Counsel (Mar. 20, 1974) (“Compliance Monitoring, Administrative Orders, and Court Actions under Section 309 of the Federal Water Pollution Control Act Amendments of 1972”) suggests that an order require completion of the first step toward compliance within thirty days and set forth an advisory schedule for activities to lead to full compliance thereafter. It then suggests that thirty days before each event in the advisory schedule a new order be issued requiring completion of that step within thirty days and reaffirming the remainder of the advisory schedule. A cunning device, but one that did not endure in practice for obvious reasons.

²²The New Hampshire Supreme Court justified state certification under CWA § 401, 42 U.S.C.A. § 1341, of a permit to a publicly owned treatment works containing a schedule of compliance starting with one requirement due on July 1, 1977, but not leading to final compliance until well after the statutory deadline using similar logic. *Town of Sutton v. New Hampshire Water Supply & Pollution Control Comm’n*, 355 A.2d 867 (N.H. 1976). The reasoning is clearly erroneous in view of *Republic Steel v. Costle*, 581 F.2d 1228, 8 *Env’tl. L. Rep.* (Env’tl. L. Inst.) 20686 (6th Cir. 1978).

²³The terms “interim compliance schedule” and “operation and maintenance provision” are not defined and not easily understood. Permits normally have compliance schedules for the installation of control equipment to meet final effluent limitations, and they normally have interim effluent limitations to be met in the meantime. The milestones in the compliance schedule leading up to final compliance are often referred to as interim steps. But “interim compliance schedule” is not a term used with regard to NPDES permits.

There are boilerplate conditions for proper operation and maintenance of treatment facilities in NPDES regulations that are to be incorporated in NPDES permits. 40 C.F.R. §§ 122.41 to 122.50. They are so general they would be difficult to enforce unless the poor operation and maintenance resulted in an effluent limit violation. If such a violation occurred, it would become the prime target of enforcement and proper operation and maintenance would become the means of compliance rather than the *sine qua non* of compliance. Thus, the restrictions apply to few, if any, enforceable violations. There are many violations of the Act possible other than “interim compliance schedules,” “operation and maintenance requirement,” and “final deadline” violations. How a compliance schedule is to be framed for other types of violations, such as those involving violations of a § 307 standard—a monitoring requirement in a permit or for discharging without a permit—is an open question.

emergencies, to assess penalties, to gather information, and to effectuate *in rem* remedies such as stop sale orders. The most common specialized use, however, is as an extension device.

Most litigation concerning administrative compliance orders has involved whether the issuance of an order is mandatory or discretionary²⁴ and whether it is subject to pre-enforcement review.²⁵ As discussed above,²⁶ the better view is that the issuance of orders, like most other enforcement actions, is discretionary. Pre-enforcement review of administrative orders raises different issues than pre-enforcement review of notices of violation. While a notice of violation is merely a procedural presage of possible future enforcement action, an administrative order may require the cessation of economically rewarding activity²⁷ or the expenditure of funds on remedial measures,²⁸ and violation of an order may lead to the imposition of penalties²⁹ or criminal liability.³⁰ Courts have split on whether these factors warrant pre-enforcement review.³¹ This issue is discussed more fully below.³²

Administrative orders are valid and enforceable only when they are issued by an agency with statutory authority to do so,³³ supported by valid evidence of a violation,³⁴ issued in accordance with proper procedures by properly authorized officials,³⁵ and not arbitrary and capricious in their requirements.³⁶ Of course, administrative orders are not exclusive remedies. Thus, a source which is administratively ordered to install pollution control equipment may also be sued for penalties for failure to install the equipment on time.³⁷

²⁴See the discussion of this issue in § 9:4.

²⁵See discussion of this issue in § 9:20.

²⁶See § 9:4.

²⁷Cease and desist orders operate in this manner. CWA §§ 309(a)(1), 309(a)(3) & 404(s), 42 U.S.C.A. §§ 1319(a)(1), 1319(a)(3) & 1344(s), are frequently used to order immediate cessation of illegal dredge and fill activities. See *USI Properties Corp. v. EPA*, 517 F. Supp. 1235, 1244-45, 11 *Envtl. L. Rep. (Envtl. L. Inst.)* 20971 (D.P.R. 1981); *PFZ Properties v. Train*, 393 F. Supp. 1 (D.D.C. 1975).

²⁸Most orders require compliance activities involving the expenditure of money. *Ramey Borough v. Commonwealth of Pa., Dep't of Env'tl. Res.*, 351 A.2d 613 (Pa. 1976) (state order to town to build sewage treatment plant).

²⁹See, e.g., CAA § 113(b)(1), 42 U.S.C.A. § 7413(b)(1); CWA § 309(d), 33 U.S.C.A. § 1319(d). CERCLA § 107(c)(3), 42 U.S.C.A. § 9607(c)(3), provides that persons failing to comply with CERCLA section 106 remedial orders are liable for EPA's cleanup costs plus treble damages.

³⁰See CAA § 113(c)(1)(B), 42 U.S.C.A. § 7413(c)(1)(B). See also *Donner Hanna Coke Corp. v. Costle*, 464 F. Supp. 1295, 9 *Envtl. L. Rep. (Envtl. L. Inst.)* 20299 (W.D.N.Y. 1979).

³¹See the discussion of this issue in § 9:4.

³²See § 9:20.

³³*Parkview Corp. v. Department of the Army*, 455 F. Supp. 1350, 8 *Envtl. L. Rep. (Envtl. L. Inst.)* 20834 (E.D. Wis. 1978).

³⁴*United States v. Independent Stave Co.*, 406 F. Supp. 886 (W.D. Mo. 1975).

³⁵*United States v. Seafab Metal Corp.*, 18 *Envtl. L. Rep. (Envtl. L. Inst.)* 21024 (W.D. Wash. 1988). Proper procedures included signing and dating the order. *United States v. Louisiana-Pacific Corp.*, 682 F. Supp. 1122, 18 *Envtl. L. Rep. (Envtl. L. Inst.)* 20350 (D. Colo. 1987).

³⁶*ASARCO, Inc. v. EPA*, 616 F.2d 1153, 10 *Envtl. L. Rep. (Envtl. L. Inst.)* 20433 (9th Cir. 1980); *United States v. Seafab Metal Corp.*, 18 *Envtl. L. Rep. (Envtl. L. Inst.)* 21024 (W.D. Wash. 1988); *Donner Hanna Coke Corp. v. Costle*, 464 F. Supp. 1295, 9 *Envtl. L. Rep. (Envtl. L. Inst.)* 20279 (W.D.N.Y. 1979).

³⁷*United States v. Liviola*, 605 F. Supp. 96, 15 *Envtl. L. Rep. (Envtl. L. Inst.)* 20452 (N.D. Ohio 1985); *United States v. Outboard Marine Corp.*, 12 *Envtl. Rep. Cas. (BNA)* 1346 (N.D. Ill. 1978); *United States v. Eastern Associated Coal Corp.*, 11 *Envtl. Rep. Cas. (BNA)* 1381 (W.D. Pa. 1977). See also *United States v. Frezzo Brothers, Inc.*, 602 F.2d 1733, 9 *Envtl. L. Rep. (Envtl. L. Inst.)* 20556 (3d Cir. 1979); *United States v. Earth Sciences, Inc.*, 599 F.2d 368, 9 *Envtl. L. Rep. (Envtl. L. Inst.)* 20542 (10th Cir. 1979).

§ 9:11 Administrative enforcement remedies—Administrative compliance orders—Extension orders

As the initial CAA 1975 and CWA 1977 deadlines for compliance with the more stringent pollution control requirements came and went, it became apparent that many pollution sources were not able to comply on time, many through no fault of their own. EPA and state agencies sanctified extension of compliance schedules for some of these sources using administrative orders, permit modifications, consent decrees, variations on no action letters, and other such imaginative devices. Congress, believing that it had legislated deadlines, was upset that executive agencies were apparently rewriting the legislation.¹ Courts held that EPA could not extend the statutory deadlines.² At the same time, Congress did not want the offending sources necessarily enjoined from further operation. Consequently, in 1977 Congress amended both Acts to authorize compliance deadline extensions by administrative order in selected and narrowly defined circumstances. In both cases the amendments created problems of their own.

The CWA amendments were the simplest. In section 309(a)(5)(A), Congress authorized EPA to issue administrative orders for violations of “final deadlines,” requiring compliance within a reasonable time. In section 309(a)(5)(B), it authorized EPA to extend the 1977 pollution control deadline to 1979 for nonmunicipal sources meeting various criteria.³ Although it specified no mechanism for doing so, Congress clearly contemplated that the extensions under section 309(a)(5)(B) were to be accomplished with administrative orders.⁴ Courts have ruled that EPA must hold hearings before denying a request for an extension order,⁵ although it was not EPA’s practice to do so and there is no requirement in section 309(a) for any administrative process prior to issuing a section 309(a) order. Finally, EPA was authorized to issue administrative orders under section 309(a)(6) to extend the 1977 deadline for industrial sources of water pollution which in “good faith” had contracted for connection to a municipal sewage treatment system as a means of

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¹See 2 Clean Air Act Legislative History at 1417-22; 4 Clean Air Act Legislative History at 2522-28.

²Republic Steel Corp. v. Costle, 581 F.2d 1228, 8 Env’tl. L. Rep. (Env’tl. L. Inst.) 20686 (6th Cir. 1978); United States Steel Corp. v. Train, 556 F.2d 822, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20419 (7th Cir. 1977); Bethlehem Steel Corp. v. Train, 544 F.2d 657, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20019 (3d Cir. 1976); United States v. United States Steel Corp., 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20732 (N.D. Ala. 1976), aff’d, 548 F.2d 1232, 7 Env’tl. L. Rep. (Env’tl. L. Inst.) 20294 (5th Cir. 1977).

³The discharger must have applied for a permit prior to December 31, 1974; have acted in good faith; have commenced construction of control technology; and have committed sufficient resources to achieve compliance by April 1, 1979. Extensions were not to be granted beyond that date and were not to be granted at all if their issuance would result in the imposition of additional controls on other sources. Both the use of “may” in EPA’s authority to issue extensions and legislative history indicate that extensions are discretionary. See 3 Env’tl. Pol’y Div., Cong. Research Serv., 95th Cong., 2d Sess., A Legislative History of the Clean Water Act of 1977 464 (Comm. Print 1978). The extension was only for the requirements of section 301(b)(A) (for meeting technology-based treatment requirements rather than requirements based on water quality standards). On both points, see United States v. Homestake Mining Co., 595 F.2d 421, 9 Env’tl. L. Rep. (Env’tl. L. Inst.) 20245 (8th Cir. 1979).

⁴3 Env’tl. Pol’y Div., Cong. Research Serv., 95th Cong., 2d Sess., A Legislative History of the Clean Water Act of 1977 464 (Comm. Print 1978). This desire is further evidenced by placement of section 309(a)(5)(B) in the midst of various administrative order provisions rather than surrounded by deadline extension mechanisms to be implemented in permits such as section 301(i) and section 301(k).

⁵Monongahela Power Co. v. EPA, 586 F.2d 318, 8 Env’tl. L. Rep. (Env’tl. L. Inst.) 20884 (4th Cir. 1978). In United States v. Homestake Mining Co., 595 F.2d 421, 9 Env’tl. L. Rep. (Env’tl. L. Inst.) 20245 (8th Cir. 1979), the court held that EPA, not the district court, was the primary fact finder under the extension section, although it appeared to be untroubled by the fact that EPA had not given the plaintiff a hearing on its application for an extension. *Id.* at 429-30, 9 Env’tl. L. Rep. (Env’tl. L. Inst.) at 20247-48.

compliance when the municipal system itself had been granted a compliance extension until 1983 in a permit under CWA section 301(i). While section 309(a)(5)(B) is only of historical interest,⁶ it does illustrate the need for a pressure valve accompanying strict statutory compliance deadlines,⁷ and its history casts some light on judicial and congressional views of “good faith.”⁸ CWA section 309(a)(5)(A) is, of course, of continuing utility.⁹

The extension provisions added to the CAA in 1977 are considerably more complicated. The primary mechanism is the delayed compliance order (DCO) under CAA section 113(d). States were authorized to issue DCOs for compliance by July 1, 1979, or three years after the date required for compliance in a SIP, whichever was later. The state must first provide public notice and opportunity for a hearing on a proposed DCO. A DCO issued to a major source¹⁰ must include notice that the source will be assessed a CAA section 120 penalty if it fails to comply with the

⁶The provision was the subject of litigation in which it was held that it authorized extensions for BPT effluent limitations under section 301(b)(1)(B). *United States v. Homestake Mining Co.*, 595 F.2d 421, 423–24, 9 *Envtl. L. Rep.* (Envtl. L. Inst.) 20245, 20246 (8th Cir. 1979). It is also clear that the decision of whether or not to grant such an extension was committed to the discretion of the Administrator and was not to be usurped by the courts. *Id.* See also *Republic Steel Corp. v. Costle*, 581 F.2d 1228, 1234 n17, 8 *Envtl. L. Rep.* (6th Cir. 1978); *Monongahela Power Co. v. EPA*, 586 F.2d 318, 322, 8 *Envtl. L. Rep.* (Envtl. L. Inst.) 20884, 20855–86 (4th Cir. 1978).

⁷In *Consolidation Coal Co. v. Costle*, 604 F.2d 239, 9 *Envtl. L. Rep.* (Envtl. L. Inst.) 20511 (4th Cir. 1979), the court held that the extension provision afforded adequate relief to avoid considering whether effluent guidelines issued two months prior to the statutory date for their achievement were unachievable in the time remaining.

⁸In the Senate Report on S. 1952 it is stated that “good faith” is “generally understood to mean a reasonable statement to comply with the mandates of law,” a formulation earlier adopted by EPA in granting administrative relief to those unable to comply with the 1977 statutory deadline. 4 *Envtl. Pol’y Div., Cong. Research Serv., 95th Cong., 2d Sess., A Legislative History of the Clean Water Act of 1977* 464, 694 (Comm. Print 1978). The legislative history further elaborates elsewhere the congressional view on how good faith relates to permit appeals and noncompliance with statutory deadlines. 3 *Envtl. Pol’y Div., Cong. Research Serv., 95th Cong., 2d Sess., A Legislative History of the Clean Water Act of 1977* 464, 408, 463 (Comm. Print 1978); 4 *Envtl. Pol’y Div., Cong. Research Serv., 95th Cong., 2d Sess., A Legislative History of the Clean Water Act of 1977* 464, 694, 1054 (Comm. Print 1978). For EPA’s analysis of the good faith requirement, see Memorandum from Assistant Administrator for Enforcement (Mar. 30, 1978) (Extended Compliance for Industrial Dischargers from the July 1, 1977 Deadline under the 1977 Clean Water Act Amendments) (pages 6-8) [hereinafter cited as Memorandum]. The court in *Monongahela Power Co.* rejected EPA’s and to some extent Congress’ conception of good faith in holding that judicial challenge of a regulation did not undermine a showing of good faith attempts to comply with the regulation. *Monongahela Power Co. v. EPA*, 586 F.2d 318, 320–21, 8 *Envtl. L. Rep.* (Envtl. L. Inst.) 20884, 20885 (4th Cir. 1978). For subsequent discussions of good faith as an equitable defense to the imposition of penalties for permit violations, see *United States v. T&S Brass & Bronze Works, Inc.*, 681 F. Supp. 314, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20905 (D.S.C. 1988), *aff’d*, 19 *Envtl. L. Rep.* (Envtl. L. Inst.) 20857 (4th Cir. 1988); *United States v. SCM Corp.*, 667 F. Supp. 1110, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20073 (D. Md. 1987); *PIRG of N.J., Inc. v. Ferro Merchandising Equip. Corp.*, 680 F. Supp. 692, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 21368 (D.N.J. 1987).

⁹Since CWA § 309(a)(5)(B), 33 U.S.C.A. § 1319(a)(5)(B), specifies which criteria must be met before an extension of CWA § 301(b)(1)(A) requirements can be extended and limits the extensions that can be made, extensions presumably cannot be made under CWA § 309(a)(5)(A), 33 U.S.C.A. § 1319(a)(5)(A), which are inconsistent with it. *But see* 4 *Envtl. Pol’y Div., Cong. Research Serv., 95th Cong., 2d Sess., A Legislative History of the Clean Water Act of 1977* 464, 1044–45 (Comm. Print 1978). Of course, CWA § 309(a)(5)(A) may be available, as an extension device, only for CWA §§ 301(b)(1)(B), (C), (b)(2). EPA seems to take this position, but not decisively so. See Memorandum from Assistant Administrator for Enforcement, 14 (Mar. 30, 1978) (Extended Compliance for Industrial Dischargers from the July 1, 1977 Deadline under the 1977 Clean Water Act Amendments).

¹⁰A major source is one emitting or with the potential to emit more than 100 tons per year of a pollutant for which a national ambient air quality standard has been promulgated. 40 C.F.R. § 65.01(d).

compliance date in the order.¹¹ DCOs issued by states to major sources must be approved by EPA as meeting the requirements of section 113(d). EPA may issue DCOs to major sources after thirty days' notice to states and to minor sources after determining that a state-issued DCO does not meet the requirements of the Act. DCOs issued to sources intending to comply by termination of operations¹² or replacement of facilities require bonds or other surety for compliance. There is no discretion to modify the DCO or the bond if the source fails to comply with the termination requirements. These state or EPA-issued DCOs may be terminated if EPA determines that the inability to comply no longer exists. DCOs may also be issued to extend compliance dates up to five years for sources proposing to comply by using innovative technology. These innovative-technology DCOs are similar to innovative technology permit extensions authorized under CWA section 301(k).¹³ A DCO also may be authorized under the CAA for a fuel burning source switching from gas to oil to coal, as long as the resulting emissions will not contribute significantly to violations of primary air quality standards in the air quality control region where the source is located.

Except for sources complying by termination or replacement, DCOs must contain compliance schedules with increments of progress leading to compliance as expeditiously as practicable. They must require interim use of the best practicable systems of emissions reduction, measures to avoid endangerment of public health, and in some instances monitoring. State-issued DCOs become part of SIPs. Compliance with a DCO insulates the source from federal enforcement or citizen suits for the underlying SIP violation, but noncompliance with the DCO can result in revocation of the DCO as well as the assessment of noncompliance penalties under CAA section 120 and other enforcement under section 113.¹⁴ Since DCOs may extend compliance until three years after otherwise required by SIPs, DCOs have continuing utility for extending future SIP requirement deadlines. A similar, but in some ways even more complicated, two-step order is authorized in CAA section 119¹⁵ to extend compliance dates with SIP requirements for sulfur oxides control by primary nonferrous smelters until January 1, 1988.¹⁶

¹¹One commentator concluded that a DCO is a notice for the purposes of section 120, meaning that section 120 penalties begin to accrue automatically if the source fails to comply with the DCO. 1 F. Grad, *Treatise on Environmental Law* § 2.03[16][b] (1985). This would lead to the odd result that a state-issued DCO, in a state without an approved section 120 program, would constitute a federal section 120 notification. EPA does not interpret the statute in this manner. It requires a section 120 notice to be issued after the DCO is violated. *See* 40 C.F.R. § 66.11.

¹²It has been held that DCOs are not the exclusive method for extending compliance dates for sources terminating operations; that may also be done by amending the SIP. *Ohio Env'tl. Council v. EPA*, 593 F.2d 24, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20157 (6th Cir. 1979).

¹³Both allow extensions only if EPA finds that the innovative technology is likely to result either in emission reductions greater than would otherwise be required or in achieving the required emission reduction at lesser cost. The CWA extension is limited to innovative process changes that will result in such reductions, whereas the CAA extension is available for any innovative means of achieving the reduction. The CWA extension may be granted only if the innovative process has the potential for industry-wide application, whereas the CAA extension is available if the innovative technology is likely to be adequately demonstrated.

¹⁴EPA's regulations for issuance, approval, and disapproval of DCOs are found at 40 C.F.R. §§ 65.01 to 65.602, where both state and federal DCOs and disapproved state DCOs are listed. As of July 1, 1981, EPA had issued just under 100 DCOs, approved slightly over 100 state-issued DCOs, and disapproved eight state-issued DCOs. Forty percent of the DCOs were for sources in Ohio.

¹⁵42 U.S.C.A. § 7419. *See also* 40 C.F.R. §§ 67.1 to 67.43.

¹⁶*See* *Kamp v. Hernandez*, 752 F.2d 1444, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20216 (9th Cir. 1985).

For the most part, other statutes do not establish statutory deadlines for installation of capital-intensive control equipment. Although some do contain authorization for extensions,¹⁷ they do not utilize administrative orders for that purpose.

§ 9:12 Administrative enforcement remedies—Administrative penalty orders—In general

The environmental regulatory statutes authorize the administrative assessment of civil penalties for most, if not all, enforceable violations. CWA sections 311 and 312 first authorized such penalties only for spills of oil or hazardous substances, violations of spill prevention and containment plan requirements, and violations of marine sanitation device requirements.¹ The statute was amended in 1987 to authorize EPA to assess such penalties for most violations.² While CAA section 120³ authorizes such penalties for a wide range of stationary source violations, it is so encumbered with fine-tuned elaborations that it cannot be used effectively against many violations. The statute was amended in 1990 to add an administrative penalty authority to section 113, comparable to the CWA.⁴ CAA section 211(d)⁵ was used for years to administratively assess penalties against a variety of violations of lead in fuel regulations, but was ultimately held by EPA's Judicial Officer not to authorize such action.⁶ MPRSA, RCRA, TSCA, FIFRA, CERCLA, and EPCRA all authorize

¹⁷SWDA §§ 1415, 1416, 42 U.S.C.A. §§ 300g-4, 300g-5, for instance, authorize variances and exceptions to extend time for compliance with primary drinking water standards, among other purposes.

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¹33 U.S.C.A. §§ 1321 to 1322. Under section 311(b)(6), the Coast Guard and EPA assess penalties for oil and hazardous substance spills. *See* Exec. Order No. 11548, 35 Fed. Reg. 11677 (1970), superseded by Exec. Order No. 11735, 38 Fed. Reg. 21243 (1973), *reprinted in* 33 U.S.C.A. § 1321 app. at 947-48 (1982). The Coast Guard also assesses penalties for violations of the marine sanitation device requirements under section 312(j).

²CWA § 309(g), 33 U.S.C.A. § 1319(g).

³42 U.S.C.A. § 7420.

⁴CWA § 113(d), 42 U.S.C.A. § 7413(d).

⁵42 U.S.C.A. § 7545(d). From the mid-1970s through 1980, EPA issued more than 2500 complaints assessing nearly \$12 million in penalties. *See* EPA Enforcement A Progress Report 1976 30; EPA Enforcement A Progress Report Fiscal Years 1977-80, 29 (draft, not released). Resolutions of some were noted in the Federal Register, although that was not the general practice. *See, e.g.*, 45 Fed. Reg. 53568, 58408 (1980).

⁶In 1982 EPA's Judicial Officer decided that it lacked authority to assess penalties administratively under section 211(d). *See* *In re Transportation, Inc.*, Docket No. CAA (211-27), (Feb. 25, 1982). The decision is true to the literal reading of the statute, but is not free from doubt and leads to strange results. The provision indicated that violators "shall forfeit and pay to the United States a civil penalty" of \$10,000 for each day of violation, which penalty may, upon application be remitted or mitigated by the Administrator of EPA. It nowhere indicates that the penalty is to be assessed by the Administrator. Congress so indicated in most of the other provisions discussed in this subsection. EPA's previous construction of the provision, however, was not without merit. If the penalty is to be assessed by a court, it must assess the full \$10,000 for each day of each violation: The section does not authorize an assessment of "no more than \$10,000," but rather "of \$10,000." This has been held to be a mandatory amount once a violation is proved. *United States ex rel. EPA v. Hill Petroleum Co.*, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20457 (W.D. La. 1986). After the district court assesses a \$10,000 penalty, the defendant can then go to the Administrator for mitigation. Must he do so before he appeals the district court's ruling to the court of appeals? If so, is the running of the sixty day period for filing the appeal in section 4 of the Federal Rules of Appellate Procedure stayed while the defendant petitions the Administrator for mitigation or remission of the penalty? Is the Administrator's response to the petition reviewable under the APA as a final agency action in the same district court? This scheme makes so little sense that Congress probably meant the penalties to be assessed by the Administrator in the first place, but it did not explicitly say so. Since courts, rather than executive branches, are normally vested with penalty assessment powers, Congress should be explicit when it intends the opposite result. All the same, the violations at issue are amenable to "traffic ticket"

EPA to assess penalties administratively.⁷ CAA section 113(d)(3) goes farther than any of the other provisions by authorizing EPA to establish by regulation a field citation program under which its inspectors in the field can assess penalties of up to \$5,000 per day of violation. EPA has not yet promulgated regulations to implement this program. Given the anti-regulatory atmosphere that has developed since enactment of this amendment, it is questionable whether EPA will move to implement it any time soon.

At first blush administratively assessed penalties appear appropriate for use in almost a traffic ticket fashion against relatively minor violations, best addressed without the trappings and expense of full judicial proceedings. Indeed, the pre-1990 CWA section 311 was a good example of such use. Penalties were limited to \$5,000 for each offense. Since violators were not generally liable for multiple offenses in the same proceeding, exposure to liability was relatively low. In assessing or compromising the amount of the penalty for spills, the size of the violator's business, its ability to continue in business, and the gravity of the violation all were to be taken into account.⁸ In assessing or compromising penalties, violation of required prevention measures or demonstrated good faith efforts of the violator to comply after notification of the violation also were to be taken into account.⁹ Procedures were informal, although administrative appeal was provided.¹⁰ In sum, the penalties were relatively minor, were easily adjusted to prevent undue imposition on the impecunious, and could be easily and quickly imposed. Not surprisingly, they were used more frequently by EPA than all other enforcement actions available under the CWA.¹¹ Although the effect of penalties is exceedingly difficult to evaluate, an early study of the implementation of the section 311 penalty program suggests a lessening of preventable spills in areas of aggressive assessment.¹²

The pre-1990 CWA section 311, however, did not represent a consistent pattern for either statutory design or agency implementation of administratively assessed penalty provisions in the environmental statutes. The statutes authorize penalties ranging from \$5,000 to \$50,000 per day or per violation or both (with CAA section 120 authorizing an open-ended penalty based on recovering the economic benefit of noncompliance); contemplate assessment proceedings ranging from informal to full, multi-tiered APA adversary procedures; and provide criteria for fixing penalty amounts ranging from one factor with limited discretion to many factors with

administratively assessed penalties and the provision results in extremely odd procedures if they must be judicially assessed.

⁷MPSRA § 105(a), 33 U.S.C.A. § 1415(a); RCRA § 3008(a), 42 U.S.C.A. § 6928(a); TSCA § 16, 15 U.S.C.A. § 2615; FIFRA § 136(1), 7 U.S.C.A. § 136(1); CERCLA § 109, 42 U.S.C.A. § 9609; EPCRA § 325, 42 U.S.C.A. § 11045.

⁸CWA § 311(b)(6)(A), 33 U.S.C.A. § 1321(b)(6)(A).

⁹CWA § 311(j)(2), 33 U.S.C.A. § 1321(j)(2).

¹⁰EPA has regulations governing its assessment procedures, beginning with a notice of violation and culminating with an appeal to the Administrator. 40 C.F.R. § 114. The procedures are extremely informal. All of EPA's other penalty assessments are governed by its Consolidated Rules of Practice, 40 C.F.R. § 22, which provide full APA hearings or their equivalent (the same hearing procedure but without administrative law judges). EPA's failure to include CWA section 311 penalty assessments in the Consolidated Rules was probably out of deference to the Coast Guard, which has not published rules for its longstanding CWA section 311 penalty assessment procedures, which are extremely informal and parallel EPA's. 40 C.F.R. § 114. *See United States v. Independent Bulk Transport, Inc.*, 8 *Env'tl. Rep. Cas. (BNA) 1202 (S.D.N.Y. 1975)*. If EPA had included CWA section 311 assessments in its Consolidated Rules, it would have cast doubt on the adequacy of the Coast Guard's extreme informality.

¹¹From 1977 through 1980, EPA initiated 4000 to 4500 CWA section 309 notices of violation, administrative orders and judicial actions, and at the same time initiated over 6500 CWA section 311 penalty assessments or referrals to the Coast Guard for penalty assessment. *See EPA Enforcement A Progress Report Fiscal Years 1977-1980 38-9*.

¹²U.S. Dep't of the Interior, *Federal Water Quality Administration, Clean Water for the 1970's: A Status Report 15-16 (1970)*, reprinted in *VII EPA, Legal Compilation 3592, 3615-16 (1973)*.

almost complete discretion. Indeed, in 1990, CWA § 311 was amended to bring it in line with these authorities.

There is not only a great deal of variation between the three critical aspects of the provisions—maximum penalty, factors for determining size of penalty, and assessment procedures—but also the complete lack of a considered relationship among those aspects in the various statutes, although a pattern is beginning to emerge. As the maximum penalty increases, for instance, one would expect corresponding increases in the formality required in the assessment procedures and the discretion available to vary the size of the penalty to avoid injustice. But MPRSA section 105(a), which authorizes penalties of no more than \$50,000 per day of violation—the largest penalty of all the statutes, requires only notice and opportunity for a hearing, while SMCRA section 518, which authorizes penalties of no more than \$5,000—the smallest penalty of all the statutes, requires a full APA hearing. Both authorize assessing or mitigating the penalty based on the same three factors. At the same time, TSCA section 16, which authorizes penalties of no more than \$25,000 for each violation—in the middle of the range of penalties authorized by the various statutes, provides the greatest range of the factors to be taken into account in setting the amount of the penalty, including unspecified factors necessary to do justice. Moreover, that provision allows EPA to compromise, modify and remit penalties, with or without conditions.

Perhaps in response to this mishmash of procedures, Congress began to enact tiered administrative penalty structures in 1986, increasing the procedural requirements and safeguards as it increased maximum penalty levels. The model was established in the Superfund Amendments and Reauthorization Act (SARA),¹³ which both added an administratively assessed penalty section to Superfund, CERCLA section 109,¹⁴ and also enacted the Emergency Planning and Community Right-To-Know Act (EPCRA), complete with a similar administrative penalty scheme, EPCRA § 325.¹⁵ On the heels of this innovation, Congress added comparable authority to CWA §§ 309 and 311 and in CAA § 113. Generally, Class I penalties are for lesser maximum amounts, require notice and an informal hearing, and are judicially reviewed in district courts, while Class II penalties are for greater maximum amounts, require notice and formal hearings, and are reviewed in courts of appeal. It would be too much of a good thing, however, to expect complete adherence to this rational pattern.

Because they emerge from the same piece of legislation, it is not surprising that the administrative penalty schemes in CERCLA and EPCRA are very similar. What is surprising is that they are not identical and depart from each other in minor, but unexplainable, ways. Both statutes authorize Class I penalties for specified violations of not more than \$25,000 per violation and Class II penalties for the same violations of not more than \$25,000 per violation per day or not more than \$75,000 per violation per day for second or subsequent violations. Both statutes require notice and opportunity for a hearing for a Class I violation and notice and opportunity for a full APA hearing for a Class II violation.¹⁶ Both specify the same factors to be taken into account in assessing Class I penalties: the nature, circumstances, extent, and gravity of the violations; the wealth, culpability, and compliance history of the violator; the economic benefit from the violation; and such other matters as justice

¹³Pub. L. No. 99-499, 100 Stat. 1613 (1986).

¹⁴42 U.S.C.A. § 9609.

¹⁵42 U.S.C.A. §§ 11001 to 11050, Pub. L. No. 99-499, tit. III, 100 Stat. 1613, 1728 (1986).

¹⁶CERCLA § 109(a)(2), (b), 42 U.S.C.A. § 9609(a)(2), (b); EPCRA § 325(b)(1)(B) (b)(2), 42 U.S.C.A. § 11045(b)(1)(B), (b)(2). EPCRA section 325(b)(2) specifies that the procedures for hearings on Class II penalties are to be the same as for those on administrative penalties under TSCA. TSCA § 16(a)(2), 15 U.S.C.A. § 2615(a)(2), requires an APA hearing for contested administrative penalties. Why is EPCRA so coy?

may require. Both statutes authorize the administrative issuance and judicial enforcement of subpoenas to compel testimony and production of documents in connection with a hearing for either class of penalty, while CERCLA authorizes the promulgation of rules of discovery for Class II hearings.¹⁷ Under both statutes judicial review of Class I penalties is in the district courts on a record certified by EPA, but for Class II penalties, review is in the courts of appeal under CERCLA and the district courts under EPCRA.¹⁸

CWA §§ 309(g) and 311(b)(6) follow the same general pattern but Congress was more niggardly in granting penalty assessment authority. The Class I and II penalties appear to be quite broadly available. Class I penalties may be assessed up to \$10,000 per violation, but the maximum amount of any Class I penalty may not exceed \$25,000. Class II penalties may be assessed up to \$10,000 per violation per day, but the maximum amount of any Class II penalty may not exceed \$125,000. Simultaneous violations of more than one pollutant parameter caused by a single operational upset under CWA § 309(g), however, are considered a single violation.¹⁹ Class I penalties require notice and a “reasonable opportunity to be heard and to present evidence” (but not a hearing under APA §§ 554 or 556), while Class II penalties require notice and opportunity for an APA § 554 hearing. In assessing a penalty under § 309(g), the same factors are to be taken into account as under CERCLA § 109 and EPCRA § 325. The factors to be considered under § 311(b)(6) vary somewhat, most notably in considering the amount of other penalties assessed for the spill and the violator’s efforts in mitigating the spill. Judicial review of Class I penalties is in the district courts and of Class II penalties in the courts of appeal. In either case the standard of review is substantial evidence on the record as a whole for the finding of violation and abuse of discretion for the penalty assessment. Public participation is also afforded in the process. Proposed penalties must be publicly noticed with an opportunity to comment. Anyone commenting may participate in the hearing and appeal its outcome. Public participation provisions, of course, are for the benefit of persons other than the respondent. Such persons will usually be opponents of the respondent who wish the respondent to receive harsher penalties than the government proposes. They can prevail in seeking a higher penalty only if they prove EPA’s assessment was an abuse of discretion.

In general, the distinction between full APA and less formal hearings has become blurred regarding both the circumstances in which a formal hearing is required and the procedural differences between formal and informal hearings. With regard to when a formal APA hearing is required, it has been held that when Congress provided for agency action under the CWA after “opportunity for public hearing,” it meant a full, formal APA hearing.²⁰ Clearly, Congress meant something different by a hearing in the CAA, CWA, CERCLA, and EPCRA Class I penalty provisions, because it required full APA hearings for Class II penalties under those statutes. Procedural differences between informal and APA hearings have also become

¹⁷CERCLA § 109(a)(5), (b), 42 U.S.C.A. § 9609(a)(5), (b); EPCRA § 325(f)(2), 42 U.S.C.A. § 11045(f)(2).

¹⁸CERCLA § 109(a)(4), (b), 42 U.S.C.A. § 9809(a)(4), (b); EPCRA § 325(f), 42 U.S.C.A. § 11045(f).

¹⁹CWA § 309(g)(3), 33 U.S.C.A. § 1319(g)(3). This device works to eliminate violations of multiple pollutant limitations caused by the same occurrence on a given day, not to eliminate violations on multiple days caused by the same occurrence. *Public Interest Research Group of N.J. v. Elf Atochem N. Am., Inc.*, 817 F. Supp. 1164, 23 *Envtl. L. Rep.* (Envtl. L. Inst.) 21225 (D.N.J. 1993).

²⁰That holding addressed the issuance of NPDES discharge permits under CWA section 402(a)(1), 33 U.S.C.A. § 1342(a)(1). *Seacoast Anti-Pollution League v. Costle*, 572 F.2d 872, 8 *Envtl. L. Rep.* (Envtl. L. Inst.) 20207 (1st Cir. 1978), cert. denied, 493 U.S. 824 (1978). *But see* *Chemical Waste Management, Inc. v. EPA*, 873 F.2d 1477, 19 *Envtl. L. Rep.* (Envtl. L. Inst.) 20868 (D.C. Cir. 1989).

blurred. EPA's Consolidated Rules of Practice²¹ provide essentially the same hearing procedures for both, except that they require administrative law judges as hearing officers for penalties assessed under statutes requiring full APA hearings. The Department of Interior provides both informal settlement conference procedures²² and full APA appeal procedures for penalty assessments under SMCRA section 521.²³

Despite considerable numbers of administratively assessed penalties, there are surprisingly few reported cases contesting assessments. Courts have required persons against whom penalties have been assessed to exhaust their administrative appeals²⁴ before seeking judicial review. In reviewing findings of violation, courts have used the test of supported by substantial evidence on the record as a whole,²⁵ while reviewing penalty amounts, they have used the arbitrary and capricious test.²⁶ They have refused to overturn or remand penalty amounts even if they would not have assessed as high a penalty on the same facts had the case been tried to the court.²⁷ They have refused to allow the appeal of a penalty to become the pretext of a collateral attack on the violated permit condition.²⁸ For the most part they have properly respected the congressional delegation to the agencies of the responsibility to set and compromise the penalty amounts, and have remanded cases to the agencies rather than judicially determining the amount of the penalty where they were

²¹40 C.F.R. § 22. When challenged, the rules have been upheld. *See* *Katzson Bros. v. EPA*, 839 F.2d 1396, 18 *Envtl. L. Rep. (Envtl. L. Inst.)* 20942 (10th Cir. 1988) (challenge to service by mail).

²²30 C.F.R. § 846.17.

²³43 C.F.R. § 4.

²⁴*United States v. Chotin Transp., Inc.*, 649 F. Supp. 356, 17 *Envtl. L. Rep. (Envtl. L. Inst.)* 20636 (S.D. Ohio 1986) (judicial review limited to the record, will not consider evidence not presented to agency assessing penalty); *Continental Research Corp. v. Train*, 427 F. Supp. 713 (E.D. Mo. 1976) (failure to seek the Administrator's review of an ALJ decision assessing a FIFRA § 1361 penalty pursuant to the Consolidated Rules precluded judicial review). *See also* *United States v. Beatty, Inc.*, 401 F. Supp. 1040, 6 *Envtl. L. Rep. (Envtl. L. Inst.)* 20119 (W.D. Ky. 1975).

²⁵*See, e.g.,* *Diamond Ring Ranch, Inc. v. Morton*, 531 F.2d 1397, 6 *Envtl. L. Rep. (Envtl. L. Inst.)* 20637 (10th Cir. 1976); *BP Exploration & Oil, Inc. v. Department of Transp.*, 44 F. Supp. 2d 34 (D.D.C. 1999); *Chemical Waste Management, Inc. v. EPA*, 649 F. Supp. 347, 17 *Envtl. L. Rep. (Envtl. L. Inst.)* 20521 (D.D.C. 1986).

²⁶*Sasser v. Administrator*, 990 F.2d 127, 23 *Envtl. L. Rep. (Envtl. L. Inst.)* 21022 (4th Cir. 1993); *Panhandle Coop. Ass'n v. EPA*, 771 F.2d 1149, 15 *Envtl. L. Rep. (Envtl. L. Inst.)* 20935 (8th Cir. 1985); *Yaffee Iron & Metal Co. v. EPA*, 774 F.2d 1008, 16 *Envtl. L. Rep. (Envtl. L. Inst.)* 20431 (10th Cir. 1985); *Hudson Stations, Inc. v. EPA*, 642 F.2d, 261, 11 *Envtl. L. Rep. (Envtl. L. Inst.)* 20278 (8th Cir. 1981); *BP Exploration & Oil Inc. v. Department of Transp.*, 44 F. Supp. 2d 34 (D.D.C. 1999); *Chemical Waste Management, Inc. v. EPA*, 649 F. Supp. 347, 17 *Envtl. L. Rep. (Envtl. L. Inst.)* 20521 (D.D.C. 1986).

²⁷*United States v. Chotin Transp., Inc.*, 649 F. Supp. 356, 17 *Envtl. L. Rep. (Envtl. L. Inst.)* 20636 (S.D. Ohio 1986) (\$1,500 CWA penalty for 20-gallon oil spill upheld, although court thought penalty excessive); *N. Jonas & Co.*, 666 F.2d 829, 12 *Envtl. L. Rep. (Envtl. L. Inst.)* 20255 (3d Cir. 1981); *United States v. Beatty, Inc.*, 401 F. Supp. 1040, 6 *Envtl. L. Rep. (Envtl. L. Inst.)* 20119 (E.D. Ky. 1975).

²⁸*General Motors Corp. v. EPA*, 168 F.3d 1377, 29 *Envtl. L. Rep. (Envtl. L. Inst.)* 21021 (D.C. Cir. 1999).

unable to sustain agency action.²⁹ Of course, courts do not entertain appeals for civil penalty assessments once the statutory period for filing an appeal has run.³⁰

If litigation on other enforcement sections is any guide, the discretionary or mandatory nature of penalty assessments and their relation to other remedies will be raised judicially. Under the wording of most of the statutes it seems clear that penalty assessment is discretionary³¹ or, since penalties can be compromised, remitted or modified,³² the same result can be got through the back door. CAA section 120, however, is clearly mandatory, which is only one of its difficulties.³³

The most interesting relationship to the other remedies involves judicially imposed civil penalties. TSCA, FIFRA, MPRSA, and SMCRA authorize only administratively assessed civil penalties for violations of their substantive provisions. Because those statutes authorize civil judicial penalties only for violations of administrative orders, if at all,³⁴ the issue is confined to RCRA section 3008, CAA sections 113 and 120, and CWA sections 309 and 311. RCRA section 3008(g) provides that persons violating hazardous waste management requirements are liable to the United States for a civil penalty not to exceed \$25,000 per each day of violation. The section originally did not specify whether EPA or the courts were to assess the penalty, although it provided in subsection (a)(3) that courts were authorized to assess penalties for violations of EPA-issued compliance orders. EPA interpreted its administrative order authority in RCRA section 3008(a), as it existed prior to the 1984 Amendments, broadly to include the authority to assess penalties and undertook an ambitious civil penalty assessment program. It asserted this authority, among other places, in its Consolidated Rules of Procedure.³⁵ The section, however, did not explicitly grant EPA penalty assessment authority and mentioned penalties only in the context of violations of administrative orders. Under similar circumstances EPA's Chief Judicial Officer ruled that CAA section 211(d) did not authorize the administrative assessment of penalties. Not content with this perhaps questionable assertion of authority, EPA also sought judicially assessed penalties under RCRA section 3008 in at least one case, *United States v. Liviola*.³⁶ The 1984 RCRA Amendments clarified this situation in one respect. They made it clear in RCRA section 3008(a)(3) that EPA could assess penalties in administrative orders. They changed subsection (a)(3) from one authorizing judicially assessed penalties for violations of EPA-issued compliance orders to one authorizing EPA-assessed penalties for violations of the

²⁹See *Katzson Bros. v. EPA*, 839 F.2d 1396, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20942 (10th Cir. 1988) (remanded where troubled by severity of a \$4,200 FIFRA default judgment penalty for failure to file a pesticide production report during a year when respondent produced no pesticides); *Atlantic-Richfield Co.*, 429 F. Supp. 830, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20063 (9th Cir. 1977). See also *Yaffee Iron & Metal Co. v. EPA*, 774 F.2d 1008, 16 *Envtl. L. Rep.* (Envtl. L. Inst.) 20431 (10th Cir. 1985); *Aero-Master, Inc. v. EPA*, 765 F.2d 746 (8th Cir. 1986). But see *United States v. General Motors Corp.*, 403 F. Supp. 1151, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20248 (D. Conn. 1975).

³⁰*Selco Supply Co. v. EPA*, 632 F.2d 863, 11 *Envtl. L. Rep.* (Envtl. L. Inst.) 20015 (10th Cir. 1980).

³¹*E.g.*, CWA § 309(b)(1), 33 U.S.C.A. § 1319(b)(1), and CAA § 113(d)(1), 42 U.S.C.A. § 7413(d)(1) both provide that the relevant agency "may" assess a penalty. RCRA requires EPA to assess a civil penalty, "if any," in an administrative order.

³²TSCA § 16, 15 U.S.C.A. § 2615, indicates that EPA "shall" assess penalties against violators, but allows EPA to remit, modify or compromise penalties. CWA § 311(b)(6)(A), 33 U.S.C.A. § 1321(b)(6)(A), provides that the Coast Guard "shall" assess penalties against violators, but allows it to compromise them. Moreover, since a single spill can lead to a penalty assessment under section 311(b)(6)(A), a judicial action under section 311(b)(6)(B) or action under section 309, but not more than one of the above, all three must be discretionary.

³³See § 9:13.

³⁴See, *e.g.*, RCRA § 3008(a)(3), 42 U.S.C.A. § 6928(a)(3).

³⁵See 40 C.F.R. § 22.1(4).

³⁶*United States v. Liviola*, 605 F. Supp. 96, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20452 (N.D. Ohio 1985).

Act. The House Report explained this amendment, however, in terms of clarifying not EPA's ability to assess penalties administratively, but rather its ability to assess penalties for *past* as well as current violations.³⁷ The change deleted the one express reference in the section to judicial assessment of penalties. In *Liviola* the complaint was filed before the Amendments but the decision was rendered after the Amendments. Neither the court nor the defendant appear to have considered the effect of the Amendments on the court's authority to assess penalties. The defendant, failing to note the changes made by the Amendments, argued the court had no such authority, for under RCRA section 3008(a)(3) civil penalties were authorized only for violations of administrative orders. The court too failed to note that section 3008(a)(3) had been amended and to consider the implications of the changes. Instead, it relied on the broad civil penalty authority in RCRA section 3008(g), but failed to note that the subsection nowhere mentioned judicial authority regarding penalties. Its conclusion, however, is probably correct. Section 3008(g) makes persons violating the Act liable "to the United States" for civil penalties. Because it is the United States which sues for penalties in court and the Administrator who assesses penalties administratively, the wording is highly suggestive that courts are to assess penalties under section 3008(g). Unless section 3008(g) is construed to authorize judicially assessed penalties, it is surplusage, being redundant to the amended section 3008(a)(3).

CAA sections 113(b) and 120(a)(2)(A) go to great lengths to make it clear that, at least for major sources, assessment of a section 120 penalty and commencement of a court action for judicial civil penalty assessment are both mandatory. Since CAA section 120 is nonpunitive³⁸ and CAA section 113 is punitive, assessment of a penalty under both is not duplicative, although if EPA ever attempted both assessments for the same violation, the violator would probably not be comforted by this logic.

CWA section 311 has considerable overlap with CWA section 309,³⁹ but since section 311(b)(11) prohibits assessments under both for the same discharge, duplication between penalties assessed under these two sections is avoided. CWA section 311 also authorizes judicially and administratively assessed penalties against the same type of violations, again raising the specter of duplication of penalties. This is avoided by section 311(b)(7)(f), which prohibits the assessment of a penalty judicially when one has already been assessed administratively. This shifts a potential double jeopardy for the violator to a chance for the violator to minimize its liabilities. Because judicially assessed penalties are potentially larger than penalties assessed administratively, it is to the violator's advantage to attempt to enter into negotiations for an administrative penalty. Moreover, because both EPA and the Coast Guard may assess administrative penalties, it may be possible to forum shop for penalty assessors.

The addition of administrative penalty authority in CWA section 309 also raises the question of whether both EPA and courts can assess a penalty for the same violation under that section. The question is compounded by a prohibition on judicially assessed penalties for violations against which penalties have been as-

³⁷See H.R. Rep. No. 198, pt. 1, 98th Cong., 2d Sess. 54 (1984), reprinted in United States Code Congressional and Administrative News pp 5576, 5613.

³⁸The amount of the penalty is the economic benefit of noncompliance, a sort of reverse restitution, removing from the violator its illegally-gotten gains.

³⁹Discharges of oil or hazardous substances subject to penalty under section 311 are also subject to penalty under section 309 if they are from point sources and made either without a permit or in violation of a permit. See, e.g., *United States v. Hamel*, 551 F.2d 107, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20253 (6th Cir. 1977) (court observed that a discharge of gasoline without a permit was actionable under either CWA §§ 309, 311). But see also *Manufacturing Chemists Ass'n v. Costle*, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20667 (W.D. La. 1978) (erroneously held that such result could not occur). Of course action cannot be taken under both sections for the same spill since the CWA was amended in 1977, adding section 311(b)(6)(E) now found at section 311(b)(11).

essed administratively and paid,⁴⁰ while there is no corresponding bar against administrative assessment of penalties where judicial penalties have already been assessed. The intent of the prohibition, however, is clearly to avoid assessment of two penalties for the same violation, and that intent should be read to bar an administrative penalty for a violation against which a judicial penalty has already been assessed.

Since the overwhelming number of administratively assessed penalties have been made under CWA section 311, it is not surprising that the bulk of the litigation surrounding such penalties has involved issues peculiar to that section. That the litigation has involved three constitutional issues is perhaps more surprising. The constitutional questions, somewhat related, are: (1) whether the imposition of a penalty for a spill, regardless of fault, is a deprivation of property without due process; (2) whether the penalty is criminal in nature rather than civil; and (3) if the penalty is civil, whether its assessment nevertheless requires a jury trial.

None of the three questions has merit. As to the first issue, the imposition of strict liability for spilling oil or hazardous substances is warranted because it is reasonably related to the statutory purposes of preventing such spills, funding the cleanup of the spills (the penalties are paid to a revolving cleanup fund), and shifting liability for cleanup costs from the general public to those benefitting from oil and hazardous substances.⁴¹ With regard to the second issue, if the penalty is criminal, of course, the whole CWA section 311 penalty assessment scheme is constitutionally defective because it deprives the defendant of the right to a jury trial guaranteed by the Sixth Amendment. Moreover, because section 311 requires persons in charge of facilities to give the government notice of spills from such facilities, the government could not use the notices to assess penalties without violating the Fifth Amendment. Finally, prosecution for failure to notify and a subsequent assessment of penalties for the spill might constitute double jeopardy. Since most defendants raising the self-incrimination defense are corporations, the easy answer in those cases is that corporations are not beneficiaries of the defense.⁴² But courts have unanimously held, on a more substantive analysis, that the provision is civil rather than criminal.⁴³ As to the final issue, it has been held that the Seventh Amendment right to a jury trial does not apply to administratively assessed penalties.⁴⁴

There are a number of issues common to both administratively and judicially assessed penalties such as whether violations of several permit requirements on a single day justify one or several maximum penalty assessments for that day. Reference should be made to § 9:24 in this regard.

§ 9:13 Administrative enforcement remedies—Administrative penalty orders—Noncompliance penalties under CAA Section 120

Conceived as the economists' answer to the "command and control" regulatory ap-

⁴⁰CWA § 309(g)(6)(A), 33 U.S.C.A. § 1319(g)(6)(A).

⁴¹United States v. Coastal States Crude Gathering Co., 643 F.2d 1125, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20438 (5th Cir. 1981), cert. denied, 454 U.S. 835 (1981); United States v. Le Boeuf Bros. Towing Co., 537 F.2d 149, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20708 (5th Cir. 1976); United States v. Atlantic-Richfield Co., 429 F. Supp. 830, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20635 (E.D. Pa. 1977).

⁴²United States v. Le Boeuf Bros. Towing Co., 537 F.2d 149, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20708 (5th Cir. 1976).

⁴³United States v. Ward, 448 U.S. 242, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20477 (1980). See also United States v. Le Boeuf Bros. Towing Co., 537 F.2d 149, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20708 (5th Cir. 1976); United States v. Boyd, 491 F.2d 1163, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20434 (9th Cir. 1973); United States v. Atlantic-Richfield Co., 429 F. Supp. 830, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20417 (D.N.J. 1976).

⁴⁴Sasser v. Administrator, 990 F.2d 127, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 21022 (4th Cir. 1993).

proach of environmental statutes, CAA section 120 seeks to remove market disincentives from compliance with CAA requirements.¹ Since most pollution control expenditures do not produce a return on capital invested, a company which defers those expenditures has the economic benefit in the meantime of investing the same capital in a profit-making venture. Section 120 seeks to recover that economic benefit, thus eliminating the incentive for delay and putting companies that comply on time on an equal economic footing with their competitors that do not. If it worked as contemplated, section 120 would not encourage compliance; it is designed only to make the distinction between compliance and noncompliance economically neutral. In fact, it would never do even that because it would not recover for the economic benefit of delayed compliance achieved prior to initiation of the section 120 proceeding. In any event, the section cannot work well. Congress has loaded it with so many procedural requirements that its complexity outweighs its usefulness. It is modeled on a Connecticut regulatory scheme that is less economically pure but more practical than section 120 because its use is discretionary rather than mandatory.² Despite its relative practicality, the Connecticut scheme has never been extensively utilized. Not surprisingly, the more complicated § 120 has been implemented “not with a bang but a whimper.”³ It should be noted that a similar provision was included in the Senate Amendments to the CWA in 1977, but was rejected by the House, although apparently for the wrong reasons.⁴

Section 120 makes penalties mandatory against more important violations, such as: (1) violations of SIP emissions limitations or standards⁵ or compliance schedules by major stationary sources; (2) violations of new source or hazardous emission standards by any source; or (3) violations by such sources of applicable delayed

[Section 9:13]

¹See Drayton, *Economic Law Enforcement*, 4 Harv. Envtl. L. Rev. 1 (1980).

²See Drayton, *Economic Law Enforcement*, 4 Harv. Envtl. L. Rev. 1 (1980). The relevant Connecticut regulations are found at Conn. Agencies Regs. §§ 22a-6b-503, 22a-6b-504, 22a-6b-602, 22a-6b-603. Assessing simple and relatively small penalties against the hundreds or thousands of noncomplying sources involved may be possible. But when the penalty calculation and/or procedure is as complex as under § 120, even the pretext of widespread application is a sham.

³Although over 2000 sources were potentially subject to § 120 penalties when EPA's regulations were promulgated, *see* 45 Fed. Reg. 50087 (1980), only a little more than fifty, § 120 proceedings have been initiated since the effective date of the regulations. Telephone interview Laurence Groner, EPA Office of Enforcement and Compliance Monitoring, March 19, 1986. *See* Wakefield, *EPA Implementation of Noncompliance Penalty Regulations*, 12 Envtl. L. Rep. (Envtl. L. Inst.) 10012, 10017 (1982).

⁴Section 45 of S. 1952 would have added the provision as § 319 of the CWA. 4 Envtl. Pol'y Div., Cong. Research Serv., 95th Cong., 2d Sess., *A Legislative History of the Clean Water Act of 1977* 464, 612-18 (Comm. Print 1978). The provision was dropped in conference. According to Senator Muskie, it was dropped as unneeded because there were relatively fewer major CWA violations than there were CAA violations and because EPA was already using a penalty policy under the CWA to recoup the economic benefit of delayed compliance. 3 Envtl. Pol'y Div., Cong. Research Serv., 95th Cong., 2d Sess., *A Legislative History of the Clean Water Act of 1977* 464, 478-79 (Comm. Print 1978).

⁵CAA § 120(a)(2)(A), 42 U.S.C.A. § 7420(a)(2)(A). Major sources must comply with SIP emission limitations, even those for which revisions are pending before EPA. This was an issue addressed in *Duquesne Light Co. v. EPA*, 698 F.2d 456, 13 Envtl. L. Rep. (Envtl. L. Inst.) 20251 (D.C. Cir. 1983), in response to petitioner's argument that violations of SIP provisions under review are not subject to noncompliance penalties. *Id.* at 471, 13 Envtl. L. Rep. (Envtl. L. Inst.) at 20258. The court supported EPA's argument that proposed revisions held no legal weight until approved by the Agency and thus noncompliance penalties should be imposed when sources are not in compliance with existing approved emission limitations. *Id.* Recent amendments to the regulations clarified the obligations of a source when SIP revisions are pending and tried to reconcile the confusion that might occur when EPA's action on proposed revisions is delayed. 50 Fed. Reg. 36732 (1985). There are recent decisions holding that EPA cannot enforce against SIP violations under CWA § 113 where EPA has not acted on state-submitted SIP revisions that would obviate the violation, *American Cyanamid Co. v. EPA*, 810 F.2d 493, 17 Envtl. L. Rep. (Envtl. L. Inst.) 20642 (5th Cir. 1987); *United States v. Alcan Foil Prods.*, 694 F. Supp. 1280, 18 Envtl. L. Rep. (Envtl. L. Inst.) 21006 (W.D. Ky. 1988). *But see* *General Motors Corp. v. EPA*, 871 F.2d 495, 19 Envtl. L. Rep. (Envtl. L. Inst.) 20841 (5th Cir. 1989).

compliance orders, consent decrees,⁶ or primary nonferrous smelter orders.⁷ The violations covered by section 120 are wide-ranging and can include monitoring violations and emission limitations brought about by poor operation and maintenance, as well as failure to install control equipment.

Sources can claim exemption from the noncompliance penalties in the following situations: (1) when the violations are only *de minimis*;⁸ (2) when the sources are subject to coal conversion orders, delayed compliance orders, SIP emergency suspensions, or innovative technology extensions; or (3) when circumstances are entirely beyond their control.⁹

The amounts of the penalties assessed are to be no less than the economic value of delayed compliance.¹⁰ The assessment procedure begins with the issuance of a notice of noncompliance, either by EPA or by a state with an approved section 120 program.¹¹ A notice that is defective in an immaterial manner will not defeat EPA's

⁶CAA § 120(a)(2)(A)(i), 42 U.S.C.A. § 7420(a)(2)(A)(i). In *Duquesne Light Co. v. EPA*, 698 F.2d 456, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20251 (D.C. Cir. 1983), the petitioners contested EPA's interpretation of the statute, arguing that noncompliance penalties under CAA § 120 should not be imposed against major sources that failed to adhere to emissions limitations that were themselves the subjects of consent decrees. *Duquesne Light Co. v. EPA*, 698 F.2d 456, 466, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20251, 20255 (D.C. Cir. 1983). The court determined that EPA's reading was correct, and that therefore noncompliance penalties under section 120 are appropriate for violations of terms set forth in consent decrees. *Id.* at 467, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) at 20255.

⁷CAA § 120(a)(2)(A), 42 U.S.C.A. § 7420(a)(2)(A).

⁸Application of the *de minimis* exemption, unlike the other exemptions, is discretionary. *Duquesne*, 698 F.2d at 479, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) at 20263.

⁹See CAA §§ 120(a)(2)(B) to 120(a)(2)(C), 42 U.S.C.A. § 7420(a)(2)(B) to (a)(2)(C). EPA's regulations governing the exemptions are set forth at 40 C.F.R. §§ 66.31 to 66.33. Among the issues discussed in *Duquesne* was the exemption for sources unable to comply because of factors beyond their control. *Duquesne Light Co. v. EPA*, 698 F.2d 456, 475, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20251, 20260 (D.C. Cir. 1983). First, the court found that a source must have received a delayed compliance order to qualify for this exemption. *Id.* at 478, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) at 20262.

While the statute lacks specificity, the EPA regulations list the seven factors that qualify a source for this exemption: act of God, fire, embargo, strike, inability to obtain capital for financing pollution control expenditures due to temporary market conditions, certain incidents of pollution control equipment failures, and inability of supplier to furnish labor or materials necessary for achieving compliance. 40 C.F.R. § 66.31(c). In *Duquesne*, the industry petitioners wanted a broader interpretation, requesting that technological impossibility be added to the list. The court decided to support EPA's exclusion of technological impossibility from the list, explaining that EPA's approach encourages pollution abatement as well as development of pollution control technology. *Duquesne Light Co. v. EPA*, 698 F.2d 456, 477, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20251, 20262 (D.C. Cir. 1983).

Nevertheless, EPA's list was considered inappropriately inflexible, and in response to the *Duquesne* opinion, EPA promulgated modifications which allow a source to petition a noncompliance notice and request a hearing without asserting one of the seven listed factors. 50 Fed. Reg. 36723 (1985).

¹⁰Penalties are to be paid quarterly in an amount equal to the "quarterly equivalent of the capital costs of compliance and debt service . . . operation and maintenance costs foregone . . . and any additional economic value" of delayed compliance. The amount is to be offset by expenditures during the quarter to bring and keep the source into compliance, to the extent that the expenditures have not been taken into account in the initial calculation of the penalty. CAA § 120(d)(2), 42 U.S.C.A. § 7420(d)(2). EPA's regulations require the penalty to be calculated in accordance with its Technical Support Document and Instruction Manual, see 40 C.F.R. § 66.21 App. A and App. B and 40 C.F.R. § 67 App. A and App. B. Among other challenges raised by industrial petitioners challenging the section 120 regulations in *Duquesne* was whether funds spent during the quarter are entitled to dollar for dollar credit against the quarterly noncompliance penalty for payment, instead of on differences between cash flows over time as provided in EPA's penalty calculation model. The court upheld the EPA's model, for adoption of a dollar credit system would have totally offset penalties in many cases. *Duquesne Light Co. v. EPA*, 698 F.2d 456, 485, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20251, 20266-67 (D.C. Cir. 1983). In more recent modifications the EPA adopted a thirty year "floating" horizon and made other changes to adapt to new tax laws. 50 Fed. Reg. 36734 (1985).

¹¹CAA § 120(b)(3), 42 U.S.C.A. § 7420(b)(3); 40 C.F.R. §§ 66.11-.12, 67.11 & 21.

jurisdiction to proceed with a penalty assessment.¹² EPA may issue a notice to a source in a state with an approved program if it notifies the state of its intent to do so and the state does not commence section 120 proceedings within thirty days.¹³ Once the notice is issued, the recipient may request a hearing within forty-five days on the underlying finding of violation or may request an exemption, which will be granted or denied in the course of the same hearing.¹⁴ It has been held that evidence of technological and economic infeasibility is excluded from consideration during the hearing on the violation, but may be considered during the hearing on the penalty.¹⁵ EPA is required to hold a hearing when it receives a challenge to its notice of violation, regardless of the type of information provided in the challenge.¹⁶ Hearings are subject to full APA adversary procedures, except on requests for *de minimis* exemptions.¹⁷ If the notice of noncompliance is uncontested or a challenge to it has been resolved in EPA's favor, the source must calculate the penalty within forty-five days or EPA may do so and add the cost of calculation to the penalty.¹⁸ The penalty may be recalculated from time to time as conditions change.¹⁹ EPA may accept or recalculate a penalty submission made by a source, and EPA's calculations or recalculations may be appealed;²⁰ a penalty submission is due quarterly, beginning six months after the notice of noncompliance or six months after administrative resolution of a challenge to the notice, in which case payments for all quarters during the period taken to resolve the appeal are also due at that time.²¹ Payments stop when EPA finds the source is in compliance, at which time the penalty is recalculated based on known facts, rather than the facts assumed when the original calculation was made.²² EPA's determination of compliance and penalty recalculation are also appealable in full APA adversary hearings.²³

The very structure of the scheme defeats its purpose. Since the penalty calculation begins when the notice of noncompliance is issued rather than when the noncompliance began, the penalty will never recover the full economic benefit or remove the full competitive advantage of noncompliance. Since EPA is not issuing notices of noncompliance and cannot subsequently recover any section 120 penalty once compliance has been achieved, congressional intent appears to be wholly frustrated. But EPA's inaction is due in large measure to the recognition that, faced with any resistance, section 120 proceedings would quickly deplete its air pollution enforcement resources. Resisting sources may request separate, full APA hearings at three stages: (1) to contest the finding of violation or denial of an exemption request; (2) to contest the calculation of the penalty; and (3) to contest the determination of final compliance or final penalty recalculation. In addition, should EPA recalculate the penalty or refuse to do so during the penalty payment period, a further appeal is afforded. With the exception of decisions on *de minimis* exemptions,

¹²Navistar Int'l Transp. Corp. v. EPA, 858 F.2d 282, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21405 (6th Cir. 1988).

¹³CAA § 120(b)(3), 42 U.S.C.A. § 7420(b)(3); 40 C.F.R. § 67.21.

¹⁴CAA § 120(b)(4), 42 U.S.C.A. § 7420(b)(4); 40 C.F.R. § 66.13(a)(2).

¹⁵Navistar Int'l Transp. Corp. v. EPA, 858 F.2d 282, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21405 (6th Cir. 1988).

¹⁶See 50 Fed. Reg. 36723 (1985).

¹⁷CAA § 120(a)(2)(C), (b)(5); 42 U.S.C.A. § 7420(a)(2)(c), 7420(b)(5); 40 C.F.R. § 66.42. Hearings regarding the *de minimis* exemption should be informal adjudicatory hearings. See *Duquesne Light Co. v. EPA*, 698 F.2d 456, 482, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20251, 20264-65 (D.C. Cir. 1983).

¹⁸CAA § 120(b)(4), 42 U.S.C.A. § 7420(b)(4); 40 C.F.R. §§ 66.13(a)(1), 66.43.

¹⁹CAA §§ 120(b)(8), (c), 42 U.S.C.A. § 7420(b)(8), (c), 40 C.F.R. §§ 66.22, 66.23.

²⁰40 C.F.R. § 66.51.

²¹CAA § 120(d), 42 U.S.C.A. § 7420(d); 40 C.F.R. § 66.61.

²²CAA § 120(d)(4), 42 U.S.C.A. § 7420(d)(4); 40 C.F.R. §§ 66.71, 66.74.

²³40 C.F.R. § 66.73.

all appeals are accorded full APA adversary procedures, governed by EPA's Consolidated Rules of Procedure, and must be completed within deadlines which are impossibly short if more than a few are proceeding simultaneously.²⁴ The decision in each case may be appealed to the Administrator and hence to the courts of appeal.²⁵ It is hardly surprising the EPA has not subjected itself in any meaningful way to this procedural morass.

EPA may approve state section 120 programs, but only if they meet essentially the same procedural requirements.²⁶ They do not have to provide full APA adversary hearings, however.²⁷ Once a state program is approved, EPA may review state decisions on exemption requests and penalty amounts and may assess section 120 penalties itself when the state does not or assesses penalties that are insufficient.²⁸ It is hardly surprising that no states have sought approval of their own section 120 programs. The complete failure of section 120 is unfortunate, since the concept behind the section is essentially sound. Recovering the economic benefit of noncompliance is feasible and fair. Since it only removes disincentives to delayed compliance and then only if the notice of noncompliance coincides with the initial failure to comply, some adjustments are desirable. The penalty should be back-calculated to the date on which the noncompliance began and should include a "kicker" to make the penalty an incentive for prompt compliance rather than making compliance or noncompliance economically neutral. Use of the provision should be discretionary rather than mandatory to reflect reality and avoid the specter of an avalanche of assessments. Beyond that, the procedural quagmire should be eliminated. There should be only one hearing or appeal, at the end of the process, with repayment of the penalty with interest, if the source prevails.²⁹ If necessary, discretion could be afforded to hold interim, less formal hearings if a *prima facie* case of overwhelming economic hardship (real likelihood of plant closure or bankruptcy) is made. Without such restructuring, the CAA is better served by a simple, "traffic ticket" administratively assessed penalty provision, added by the 1990 amendments in CAA § 113(d). Alternatively, the economic benefit of delayed compliance can be taken into account in a less precise manner, along with other factors in assessing penalties judicially under section 113(e).

§ 9:14 Administrative enforcement remedies—*In Rem* procedures

Some of the environmental statutes supplement common administrative remedies with *in rem* procedures to address particular enforcement problems. Because such procedures are tailored to specific situations, they are not pervasive.

The most traditional of the *in rem* procedures are those contained in CWA section 311 designed to prevent violating ships from fleeing the jurisdiction of the Coast Guard before rectifying their violations. Thus, clearance to sail to foreign ports is

²⁴Decisions on appeals are to be rendered within ninety days after hearing requests are granted. CAA § 120(b)(5), 42 U.S.C.A. § 7420(b)(5); 40 C.F.R. §§ 66.42, 66.54, 66.73.

²⁵CAA § 120(e), 42 U.S.C.A. § 7420(e); 40 C.F.R. § 66.81. *See Navistar Int'l Transp. Corp. v. EPA*, 858 F.2d 282, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21405 (6th Cir. 1988) (appeal of decision on violation prior to hearing on penalty).

²⁶CAA § 120(b), 42 U.S.C.A. § 7420(b); 40 C.F.R. § 66.11.

²⁷40 C.F.R. § 67.11(a)(4).

²⁸CAA § 120(b)(6), 42 U.S.C.A. § 7420(b)(6), 40 C.F.R. §§ 67.21, 67.31, 67.41.

²⁹Such a scheme has been held constitutional under SMCRA. *See United States v. Moore*, 734 F.2d 17, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20703 (6th Cir. 1984); *Blackhawk Mining Co. v. Andrus*, 711 F.2d 753, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20710 (6th Cir. 1983); *B & M Coal Corp. v. Office of Surface Mining & Reclamation Enforcement*, 531 F. Supp. 677, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20584 (S.D. Ind. 1982).

denied vessels which have not paid penalties assessed for oil spills¹ or which have not provided evidence of financial responsibility sufficient to clean up oil spills as required by the section.² In the latter case, ships may either be detained in or denied entry to American ports until evidence of financial responsibility is provided.³ These authorities reflect the traditional reliance on *in rem* proceedings in admiralty cases⁴ growing out of the jurisdictional problems posed by ships that may leave the jurisdiction and never enter it again and that are owned by foreign interests not otherwise subject to jurisdiction.⁵

One provision of CWA section 311, however, goes far beyond the traditional *in rem* remedies. In the event of a maritime disaster in the waters of the United States posing a substantial threat to public health or welfare from the discharge of oil or a hazardous substance from a vessel, section 311(d) authorizes elimination of the threat by a variety of means, including removal or destruction of the vessel. The authority in some respects parallels the emergency injunctive relief provisions of section 311 and other environmental statutes.⁶ Although this authority does not have the traditional roots of those discussed earlier, it is not without precedent.⁷ The costs to the United States of removal or destruction are recoverable in a judicial action against the owner or operator of the vessel, subject to the limitations on liability established in section 311.⁸ The provision raises the constitutional issue of whether a particular action is: (1) taking of property for the public benefit under eminent domain authority, which requires just compensation; or (2) removal and possible destruction of property to prevent an emergency under the police power, which does not require compensation. Indeed, in the latter case not only does the person whose property is destroyed have no rights to just compensation, as the statute suggests, he may have to compensate the government for its expenses.⁹

Other *in rem* remedies include: administrative orders to stop sale, use, or distribution to prevent violating products from reaching the public; administrative recall orders to remediate defective products in the hands of customers; judicially sanctioned seizures and forfeitures of violating products in commerce; and statutory

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¹CWA § 311(b)(6)(A), 33 U.S.C.A. § 1321(b)(6)(A).

²CWA § 311(p)(5), 33 U.S.C.A. § 1321(p)(5).

³CWA § 311(p)(6), 33 U.S.C.A. § 1321(p)(6).

⁴See Fed. R. Civ. P. Admiralty & Maritime Supp. R. B, C.

⁵See *Grand Bahama Petroleum Co. v. Canadian Transp. Agencies, Ltd.*, 450 F. Supp. 447 (D.C.C. 1978) (discussion of jurisdictional problem in maritime cases).

⁶CWA § 311(c)(1)(B)(iii), 33 U.S.C.A. § 1321(2)(B)(ii), authorizes such relief as the public interest and equity require to abate the threat of an imminent hazard to public health or welfare from a spill or threatened spill from an onshore or offshore facility other than a vessel. For an example of an emergency injunction provision under another statute, see CAA § 303, 42 U.S.C.A. § 7603.

⁷According to the House Report the provision is based on 33 U.S.C.A. § 415, an 1899 statute authorizing the Corps of Engineers in an emergency to remove or destroy a vessel impeding navigation. H.R. Rep. No. 127, 91st Cong., 2d Sess., *reprinted in* United States Code Congressional and Administrative News pp 2691, 2701.

⁸See CWA § 311(e), 33 U.S.C.A. § 1321(e). The earlier provision, 33 U.S.C.A. § 415, provided that such costs are charges against the vessel and its cargo. If not properly paid by the owners, the United States is authorized to sell the vessel and cargo. See *China Union Lines, Ltd. v. A.O. Andersen & Co.*, 364 F.2d 769 (5th Cir. 1966), cert. denied, 386 U.S. 933 (1967). In that case, the government seized and removed a flaming, derelict ship which obstructed navigation and imperiled other watercraft. Later, a libel *in rem* was filed against the ship, secured its sale and recovered the expenses of removal, preservation of the ship and its cargo, and prevention of its causing a continuing obstruction. *China Union Lines, Ltd. v. A.O. Andersen & Co.*, 364 F.2d 769, 773–74 (5th Cir. 1966).

⁹See *China Union Lines, Ltd. v. A.O. Andersen & Co.*, 364 F.2d 769, 794 (5th Cir. 1966), cert. denied, 386 U.S. 933 (1967). Superfund builds on this concept to erect a whole program of searching out and remedying hazardous substance problems before they become emergencies.

liens on property to secure repayment of government expenditures. Under FIFRA section 13(a),¹⁰ EPA is authorized to issue “stop sale, use or removal” orders prohibiting the sale, use or removal of violating pesticides or devices except in conformance with the order. Although often used,¹¹ the provision has not been subject to reported litigation. Both FIFRA and TSCA authorize EPA to initiate proceedings for seizure and condemnation in the district court within whose jurisdiction the violating products are found.¹² Harkening back to the origins of this authority, TSCA provides that procedures for utilizing it “shall conform as nearly as possible to proceedings in rem in admiralty.” Under FIFRA, the authority is limited to products violating particular requirements and occupying particular positions in commerce. TSCA imposes no such restrictions. Condemned items may be destroyed or sold (with proceeds going to the Treasury), although they may not be sold in a manner contrary to FIFRA.¹³ Although there have been no reported cases in which EPA has used these authorities, decisions under comparable authorities have established that the government has a low burden for utilizing them.¹⁴

CAA section 207(c)¹⁵ provides EPA with the authority to order manufacturers to recall and repair models of motor vehicles, substantial numbers of which are found not to meet vehicle emissions standards during their useful life, despite proper operation and maintenance. Prior to the issuance of such an order, EPA must notify the manufacturer and require it to submit a plan to remedy the defect at its own expense on properly used and maintained vehicles. Hearings are provided upon request.¹⁶ Because of the notice provision, motor vehicle manufacturers have voluntarily recalled more models—but fewer vehicles—than EPA has ordered recalled.¹⁷ The provision is quite similar to the recall authority provided in the Motor Vehicle Safety Act.¹⁸

Predictably, the three vaguest aspects of section 207(c) have given rise to litigation. What are “substantial numbers” of vehicles? What is “proper operation and maintenance”? What is the “useful life” of a vehicle? The first two of these is-

¹⁰7 U.S.C.A. § 136 K(a).

¹¹EPA has issued nearly 25,500 stop sale orders, of which 24,000 were to producers, distributors and users of 2,4,5-T and Silvex when their registrations were suspended. EPA Enforcement Two Years of Progress 49; EPA Enforcement: A Progress Report 1974 to 1975 37; EPA Enforcement a Progress Report 1976 36; EPA Enforcement a Progress Report Fiscal Years 1977-80 (draft not released).

¹²FIFRA § 13(b), 7 U.S.C.A. § 136k(b), TSCA § 17(b), 15 U.S.C.A. § 2616(b).

¹³FIFRA § 13(c), 7 U.S.C.A. § 136k(c). Similar restrictions are placed on the disposal of vehicles denied entry to the country because they fail to meet emission limitation requirements, CAA § 203(b)(2), 42 U.S.C.A. § 7522(b)(2).

¹⁴*E.g.*, *United States v. 2,507 Live Canary Winged Parakeets*, 689 F. Supp. 1106, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20101 (S.D. Fla. 1988), in which parakeets imported in violation of the Endangered Species Act, 16 U.S.C.A. §§ 1531 to 1544, were seized. The burden on the government to seize the birds was probable cause: reasonable grounds for belief that the birds were illegally imported, supported by more than a mere suspicion, but less than *prima facie* proof. Once probable cause is established, the burden shifts to the claimant to establish a defense by a preponderance of the evidence.

¹⁵42 U.S.C.A. § 7541(c).

¹⁶CAA § 207(c)(1), 42 U.S.C.A. § 7541(c)(1), requires that a public hearing be afforded to allow interested parties to “present their views and evidence.” Although this does not seem to be the type of statutory language requiring a formal APA adversary hearing, EPA’s regulations provide such procedures. 40 C.F.R. §§ 85.1801 to 85.1807.

¹⁷Prior to 1980 EPA has ordered recalls of over 30 models, totalling 11 million vehicles, while, after receiving the notice, manufacturers voluntarily recalled over 100 models, totalling 3.6 million vehicles. EPA Enforcement: Two Years of Progress 24-25; EPA Enforcement: A Progress Report 1974 to 1975 24; EPA Enforcement: A Progress Report 1976 30; EPA Enforcement: A Progress Report Fiscal Years 1977-80 23-24 (draft not released).

¹⁸15 U.S.C.A. §§ 1412 to 1415.

sues were raised in a challenge by Chrysler to a recall order.¹⁹ The case turned on whether Chrysler was responsible for emissions violations caused by faulty adjustments to the vehicle engines after their manufacture. EPA contended Chrysler was responsible because the very design of the engine made adjustments in accordance with Chrysler's instructions so difficult that maladjustments, resulting in emissions violations, were inevitable. Chrysler argued that it was not responsible unless vehicles had been properly operated and maintained in accordance with its instructions. The answer to the first question governed the second, for if EPA's view prevailed, 49 to 79 percent of vehicles tested exceeded the emissions limitation, but if Chrysler's view prevailed, only 4 to 8 percent did. The D.C. Circuit accepted EPA's argument as better carrying out the purposes of the Act. It declined to define "substantial," but held that the number of vehicles in the case was large enough to indicate a systematic or pervasive problem.

The useful life of vehicles is established in terms of age and mileage both by statute and by regulation.²⁰ Nonetheless, disputes over its meaning have led to litigation.²¹ The most significant dispute was a challenge to an interpretative ruling by EPA requiring repair of vehicles regardless of age or mileage at the date of recall if the nonconformity occurred during the useful life of the vehicles. The interpretative rule sought to avoid a defect inherent in the recall scheme: by the time EPA establishes that there are in-use defects in a substantial number of vehicles, the useful life of those vehicles is waning. If the manufacturer then stalls the recall by protracted negotiations or administrative and judicial appeal, the useful life of the defective vehicles may have run its course and repairs may no longer be mandated. While acknowledging this practical enforcement problem, the D.C. Circuit held that EPA's interpretation was invalid: Congress mandated only the repair of vehicles still in their useful life.²²

Although not specifically authorized by statute, the administrative order in NCA section 11(d)²³ has been utilized to order recalls of products not meeting noise standards. Since all such orders have been by consent,²⁴ EPA's authority to utilize NCA section 11(d) in this manner has not been judicially tested, although the statutory authority appears amply broad to support it.²⁵ Because EPA has stopped enforcing the NCA, such activity will probably not recur in the future.²⁶

Stop sale orders and recalls, insofar as they deprive manufacturers and others of the value of their products might be thought to raise just compensation issues. But

¹⁹Chrysler Corp. v. EPA, 631 F.2d 865, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20595 (D.C. Cir. 1980).

²⁰See CAA § 202(d), 42 U.S.C.A. § 7521(d). Definitions of useful life also are incorporated into the definition section of the various emission regulations in the Code of Federal Regulations. See, e.g., 40 C.F.R. § 86.082-86.0822.

²¹See General Motors Corp. v. Ruckelshaus, 724 F.2d 979, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20110 (D.C. Cir.1983), rule upheld en banc, 742 F.2d 1561, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20704 (D.C. Cir. 1984); Harley-Davidson Motor Co. v. EPA, 598 F.2d 228 (D.C. Cir. 1979).

²²General Motors Corp. v. Ruckelshaus, 724 F.2d 979, 989-90, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20110, 20116 (D.C. Cir. 1983). The court did suggest, however, that EPA could repair some of the damage by changing its regulatory definition of useful life rather than attempting to do so by interpretation. *Id.* at 997-98, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) at 20122-23.

²³42 U.S.C.A. § 4910(d).

²⁴EPA has issued three such orders. See EPA Enforcement: A Progress Report Fiscal Years 1977-80 73-74 (draft not released).

²⁵NCA § 11(d), 42 U.S.C.A. § 4910(d), authorizes EPA to issue an order specifying the relief it "determines necessary" to protect public health and welfare. Since distribution in commerce by a manufacturer of products not meeting noise standards calculated to protect public health and welfare is prohibited by the Act, recall of offending products appears to be a reasonable measure under the order provision.

²⁶See M. Miller, "Noise Control," in G. Arbuckle et al., Environmental Law Handbook 523 (10th ed. 1989).

since the effect of such orders is only to enforce the prohibitions of statutes, it is the statutory prohibitions themselves that result in deprivation of property value, if any. It is well established that statutes barring the sale of goods pursuant to the police power do not result in compensable takings.²⁷ At the same time, it should be noted that Congress has provided compensation for similar losses under limited circumstances.²⁸ Indeed, there is a provision in FIFRA indemnifying owners of pesticides that can no longer be used because their registrations are cancelled.²⁹ This authority has been brought into play only a few times and only once with any significance: when the registrations of Silvex and 2,4,5-T were cancelled. In that instance, the indemnification caused considerable confusion because EPA had no budget authority to pay the indemnity.³⁰

§ 9:15 Miscellaneous remedies—Contractor listing

CAA section 306¹ and CWA section 508² are virtually identical provisions for denying the benefits of contracting with the government to persons violating the requirements of the two acts. They prohibit any federal agency from contracting with persons convicted of such a violation until EPA certifies that the condition giving rise to the conviction has been corrected. The prohibition in the CWA is facility-specific: it attaches generally to goods, materials, or services only from a facility at which the offense was committed.³ In the CAA, however, the 1990 amendments abandoned this limitation and made the prohibition applicable to goods, materials, and services from any facility “owned, leased, or supervised” by an offender. EPA placement of a facility on the list is notice to federal agencies of ineligible contractor facilities. The President is directed to issue an order requiring federal agencies to “effectuate the purpose and policy” of the two acts in their contract, grant, and loan activities and establishing “procedures, sanctions, penalties and such other provisions” as are necessary to carry out the requirement. The President may exempt contracts, loans or grants when necessary in the “paramount interest” of the country, but he must notify Congress.⁴ He is to make annual reports to Congress on implementation of the section.

²⁷See *Andrus v. Allard*, 444 U.S. 51, 9 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20791 (1979). In *Andrus*, the Court upheld the constitutionality of statutes and regulations prohibiting, without compensation, the sale of eagle feathers or goods containing eagle feathers regardless of whether the feathers were taken before passage of the legislation. *Id.* at 56-59, 9 *Env'tl. L. Rep.* (Env'tl. L. Inst.) at 20793-94.

²⁸See generally Environmental Protection Agency, Office of Toxic Substances, Background Report for the Indemnification Report to Congress (EPA 560/4-83-002 1983).

²⁹See FIFRA § 15, 7 U.S.C.A. § 136m. See also D. Stever, *Law of Chemical Regulation and Hazardous Waste* ch. 3 (1986).

³⁰Indeed, although EPA acknowledged its obligation to satisfy the indemnity, it refused to pay the obligation, citing lack of budgetary authority to do so. The pesticide registrant then sued in the Court of Claims and the case was settled by a payment from the Court of Claims Independent Fund. See Environmental Protection Agency, Office of Toxic Substances, Background Report for the Indemnification Report to Congress, 35-38 (EPA 560/4-83-002 1983).

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¹42 U.S.C.A. § 7606.

²33 U.S.C.A. § 1368.

³Thus, a multifacility entity convicted of a violation at one facility may not secure a government contract for sale of goods produced at that facility, but may for sale of goods produced at other facilities. However, a mobile or transient business, such as asbestos removal, will be listed by the business address, rather than the location where the violation occurs.

⁴“Paramount interest” is not defined. It is used in 42 U.S.C.A. § 7418(a) and 33 U.S.C.A. § 1323(a), which enable the President to exempt federal installations from CAA and CWA requirements when in the paramount interests of the country. The power has been invoked only once, when establishing a camp in Puerto Rico to relocate Haitian refugees from Florida. It is an interesting question whether this is what Congress had in mind.

Executive Order 11,738⁵ paraphrases the statutory provisions, authorizes EPA to issue regulations necessary to carry out the purposes of the Order, and provides mechanisms by which paramount interest exemptions may be granted. EPA's regulations⁶ at first blush appear to go considerably beyond the bare bones of the statutes and the Executive Order. While the latter prohibit contracting with facilities whose violations give rise to criminal convictions, the regulations provide for listing facilities based on federal, state or local criminal convictions, civil adjudications, or administrative findings of noncompliance.⁷ This apparent extension of listing authority has been challenged, but upheld by three courts, based on a liberal reading of the statutes and Executive Order.⁸ Other debarment programs have been upheld based on similar readings of their supporting statutes.⁹ Even apart from the authorizing provisions of the two acts, an argument could be made that the Executive Order and regulations can be supported by the inherent authority of the executive to fix the terms and conditions on which it will contract.¹⁰

The regulations move beyond the prohibition against contracting for the procure-

⁵Exec. Order No. 11738, 38 Fed. Reg. 25161 (1973), reprinted in 42 U.S.C.A. § 7606 at 314-15 (1982).

⁶50 Fed. Reg. 36188, 36191 (1985) (codified at 40 C.F.R. § 15).

⁷50 Fed. Reg. 36188, 36193 (1985) (codified at 40 C.F.R. §§ 15.10, 15.11(a)).

⁸The statutory provisions require the President to issue an order directing federal agencies to effectuate the purposes and policies of the Acts in their contracting and assistance activities. This is reiterated in section 1 of the Executive Order, which in § 5 authorizes EPA to promulgate regulations necessary to carry out the purposes of the Order. Listing violating facilities on the basis of enforcement action other than criminal conviction comes well within these broad authorities. *United States v. Interlake, Inc.*, 432 F. Supp. 987, 7 *Env't. L. Rep.* (Env't. L. Inst.) 20669 (N.D. Ill. 1977); *United States v. Del Monte de Puerto Rico, Inc.*, *Env't Rep. Cas.* (BNA) *Env't Rep. Cas.* (BNA) (D.P.R. 1976); see also *ITT Rayonier, Inc. v. United States*, 651 F.2d 343, 11 *Env't. L. Rep.* (Env't. L. Inst.) 20823 (5th Cir. 1981).

⁹It has been held that substantive statutes, not specifically authorizing contractor listing, carry with them inherent authority for effective administration of the statutory scheme, including debarment. In *Jacquet v. Westerfield*, 569 F.2d 1339 (5th Cir. 1978), the court held that the statute authorizing food stamps carried with it inherent authority to bar from further participation in the food stamp program persons fraudulently acquiring food stamps. In *Gonzales v. Freeman*, 334 F.2d 570 (D.C. Cir. 1964), the court held that the authorizing statute for the Commodity Credit Corporation carried with it inherent authority to bar from further contracts with the Corporation persons convicted of misuse of its official inspection certificates. These cases considered only the limited question of denying the violators of a particular statute the contractual benefits of that statute, which is quite different from denying them the contractual benefits of *any* statute.

But cases have construed the Federal Property and Administrative Services Act of 1949, 40 U.S.C.A. §§ 471 et seq., to justify a variety of government-wide contractor listing programs. Their reasoning has rested on the Acts' general purpose of providing for the "economical and efficient" procurement of goods and services, 40 U.S.C.A. § 471, and its delegation to the President of the authority to prescribe policies and directives to "effectuate the purposes of the Act." 40 U.S.C.A. § 486(a). This reasoning has been used to uphold the debarment from contracting of persons not complying with voluntary wage and price controls, *American Fed'n of Labor v. Kahn*, 618 F.2d 784 (D.C. Cir. 1979), and not complying with equal opportunity employment requirements. *Uniroyal, Inc. v. Marshall*, 482 F. Supp. 364 (D.D.C. 1979); *Crown Zellerbach Corp. v. Marshall*, 441 F. Supp. 1110 (E.D. La. 1977). While wage and price controls do bear some relation to the economy purpose of the Federal Property and Administrative Services Act, Equal Employment Opportunity (EEO) does not. To the extent that the Act justifies debarment for EEO violations, it should justify them for air and water pollution violations as well.

¹⁰"Like private individuals and businesses, the government enjoys the unrestricted power to produce its own supplies, to determine those with whom it will deal, and to fix the terms and conditions upon which it will make needed purchases." *Perkins v. Lukens Steel Co.*, 310 U.S. 113, 127 (1940); see also *Crown Zellerbach Corp. v. Marshall*, 441 F. Supp. 1110, 1115 (E.D. La. 1977). Despite their broad language, however, these cases and most of those citing them involve executive action based on legislative authority. *Contractors Ass'n E. Pa. v. Secretary of Labor*, 442 F.2d 159 (3d Cir. 1971), cert. denied, 404 U.S. 854 (1971), however, does uphold contractor listing for EEO violations based on inherent executive power, long exercised with no congressional disapproval, relying in part on the analysis in *Youngstown Sheet & Tube Co. v. Sawyer*, 343 U.S. 579 (1952). This argument, probably the weakest of

ment of goods, materials or services from a listed facility, to a prohibition against entering, renewing or extending a contract, subcontract, grant, subgrant, loan or subloan to such a facility.¹¹ Further, the bar applies not only to federal contractors, but also to government subcontractors and the recipients of federal grants or loans.¹² While this may also appear to be an extension of the statutory authority, it is well within its scope. The prohibition on renewing, extending and subcontracting contracts merely effectuates the statutory prohibition on contracting. The prohibition on grants and loans is contemplated in both of the statutory provisions.¹³

In 1985, EPA amended its regulations to revise and clarify the contractor listing procedures under the Clean Air and Water Acts.¹⁴ EPA will further amend its regulations to incorporate the 1990 amendments to the CAA prohibiting goods, materials, and services from any facility “owned, leased, or supervised” by an offender. The procedures establish two types of contractor listings: mandatory and discretionary.¹⁵ The regulations require mandatory listing of a facility at which a violation occurs that leads to the criminal conviction of a person who owns, operates, or leases the facility. Such a facility is first barred by law from government contracting and then automatically placed on the List of Violating Facilities published by GSA.¹⁶ This requirement merely restates the provisions of the two statutes. The regulations provide for discretionary listing of a facility with a record of continuing or recurring noncompliance and a civil finding of violation of federal, state, or local clean air or clean water standards.¹⁷ A facility with a record of continuing or recurring noncompliance may also be listed on a discretionary basis when the facility has violated an administrative order or is the subject of an administrative enforcement proceeding under the Clean Air and Clean Water Acts.¹⁸

The procedure for contractor listing under the regulations is informal. It is well established that debarment proceedings must be carried out pursuant to regulations that provide fundamental due process, including requirements for notice, opportunity to present evidence and cross-examine witnesses, and a reasoned decision based on the record.¹⁹ Although these requirements seem to call for a full adversary hearing, subsequent cases authorize considerable flexibility in procedures.²⁰ For example, temporary suspensions without hearings have been allowed to accom-

those discussed, could also justify debarment for violations of the CAA and CWA not widened by a criminal conviction. *See United States v. Interlake, Inc.*, 432 F. Supp 987, 990, 7 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20669, 20669 (N.D. Ill. 1979).

¹¹50 Fed. Reg. 36188, 36191 to 36192 (1985) (codified at 40 C.F.R. § 15.2(a)). The regulations are inapplicable to the following exempt transactions: (1) transactions for less than \$100,000 (unless the listing is based on a criminal conviction); (2) transactions where the principal purpose of the contract is to assist in pollution control (unless the listing is based on a criminal conviction); (3) individual transactions determined by an Agency head through rule or regulation. *Id.* at 36193 (codified at 40 C.F.R. § 15.5).

¹²50 Fed. Reg. 36188, 36191 to 36192 (1985) (codified at 40 C.F.R. § 15.2(a)).

¹³33 U.S.C.A. § 1368(c); 42 U.S.C.A. § 7606(c).

¹⁴50 Fed. Reg. 36188, 36191 (1985).

¹⁵50 Fed. Reg. 36188, 36193 (1985) (codified at 40 C.F.R. §§ 15.10 & 15.11).

¹⁶50 Fed. Reg. 36188, 36193 (1985) (codified at 40 C.F.R. § 15.10).

¹⁷50 Fed. Reg. 36188, 36193 (1985) (codified at 40 C.F.R. § 15.11(a)(1) to (a)(3)).

¹⁸50 Fed. Reg. 36188, 36193 (1985) (codified at 40 C.F.R. § 15.11(a)(4) to (a)(6)).

¹⁹*Gonzales v. Freeman*, 334 F.2d 570 (D.C. Cir. 1964). The court noted that “[c]onsiderations of fairness require administrative regulations establishing standards for debarment and procedures which will include notice of specific charges, opportunity to present evidence and to cross-examine adverse witnesses, all culminating in administrative findings and conclusions based upon the record so made.” *Id.* at 578.

²⁰*See, e.g., Horn Bros. Inc. v. Laird*, 463 F.2d 1268 (D.C. Cir. 1972); *American Fidelity Fire Ins. Co. v. Harris*, 456 F. Supp. 606 (D.D.C. 1978).

moderate particular problems faced by administering agencies.²¹ The EPA regulations more than likely provide adequate protection of the due process rights of the listed facilities.²²

With respect to mandatory listing, no hearing is provided prior to placing a facility on the List because listing upon criminal conviction is automatic under both statutes.²³ In such cases, proof of violation is already established beyond a reasonable doubt. The regulations reflect the mandates of the Clean Air and Clean Water Acts that no federal agency may contract with a person convicted of a criminal offense.²⁴ The regulations do provide, however, that if a criminal conviction is overturned on appeal, the facility in question will automatically be removed from the List.²⁵ Further, a facility's owner, operator, or supervisor may request that the facility be removed from the List when the condition giving rise to the mandatory listing has been corrected.²⁶ If this request is denied, the requesting party is then entitled to a removal hearing with the right to be represented by counsel, present evidence, and, with the permission of the Case Examiner, call, ask questions of, and confront witnesses.²⁷ Thus, although no hearing is provided prior to mandatory listing, the regulations provide for a hearing with respect to removal from the List at any time following conviction. The bark of these regulations is worse than their bite because most criminal convictions are for discrete, past acts (failure to report, false report, spill) rather than for ongoing violations (operation of a plant without proper pollution control equipment). The conditions giving rise to convictions for discrete, past acts are easily corrected, thus preventing listing in the first place or obviating it quickly.

The procedures for discretionary listing are more complex than those for mandatory listing. A discretionary listing proceeding is begun with a recommendation from a Regional Administrator, an Enforcement Counsel for Air or Water, a state governor, or a member of the public.²⁸ Once a recommendation has been made, the regulations call for notice and a determination of whether to list or investigate the facility in question. The owner, operator, or supervisor of the facility may then request a hearing.²⁹ At the hearing the requesting party is entitled to be represented by counsel, to present evidence, and, with the approval of the Case Examiner, to

²¹See *Horn Bros. Inc.*, 463 F.2d at 1271-72; *American Fidelity*, 456 F. Supp. at 608.

²²Prior to revision in 1985, the EPA procedures for contractor listing were challenged as not complying with the requirements of the Administrative Procedure Act, but these challenges were rejected as not ripe for review. *United States v. Interlake, Inc.*, 432 F. Supp. 987, 989, 7 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 20669, 20669 (N.D. Ill. 1977).

²³50 Fed. Reg. 36188, 36193 (1985) (codified at 40 C.F.R. §§ 15.10, 15.13(a)).

²⁴CAA § 306, 42 U.S.C.A. § 7606; CWA § 508, 33 U.S.C.A. § 1368.

²⁵50 Fed. Reg. 36188, 36195 (1985) (codified at 40 C.F.R. § 15.20).

²⁶50 Fed. Reg. 36188, 36195 (1985) (codified at 40 C.F.R. §§ 15.20, 15.22).

²⁷50 Fed. Reg. 36188, 36195 (1985) (codified at 40 C.F.R. §§ 15.23, 15.24). The Case Examiner is required to make a decision concerning removal as expeditiously as possible, and the failure to act within forty-five days is deemed a denial of the request for removal. The requesting party is then eligible to request a removal hearing. A request for a removal hearing must be made within thirty days of the denial of the removal request.

²⁸50 Fed. Reg. 36188, 36192 (1985) (codified at 40 C.F.R. § 15.4). Prior to the 1985 revisions, listing proceedings could only be initiated by an EPA or state official. See 40 C.F.R. § 15.20. Under the revised regulations, any person can request listing, and the requestor is thereafter a party to the listing proceeding. 50 Fed. Reg. 36188, 36192 to 36193 (1985) (to be codified at 40 C.F.R. §§ 15.4, 15.11). The requestor cannot appeal the Case Examiner's decision administratively, nor can it be a party in a removal hearing, requested by the owner, operator, or supervisor of a listed facility. See 50 Fed. Reg. 36188, 36194 to 36195 (1985) (codified at 40 C.F.R. §§ 15.14, 15.24).

²⁹50 Fed. Reg. 36188, 36193 to 36194 (1985) (codified at 40 C.F.R. §§ 15.11, 15.12).

call, ask questions of, and cross-examine witnesses.³⁰ The Case Examiner must then decide, based on the record, whether or not to list the facility.³¹ A facility listed on a discretionary basis is entitled to removal: (1) if the civil ruling underlying the listing decision is reversed; (2) if the condition underlying the listing decision has been corrected; or (3) automatically after one year unless a new basis for listing arises.³² The procedures for removal of discretionarily-listed facilities are the same as those for removal of mandatorily-listed facilities. Thus, the regulations appear to provide the procedures necessary to establish fundamental due process: notice, an opportunity to present evidence and cross-examine witnesses, and a decision on the record.

The regulations could be challenged, however, in a case where cross-examination of witnesses is not allowed, for the decision to allow cross-examination is left to the discretion of the Case Examiner. In its preamble to the regulations, EPA addressed this issue, essentially denying that due process requires cross-examination during listing procedures.³³ EPA asserts that “[a] listing proceeding involves a contract action taken by the federal government in its proprietary capacity as a purchaser of goods and services.”³⁴ It further noted that a facility is automatically removed from the List after one year unless there has been a subsequent conviction or court order. As a result, EPA claimed that listing was more like a suspension than a debarment, requiring only that the contractor receive notice and be given an opportunity to rebut the charges.³⁵ EPA’s justification for providing the Case Examiner with discretion may be supported by precedent authorizing flexibility in listing procedures.³⁶

Contractor listing has not been used often by EPA for a variety of reasons. Its effectiveness in achieving compliance with environmental requirements is in proportion to the importance of governmental contracts to the economic life of the facility or violator at issue. If it does little business with the government, listing is little or no threat. If it is dependent on government contracts, debarment or listing may be in the nature of a nuclear deterrent, the threat of which may result in prompt compliance, but also may engender a political backlash against EPA.³⁷ Indeed, debarment could work to the detriment of the government.

The commencement of discretionary listing or debarment proceedings may encourage prompt settlement of a civil or administrative proceeding³⁸ and should therefore be attractive to enforcement personnel.³⁹ Since debarment absent a criminal conviction

³⁰50 Fed. Reg. 36188, 36194 (1985) (codified at 40 C.F.R. § 15.13(b)(1)).

³¹50 Fed. Reg. 36188, 36194 (1985) (codified at 40 C.F.R. § 15.13(c)). Following a Case Examiner’s decision on the record to list a particular facility, the owner, operator, or supervisor of the facility, may request administrative review, if it does so within 30 days of the Case Examiner’s decision. *Id.* (codified at 40 C.F.R. § 15.14).

³²50 Fed. Reg. 36188, 36195 (1985) (codified at 40 C.F.R. § 15.21(a)(1) to (a)(3)). The listed facility may also be removed from the List if it is determined to be on a plan for compliance that will ensure correction of the conditions giving rise to listing. *Id.* (codified at 40 C.F.R. § 15.21(b)).

³³50 Fed. Reg. 36188, 36190 (1985).

³⁴50 Fed. Reg. 36188, 36190 (1985).

³⁵50 Fed. Reg. 36188, 36190 (1985). EPA also asserts that it is justified in its limitation because it has a legitimate interest in preventing premature disclosure of evidence relevant to enforcement proceedings. *Id.*

³⁶See this section notes 19–21 and accompanying text.

³⁷The commencement of a listing proceeding in the later 1970s against Kaiser Steel’s Fontana, California, facility led to its loss of a multi-million dollar defense contract, despite Kaiser’s prompt entry into a consent decree to end outstanding air pollution violations. The ensuing political fallout caused EPA to suspend operation of its listing program for some time.

³⁸Settlement might be encouraged because it is one means of ending a civil debarment. See 50 Fed. Reg. 36188 (1985) (codified at 40 C.F.R. 15.21(b)).

³⁹See 50 Fed. Reg. 36188, 36192 to 36193 (1985) (codified at 40 C.F.R. §§ 15.4, 15.11(c)).

tion under EPA's regulations is discretionary⁴⁰ and is beyond the control of the enforcement officials most directly involved with the case, a decision could be made not to debar a contractor even though the conditions precedent to debarment existed. Although not fatal to a civil or administrative case,⁴¹ such a decision could be harmful and would be awkward. Why should a court direct a stern remedy when EPA sees fit not to utilize a remedy it controls? Of course, there are answers to this question,⁴² but it is one that the enforcement officials handling the civil or administrative case may rather not address. Running parallel proceedings—discretionary listing or debarment and civil or administrative—is potentially confusing, which may also discourage EPA personnel from initiating debarment proceedings.

Whatever the reason, EPA has initiated few discretionary listing proceedings. EPA's extension of the right to recommend that a facility be placed on the List may result in an increase in the use of the contractor listing procedures. The extension by the 1990 amendments of the reach of delisting to all facilities owned, leased, or supervised by an offending company may increase the power of listing once it occurs. Additionally, because of its undoubted power in particular circumstances, the contractor listing procedure is a tool that is bound to be rediscovered by EPA itself. It should be noted that if EPA were really bullish on contractor listing, it would assert the authority under RCRA, TSCA, FIFRA, SDWA, and the MPRSA as an incident to its proprietary interest in government contracts. After all, it has expanded the listing powers conferred on it by the Clean Air and Clean Water Acts based on the same asserted authority, and courts have been receptive to the assertion.⁴³

§ 9:16 Miscellaneous remedies—Permit revocation

The regulations established under the CWA,¹ RCRA,² and SDWA³ authorize the discretionary revocation of permits issued thereunder in several circumstances. They authorize the termination of a permit when: (1) the permittee fails to comply with any permit condition; (2) an applicant fails to fully disclose all relevant facts in the application or permit issuance process or makes a misrepresentation of relevant facts at any time; (3) or EPA determines that the permitted activity endangers human health or the environment.⁴ CWA section 402 permits may also be revoked when there is a “change in any condition that requires a temporary or permanent

⁴⁰50 Fed. Reg. 36188, 36193 (1985) (codified at 40 C.F.R. §§ 15.10, 15.11).

⁴¹A “listing proceeding is brought by . . . [EPA] in its proprietary role as consumer and is not *per se* a concern of . . . [a] court” in an enforcement case involving the same alleged offense. *United States v. Interlake, Inc.*, 431 F. Supp 987, 990, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20669 (N.D. Ill. 1979).

⁴²While compliance with control requirements is mandatory, listing and debarment are discretionary—with the exception of mandatory listing for federal criminal convictions. Reasons for not debarring (the importance of the contractor performing a certain contract for the government, possible economic dislocation, etc.) are not necessarily germane to decisions on injunctions to meet pollution control requirements or penalties for not doing so.

⁴³See this section notes 10, 34 and accompanying text.

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¹40 C.F.R. § 122.64 (NPDES); 40 C.F.R. § 233.15 (§ 404).

²40 C.F.R. § 270.43.

³40 C.F.R. § 144.40.

⁴40 C.F.R. §§ 122.64(a)(1)–(3), 144.40(a)(1)–(3), 233.15(a)–(3), 270.43(a)(1)–(3).

reduction or elimination of discharge.”⁵ Termination procedures under each set of regulations are identical.⁶

RCRA expressly authorizes revocation of permits for failure to comply with statutory or regulatory provisions or permit conditions.⁷ The CWA and SDWA do not expressly authorize revocation, but the authority is derivative of the general authority to grant permits.⁸ Because the authority to revoke a permit under certain circumstances (when the permit is based on a faulty application) is inherent in the authority to issue a permit, EPA could assert the authority for permits under other acts. That it has not done so probably stems from its failure to use the authority under the statutes in which it has been explicitly granted. Its failure to do so is puzzling in view of the powerful nature of the authority.

§ 9:17 Miscellaneous remedies—Sewer connection ban

Section 402(h) of the CWA provides a mechanism for restricting or prohibiting the introduction of pollutants into a publicly owned treatment work (POTW).¹ The section provides that a source may be restricted or prohibited from introducing pollutants into a POTW when the POTW has violated a condition in its permit and the source had not been utilizing the POTW prior to the violation. To prohibit the connection, a proceeding must be initiated in a court of competent jurisdiction, presumably under CWA section 309. It is curious that this authority is found in the permitting section of the CWA rather than in the enforcement section because it is merely an elaboration of how a court may use its equitable powers to fashion injunctive relief. The reason behind a sewer connection ban, of course, is to prevent an effluent violation by a POTW from becoming worse through increased flow. Insofar as it threatens development and growth it may be a powerful lever to encourage compliance. The authority has not been widely used by EPA, if at all. Some states have the authority to impose sewer connection bans administratively and use the authority more frequently than EPA.

§ 9:18 Miscellaneous remedies—Public disclosure of violation

Section 1414(c) of SDWA requires that the owner or operator of a public water system give notice to its users or customers whenever it fails to comply with the requirements of SDWA or is granted a variance.¹ Notice is to be given not less than once every three months, through publication in newspapers, and other communications media, and with water bills. EPA regulations provide more specific requirements for public notification.² In theory public notification of violations should be a powerful deterrent against violations for which public concern is high. The remedy might be appropriate for violations of other statutes. To be effective, however, it would have to be applied only to serious substantive violations. Public notification of every slight exceedance of a standard or later report would soon lead to indifference.

⁵40 C.F.R. §§ 122.64(a)(4), 233.15(d).

⁶The termination procedures are found at 40 C.F.R. § 124.5 and include notice of intent to terminate based on an administrative record, opportunity for public comment and public hearing.

⁷RCRA § 3005(d), 42 U.S.C.A. § 6925(d).

⁸See CWA § 402, 33 U.S.C.A. § 1342; Safe Drinking Water Act § 1424, 42 U.S.C.A. § 300h-3.

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¹33 U.S.C.A. § 1342(h).

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¹42 U.S.C.A. § 300g-3(c).

²40 C.F.R. § 141.32.

§ 9:19 Miscellaneous remedies—Employee protection

The CAA,¹ CWA,² RCRA,³ and TSCA⁴ all contain measures designed to protect employees who begin or assist in enforcement proceedings against employers for violation of the acts. Each act prevents the discharge of or discrimination against any employee who institutes or causes the institution of an enforcement proceeding, testifies in an enforcement proceeding, or assists or participates in any proceeding.⁵ Under each employee protection provision, the employee must file a complaint with the Secretary of Labor who is then to notify the employer, investigate the alleged violation, and make a decision on the record.⁶ Upon a finding that the employer has violated the employee protection provisions, the Secretary of Labor is to issue an order requiring that affirmative action be taken to remedy the wrongful discharge or discrimination.⁷ The Secretary may require that the complainant be reinstated to his or her former position. Additionally, the Secretary of Labor may award to the complainant the costs of bringing the complaint, including reasonable expenses and attorney's fees. The employee protection provisions do not apply to any employee who, without direction from his employer, deliberately violates any provision of the applicable Act.⁸ Although not often invoked, this type of employer protection appears basic and should be extended to the other statutes.

The CWA,⁹ RCRA,¹⁰ and TSCA¹¹ also require that under stated circumstances EPA conduct continuing evaluations of potential changes in employment resulting from the administration and enforcement of provisions of the acts. At the request of any party, EPA is to investigate and hold hearings on the matter, and to make findings and recommendations.¹² The provisions, however, state clearly that EPA is not required or authorized to modify or withdraw any standards established pursuant to the acts.¹³ Thus, while EPA is required to investigate the effect its regulations and policies may have on employment, it is not authorized to take affirmative action based on the findings of any investigation.

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¹CAA § 322, 42 U.S.C.A. § 7622.

²CWA § 507, 33 U.S.C.A. § 1367.

³RCRA § 7001, 42 U.S.C.A. § 6971.

⁴TSCA § 23, 15 U.S.C.A. § 2623.

⁵15 U.S.C.A. § 2622(a); 33 U.S.C.A. § 1367(a); 42 U.S.C.A. §§ 6971(a), 7622(a).

⁶15 U.S.C.A. §§ 2622(b)(1) to 2622(b)(2) (1982); 33 U.S.C.A. § 1367(b); 42 U.S.C.A. § 6971(b). The employee must file his complaint with the Secretary of Labor within thirty days of the alleged violation. The Court of Appeals for the Third Circuit found that this time period was not jurisdictional, but more like a statute of limitations. *School Dist. of Allentown v. Marshall*, 657 F.2d 16, 18-20 (3d Cir. 1981). Thus, the court found that in certain situations the doctrine of equitable tolling would be applicable to allow the filing of a complaint after the thirty day time period had expired. *Id.*

⁷15 U.S.C.A. § 2622(b)(2)(B); 33 U.S.C.A. § 1367(b) to § 1367(c); 42 U.S.C.A. §§ 6971(b) to (c), 7622(b)(2)(B).

⁸15 U.S.C.A. § 2622(e); 33 U.S.C.A. § 1367(d); 42 U.S.C.A. §§ 6971(d), 7622(g).

⁹CWA § 507, 33 U.S.C.A. § 1367.

¹⁰RCRA § 7001(e), 42 U.S.C.A. § 6971(e).

¹¹TSCA § 24, 15 U.S.C.A. § 2623.

¹²15 U.S.C.A. § 2623(b); 33 U.S.C.A. § 1367(e); 42 U.S.C.A. § 6971(e).

¹³15 U.S.C.A. § 2623(b)(4); 33 U.S.C.A. § 1367(e); 42 U.S.C.A. § 6971(e).

§ 9:20 Pre-enforcement review of administrative enforcement actions

The APA¹ creates a cause of action for judicial review by persons claiming an injury from “final” agency action. But there are several caveats to this cause of action. First, the agency action must be final. Second, the APA withdraws judicial review if it is precluded by another statute.² Third, the APA does not vest jurisdiction to hear such a cause of action in any court.³ Whether judicial review is available for an EPA administrative enforcement action, therefore, begins with an examination of whether the action is final under the APA. It then proceeds with an examination of the statute authorizing the action to determine if that statute precludes or otherwise limits judicial review and, if not, whether it vests a particular court with jurisdiction for review. As for preclusion, courts interpret the APA to create a presumption that final agency actions are judicially reviewable, requiring “clear and convincing” statutory evidence to overcome that presumption.⁴ While limitations on judicial review in statutes are common, statements that judicial review is not available are rare. But courts commonly interpret congressional intent for such preclusion from the structure of the authorizing statute.⁵

The environmental statutes may provide, preclude, or limit judicial review of administrative enforcement actions either in general judicial review provisions or in the enforcement provisions authorizing the actions. Most of the statutes have general judicial review provisions,⁶ but some do not.⁷ Of those that have general review provisions, some provide review for the promulgation of regulations,⁸ others provide review for a laundry list of administrative actions,⁹ and only a few provide review for administrative enforcement actions either explicitly¹⁰ or implicitly.¹¹

The statutes authorize a variety of administrative enforcement actions, including

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¹5 U.S.C.A. §§ 551, 702, 704. “[A] person suffering legal wrong because of agency action, or adversely affected or aggrieved by agency action within the meaning of a relevant statute, is entitled to judicial review thereof.” 5 U.S.C.A. § 702.

²5 U.S.C.A. § 701(a)(1).

³Califano v. Sanders, 430 U.S. 99 (1977).

⁴Dunlap v. Bachowski, 421 U.S. 560 (1975); Abbott Labs. v. Gardner, 387 U.S. 136 (1967).

⁵Block v. Community Nutrition Inst., 467 U.S. 340 (1984); Abbott Labs. v. Gardner, 387 U.S. 136 (1967).

⁶FIFRA § 16, 7 U.S.C.A. § 36n; TSCA § 19, 15 U.S.C.A. § 2618; CWA § 509, 33 U.S.C.A. § 359; SDWA § 1448, 42 U.S.C.A. § 300j-7; RCRA § 7006, 42 U.S.C.A. § 6979; CAA § 307, 42 U.S.C.A. § 7607; and CERCLA § 133(a), 42 U.S.C.A. § 9613(a).

⁷MPRSA and EPCRA lack general judicial review provisions.

⁸TSCA § 19(a), 15 U.S.C.A. § 2618(a); RCRA § 7006(a), 42 U.S.C.A. § 6976(a) (review of the promulgation of regulations and the approval and disapproval of state permit programs); and CERCLA § 113(a), 42 U.S.C.A. § 9613(a).

⁹CWA § 509(b), 33 U.S.C.A. § 1359(b); and CAA § 307(b), 42 U.S.C.A. § 7607(b).

¹⁰FIFRA § 16(b), 7 U.S.C.A. § 136n(b), provides review in the courts of appeal for orders issued after a hearing, and § 16(a), 7 U.S.C.A. § 136(a) provides review in the district courts for orders issued without a hearing and “other final actions.” The laundry list of actions for which CAA § 307(b), 42 U.S.C.A. § 7607(b) provides review includes administrative orders to abate imminent and substantial endangerment under § 112(j), compliance by primary nonferrous smelters under § 119, and assessment of non-compliance penalties under §§ 113, 119, and 120, 42 U.S.C.A. §§ 7413, 7419 and 7420.

¹¹After its laundry list of actions for which review is available in the courts of appeal, CAA § 307(b), 42 U.S.C.A. § 7607(b), provides that review may also be had there for “other final actions.” It specifies the District of Columbia Court of Appeals for actions having national significance and the relevant Circuit Court of Appeals for actions having local or regional significance. Similarly, after providing review of drinking water regulations in the District of Columbia Court of Appeals, SDWA § 1448, 42 U.S.C.A. § 300j-7, provides for review of “any other action” in the Circuit Court of Appeals where the petitioner resides or does business, and for review of variances or exceptions in the district courts. The implication that administrative orders relating to SDWA drinking water standards are to be

the following: notices of violation, compliance orders, penalty assessment orders, contract debarment orders, and permit revocations. For the most part,¹² the general judicial review provisions do not authorize judicial review of any of these enforcement actions. Nor do the enforcement provisions themselves authorize judicial review of notices of violation or compliance orders. However, the enforcement provisions often authorize judicial review of the penalty assessment orders in a two-step fashion: 1) modest penalty assessments with informal administrative hearings and judicial review in district courts, and 2) more substantial assessments with formal administrative hearings and judicial review in courts of appeal.¹³ Most of the other statutes that authorize administrative penalties explicitly provide for judicial review of the assessments in either the courts of appeal¹⁴ or the district courts.¹⁵ RCRA and the MPRSA, however, authorize administrative penalties but make no mention of judicial review of assessment orders.

The question remains whether judicial review is available for the remaining administrative enforcement actions for which the statutes are silent on judicial review: penalty assessment orders under RCRA and MPRSA, as well as notices of violation, compliance orders, debarment orders, and permit revocations under these and the other statutes. The answer varies, depending on the type of administrative action in question and, to a lesser extent, on the statute involved.

§ 9:21 Pre-enforcement review of administrative enforcement actions— Judicial review of notices of violation

The statutes authorizing notices of violation are consistent in their complete silence on whether judicial review is available for such actions. Few judicial decisions have addressed the issue. The first court of appeals decision to consider it, *West Penn Power Co. v. Train*,¹ analyzed it as thoroughly and well as any succeeding decision. The court found that a notice of violation was not a final agency action and hence was not an action for which judicial review is authorized by the APA. Its holding was based on two observations. First, notices of violation have no “independent coercive effect” and, therefore, lack any force of law. Second, they are merely a trigger for “informal accommodation” preceding formal enforcement. Later decisions have relied on this holding without elaborating its analysis.² The one opinion to the

reviewed in the Circuit Courts of Appeals is underscored by the provision that unpaid administrative penalty assessments may be collected “after the appropriate court of appeals has entered final judgment in favor of the Administrator,” SDWA § 1414(g)(1)(D), 42 U.S.C.A. § 300g-7(g)(1)(D).

¹²For the exceptions, see TSCA § 19(a), 15 U.S.C.A. § 2618(a); RCRA § 7006(a), 42 U.S.C.A. § 6976(a); CERCLA § 113(a), 42 U.S.C.A. § 9613(a); CWA § 509(b), 33 U.S.C.A. § 1359(b); and CAA § 307(b), 42 U.S.C.A. § 7607(b).

¹³CWA §§ 309(g) and 311(b)(6)(B), 33 U.S.C.A. §§ 1319(g) and 1321(b)(6)(B); CAA § 113(d), 42 U.S.C.A. § 7413(d); CERCLA § 109(a) and (b), 42 U.S.C.A. § 9609(a) and (b); and EPCRA § 325(b), 42 U.S.C.A. § 11045(b).

¹⁴Under FIFRA § 14(a)(3), 7 U.S.C.A. § 136l(3), penalty assessments may be made only after a hearing, and judicial review of orders issued after a hearing is in the court of appeals, § 16(b), 7 U.S.C.A. § 136n(b). TSCA § 16(a)(3) provides judicial review for penalty assessments in the court of appeals, 42 U.S.C.A. § 2615(a)(3).

¹⁵SDWA § 1428(c)(6), 42 U.S.C.A. § 300h-2(c)(6).

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¹*West Penn Power Co. v. Train*, 522 F.2d 302, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20557 (3d Cir. 1975).

²*Union Elec. Co. v. EPA*, 593 F.2d 299, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20154 (8th Cir. 1979); *West Penn Power Co. v. Train*, 538 F.2d 1020, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20658 (3d Cir. 1976); *United States v. AM Gen. Corp.*, 808 F. Supp. 1353 (N.D. Ind. 1992).

contrary fails to provide convincing analysis to justify its differing conclusion.³ Lack of finality in notices of violation also operates to obviate judicial review under the two environmental statutes that provide review of all final actions.⁴

By the same analysis, investigatory⁵ and other actions preliminary to possible enforcement⁶ have routinely been held not to be final agency actions subject to judicial review.

§ 9:22 Pre-enforcement review of administrative enforcement actions— Judicial review of compliance orders

The SDWA provides pre-enforcement judicial review of compliance orders for its underground injection control program.¹ The CAA and the SDWA (for its drinking water standards program) provide judicial review for such orders if they are “final” agency actions.² CERCLA clearly precludes pre-enforcement review of cleanup orders.³ Although the remaining statutes are silent on judicial review of compliance orders, if the orders are final agency actions, and the statutes do not preclude review, the APA provides a cause of action for judicial review. Since none of the statutes explicitly preclude review, the question becomes whether they do so implicitly. While there are differences in the statutes, the analysis of whether compliance orders are final agency actions and of whether the structures of the statutes implicitly preclude judicial review are very similar, if not identical, under all of them. If the analysis concludes that the APA creates a cause of action for judicial review of compliance orders, jurisdiction lies in the district courts under federal question jurisdiction.⁴

The argument that compliance orders lack finality is simply stated. If the respondent fails to comply, nothing happens unless and until EPA proceeds to court to enforce against the underlying violation of the statute and/or the violation of the order. Nothing in the statutes forces EPA to proceed to court,⁵ and unless it does there is no continuing dispute and the respondent faces no continuing jeopardy. If EPA does proceed to court, the order can be challenged at that time. The argument

³*Conoco, Inc. v. Gardebring*, 503 F. Supp. 49, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20497 (N.D. Ill. 1980). The court in this decision sought to avoid the holdings of *West Penn Power* and *Union Electric* by confining them to their facts. It reasoned the issuance of a notice of violation was a final agency action because EPA had a mandatory duty thirty days thereafter to take enforcement action, a questionable assumption. See § 9:4.

⁴The two statutes are the CAA and FIFRA. See FIFRA § 16(b), 7 U.S.C.A. § 136n(b); FIFRA § 16(a), 7 U.S.C.A. § 136(a); CAA § 307(b), 42 U.S.C.A. § 7607(b).

⁵*Southern Ohio Coal Co. v. Office of Surface Mining Reclamation & Enforcement*, 20 F.3d 1418, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20848 (6th Cir. 1994) (investigation under CWA § 308, 42 U.S.C.A. § 1318); *Dow Chem. Co. v. EPA*, 635 F. Supp. 126, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20845 (M.D. La. 1986) (information request under CAA § 114, 42 U.S.C.A. § 7414, not final agency action).

⁶*Child v. United States*, 851 F. Supp. 1527, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 21192 (D. Utah 1994) (determination by the Corps of Engineers that land being filled was a wetland for which a CWA § 404, 33 U.S.C.A. § 1344, permit is required, not a final agency action); *Hampton Venture No. One v. United States*, 768 F. Supp. 174 (E.D. Va. 1990) (the extent to which the same is settled law is evidenced by footnote 2, in which the court noted plaintiff's attorney had filed numerous similar cases in the past and put attorney and his firm on notice that if he filed another such case, the court would impose Rule 11 sanctions).

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¹SDWA § 1423(c)(6), 42 U.S.C.A. § 300h-(c)(6).

²SDWA § 1448(a), 42 U.S.C.A. § 300j-7(a); CAA § 307(b), 42 U.S.C.A. § 7607(b).

³CERCLA § 113(h), 42 U.S.C.A. § 9613(h).

⁴28 U.S.C.A. § 1331.

⁵The court in *Conoco, Inc. v. Gardebring*, 503 F. Supp. 49, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20497 (N.D. Ill. 1980), decided differently, but its opinion is contrary to the general state of the law. See § 9:4.

is the same as the one that has been made for the non-reviewability of notices of violation: they have no independent coercive effect, no force of law, and are mere triggers of a process of informal accommodation prior to formal enforcement action. Indeed, the reasoning and language of *West Penn Power Co. v. Train*,⁶ justifying the non-reviewability of notices of violation, has been adopted without second thought to hold that judicial review of compliance orders is not available.⁷

But the argument ignores significant differences between notice of violation⁸ and compliance orders. Failure to comply with such an order is independent violation under many of the statutes, in addition to the violation of the underlying statutory provision.⁹ Thus, liability for a statutory violation can be doubled if it is also an order violation. Some of the statutes make violation of a compliance order a criminal act, independent from a violation of the underlying statute.¹⁰ Courts do not always recognize that statutes double penalties in this manner, nor do they deal with the implications of the doubling.¹¹ Even when statutes do not penalize the violation of an order, the presence of an order eliminates any argument that the respondent lacked notice of the violation or knowledge for purposes of a criminal prosecution. Moreover, violation of an order aggravates the culpability of the respondent, increasing the chances of a criminal prosecution or increasing the amount of a civil penalty.¹² Finally, violations of compliance orders may be enforced against by citizens under the citizen suit provisions of many of the statutes.¹³ The stakes are considerably raised when penalties double or when prosecution switches from civil to criminal. And query how judicial review of an order can be accomplished in a citizen suit in which the issuer of the order is not a party. Under most of the statutes, a compliance order is final at least in the sense that it has changed the liability posture of the respondent.

The framework for a more sophisticated analysis of finality is suggested by the four factors developed by the Court in *FTC v. Standard Oil Co. of California*:¹⁴ 1) the definitiveness of the agency's statement and action; 2) the practicality and immediacy of the action's effect on the respondent absent review; 3) the extent to which the dispute presents purely legal issues; and 4) the effects of immediate review on agency and judicial efficiency. Three courts of appeal have used this analysis to determine whether CAA administrative orders are final. In all three decisions the second factor, the effect of the order, played an important role in the courts' analyses. Two of the orders required cessation of the construction and operation of new sources of air pollution—one issued pursuant to CAA § 113(a) and one

⁶*West Penn Power Co. v. Train*, 522 F.2d 302, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20557 (3d Cir. 1975).

⁷*Solar Turbines, Inc. v. Seif*, 879 F.2d 1073, 1077, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 21091, 21092 (3d Cir. 1989) (cease and desist order under CAA § 167, 42 U.S.C.A. § 7477); *Lloyd A. Fry Roofing Co. v. EPA*, 554 F.2d 885, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20415 (8th Cir. 1977) (order under CAA § 113(a), 42 U.S.C.A. § 7413(a)).

⁸For a decision holding that even a notice of violation is a final agency action, see *Conoco, Inc. v. Gardebring*, 503 F. Supp. 49, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20497 (N.D. Ill. 1980).

⁹*E.g.*, CWA § 309(d), 33 U.S.C.A. § 1319(d).

¹⁰*E.g.*, CAA § 113(c)(1), 42 U.S.C.A. § 7413(c)(1).

¹¹In *Southern Pines Assocs. v. United States*, 912 F.2d 713, 21 Env'tl. L. Rep. (Env'tl. L. Inst.) 20033 (4th Cir. 1990), for instance, the court observed that the penalties for violating "either the Act or a compliance order are the same." *Id.* at 715. While this is true, it fails to recognize that the penalties are additive.

¹²*See, e.g.*, *United States v. Ellen*, 961 F.2d 462, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 21282 (4th Cir. 1992).

¹³*E.g.*, CWA § 505(a)(1), 33 U.S.C.A. § 1365(a)(1).

¹⁴*FTC v. Standard Oil Co. of California*, 449 U.S. 232 (1980).

issued pursuant to § 167. In *Allsteel, Inc. v. EPA*,¹⁵ the Sixth Circuit concluded that a § 113(a) cease and desist order was final because violation of the order itself could subject the respondent to harsh civil and criminal penalties, in addition to penalties for violating the statute, citing sanctions for violating such orders in § 113(b) and (c). In *Solar Turbines, Inc. v. Seif*,¹⁶ the Third Circuit concluded that a § 167 cease and desist order was not final because, in part, § 167 did not impose additional penalties for violating the order. The court neglected to observe, however, that § 113(b) and (c) provide the same civil and criminal sanctions for violating § 167 orders as they provide for violating § 113(a) orders.¹⁷ Had the court been aware of these provisions, its reasoning would have led it to the opposite conclusion. In the third case, *Asbestec Construction v. EPA*,¹⁸ the Second Circuit considered whether an “obey the law” § 113(a) order was a final agency action. The respondent argued the order had an immediate negative reputation effect on it, but apparently was unaware of the additional penalties that violation of the order could entail. The court ruled the order was not a final action because “stigma” effects were not included among the effects relevant to finality, citing *Abbott Laboratories v. Gardner*¹⁹ for the proposition that the risk of incurring penalties, rather than stigma, was the sort of effect relevant to finality. The court apparently missed the fact that § 113 penalized violation of the order. The court also found the issues raised were heavily factual, another reason for finding no finality. Significantly, all three courts assumed that the “effects” factor included the possible imposition of additional penalties, although two of them failed to recognize that violations of orders in fact had that consequence. The reasoning of these three decisions, applied with an informed understanding of the CAA, leads to the conclusion that, absent unusual circumstances, compliance orders under the CAA are final agency actions and are subject to pre-enforcement judicial review. Other courts have used this analysis or one like it in analyzing the finality of administrative orders under the CAA and under other statutes.²⁰ And some courts have used many of the same factors in analyzing whether ripeness or exhaustion doctrines preclude judicial review.²¹

While finality is *the* decisive factor under the current CAA and SDWA judicial review provisions, it is only one of two decisive factors under the other statutes. The other is whether the statutes preclude pre-enforcement review. Because none do so explicitly, the question is whether they do so implicitly. Courts have taken two approaches to this analysis. First, they note that Congress has explicitly provided for judicial review of particular actions in the general judicial review sections, implicitly

¹⁵*Allsteel, Inc. v. EPA*, 25 F.3d 312, 24 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20974 (6th Cir. 1994).

¹⁶*Solar Turbines, Inc. v. Seif*, 879 F.2d 1073, 19 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21091 (3d Cir. 1989).

¹⁷Section 113(b)(2) provides civil penalties for violations of “any other requirement or prohibition of this subchapter . . . including . . . any . . . order.” Sections 113 and 167 are in the same subchapter. Section 113(c)(1) provides criminal sanctions for one knowingly violating an order under § 167.

¹⁸*Asbestec Constr. v. EPA*, 849 F.2d 765, 18 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21029 (2d Cir. 1988).

¹⁹*Abbott Labs. v. Gardner*, 387 U.S. 136 (1967).

²⁰*Hooker Chem. Co., Ruco Div. v. EPA*, 642 F.2d 48, 11 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20084 (3d Cir. 1981) (CAA order not final action because issues presented for review were not purely legal); *United States v. Mobil Oil Co.*, 1997 WL 1048911, at *6-7, No. 96-CV-1432 (JG) (E.D.N.Y. 9-11-97) (RCRA § 3013, 42 U.S.C.A. § 6934 order not final for purpose of judicial review); *Salt Pond Assocs. v. Corps of Eng’rs*, 815 F. Supp. 766, 23 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21026 (D. Del. 1993) (action final when Corps issued CWA order to remove illegal fill and denied after the fact permit); *Route 26 Land Dev. Ass’n v. United States*, 753 F. Supp. 532, 21 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21199 (D. Del. 1990) (action not final when Corps issued CWA order, and after the fact permit application was still pending).

²¹*Howell v. Corps of Eng’rs*, 794 F. Supp. 1072 (D.N.M. 1992) (ripeness analysis for CWA order using the same four factors); *Route 26 Land Dev. Ass’n v. United States*, 753 F. Supp. 532, 21 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21199 (D. Del. 1990) (ripeness analysis for CWA order using some of same factors); *USI Properties Corp. v. EPA*, 517 F. Supp. 1235, 11 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20971 (D.P.R. 1981) (exhaustion analysis for CWA order using some of same factors).

indicating judicial review is not intended for other actions.²² This is a weak argument. Because the general judicial review provisions authorize judicial review, but only in the courts of appeal, the implication just as easily could be that judicial review for other actions is intended to be in the district courts pursuant to the APA and federal question jurisdiction. The argument becomes more persuasive, however, when the very enforcement provisions that authorize the issuance of compliance orders provide for judicial review of some administrative enforcement actions, but not for compliance orders. The force of the argument is increased where those provisions authorize judicial review of some or all of those other enforcement actions in district courts.²³ The explicit provision in the general judicial review sections of review in the courts of appeal for some agency actions, together with the explicit provision in the enforcement sections of review in the district courts for some administrative enforcement actions, is a persuasive implicit indication of congressional intent not to provide pre-enforcement review of other enforcement actions.

There is another structural argument. Most of the statutes give EPA two routes to enforce compliance—issuing an administrative order or seeking a judicial injunction—and they do so in the same subsections.²⁴ Legislative history suggests that one of the reasons Congress completely revamped the CAA and CWA in the early 1970s was its frustration with the cumbersome and ineffective enforcement mechanisms of earlier pollution control legislation. It intended for the new legislation to provide fast and efficient enforcement.²⁵ The authorization of an administrative compliance order, with no explicitly provided judicial review, “indicates that Congress intended to allow EPA to act to address environmental problems quickly and without becoming immediately entangled in litigation.”²⁶ If the issuance of an administrative order resulted in judicial review, EPA would be in court immediately under both alternatives, and the differences between the two would be lost. The very choice between the remedies suggests legislative intent to preclude pre-enforcement review of compliance orders. The additional choice in many of these sections of an administrative penalty assessment, coupled with the explicit provision of judicial review for the penalty order, adds to the argument. Decisions enunciating the structural approach first arose under the CAA and CWA.²⁷ Structural analysis is now irrelevant under the CAA, of course, because it was amended to explicitly provide judicial review for

²²*Solar Turbines, Inc. v. Seif*, 879 F.2d 1073, 1077, 19 *Envtl. L. Rep.* (Envtl. L. Inst.) 21091, 21092 (3d Cir. 1989) (CAA); *City of Baton Rouge v. EPA*, 620 F.2d 478, 10 *Envtl. L. Rep.* (Envtl. L. Inst.) 20546 (5th Cir. 1980) (CWA); *Lloyd A. Fry Roofing Co. v. EPA*, 554 F.2d 885, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20415 (8th Cir. 1977) (CAA).

²³CWA § 309(g), 33 U.S.C.A. § 1319(g); CAA § 113(d), 42 U.S.C.A. § 7413(d); CERCLA § 109, 42 U.S.C.A. § 9609; and EPCRA § 325(f), 42 U.S.C.A. § 11045(f).

²⁴CWA § 309(a), 33 U.S.C.A. § 1319(a); SDWA §§ 1414(a) and 1423(a), 42 U.S.C.A. § 300g-3(a) and 300h-2(a); RCRA § 3008(a), 42 U.S.C.A. § 6928(a); and CAA § 113(a), 42 U.S.C.A. § 7413(a).

²⁵Indeed, although when enacting CAA § 113 Congress generally adopted the Senate version of § 113, it rejected a provision in the Senate bill that would have provided pre-enforcement review of administrative orders. For an account of this and other relevant aspects of the legislative history, see *Lloyd A. Fry Roofing Co. v. EPA*, 554 F.2d 885, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20415 (8th Cir. 1977).

²⁶*Southern Pines Assocs. v. United States*, 912 F.2d 713, 716, 21 *Envtl. L. Rep.* (Envtl. L. Inst.) 20033, 20034 (4th Cir. 1990).

²⁷CWA: *Laguna Gatuna, Inc v. Browner*, 58 F.3d 564, 25 *Envtl. L. Rep.* (Envtl. L. Inst.) 21192 (10th Cir. 1995); *Southern Pines Assocs. v. United States*, 912 F.2d 713, 21 *Envtl. L. Rep.* (Envtl. L. Inst.) 20033 (4th Cir. 1990); *Hoffman Group, Inc. v. EPA*, 902 F.2d 567, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 20884 (7th Cir. 1990) (§ 309(a) order to remove unpermitted fill from wetland); *Southern Ohio Coal Co. v. Office of Surface Mining Reclamation & Enforcement*, 20 F.3d 1418, 24 *Envtl. L. Rep.* (Envtl. L. Inst.) 20848 (6th Cir. 1994); *Reuth v. EPA*, 13 F.3d 227 (7th Cir. 1993); *Mulberry Hills Dev. Corp. v. United States*, 772 F. Supp. 1553, 22 *Envtl. L. Rep.* (Envtl. L. Inst.) 20254 (D. Md. 1991); *Hampton Venture No. One v. United States*, 768 F. Supp. 174 (E.D. Va. 1991); *Banks v. Page*, 768 F. Supp. 809 (S.D. Fla. 1991); *Route 26 Land Development Ass'n v. United States*, 753 F. Supp. 532, 21 *Envtl. L. Rep.* (Envtl. L. Inst.) 21199 (D. Del. 1990); *McGown v. United States*, 747 F. Supp. 539, 21 *Envtl. L. Rep.* (Envtl. L. Inst.) 20344 (E.D. Mo. 1990).

all final EPA actions. The most recent and expansive structural analysis for preclusion of judicial review²⁸ is under RCRA, which is structured similarly to the CAA and CWA, but with a slight twist.²⁹

In one respect, the case for pre-enforcement review of a compliance order is strongest under CERCLA. If the respondent to a CERCLA cleanup order does not comply, the respondent is liable for the costs of the government performing the cleanup itself, plus three times the costs in treble damages, in addition to a penalty of \$25,000 a day.³⁰ A CERCLA cleanup order clearly increases the liability regime for the respondent far more than a compliance order under the other statutes. At the same time, the intent of the statute, manifested in both its legislative history and structure, is to provide for streamlined government action and quick cleanup action. Requiring compliance without pre-enforcement review and waiting until the cleanup is complete or EPA joins the issue by seeking judicial enforcement clearly promotes that intent. Relying on this intent, courts routinely held that CERCLA cleanup orders were not subject to pre-enforcement review.³¹ Congress amended CERCLA to eliminate any doubt on the matter.³²

While the APA creates a presumption in favor of judicial review, it does not create a presumption in favor of pre-enforcement review. It is often argued that the constitutional guarantee of due process does create a right of pre-enforcement review of administrative orders if they create new liabilities (*e.g.*, when violation of an order can be penalized in addition to and independently of violation of an underlying statutory requirement). This argument is routinely rejected, however, because the order is subject to judicial review when the agency seeks judicial imposition of a penalty for violation of the order or enforcement of the order.³³ An argument that an

CAA: *Solar Turbines, Inc. v. Seif*, 879 F.2d 1073, 19 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 21091 (3d Cir. 1989) (§ 167 order to cease building unpermitted new air pollution source); *Union Elec. Co. v. EPA*, 593 F.2d 299 (8th Cir. 1979); *Lloyd A. Fry Roofing Co. v. EPA*, 554 F.2d 885, 7 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20415 (8th Cir. 1977); *Getty Oil Co. v. Ruckelshaus*, 467 F.2d 349, 2 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20683 (3d Cir. 1972).

²⁸*United States v. Mobil Oil Corp.*, 1997 WL 1048911, No. 96-CV-1432 (JG) (E.D.N.Y. 9-11-97) (administrative order under RCRA § 3013, 42 U.S.C.A. § 6934); *Amoco Oil Co. v. EPA*, 959 F. Supp. 1318, 27 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 21309 (D. Colo. 1997) (administrative order under RCRA § 3008(h), 42 U.S.C.A. § 6928(h)). The court in *Mobil Oil* fully examines and disposes of earlier decisions suggesting that § 3013 orders may be subject to judicial review. *See Mobil Oil* at 4-5.

²⁹RCRA § 3008(a), 42 U.S.C.A. § 6928(a), authorizes injunctions, administrative compliance orders, and administrative penalty orders, all in the same subsection. That subsection does not provide for judicial review of administrative penalty orders, but EPA affords it an administrative hearing before a penalty is imposed. *See* 40 C.F.R. Parts 22 and 24. Although the cases cited in footnote 314.24 involved administrative compliance orders under RCRA §§ 3008(h) and 3013, their analysis applies as well to compliance orders under § 3008(a).

³⁰CERCLA §§ 106(b)(1), 107(a), (c)(3), 42 U.S.C.A. §§ 9606(a), 9607(a), (c)(3).

³¹*See, for instance*, *Wagner Seed Co. v. Daggett*, 800 F.2d 310, 16 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 21001 (2d Cir. 1986); *United States v. Outboard Marine Corp.*, 789 F.2d 497, 16 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20708 (7th Cir. 1986); *Wheaton Indus. v. EPA*, 781 F.2d 354, 16 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20260 (3d Cir. 1986); *Lone Pine Steering Comm. v. EPA*, 777 F.2d 882, 16 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20009 (3d Cir. 1985); and *J.V. Peters & Co., Inc. v. Administrator, EPA*, 767 F.2d 263, 15 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20646 (6th Cir. 1985).

³²CERCLA § 113(h), 42 U.S.C.A. § 9613(h), authorizes judicial review of cleanup orders only in conjunction with enforcement or cost recovery actions commenced by the government, in challenges to the adequacy of cleanup actions already taken, or cost recovery actions performed by respondents to cleanup orders arguing the orders were legally deficient.

³³*Wagner Seed Co. v. Daggett*, 800 F.2d 310, 16 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 21001 (2d Cir. 1986); *Union Elec. Co. v. EPA*, 593 F.2d 299, 9 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20154 (8th Cir. 1979); *Amoco Oil Co. v. EPA*, 959 F. Supp. 1318, 27 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 21309 (D. Colo. 1997); *Howell v. Corps of Eng'rs*, 794 F. Supp. 1072 (D.N.M. 1992).

order deprives respondents of property without due process of law has been similarly rejected.³⁴

In conclusion, pre-enforcement judicial review of compliance orders is provided in the SDWA. It is also provided in the CAA for all final agency actions, and CAA compliance orders appear to be final actions because of the effects they have on the respondents' liability regimes. Pre-enforcement judicial review is explicitly precluded by CERCLA and is implicitly precluded by the structure of the other statutes. While courts sometimes grant pre-enforcement review where it is implicitly precluded by the structure of the statute, they do so under exceptional circumstances.³⁵ Order recipients have sometimes attempted to avoid the preclusion of pre-enforcement review by seeking injunctions against government enforcement rather than review of government action. Courts have not been receptive to such end-runs around legislative and judicially imposed restrictions on judicial review and have disposed of such attempts as if they had been seeking pre-enforcement review.³⁶

§ 9:23 Pre-enforcement review of administrative enforcement actions— Judicial review of administrative penalty orders

The environmental statutes typically authorize the assessment of penalties by EPA.¹ Most, but not all,² of them explicitly provide for judicial review of penalty assessments. There is no discernable pattern in these provisions, except that many of the most recently enacted penalty authorities (CWA, CERCLA, and EPCRA) incorporate a two-tiered administrative penalty structure. The first tier authorizes the assessment of a relatively small penalty, *e.g.*, no more than a total of \$25,000 after an informal hearing before an agency employee. The second tier authorizes the assessment of a larger penalty, *e.g.*, no more than a total of \$125,000 after a formal

³⁴Asbestec Constr. Servs., Inc. v. EPA, 849 F.2d 765, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21029 (2d Cir. 1989).

³⁵Adamo Wrecking Co. v. United States, 434 U.S. 275, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20171 (1978) (CAA—dicta); ASARCO, Inc. v. EPA, 616 F.2d 1153, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20433 (9th Cir. 1980) (CAA—jurisdiction for review not contested); Donner Hanna Coke Corp. v. Costle, 464 F. Supp. 1295, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20279 (W.D.N.Y. 1979) (CAA—objection to jurisdiction withdrawn); Parkview Corp. v. Department of the Army, 455 F. Supp. 1350, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20834 (E.D. Wisc. 1978) (CWA—action taken by government clearly beyond its jurisdiction as a matter of law).

There are a series of opinions in the Ninth Circuit opinions that “appear to establish that a district court has jurisdiction to resolve the application of the Clean Water Act to a parcel of property once the Corps issues a cease and desist order.” *Leslie Salt Co. v. United States*, 789 F. Supp. 1030, 1032, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20359, 20360 (N.D. Cal. 1991). Those opinions include *Leslie Salt Co. v. United States*, 660 F. Supp. 183, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 21006 (N.D. Cal. 1987); *Leslie Salt Co. v. United States*, 700 F. Supp. 476, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20420 (N.D. Cal. 1988), *rev'd on other grounds*, 896 F.2d 354, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20477 (9th Cir. 1990); *Swanson v. United States*, 600 F. Supp. 802, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20206 (D. Idaho 1985), *aff'd on other grounds*, 789 F.2d 1368, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20799 (9th Cir. 1986). On closer examination, however, the government did not contest the courts' jurisdiction in any of these cases, and the courts did not expressly analyze the issue. When the jurisdictional issue was squarely raised by the government in a subsequent case in a district court in the circuit, the court was not constrained by them and held that a Corps cease and desist order was not a final action and that the structure of the CWA precluded judicial review of the order. *Leslie Salt Co. v. United States*, 789 F. Supp. 1030, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20359 (N.D. Cal. 1991).

³⁶*Southern Ohio Coal Co. v. Office of Surface Mining Reclamation & Enforcement*, 20 F.3d 1418, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20848 (6th Cir. 1994) (CWA); *Union Elec. Co. v. EPA*, 593 F.2d 299, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20154 (8th Cir. 1979).

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¹See § 9:12.

²Neither the MPRSA nor RCRA contains explicit judicial review authority in its penalty assessment or judicial review provision, MPRSA § 105(a), 33 U.S.C.A. § 1415(a); RCRA §§ 3008, 7006, 42 U.S.C.A. §§ 6928, 6976.

APA hearing before an administrative law judge.³ These provisions all indicate the factors that EPA is to take into account in assessing a penalty amount: the nature, circumstances, extent, and gravity of the violation; the ability to pay, compliance history, and culpability of the violator; and such other factors as justice may require.⁴ Most, but not all, of these provisions authorize judicial review of the first tier penalty in the district courts and of the second tier penalty in the courts of appeal.⁵ They provide standards of review as well—substantial evidence on the record for the violation and abuse of discretion for the amount of the penalty. If the penalties are not paid after exhaustion or waiver of the hearings and appeals provided, the government may proceed to the district courts to collect the penalties, plus costs and a non-payment penalty, without further judicial review.⁶

The other statutes vary widely in their penalty structures. The CAA authorizes EPA to assess a penalty of no more than \$200,000, subject to a formal APA hearing and judicial review in the courts of appeal, and with the other embellishments of the two-tiered scheme described above.⁷ It also authorizes the issuance of “field citations” assessing penalties of up to \$5,000 a day per violation, subject to informal administrative hearing and judicial review by district courts. TSCA and RCRA both authorize the administrative assessment of penalties of up to \$25,000 a day, with no upper limit.⁸ But TSCA requires a formal APA hearing and authorizes judicial review in the courts of appeal, while RCRA is silent on both. TSCA provides a list of factors for EPA to consider in assessing a penalty, which are very similar to those incorporated into the two-tiered scheme discussed above, while the RCRA list is much shorter.⁹ TSCA provides a collection scheme for unpaid penalties similar to that described above, while RCRA has no such scheme. Finally, FIFRA and MPRSA authorize penalty assessments with upper limits of \$5,000 and \$50,000, respectively, after notice and opportunity for informal hearings.¹⁰ Both have short, but different, lists of factors for EPA to take into account in assessing penalty amounts.¹¹ FIFRA provides for judicial review in the courts of appeal in its general judicial review section, while MPRSA nowhere mentions judicial review.¹²

EPA has promulgated regulations establishing procedures for the assessment of these penalties.¹³ They require administrative hearings structured to resemble judicial trials, although with less formality, not using the rules of evidence, and providing only such discovery as the presiding officer sees fit. As mentioned above, some of the statutes specifically provide standards of judicial review for the result-

³This is the tiering scheme adopted in CWA §§ 309(g) and 311(b)(6), 33 U.S.C.A. §§ 1319(g) and 1321(b)(6). CERCLA § 109, 42 U.S.C.A. § 9608, adopts a similar scheme, except that the second tier allows a penalty assessment of \$25,000 a day with no upper limit. EPCRA § 325, 42 U.S.C.A. § 11045, adopts a tiering scheme similar to the CERCLA scheme.

⁴CERCLA and EPCRA add as a factor the economic benefit or savings to the violator.

⁵EPCRA provides judicial review if and when the violator does not pay the penalty and EPA proceeds to collect it in the district court.

⁶The non-payment penalty is 20 percent per quarter. Adopting a somewhat similar penalty scheme, CAA § 113(d)(2)(5), 42 U.S.C.A. § 7413(d)(2)(5), incorporates a 10 percent a quarter non-payment penalty.

⁷CAA §§ 113(d) and 307(b), 42 U.S.C.A. §§ 7413(d) and 7607(b).

⁸TSCA § 16(a), 16 U.S.C.A. § 2615(a); RCRA § 3008(a), 42 U.S.C.A. § 6928(a).

⁹RCRA takes into account only the seriousness of the violation and the good faith efforts of the violator to comply.

¹⁰FIFRA § 14, 7 U.S.C.A. § 136l.

¹¹For FIFRA: size of business, ability to continue in business, and gravity of the violation. For MPRSA: gravity of the violation, history of past violations, and good faith efforts to comply.

¹²FIFRA § 16(b), 7 U.S.C.A. § 136n(b). MPRSA § 105, 33 U.S.C.A. § 1415. MPRSA has no general judicial review provision.

¹³40 C.F.R. Part 22.

ing penalty assessments—supported by substantial evidence on the record for the finding of a violation and abuse of discretion for the amount of the penalty. Because the APA provides the same standards of review for administrative actions,¹⁴ it is not surprising that courts have applied the same standards under all of the statutes, whether or not they specify the standards.¹⁵

CAA § 120¹⁶ departs substantially from these schemes. It provides that penalties be assessed wholly on the basis of recovering the economic benefit resulting from the violation, while the others provide that penalties be assessed on the basis of many more factors. And while the others provide for a single administrative hearing before judicial review, it requires a crippling array of administrative acts that are final and subject to judicial review before the penalty is finally assessed.¹⁷ Small wonder this authority is little used, although it appears to create a mandatory duty on EPA to assess penalties.¹⁸

§ 9:24 Judicial remedies—Civil penalties

In an unusual *voltra face*, the Clean Air Act did not set the pattern for the civil penalty provisions of the environmental statutes. Indeed, it did not provide judicially assessed civil penalties for violations by most sources until the 1977 Clean Air Act Amendments.¹ The first comprehensive penalty provision was section 309(d) of the Clean Water Act, which originally authorized district courts to assess civil penalties of not more than \$10,000 per day of violation for most of the Act's requirements.² The section did not establish criteria to guide courts in determining how to assess the penalty amount for a particular violation. This was in marked contrast to CWA section 311(b), the spill section, which has always provided such criteria for both judicially and administratively assessed penalties.³ Those criteria are: the size of business of the violator; the seriousness of the violation, the economic benefit to the violator, the culpability of the violator, other penalties for the same violation, the history of prior violations, mitigation efforts undertaken by the violator, economic

¹⁴5 U.S.C.A. § 706.

¹⁵*General Motors Corp. v. EPA*, 168 F.3d 1377, 29 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21021 (D.C. Cir. 1999) (CWA § 309(g) penalty); *Hickey's Carting, Inc. v. EPA*, 978 F.2d 66, 23 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20307 (2d Cir. 1992) (SDWA underground injection program); *Sasser v. Administrator*, 990 F.2d 127, 23 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21022 (4th Cir. 1993) (CWA § 309(g) penalty); *Panhandle Coop. Ass'n v. EPA*, 771 F.2d 1149, 15 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20935 (8th Cir. 1985); *Yaffee Iron & Metal Co., Inc. v. EPA*, 774 F.2d 1008, 16 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20431 (10th Cir. 1985); *Hudson Stations, Inc. v. EPA*, 642 F.2d 261, 11 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20728 (8th Cir. 1981); *Oner II, Inc. v. EPA*, 597 F.2d 184 (9th Cir. 1979) (FIFRA); *BP Exploration & Oil, Inc. v. Department of Transp.*, 44 F. Supp. 2d 34 (D.D.C. 1999); *Buxton v. EPA*, 961 F. Supp. 6, 27 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21270 (D.D.C. 1997) (CWA § 309(g) penalty); *In re Romero & Busot, Inc.*, 785 F. Supp. 27, 22 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21032 (D.P.R. 1992) (SDWA underground injection program); *Hanson v. United States*, 710 F. Supp. 1105, 19 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21074 (E.D. Tex. 1989) (CWA § 309(g) penalty); *Chemical Waste Mgmt., Inc. v. EPA*, 649 F. Supp. 347, 17 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20521 (D.D.C. 1986).

¹⁶42 U.S.C.A. § 7420.

¹⁷40 C.F.R. § 68.81.

¹⁸This penalty program is described in detail in § 9:13.

[Section 9:24]

¹CAA section 113 did not authorize civil penalties until it was amended in 1977. CAA section 211(d) authorized civil penalties from its outset in 1970, but EPA construed the section to authorize administratively assessed penalties. This position was reversed by EPA's judicial officer. *See* § 9:12 note 6 and accompanying text.

²33 U.S.C.A. § 1319(d).

³33 U.S.C.A. § 1321(b). Administratively assessed penalties are authorized in section 311(b)(6), and judicially assessed penalties are authorized in section 311(b)(7).

impact on the violator, and other factors as justice may require.⁴ In 1987, CWA section 309(d) was amended to raise the standard civil penalty to up to \$25,000 per day per violation and to specify factors for courts to consider in assessing penalties. The factors are: the seriousness of the violations, any economic benefit resulting from the violations, any history of such violations, good faith efforts to comply,⁵ economic impact of the penalty, and such other matters as justice may require.⁶ Notice that Congress specified different factors to be considered for assessing penalties under CWA sections 309 and 311. It gave no hint as to why it did so.

Another feature of the CWA penalty structure arises because the same offense, a discharge of oil or a hazardous substance without a permit or in violation of the terms of a permit, in theory could lead to both judicially and administratively assessed penalties under both CWA sections 309 and 311. The possibility of multiple civil penalties for a single offense is prevented, however, because CWA section 311(b)(6)(F) bars the judicial assessment of a penalty under section 311 if the Coast Guard has already assessed a penalty for the same violation. Moreover, section 311(b)(11)⁷ bars assessment of civil penalties under both CWA sections 309 and 311 for the same violation. In theory this allows the Coast Guard to undercut the assessment of significant judicial penalties under sections 309 or 311 or the assessment by EPA of administrative penalties under section 309 by assessing an administrative penalty under section 311. This often could be true for NPDES permit violations, for many of them involve violations of effluent limitations on oil or a hazardous substance. In practice, however, EPA and the Coast Guard limit this possibility by confining their enforcement actions to violations within their own well-established jurisdictions: EPA assessing or seeking judicially assessed penalties for violations of NPDES permits and the Coast Guard assessing penalties for classic spills. As a consequence, the CWA section 311(b)(7) provision for judicially assessed penalties for spills is seldom, if ever, used.

Section 11(1)(2) of the Noise Control Act (NCA)⁸ authorizes civil penalties not to exceed \$10,000 per day of violation, although it is not clear whether these penalties are to be assessed by courts or by EPA. The section specifies no criteria for determining the amount of penalty to assess. Regulations under the NCA are directed to require that individual products, such as air compressors or heavy duty trucks, meet noise standards.⁹ It would be more logical to apply the penalty to each defective product rather than to each day of violation. This is the approach taken in the analogous CAA section 205,¹⁰ which penalizes each motor vehicle or vehicle engine that does not conform to air pollution emission limitations.

RCRA section 3008(g) provides that persons violating hazardous waste management requirements are liable for a civil penalty not to exceed \$25,000 per day of violation. Although it does not specify whether EPA or courts are to assess the penalty it is reasonably clear that it authorizes judicial assessment of penalties. This is discussed in detail elsewhere.¹¹ The subsection does not specify what factors courts are to consider in establishing penalty levels. Courts, however, have relied on the factors that section 3008(a)(3) provides for EPA in assessing penalties

⁴CWA § 311(b)(8), 33 U.S.C.A. § 1321(b)(8).

⁵On what constitutes good faith, see § 9:11 note 8 and accompanying text.

⁶33 U.S.C.A. § 1319(d).

⁷33 U.S.C.A. § 1321(b)(11).

⁸33 U.S.C.A. § 4910(a)(2).

⁹NCA § 6, 32 U.S.C.A. § 4905.

¹⁰42 U.S.C.A. § 7524.

¹¹See § 9:12 notes 35-37 and accompanying text.

administratively: the seriousness of the violation and good faith efforts to comply.¹² Another court has referred instead to the factors set forth in another statute, a less satisfactory method.¹³

There are no provisions for judicially assessed penalties under TSCA or FIFRA. Penalties under those statutes are assessed administratively.¹⁴

SDWA was amended in 1986 to make its enforcement and penalty provisions viable.¹⁵ SDWA sections 1414(b) and 1423(b)¹⁶ now provide civil penalties of up to \$25,000 a day for each day of violation. In assessing penalties for violations of primary drinking water standards, courts are to take into account the seriousness of the violation, the population at risk, and “other appropriate factors.”¹⁷ No factors are provided for courts to assess penalties for violations of underground injection requirements, although factors are provided if the penalties are assessed administratively.¹⁸ The latter should provide some guidance for judicially assessed penalties. This represents a quantum leap forward for the enforceability of SDWA, which was previously in the enforcement dark ages.¹⁹ It is still not up to the other statutes in ease or reality of enforcement, however.²⁰

As noted above, CAA was a latecomer to the judicial civil penalty circuit. Although 1970 amendments to the Act provided civil penalties to be assessed against violations of its automobile related requirements, the violations against which penalties were authorized were limited and EPA construed the provision to authorize administratively assessed penalties. This construction was later reversed by EPA’s Judicial Officer.²¹

General judicial civil penalty authority was not introduced in the CAA until the 1977 Amendments, which amended CAA section 113(b) to authorize judicially assessed civil penalties of not more than \$25,000 per day of violation. It now directs courts to determine the amounts of penalties assessed by taking into account: the size of the violator’s business, the economic impact of the penalty on the business, the violator’s compliance history and good faith efforts to comply, the duration of the

¹²United States v. Bethlehem Steel Corp., 829 F. Supp. 1047, 24 *Envtl. L. Rep.* (Envtl. L. Inst.) 20263 (N.D. Ind. 1993); United States v. T&S Brass & Bronze Works, Inc., 681 F. Supp. 314, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20905 (D.S.C. 1988), *aff’d* in relevant part, 19 *Envtl. L. Rep.* (Envtl. L. Inst.) 20857 (4th Cir. 1988).

¹³United States v. Ekco Housewares, Inc., 853 F. Supp. 975, 25 *Envtl. L. Rep.* (Envtl. L. Inst.) 21560 (N.D. Ohio 1994) (relying on the factors set forth in CERCLA § 109(a)(3), 42 U.S.C.A. § 9609(a)(3)).

¹⁴*See* § 9:12.

¹⁵Pub. L. No. 99-339, §§ 102, 103, 202, 100 Stat. 647, 648, 654 (1986).

¹⁶42 U.S.C.A. §§ 300g-3(b), 300h-2(b).

¹⁷SDWA § 1414(b), 42 U.S.C.A. § 300g-3(b).

¹⁸SDWA § 1423(c)(4)(B), 42 U.S.C.A. § 300h-2(c)(4)(B).

¹⁹Previously, the penalty was only \$5,000 a day. If primary drinking water standards were violated, the penalty applied only when the violations were willful. If underground injection requirements were violated, the penalty doubled when the violations were willful. Providing a penalty only for willful violation of public health-based primary drinking water standards but doubling it for willful violation of non-public health-based injection regulations was symptomatic of the topsy-turvy world of SDWA enforcement. Despite the amendments, anomalies remain in the statute’s enforcement provisions, and EPA’s enforcement performance remains lackluster.

²⁰The requirement that EPA provide technical assistance to public water supply violators prior to suit is antagonistic to enforcement. *See* § 9:6. EPA’s failure to enforce SDWA is documented in a publication of the National Wildlife Federation, N. Dean, *Danger on Tap: The Government’s Failure to Enforce the Federal Safe Drinking Water Act* (1988).

²¹*In re Transportation, Inc.*, Docket No. CAA (211)-27 (Feb. 25, 1982). *See* § 9:12 note 6 and accompanying text.

violation,²² other penalties paid for the same violation, the economic value of noncompliance to the violator,²³ the seriousness of the violation, and other factors as justice may require.²⁴ At the time of the 1977 amendments Congress was frustrated by EPA's apparent lack of effectiveness and zeal in enforcing the CAA.²⁵ As a result, it increased the effectiveness of EPA's remedies, not only by authorizing judicially assessed penalties, but also authorizing administratively assessed civil penalties in CAA section 120,²⁶ the latter calculated to recover from the violator its economic benefit from delayed compliance. That penalty authority is discussed elsewhere in detail.²⁷ Congress also sought to increase the zeal of EPA's enforcement by making enforcement mandatory in certain circumstances. Thus under CAA section 113(b), EPA "shall" commence a civil action to assess a civil penalty against the owner or operator of "a major stationary source" in violation of specified, important provisions of the Act and "may" commence such an action to assess a penalty against the owner or operator of other sources in violation of the same provisions. Congress contemplated similar mandatory enforcement under CAA section 120.²⁸ Neither expectation has been remotely fulfilled. The subsequent addition of "as appropriate" before the "shall" in section 113(b) undercuts the argument that enforcement is mandatory against major sources under that section.

The existence of two penalty provisions in the CAA applicable to many of the same violations (it should be noted that not every violation susceptible to a section 113 penalty is also susceptible to a section 120 penalty) could lead to duplicative penalties. As discussed above, this possibility was specifically foreclosed by Congress under CWA by amendments to that Act in 1977. Congress was so concerned with nonenforcement against violations of the CAA, however, that at the same time it contemplated, and in some cases mandated, duplicative penalties under CAA. CAA section 113(b) grants courts jurisdiction to assess civil penalties "and" to collect delinquent noncompliance penalties under CAA section 120. (And it required enforcement actions for some violations under both sections.)

The factors that courts are to consider in determining the amount of penalty to assess under section 113(b) are different than those enumerated in section 120. This originally raised some questions as to how courts should assess penalties under section 113(b). Those questions were addressed in part by the 1990 amendment to the CAA requiring both the economic benefit of the violation to the violator and other penalties paid by the violator to be taken into account in a penalty assessment. Thus, penalties assessed under section 120 are to be taken into account in judicial penalty assessments, cancelling out the economic benefit component. The economic benefit remains a factor for violations for which no section 120 penalty is assessed. There is also a potential for EPA to subvert the apparent desire of Congress to prevent the economic benefit of a violation to be recovered twice, once under section 120 and once under section 113. This arises because courts are to consider payments of other penalties only if they are previously assessed. Violators who pay twice for economic benefit because EPA commences actions for section 120 penalties only after EPA has secured judicially assessed penalties for the same violation may be successful in seeking a modification of the judicial order based on subsequent

²²This could lead to double counting because penalties may also be assessed for each day of a violation.

²³This could lead to double counting if a penalty is also assessed under CAA § 120, 42 U.S.C.A. § 7420.

²⁴CAA § 113(e)(1), 42 U.S.C.A. § 7413(e)(1).

²⁵For a brief description of the early enforcement problems, *see* § 9:1.

²⁶42 U.S.C.A. § 7420.

²⁷*See* § 9:12.

²⁸*See* CAA § 120(a)(2), 42 U.S.C.A. § 7420(a)(2) (mandatory language of section, coupled with the limited subset of more serious violations against which action is to be taken). *See* § 9:4.

developments which make the original judicial penalty unfair or contrary to congressional intent.

CERCLA sections 106(b), 109,²⁹ respectively, authorize the assessment of civil penalties of up to \$25,000 per day of violation, both for violations of EPA-issued endangerment abatement orders and for violations of specified recordkeeping, reporting, and substantive requirements. Under section 109, the penalties can increase threefold for subsequent violations. EPCRA section 325³⁰ authorizes the assessment of \$25,000 per day for violations of specified requirements,³¹ tripling to \$75,000 for some subsequent violations.³² No factors are given under either statute to consider in assessing penalties. For some violations under EPCRA, penalties are not to be assessed against government entities.³³ The tripling of penalties for subsequent violations is reminiscent of the criminal sanctions provided in the environmental statutes—they usually double the maximum term of imprisonment and penalty authorized for second convictions.³⁴ While the concept is fairly straightforward in the criminal context where doubling hinges on a prior conviction, it is more obscure in the civil context where no such previous judicial action is referenced. In theory, the second day of a continuing violation would support a tripling of the civil penalty, since it would be a subsequent violation to the first day of the violation. This clearly is not what Congress had in mind, however, because it provided a penalty of \$25,000 “per day for each day during which the violation continues.”

The upshot of all this development is that now all but two of the EPA statutes authorize courts to assess civil penalties and all enforcement sections amended in the 1980s authorize them in amounts of \$25,000 per day. It has been held that when an amendment increases the amount of a penalty that may be assessed for a violation, the higher penalty does not apply retroactively to violations occurring before the amendment.³⁵ Half of the statutes specify factors courts are to consider in assessing penalties,³⁶ but none of them specify the same factors. Congress has not indicated any reason for this disparity and there does not appear to be any reason other than haphazard drafting. This is a matter on which more uniformity appears desirable.

Until recently there have been surprisingly few reported cases in which courts have considered the appropriate amount of civil penalty to assess. The former paucity of such cases resulted from EPA's practice of attempting to negotiate the terms of civil settlements prior to filing complaints and the reluctance of the Department of Justice to try penalty-only cases. This is changing, however, partly as a result of the large number of private enforcement cases being filed under CWA section 505 by national environmental groups. They are not as anxious to settle cases prior to filing complaints and are not as reluctant to take penalty cases to trial. Fur-

²⁹42 U.S.C.A. §§ 9606(b), 9609.

³⁰42 U.S.C.A. § 11045.

³¹EPCRA § 325(a), (b)(3), and (c)(1), 42 U.S.C.A. § 11045(a), (b)(3), and (c)(1), for violation of EPCRA §§ 302(c), 303(d), 304, 312 and 313, respectively, 42 U.S.C.A. §§ 11002(c), 11003(d), 11004, 11022 and 11023.

³²EPCRA § 325(b)(3), 42 U.S.C.A. § 11045(b)(3).

³³EPCRA § 325(c), 42 U.S.C.A. § 11045(c).

³⁴*E.g.*, CAA § 113(c)(2) to 113(c)(5), 42 U.S.C.A. § 7413(c)(2) to (c)(5).

³⁵*Atlantic States Legal Found. v. Tyson Foods, Inc.*, 897 F.2d 1128, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 20788 (11th Cir. 1990).

³⁶In such circumstances, courts at times have used factors in other statutory provisions. *See, e.g.*, *United States v. Bethlehem Steel Corp.*, 829 F. Supp. 1047, 24 *Envtl. L. Rep.* (Envtl. L. Inst.) 20263 (N.D. Ind. 1993); *United States v. T&S Brass & Bronze Works, Inc.*, 681 F. Supp. 314, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20905 (D.S.C. 1988), *aff'd* in relevant part, 19 *Envtl. L. Rep.* (Envtl. L. Inst.) 20857 (4th Cir. 1988); *United States v. Ekco Housewares, Inc.*, 853 F. Supp. 975, 25 *Envtl. L. Rep.* (Envtl. L. Inst.) 21560 (N.D. Ohio 1994).

ther, defendants appear more liable to litigate against private plaintiffs than against the government. The success of private enforcers to secure a significant penalty assessments from the courts³⁷ has contributed to making the government more aggressive in seeking much more significant penalties and going to trial to get them.

A modest number of reported decisions in which courts have considered penalty issues give an indication of the constitutional and legal issues that may be raised and the approaches courts may use in assessing penalty amounts. The constitutional issue is the respective roles of judge and jury in penalty cases, an issue upon which the Supreme Court has spoken. The legal issues relate to how the maximum penalty amounts may apply to a particular violation. When do they start to apply? How often do they apply? When do they cease to apply? Once these legal issues are decided, there is the question of how courts will apply the statutory and other criteria to determine the amounts of penalties to be assessed. EPA has attempted, with some success, to influence the latter by developing a detailed and rational penalty policy on which it bases the penalties to which it will agree in settlement and for which it will argue in court should settlement fail (the latter amount being higher, of course).

The one case to reach the Supreme Court on a penalty issue was *Tull v. United States*.³⁸ In that case the government sought civil penalties and an injunction for restoration against a developer who filled a wetland without a CWA section 404 permit. The defendant argued he was entitled to a jury trial. The Court had not previously considered whether an action seeking a civil penalty of the type authorized by CWA section 309 gave rise to the right to a jury. The issue turned on whether the action was legal or equitable in nature, since the Seventh Amendment preserved the right to a jury in "actions at Common Law." Because civil penalties for statutory violations were unknown at the time the Seventh Amendment was adopted, the answer was not a foregone conclusion. The government suggested the action was most analogous to a public nuisance action for obstruction of a waterway or for pollution, which was equitable. The defendant argued it was more analogous to collection of a debt, which was legal. The Court agreed with the defendant, holding that he was entitled to a jury trial on the issue of whether he had violated the Act, but not on the amount of the penalty to be assessed. Because the CWA presents no considerations on the issue different from those presented by the other environmental statutes, the same conclusion must be reached for civil penalties under the other statutes.³⁹ The decision was greeted by predictions of disaster for EPA's enforcement program.⁴⁰ Juries of farmers indeed may sympathize with farmers charged with unpermitted filling of wetlands. But because public sentiment is so overwhelmingly in favor of environmental protection and against polluters, these dire predictions seem generally implausible.

The issue of whether an action is legal or equitable in nature for purposes of a right to a jury in a civil trial is not to be confused with the issue of whether a civil penalty is really civil rather than criminal in nature. That question arose in *United*

³⁷The first citizen suit case in which a judicially assessed penalty topped the million dollar mark was *Chesapeake Bay Found., Inc. v. Gwaltney of Smithfield, Ltd.*, 688 F. Supp. 1078, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21275 (E.D. Va. 1988) (\$1,285,322). Ultimately the penalty was reduced to \$289,822. *Chesapeake Bay Found., Inc. v. Gwaltney of Smithfield, Ltd.*, 890 F.2d 690, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20341 (4th Cir. 1989).

³⁸*Tull v. United States*, 481 U.S. 412, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20667 (1987).

³⁹*See, e.g., United States v. M.C.C. of Florida, Inc.*, 848 F.2d 1133, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21080 (11th Cir. 1988) (Rivers and Harbors Act of 1899, 33 U.S.C.A. § 401 et seq.).

⁴⁰*Openchowski, Changing the Nature of Federal Enforcement of Environmental Laws*, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 10304 (1987).

*States v. Ward*⁴¹ in the context of an administratively assessed penalty for spilling oil under CWA section 311. In that case Ward complained that the use of his report of the oil spill for which the penalty was assessed was a violation of his Fifth Amendment guarantee against self-incrimination, where the report was required by section 311 and failure to report was punished by criminal sanctions. His contention turned on whether the penalty for the spill was civil or criminal in nature. In making that determination, the Court looked first to legislative intent. Finding that Congress clearly intended the penalty to be civil, the Court looked further to whether the penalty scheme was so punitive in nature that it negated congressional intent. The Court found Ward had not made his case in this regard. The question remains open under other administrative penalty provisions, although none of the provisions examined here appears to be a good candidate for the argument. The Court in *Ward* did not consider whether an administratively assessed penalty violated the Seventh Amendment right to jury in a civil context. It had decisively rejected this argument earlier in *Atlas Roofing Co. v. Occupational Safety and Health Review Commission*.⁴²

The first legal issues raised under the penalty provisions related to interpreting how to apply the maximum penalty amount “per day of violation” in CWA section 309(d) prior to its amendment in 1987. Is the maximum assessment authorized for each of several violations that occur on a single day or only once on a single day no matter how many violations occur on that day? Is the maximum assessment authorized for each day that a required act is not completed or only on the single day the act was required to be completed? Is the maximum assessment authorized for each day during a period in which an average limitation is violated (a weekly or monthly average concentration) or just once for the period? Although primarily raised under CWA section 309(d), these questions can recur under other statutes and other parts of the CWA. Some have been addressed by courts and some have been addressed by Congress in the 1987 amendments to CWA section 309. Because the answers are not altogether satisfactory and the issues persist under several statutes, they are worth addressing in detail.

Courts have considered whether the authorization of a penalty not exceeding “\$10,000 per day of violation” in the original CWA section 309 authorizes a penalty for each of several violations of a permit on a single day or limits the amount of penalty to \$10,000 per day, no matter how many violations occur on that day. Courts have split on the issue. Some have held that the literal reading of the statute was that regardless of the number of violations a defendant incurred a day, no more than \$10,000 in penalties could be assessed against it on a single day.⁴³ Others held that the dollar limit applies to each violation per day.⁴⁴ The first interpretation appears to be the better one. The operative word in the phrase was “day.” It was modified by “of violation.” But a single day is still a single day, no matter whether it

⁴¹United States v. Ward, 448 U.S. 242, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20477 (1980).

⁴²Atlas Roofing Co. v. Occupational Safety and Health Review Comm'n, 430 U.S. 442 (1977).

⁴³Chesapeake Bay Found. v. Gwaltney of Smithfield, Ltd., 791 F.2d 304, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20636 (4th Cir. 1986), vacated & remanded sub nom. Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found., Inc., 484 U.S. 49, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20142 (1987), penalty reinstated on remand sub nom. Chesapeake Bay Found., Inc. v. Gwaltney of Smithfield, Ltd., 688 F. Supp. 1078, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21275 (E.D. Va. 1988), aff'd in part, 890 F.2d 690, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20341 (4th Cir. 1989); United States v. Detrex Chem. Indus., Inc., 393 F. Supp. 735 (N.D. Ohio 1975). See also § 9:30.

⁴⁴Atlantic States Legal Found. v. Tyson Foods, Inc., 897 F.2d 1128, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20788 (3d Cir. 1990); United States v. Amoco Oil Co., 580 F. Supp. 1042, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20533 (W.D. Mo. 1984). In *Tyson* the court was persuaded by the legislative history of the 1987 amendments, stating that the new “per day for each violation” language merely clarified the meaning of the former “per day of violation” language. This gives greater weight to *post hoc* legislative history than courts normally afford, particularly when the interpretation flies in the face of the plain meaning of the statute.

sees one or more violations. The section has since been amended to authorize the assessment of a penalty not to exceed \$25,000 “per day for each violation.” The amendment made both “day” and “violation” operative words in the phrase. Now the maximum penalty may be assessed for each penalty on a single day, no matter how many violations occur on that day. To underscore this, the amendments also added a sentence to the effect that “a single operational upset” resulting in simultaneous violations of “more than one pollutant parameter” is to be treated as a single violation for purposes of civil penalties.⁴⁵ Upsets are unanticipatable occurrences, not predictable events such as hot summers.⁴⁶

Many of the civil penalty provisions now employ the “per day for each violation” language, or equivalent wording,⁴⁷ although none but CWA section 309 contains the “single operational upset” condition. Under these provisions, multiple maximum penalties are available for each violation, each day, without limitation. Most provisions for administrative penalties and criminal fines are closer to this older formulation.⁴⁸

Congress solved one problem with this amendment to CWA section 309 but it did not foresee other problems it was creating. Clearly there is merit in the suggestion that a maximum per day penalty should not protect a violator from the consequences of true multiple violations. Read literally, the former CWA penalty provision meant a defendant that owned one hundred permitted plants around the country could be liable for no more than one maximum penalty assessment on a given day, no matter how many plants were in violation of their permits on that day. Reduced to a more plausible example, a single plant with two permitted outfalls could be liable for no more than one maximum penalty assessment on a given day, even though both outfalls, servicing separate waste streams and treatment systems, were in violation of permit conditions. Using one maximum assessment as a cap for all violations on a single day gives violating multi-outfall polluters a free ride. Once it is clear one outfall will violate its permit on a given day, the owner’s civil liability does not increase for violating at other outfalls and there is no incentive for compliance at those outfalls. Of course, if it simply turned off all its treatment facilities that day to save money, it would run the risk of criminal prosecution.

The problem is reversed, however, when multiple violations flow from a common cause as opposed to multiple causes. Pollution control systems commonly treat many similar pollutants simultaneously. When the system fails to treat one of those pollutants to specification, it probably fails to treat the others to specification for the same reason. For instance, a pH adjustment system may be designed to meet pH

⁴⁵CWA § 309(d), 33 U.S.C.A. § 1319(d), Pub. L. No. 100-4, tit. III, § 313(c), 101 Stat. 45 (1987). The provision has been interpreted to allow aggregation into a single violation of all discharge limitation exceedences for different pollutants caused by the same occurrence on a given day, but not to allow multiple day violations to be collapsed into a single day violation. Public Interest Research Group of N.J. v. Elf Atochem of N. Am., Inc., 817 F. Supp. 1164, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 21225 (D.N.J. 1993).

⁴⁶Public Interest Research Group of N.J. v. Elf Atochem of N. Am., Inc., 817 F. Supp. 1164, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 21225 (D.N.J. 1993).

⁴⁷CAA § 113(c), 42 U.S.C.A. § 7413(c); SDWA § 1414(b), 42 U.S.C.A. § 300g-3(b) (“each day in which such violation occurs”); SDWA § 1423(b)(1), 42 U.S.C.A. § 300h-2(b)(1) (“for each day of such violation”); RCRA § 3008(g), 42 U.S.C.A. § 6928(g) (“for each such violation,” with each day of violation constituting a separate violation); CERCLA § 109(c), 42 U.S.C.A. § 9609(c) (“per day for each day during which the violation . . . continues”); EPCRA § 325(a), 42 U.S.C.A. § 11045(a) (“for each day in which such violation occurs”). Use of “such” violation or “the” violation makes “violation,” rather than just “day,” an operative word. Moreover, these terms refer to specific violations, cited earlier in the sections, against which enforcement is sought. Penalties thus become violation-specific as well as day-specific.

⁴⁸In CWA section 309, however, the “single operational upset” limitation is repeated in both the criminal and administrative penalty subsections. CWA § 309(c)(5), (g)(3), 33 U.S.C.A. § 1319(c)(5), (g)(3).

limits and also to meet heavy metal limits by precipitating metals out as it alters the pH in the waste water. When the system fails, none of the limits will be met. If the maximum assessment amount applies to the violation of each limit, the permit writer can increase or decrease penalty liability by increasing or decreasing the number of heavy metal limits included in the permit. Assuming that a penalty of \$25,000 a day is greater than the cost of operating, maintaining, and amortizing the treatment system for a day, increasing or decreasing the number of different metals limited will have no effect on pollution control, because all metals are removed by the same process and it either works or fails for all. Judge Merhige recognized the inequity of imposing separate penalties for multiple violations caused by the same treatment failure in *Gwaltney*.⁴⁹ Congress appeared to recognize it as well by adding the language on single operational upsets to CWA section 309(d). But the amendment is inadequate to solve the problem. Stating that simultaneous violations of more than one pollutant parameter caused by a single operational upset will be treated as a single violation for civil penalty purposes implies that violations of more than one pollutant parameter will be treated as multiple violations if they are: (1) not simultaneous but caused by a single operational upset; (2) simultaneous but caused by something other than a single upset; or (3) simultaneous and caused by a single operational upset but pursued for administrative or criminal penalties. Moreover, even the incomplete relief that Congress accorded was limited to the CWA and does not reach the other statutes adopting the “per day for each violation” approach.

How should the maximum penalty amount be structured? Since the basic prohibition in the CWA is against an unauthorized point source discharge, section 301(a), the penalty should apply on a point source by point source basis. It should not apply on a permit by permit basis, because liability can be artificially raised or lowered by aggregating several point sources from different plants into one permit or disaggregating several point sources at one plant into several permits. What about violations of multiple pollutant parameters at a single point source? As long as the daily maximum penalty is high enough, this shouldn't be an issue. At \$25,000 a day, the yearly maximum penalty is over \$9 million. This seems enough to offset the economic benefit of noncompliance for most point sources, even if noncompliance is caused by different events. But if the penalty is not high enough for that purpose, it may be better simply to have a larger maximum penalty applied just once a day for a single point source than to allow permit writers to establish how many maximum penalties can be applied on a single day by raising or lowering the number of pollutant parameters in a permit.

The second legal issue faced by courts in assessing civil penalties is whether a violation resulting from an act or omission on a particular day continues each day thereafter until corrected. In analyzing the issue, care must be taken to distinguish between ephemeral violations, such as spills, which cannot be subsequently corrected, and other violations, such as failures to report, which can be subsequently corrected. But what of emissions or discharges in excess of limitations or entirely unpermitted? That will depend on their nature and cause. Some courts have held that when fill material is placed without a permit in a wetland, the violation continues as long as the fill remains there unpermitted.⁵⁰ Under *Gwaltney*, however, treatment facilities are not considered to remain in violation because pollutants

⁴⁹*Chesapeake Bay Found., Inc. v. Gwaltney of Smithfield, Ltd.*, 611 F. Supp. 1542, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20663 (E.D. Va. 1985), aff'd, 791 F.2d 304, 16 Env'tl. L. Rep. (Env'tl. L. Inst.) 20636 (4th Cir. 1986), rev'd on other grounds sub nom. *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found., Inc.*, 484 U.S. 49, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20142 (1987), on remand, 844 F.2d 170, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20941 (4th Cir. 1987), 688 F. Supp. 1078, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21275 (E.D. Va. 1988).

⁵⁰*Sasser v. Administrator*, 990 F.2d 127, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 21022 (4th Cir. 1993); *North Carolina Wildlife Fed'n v. Woodbury*, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 21309 (E.D.N.C. Apr. 25, 1989); *United States v. Ciampitti*, 669 F. Supp. 684, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20419 (D.N.J.

from their violating emissions or discharges remain in the environment, even if they remain in sediment below the outfall pipe. They remain in violation only if the emission or discharge remains in violation from day to day. The distinction is neither clearcut nor rational. It also can pose difficult problems of proof for the government in the absence of daily monitoring results.⁵¹

The third legal issue is whether violation of a restriction expressed as an average over a specified period of time is one violation for the period or a violation for each day within that period; in other words, is the violation of a weekly average limitation one or seven violations? Most of the courts considering the issue have held that such a violation is a violation on every day during the averaging period.⁵² Courts also have split on whether separate penalties may be assessed for a violation of a daily maximum limitation and a monthly average limitation on the same pollutant during the same day.⁵³

It has been held that once a court has found a violation, it must assess a penalty and must consider all of the statutory factors in doing so.⁵⁴ Courts apply both “top down” and “bottom up” approaches to assess penalties. Under the “top down” approach the maximum penalty is calculated and then mitigated down by the statutory factors.⁵⁵ Under the “bottom up” approach, generally more favorable to defendants, the economic benefit of non-compliance to the violator is calculated and

1987); *United States v. Tull*, 769 F.2d 182, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 21061 (4th Cir. 1985), rev'd on other grounds sub nom. *Tull v. United States*, 481 U.S. 412, 17 *Envtl. L. Rep.* (Envtl. L. Inst.) 20667 (1987); *United States v. Cumberland Farms of Conn., Inc.*, 647 F. Supp. 1166, 17 *Envtl. L. Rep.* (Envtl. L. Inst.) 20301 (D. Mass. 1986), aff'd, 826 F.2d 1151, 17 *Envtl. L. Rep.* (Envtl. L. Inst.) 21270 (1st Cir. 1987). *Contra* *United States v. Telluride Co.*, 849 F. Supp. 1400, 24 *Envtl. L. Rep.* (Envtl. L. Inst.) 21458 (D. Colo. 1994).

⁵¹*See* *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found., Inc.*, 484 U.S. 49, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20142 (1987). *See also* *United States v. SCM Corp.*, 667 F. Supp. 1110, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20073 (D. Md. 1987) and *United States ex rel. EPA v. Hill Petroleum Co.*, 17 *Envtl. L. Rep.* (Envtl. L. Inst.) 20457 (W.D. La. 1986).

⁵²*United States v. Smithfield Foods, Inc.*, 191 F.3d 516 (4th Cir. 1999); *Atlantic States Legal Found. v. Tyson Foods, Inc.*, 897 F.2d 1128, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 20788 (11th Cir. 1990); *Public Interest Research Group of N.J., Inc. v. Powell Duffryn Terminals, Inc.*, 913 F.2d 64, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 21216 (3d Cir. 1990); *Public Interest Research Group of N.J., Inc. v. Star Enter.*, 771 F. Supp. 655, 22 *Envtl. L. Rep.* (Envtl. L. Inst.) 20094 (D.N.J. 1991); *Chesapeake Bay Found. v. Gwaltney of Smithfield, Ltd.*, 611 F. Supp. 1542, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20663 (E.D. Va. 1985); *United States v. Amoco Oil Co.*, 580 F. Supp. 1042, 14 *Envtl. L. Rep.* (Envtl. L. Inst.) 20533 (W.D. Mo. 1984). *But see* *SPIRG of N.J., Inc. v. Monsanto Co.*, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20999 (D.N.J. 1988); *United States ex rel. EPA v. Hill Petroleum Co.*, 17 *Envtl. L. Rep.* (Envtl. L. Inst.) 20457 (W.D. La. 1986).

⁵³*See, e.g.*, *Atlantic States Legal Found. v. Tyson Foods, Inc.*, 897 F.2d 1128, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 20788 (11th Cir. 1990) (double counting not permitted); *Public Interest Research Group of N.J., Inc. v. Powell Duffryn Terminals, Inc.*, 913 F.2d 64, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 21216 (3d Cir. 1990) (double counting permitted).

⁵⁴*See* *Atlantic States Legal Found. v. Tyson Foods, Inc.*, 897 F.2d 1128, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 20788 (11th Cir. 1990) (reversing lower court's refusal to assess a civil penalty because of the good faith of the defendant); *see also* *Public Interest Research Group of N.J., Inc. v. Powell Duffryn Terminals, Inc.*, 913 F.2d 64, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 21216 (3d Cir. 1990) (reversing lower court's mitigation of a penalty by \$1 million in a citizen suit because of nonenforcement by the government). *United States v. Vista Paint Corp.*, 1996 WL 477053, No. EDCV 94-0127 RT (C.D. Cal. 4-16-96) (court should use all statutory factors but need not give more weight to some than to others); *United States v. Louisiana-Pacific*, 682 F. Supp. 1141, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20912 (D. Colo. 1988) (court should use all statutory factors but need not give them equal weight).

⁵⁵*United States v. Smithfield Foods, Inc.*, 191 F.3d 516 (4th Cir. 1999); *United States v. Municipal Auth. of Union Township*, 150 F.3d 259, 28 *Envtl. L. Rep.* (Envtl. L. Inst.) 21415 (3d Cir. 1998); *Sierra Club v. Cedar Point Oil Co.*, 73 F.3d 546, 26 *Envtl. L. Rep.* (Envtl. L. Inst.) 20522 (5th Cir. 1996); *Public Interest Research Group of N.J., Inc. v. Powell Duffryn Terminals, Inc.*, 913 F.2d 64, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 21216 (3d Cir. 1990); *Atlantic States Legal Found. v. Tyson Foods, Inc.*, 897 F.2d 1128, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 20788 (11th Cir. 1990); *Hawaii's Thousand Friends v. City and County of Honolulu*, 821 F. Supp. 1368, 23 *Envtl. L. Rep.* (Envtl. L. Inst.) 21380 (D. Haw.

mitigated up or down by the other statutory factors. EPA's Penalty Policy takes the bottom up approach.⁵⁶ There is growing judicial recognition that the major purpose of civil penalties is deterrence and that deterrence cannot be accomplished if violators are allowed to benefit from noncompliance or delayed compliance. Courts, therefore, are increasingly sensitive to the necessity of assessing penalties in amounts more than sufficient to recover any economic benefit the defendant has realized from the violation.⁵⁷ If material facts regarding one of the factors are in dispute, a penalty may not be assessed on summary judgment.⁵⁸ The assessment of civil penalties, within the maximum limitation established by the authorizing statute, is entrusted to the discretion of the trial court.⁵⁹ The penalty assessed by the trial court will be overturned on appeal only for an abuse of discretion.⁶⁰

In general, courts will not be draconian in assessing penalties, but will strive for fairness, refusing to assess large penalties for violations of requirements with which defendants are unable to comply⁶¹ or requirements which probably could not have been sustained had they been challenged when established,⁶² in amounts which would result in the bankruptcy of the defendant.⁶³ In determining ability to pay by a wholly owned company whose earnings flow to the parent company, however, courts

1993); *Atlantic States Legal Found. v. Universal Tool & Stamping Co.*, 786 F. Supp. 743, 22 *Envtl. L. Rep.* (Envtl. L. Inst.) 21052 (N.D. Ind. 1992).

⁵⁶*United States v. Smithfield Foods, Inc.*, 191 F.3d 516 (4th Cir. 1999); *United States v. Municipal Authority of Union Township*, 150 F.3d 259, 28 *Envtl. L. Rep.* (Envtl. L. Inst.) 21415 (3d Cir. 1998); *see, e.g., United States v. B&W Inv. Properties*, 38 F.3d 362, 25 *Envtl. L. Rep.* (Envtl. L. Inst.) 20012 (7th Cir. 1994) (general assumption that the penalty should be the statutory maximum unless the defendant prevails in establishing a mitigation factor); *Public Interest Research Group of N.J., Inc. v. Powell Duffryn Terminals, Inc.*, 913 F.2d 64, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 21216 (3d Cir. 1990); *Atlantic States Legal Found. v. Tyson Foods, Inc.*, 897 F.2d 1128, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 20788 (11th Cir. 1990); *United States v. A.A. Mactal Constr. Co.*, 22 *Envtl. L. Rep.* (Envtl. L. Inst.) 21200 (D. Kan. 1992).

⁵⁷Indeed, one assessed a penalty to recover wrongful profits, even though the defendant lost money on the entire operation. *United States v. Municipal Authority of Union Township*, 150 F.3d 259, 28 *Envtl. L. Rep.* (Envtl. L. Inst.) 21415 (3d Cir. 1998). *See also United States v. Ekco Housewares, Inc.*, 853 F. Supp. 975, 24 *Envtl. L. Rep.* (Envtl. L. Inst.) 21560 (N.D. Ohio 1994); *United States v. A.A. Mactal Constr. Co.*, 22 *Envtl. L. Rep.* (Envtl. L. Inst.) 21200 (D. Kan. 1992).

⁵⁸*United States v. Vista Paint Corp.*, 976 F.2d 739, 22 *Envtl. L. Rep.* (Envtl. L. Inst.) 21540 (9th Cir. 1992).

⁵⁹*Tull v. United States*, 481 U.S. 412 (1987); *United States v. Smithfield Foods, Inc.*, 191 F.3d 516 (4th Cir. 1999); *United States v. Municipal Auth. of Union Township*, 150 F.3d 259, 28 *Envtl. L. Rep.* (Envtl. L. Inst.) 21415 (3d Cir. 1998); *Atlantic States Legal Found. v. Tyson Foods, Inc.*, 897 F.2d 1128, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 20788 (11th Cir. 1990); *Stoddard v. Western Carolina Reg'l Sewer Auth.*, 784 F.2d 1200, 16 *Envtl. L. Rep.* (Envtl. L. Inst.) 20503 (4th Cir. 1986); *United States v. Bethlehem Steel Corp.*, 829 F. Supp. 1047, 24 *Envtl. L. Rep.* (Envtl. L. Inst.) 20263 (N.D. Ind. 1993), *aff'd in part, vacated in part*, 38 F.3d 862, 24 *Envtl. L. Rep.* (Envtl. L. Inst.) 21499 (7th Cir. 1994); *United States v. Ekco Housewares, Inc.*, 853 F. Supp. 975, 24 *Envtl. L. Rep.* (Envtl. L. Inst.) 21560 (N.D. Ohio 1994).

⁶⁰*United States v. B&W Inv. Properties*, 38 F.3d 362, 25 *Envtl. L. Rep.* (Envtl. L. Inst.) 20012 (7th Cir. 1994).

⁶¹*State Water Control Bd. v. Train*, 559 F.2d 921, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20571 (4th Cir. 1977), involved the potential enforcement by EPA of requirements that municipalities install secondary treatment facilities for sewage in the absence of federal funding. Partial federal funding had been authorized by Congress but the funds were impounded by President Nixon. The court regarded municipalities as unable to comply with the requirement in the absence of federal funding. Because municipalities have bonding and taxing authority, however, it is inaccurate to indicate they are unable to comply in the absence of federal funding. The decision probably is more indicative of the court's impatience with the impoundment and its distaste of significant penalty assessments against governmental bodies, than of its views on true inability to comply.

⁶²*United States v. Gulf States Steel*, 54 F. Supp. 2d 1233 (N.D. Ala. 1999).

⁶³*Brown v. Dayton Malleable, Inc.*, 438 N.E.2d 120, 1 *Ohio St. 3d* (1982).

can look at the financial viability of the parent company.⁶⁴ Substantial penalties might be warranted in such circumstances, however, where Congress was deliberately intending to force the development of new pollution abatement technology or knew its requirements would result in the inability of some facilities to continue in business. Courts are also reluctant to assess significant penalties against governmental defendants⁶⁵ or against any defendant for “technical” violations.⁶⁶ In enforcement actions seeking penalties and restoration of illegally filled wetlands under CWA sections 309 and 404, some courts have been willing to suspend penalties if the wetlands are restored,⁶⁷ to forego penalty assessment entirely where restoration at sizeable cost has been ordered,⁶⁸ or to order restoration or payment of penalties in the alternative.⁶⁹ These cases have involved defendants with relatively modest economic resources who have suffered the loss of their investment in the acquisition and development of otherwise unusable property as well as the cost of restoration. They may be of little precedential value for defendants of greater economic power or for considering the cost of expenditures for pollution control. Finally, courts of appeal will afford considerable deference to trial courts in assessing penalties.⁷⁰

In the absence of clear Congressional guidance on determining the amount of penalty to assess, EPA has developed a penalty policy to guide it in settlements. EPA will also argue in court that the policy is an appropriate framework for judicial determination of the penalty amount. Presently EPA has a general Penalty Policy and has or is developing a consistent Penalty Policy for each act. The policies can be traced back to a settlement policy developed in the mid-1970s under CWA section 309. The Penalty Policy seeks a penalty in a settlement which at a minimum recovers the economic benefits that a violator has enjoyed from delayed compliance. It calculates the benefit by multiplying the cost of compliance by the number of years of delay. It multiplies the resulting product by the return on investment of capital

⁶⁴United States v. Municipal Auth. of Union Township, 150 F.3d 259, 28 Env't. L. Rep. (Env't. L. Inst.) 21415 (3d Cir. 1998).

⁶⁵Where EPA sought a contempt penalty against a city for violating a consent decree, the court refused, saying: “A fine imposed upon the City would merely serve to diminish the limited resources which the City has to comply with the decree. A fine would penalize the taxpayers of the City for an offense which was not committed by them.” United States v. City of Providence, 492 F. Supp. 602, 10 Env't. L. Rep. (Env't. L. Inst.) 20857 (D.R.I. 1980); *see also* Proffitt v. Bristol Twp. Auth., Env't Rep. Cas. (BNA) Env't Rep. Cas. (BNA) (E.D. Pa. 1988). Of course, much the same thing could be said of many corporations and their stockholders. *See* Legal Env't. Assistance Found., Inc. v. Hodel, 586 F. Supp. 1163, 14 Env't. L. Rep. (Env't. L. Inst.) 20425 (E.D. Tenn. 1984) (CWA section 505 private enforcement action against a Department of Energy facility). The court refused to assess a civil penalty for violations at a government installation essential to the national security where the government promised to reduce the impact of its discharges. Its refusal to completely enjoin further discharge from the facility would be understandable, but in the absence of some indication that the needs of national security make compliance impossible or substantially more difficult than for other facilities, the reason does not justify its refusal to order ultimate compliance or to assess any penalty. It probably reflects a more general reluctance to impose penalties on governmental entities. *See also* 21 U.S.C.A. §§ 301 et seq. Indeed, under EPCRA penalties cannot be assessed against government entities for some violations. *See* EPCRA § 325(c), 42 U.S.C.A. § 11045(c).

⁶⁶Weiszmann v. District Eng'r, 526 F.2d 1302, 6 Env't. L. Rep. (Env't. L. Inst.) 20219 (5th Cir. 1976).

⁶⁷United States v. Tull, 615 F. Supp. 610 (E.D. Va. 1983).

⁶⁸United States v. Robinson, 570 F. Supp. 1157, 14 Env't. L. Rep. (Env't. L. Inst.) 20056 (M.D. Fla. 1983); United States v. Bradshaw, 541 F. Supp. 880, 12 Env't. L. Rep. (Env't. L. Inst.) 20629 (D. Md. 1981), injunction modified, 541 F. Supp. 884, 12 Env't. L. Rep. (Env't. L. Inst.) 20630 (D. Md. 1982).

⁶⁹United States v. Board of Trustees of Fla. Keys Comm. College, 531 F. Supp. 267, 12 Env't. L. Rep. (Env't. L. Inst.) 20391 (S.D. Fla. 1981).

⁷⁰Weiszmann v. District Eng'r, 526 F.2d 1302, 6 Env't. L. Rep. (Env't. L. Inst.) 20219 (5th Cir. 1976).

for the violator or the interest on money borrowed by the violator. It then adds to the resulting product the operation and maintenance costs not incurred during the period. Finally it may adjust the result up or down depending on such factors as harm to the environment, egregiousness of the violation, good or bad faith of the violator, and the likelihood of success on the merits.⁷¹

While courts are not bound by the policy, federal and state courts have found that it provides a useful approach to framing a penalty.⁷² One court used the policy rationale to support its conclusion that civil penalties are aimed at deterrence and are therefore penal in nature. It held accordingly that an action for penalties does not survive the death of the defendant.⁷³ This, of course, may not be wholly consistent with the notion that these penalties are civil rather than criminal in nature.⁷⁴ Courts using the policy to help assess penalty levels have insisted on assessing a penalty great enough to recover any economic benefit from delayed compliance. In a federal case, *Chesapeake Bay Foundation v. Gwaltney of Smithfield, Ltd.*,⁷⁵ the economic benefit amounted to \$55,522. The court then added penalties for each day of violation to reflect the gravity of the violation. These adjustments ranged from \$50 a day for discharge of a relatively innocuous pollutant during a shakedown period after the installation of a treatment facility, to \$1,000 per day for discharging a more harmful pollutant during a period of inexcusable delay. The adjustments reflected both the relative harmfulness of the pollutant discharged (although no actual harm was shown) and the relative good faith of the violator. The adjustments amounted to \$1,229,800, for a total penalty of \$1,285,322. There were a total of 666 days of violation for discharges of fecal coliform, chlorine, and nitrogen up to 150 percent in excess of the limits in the permit. In cases arising under RCRA, courts have shown a greater inclination to assess penalties per day that appear to do rough justice in the particular circumstances of the case.⁷⁶

In a state case, *State ex rel. Brown v. Dayton Malleable, Inc.*⁷⁷ the economic benefit amounted to \$8,000. The court added \$34,150 for environmental harm and \$535,500 for the recalcitrance and indifference of the violator (sixteen months delay in constructing treatment facilities). The court then adjusted the penalty downward for some delay caused by strikes, adverse weather, and delay by equipment supplies, for a total penalty of \$493,500. The penalty was reduced further on appeal.

The ratio of penalties to economic benefit in these cases are approximately 62:1 and 23:1, respectively. In the experience of this writer these ratios are far greater than normal in settlements of enforcement cases with EPA. There are, of course,

⁷¹EPA Civil Penalty Policy, [Federal Laws] Env't Rep. (BNA) 41:2991 (June 1, 1984).

⁷²Indeed, as pointed out in *United States v. Municipal Auth. of Union Township*, 150 F.3d 259, 266, 28 Env't. L. Rep. (Env't. L. Inst.) 21415, 21418 (3d Cir. 1998), EPA intended its policy for use before trial in settlement negotiations. See also *Friends of the Earth, Inc. v. Laidlaw Env't'l Servs. (TOC), Inc.*, 956 F. Supp. 588, 601, 27 Env't. L. Rep. (Env't. L. Inst.) 20976, 20981 (D.S.C. 1997).

⁷³*United States v. Edwards*, 667 F. Supp. 1204, 18 Env't. L. Rep. (Env't. L. Inst.) 20126 (W.D. Tenn. 1987).

⁷⁴See § 9:4.

⁷⁵*Chesapeake Bay Foundation v. Gwaltney of Smithfield, Ltd.*, 611 F. Supp. 1542, 15 Env't. L. Rep. (Env't. L. Inst.) 20063 (E.D. Va. 1985).

⁷⁶See *United States v. Environmental Waste Control, Inc.*, 710 F. Supp. 1172, 20 Env't. L. Rep. (Env't. L. Inst.) 20035 (N.D. Ind. 1989) (\$2,000 a day), aff'd on other grounds sub nom. *EPA v. Environmental Waste Control, Inc.*, 917 F.2d 327, 21 Env't. L. Rep. (Env't. L. Inst.) 20007 (7th Cir. 1990); *United States v. T&S Brass & Bronze Works, Inc.*, 681 F. Supp. 314, 18 Env't. L. Rep. (Env't. L. Inst.) 20905 (D.S.C. 1988) (\$1,000 a day), aff'd in part, vacated in part, remanded in part on other grounds, 865 F.2d 1261 (4th Cir. 1988) (table decision); *United States v. Crown Roll Leaf, Inc.*, 20 Env't. L. Rep. (Env't. L. Inst.) 20297 (D.N.J. Apr. 28, 1989) (\$1,000 a day).

⁷⁷*State ex rel. Brown v. Dayton Malleable, Inc.*, 1 Ohio St. 3d 151, 438 N.E.2d 120, 12 Env't. L. Rep. (Env't. L. Inst.) 21146 (Ohio Ct. App. 1982), aff'g sub nom. *State v. Dayton Malleable, Inc.*, 10 Env't. L. Rep. (Env't. L. Inst.) 20677 (Ohio Ct. C.P. 1979).

cases in which penalties assessed are relatively light. In an earlier case, *United States v. Velsicol Chemical Corp.*,⁷⁸ for instance, a penalty of \$30,000 was assessed for 398 days of violating effluent limitations on endrin and heptachlor, two toxic pesticide compounds. The discharges were sufficient to cause residues in fish that exceeded FDA residue levels for human and animal consumption. A fair reading of the court's opinion suggests the court thought the violation egregious and the penalty significant and fitting. A comparison of the three cases indicates that leaving a penalty assessment up to a judge is a real crap shoot, but that courts perhaps are becoming increasingly stringent.

§ 9:25 Judicial remedies—Injunctive relief—The statutory provisions

The primary judicial enforcement remedy available under most of the environmental regulatory statutes is injunctive relief. They may authorize injunctive relief as (1) a tool available for EPA to enforce against violations of statutory requirements; (2) a means for EPA to abate imminent and substantial endangerments caused by pollution, regardless of whether a statute has been violated; or (3) a means for citizens to enforce against violations of the statutes and, under RCRA, to abate imminent and substantial endangerments. Some statutes authorize injunctions in only one of these instances, some in two, and some in all three. Where a statute authorizes them in more than one instance, the authorizations will be found in separate sections. The statutes vary considerably in the phrasing of each of the three types of injunctive relief.

Where statutory provisions authorize injunctive relief in government enforcement actions—e.g., CWA § 309(b), RCRA § 3008(a)(1), and CAA § 113(b)—they generally authorize EPA to commence an action for “appropriate” relief, including a temporary or permanent injunction.¹ These provisions do not, however, contain any reference to the jurisdiction of the courts to grant such relief. Other statutes, such as the CAA, Toxic Substances Control Act (TSCA), the Marine Protection, Research, and Sanctuaries Act (MPRSA), and Safe Drinking Water Act (SDWA), directly authorize courts to grant injunctive relief, some directing in part how that relief is to be fashioned.² The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) provides no authority for injunctive relief, but does provide various *in rem* procedures that are substantially the equivalent, such as seizure and stop sale orders.³

Statutes that are not regulatory in nature generally rely on penalty assessment rather than injunctive relief to secure compliance with their requirements, e.g., CERCLA § 109 and EPCRA § 325, although EPCRA § 11046 does authorize citizens to seek injunctive relief to enforce several of its requirements.⁴ It should be noted that even where a statute appears generally to authorize injunctive relief against

⁷⁸*United States v. Velsicol Chemical Corp.*, 8 *Envtl. L. Rep.* (Envtl. L. Inst.) 20745 (W.D. Tenn. 1978).

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¹33 U.S.C.A. § 1319(b), 42 U.S.C.A. § 6928(a)(1), 42 U.S.C.A. § 7413(b) (applying to stationary sources of air pollution, not to mobile sources or mobile source fuels).

²CAA §§ 204, 211(d)(2), 42 U.S.C.A. §§ 7523, 7545(d)(2) (pertaining to mobile sources and mobile source fuels, not to stationary sources, and authorizing courts to restrain violations or compel compliance); TSCA § 17(a)(1), 15 U.S.C.A. § 2616(a)(1) (authorizing courts to restrain violations or compel compliance); MPRSA § 105(d), 33 U.S.C.A. § 1415(d) (authorizing the Department of Justice to seek equitable relief to enjoin violations and courts to grant such relief as the equities may require); SDWA §§ 1414, 1423, 42 U.S.C.A. §§ 300g-3, 300h-2 (authorizing EPA to bring civil actions to require compliance and courts to enter such judgment as protection of public health may require).

³FIFRA § 13, 7 U.S.C.A. § 136k.

⁴42 U.S.C.A. § 9609, 42 U.S.C.A. §§ 11045, 11046. CERCLA § 106, 42 U.S.C.A. § 9606, authorizes injunctive relief to order the cleanup of contaminated sites that pose a danger to the environment or

violations, such relief may not be available for all violations. For instance, RCRA authorizes EPA to seek injunctive relief against disposal of solid (as opposed to hazardous) waste not meeting EPA's open dumping criteria, but only in states without an adequate open dumping program.⁵

Authorizations for EPA to seek injunctive relief to abate imminent and substantial endangerments vary similarly. The government may use these authorities to abate endangerments, whether or not they result from violations of the authorizing statutes. Accordingly, these authorities are not enforcement remedies, but are more in the nature of public nuisance remedies. Because they are not enforcement remedies, they are not specifically addressed in this section, but cases arising under them may be cited to the extent that they illuminate the courts' exercise of their injunctive authority more generally under the environmental statutes. Again, the mainline statutes merely authorize EPA to seek an order restraining those whose actions cause or threaten an endangerment, without specific mention of the jurisdiction or authority of courts to grant the relief.⁶ Other statutes, *e.g.*, CERCLA and TSCA, authorize EPA to seek a general type of relief and courts to grant it.⁷ Other statutes, *e.g.*, FIFRA and EPCRA, grant no such authority.

The citizen suit provisions in the various statutes are modeled closely on CAA § 304⁸ and are more consistent in their wording. They generally (1) authorize citizens to commence civil actions against a government agency for failing to perform a mandatory duty under the statute or against a member of the regulated public for violating particular requirements of the statute, and (2) grant jurisdiction to courts to compel the mandated agency action or enforce the violated requirements.⁹ TSCA authorizes citizens to commence the same types of actions and grants courts jurisdiction over them, without mentioning the relief courts may grant.¹⁰ FIFRA does not authorize citizen enforcement.

Oddly, the citizen suit provisions and the government enforcement provisions are not always coextensive in the violations for which private and government enforcers may seek injunctions. For instance, under RCRA, citizen enforcers may seek injunctive relief against all violations of EPA's open dumping criteria for solid waste, whereas EPA may do so only in states without adequate open dumping programs.¹¹ It should be noted that RCRA § 7002(a)(1)(B) also authorizes citizens to seek abatement of imminent and substantial endangerments caused by solid waste, whether or not the endangerment results from a violation of the statute.¹² This provision is comparable to the government's imminent and substantial endangerment provisions, discussed above. No statute other than RCRA contains such an authority for citizens. Although this chapter does not deal specifically with citizen enforcement, it is helpful to know that courts generally treat suits seeking injunctions against

public health. But this is in the nature of nuisance abatement, for it is not predicated on the defendants' violation of any statute. EPCRA provides no injunctive relief for EPA.

⁵RCRA §§ 3008(a), 4005(c)(2), 42 U.S.C.A. §§ 6928(a), 6945(c)(2).

⁶CWA § 504, 33 U.S.C.A. § 1364; RCRA § 7003, 42 U.S.C.A. § 6973; CAA § 303, 42 U.S.C.A. § 7603; SDWA § 1431, 42 U.S.C.A. § 3001.

⁷CERCLA § 106, 42 U.S.C.A. § 9606 (such relief as the public interest and the equities of the case may require); TSCA § 208(b), 15 U.S.C.A. § 2648(b) (such relief as may be necessary with respect to hazards caused by asbestos in schools).

⁸42 U.S.C.A. § 7604.

⁹CAA § 304(a), 42 U.S.C.A. § 7604(a); CWA § 505(a), 33 U.S.C.A. § 1365(a); MPRSA § 105(g), 33 U.S.C.A. § 1415(g); SDWA § 1449, 42 U.S.C.A. § 300j-8; RCRA § 7002(a), 42 U.S.C.A. § 6972(a); CERCLA § 310(c), 42 U.S.C.A. § 9659(c); EPCRA § 326, 42 U.S.C.A. § 11046.

¹⁰TSCA § 20, 15 U.S.C.A. § 2619.

¹¹*Compare* RCRA § 7002(a), 42 U.S.C.A. § 6972(a) *with* RCRA §§ 3008(a) and 4005(c)(1), 42 U.S.C.A. §§ 6928(a) and 6945(c)(2).

¹²42 U.S.C.A. § 6972(a)(1)(B).

violations of the statutes in the same manner, whether they are brought by the government or private citizens. Therefore, when citizen suit cases are helpful in understanding how courts exercise their injunctive powers, they are cited.

There is no apparent reason for the wording differences among the statutes. The distinction between statutes authorizing EPA to seek injunctive relief and those authorizing courts to grant it is one of form, not substance, however, because the authority of EPA to seek the relief implies the authority of courts to grant it. Otherwise, the grant of authority to EPA would be futile. The differences in the circumstances under which courts are granted jurisdiction to exercise injunctive power may not greatly influence the exercise of injunctive authority by the courts, given their determination to exercise it in accordance with their traditional equitable practices, as discussed below. Moreover, the few directions provided in the statutes are restatements of one or more of the equitable tests already used by courts in the exercise of their discretion. Nonetheless, without specific justification, these wording differences would be better avoided. Distinctions in the reach of injunctive relief between government and citizen enforcers are particularly difficult to understand and justify. For instance, why should EPA be able to seek injunctive relief against solid waste disposal not in compliance with its open dumping criteria only in states lacking adequate open dumping programs, while citizens may enforce against them in any state?¹³

§ 9:26 Judicial remedies—Injunctive relief—Common law background

As administered by courts in equity, the granting of injunctive relief is vested with great judicial discretion. Over the years courts developed a series of principles to guide them in exercising their discretion. Some of these principles were that injunctive relief is not available to restrain the violation of a crime; injunctive relief should be prohibitory rather than mandatory; injunctive relief should not be granted if it is difficult or impossible to enforce; and injunctive relief should be granted only if warranted on a balancing of all the equities. The last principle is the most important today, particularly in the enforcement of the environmental statutes. It has been elaborated into a four-pronged analysis to help courts determine when injunctions should issue and what forms they should take. Under this general analysis, an injunction should issue only if: (1) the defendant's activity will cause the plaintiff irreparable harm; (2) the plaintiff has no adequate remedy at law; (3) the harm to the plaintiff if the injunction is not granted outweighs the harm to the defendant if it is granted; and (4) the injunction is in the public interest or will not adversely affect the public interest.¹

Some of these principles have undergone considerable erosion and are greatly affected by the existence of statutory provisions for injunctive relief. In particular, the principles that equity will not enjoin the commission of a crime and the notion that equity should not be available when there is an adequate remedy at law have been undercut by the merger of law and equity and the recognition that criminal remedies may not be available to an injured plaintiff and may not redress the plaintiff's injury in any event. These principles have lost force, particularly in a nuisance or regulatory context.² Under statutes authorizing legal, criminal, and injunctive relief for violations, these principles may be obviated altogether. The reluctance of courts to issue mandatory rather than prohibitory injunctions has also greatly eroded,

¹³Compare RCRA §§ 3008(a) and 4005(c)(2), 42 U.S.C.A. §§ 6928(a) and 6945(c)(2) with RCRA § 7002(a), 42 U.S.C.A. § 6972(a).

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¹Wright, Miller, & Kane, *Federal Practice & Procedure* 2d § 2942 (1989). See generally *Developments in the Law—Injunctions*, 78 Harv. L. Rev. 994 (1985).

²Wright, Miller, & Kane, *Federal Practice & Procedure* 2d § 2942 (1989).

particularly in the context of injunctions enforcing statutory requirements. The principle that injunctive relief should issue only when warranted by a balancing of all the equities, however, remains vital. The extent to which the existence of a statutory authorization of injunctive relief may influence this balancing is discussed at length below.

At common law, injunctions generally are not available to restrain violation of a criminal statute.³ This follows both from the concepts that equity is not available when there is an adequate remedy at law and that criminal defendants are entitled to a trial by jury and other procedural safeguards.⁴ At the same time, the fact that a nuisance might also be a crime does not preclude an injunction restraining the nuisance. As discussed at some length by the Supreme Court in *In re Debs*,⁵ this exception has developed considerable force with regard to restraining the obstruction of public highways and waterways. Thus, it is not surprising that the Court in *United States v. Republic Steel Corp.*⁶ found injunctive relief available to require removal of pollutants obstructing navigation under §§ 10 and 13 of the Rivers and Harbors Act of 1899 (the “Refuse Act”), although only criminal remedies were provided for violations of § 13 and the injunctive relief authorized elsewhere in the statute did not fit the facts of the case.⁷ Following this lead, courts soon fashioned injunctive relief under these sections to enjoin the discharge of pollutants and a nascent EPA relied on such injunctive power to fashion a water pollution abatement program⁸ prior to enactment of the Federal Water Pollution Control Act Amendments of 1972, with their sophisticated NPDES permit and enforcement programs.⁹ The avoidance of the old common law prohibition against enjoining the commission of a crime was particularly important to establish for the enforcement of the environmental statutes, because most violations of those statutes are both civil and criminal offenses. Strict application of the common law principle could effectively foreclose injunctive enforcement.

The difference between prohibitory and mandatory injunctions is that prohibitory injunctions merely prohibit specific conduct, such as discharging an effluent in violation of permit conditions, while mandatory injunctions require positive conduct, such as building a treatment plant. Because courts traditionally regarded mandatory injunctions as more drastic remedies than prohibitory injunctions, they were reluctant to issue mandatory injunctions. Wording differences in the statutes between those authorizing injunctions to “restrain” violations and those authorizing

³*Bass Anglers Sportsman’s Soc’y of Am. v. Scholze Tannery, Inc.*, 329 F. Supp. 339, 345, 1 *Envtl. L. Rep. (Envtl. L. Inst.)* 20359, 20361 (E.D. Tenn. 1971).

⁴Insofar as private defendants seek to enjoin the violation of a statute, courts have also been reluctant to interfere with the discretion of the duly constituted prosecutor to determine whether and how to prosecute particular crimes. *Bass Anglers Sportsman’s Soc’y of Am. v. Scholze Tannery, Inc.*, 329 F. Supp. 339, 345–56, 1 *Envtl. L. Rep. (Envtl. L. Inst.)* 20359, 20360 (E.D. Tenn. 1971).

⁵*In re Debs*, 158 U.S. 564 (1934).

⁶*United States v. Republic Steel Corp.*, 362 U.S. 482 (1960).

⁷33 U.S.C.A. §§ 406, 407, 411.

⁸*See, e.g., United States v. Armco Steel Corp.*, 333 F. Supp. 1073, 1 *Envtl. L. Rep. (Envtl. L. Inst.)* 20517, injunction modified, 2 *Envtl. L. Rep. (Envtl. L. Inst.)* 20438 (S.D. Tex. 1971).

⁹The Refuse Act Permit Program was established by Exec. Order No. 11574 (1970), 3 C.F.R. 556 (1971), under which the Corps of Engineers was to issue Refuse Act permits containing pollution abatement requirements determined by EPA. The program was effectively halted by *Kalur v. Resor*, 335 F. Supp. 1, 1 *Envtl. L. Rep. (Envtl. L. Inst.)* 20637 (D.D.C. 1971), which enjoined the issuance of permits without compliance with NEPA. As a result, EPA increased civil injunctive actions under the Refuse Act, referring over 100 such cases to the Justice Department from 1970 through 1972, and initiated an Abatement Commitment Letter Program under which it agreed to forebear civil prosecution under the Refuse Act against 180 dischargers that voluntarily undertook the same measures EPA would have required in a Refuse Act permit. *See EPA, The First Two Years: A Review of EPA’s Enforcement Program* 8, 19-20 (1972).

injunctions to “compel” compliance or “enforce” the statute could support an argument that the former authorize prohibitory injunctions and only the latter authorize mandatory injunctions. A number of considerations, however, cut against this argument. In cases under environmental statutes, prohibitory injunctions in fact may be more drastic remedies than mandatory injunctions because the effect of a prohibitory injunction commonly will require the immediate cessation of commercial, manufacturing, or other productive operation, rather than allowing those operations to continue while solving pollution control problems on a court-ordered schedule.¹⁰ Moreover, the distinction between mandatory and prohibitory injunctions can be overcome by an order prohibiting the complained of conduct unless mandated positive action is taken; for example, “do not discharge effluent in violation of permit conditions except in compliance with the following schedule to construct treatment facilities to meet those conditions.”¹¹

§ 9:27 Judicial remedies—Injunctive relief—The effect of statutory authorization of injunctive relief

Once a violation of an environmental statute has been proven, thus establishing that an injunction may be issued, there remain questions of whether an injunction should issue and, if so, what form it should take. At common law both questions are left to the discretion of the court, guided by the principles and analysis identified above. The extent to which the existence of a statutory provision for injunctions itself directs or affects the exercise of judicial discretion has been elucidated by three Supreme Court decisions arising under environmental statutes: *Tennessee Valley Authority (TVA) v. Hill*,¹ *Weinberger v. Romero-Barcelo*,² and *Amoco Production Co. v. Village of Gambell*.³

In *TVA v. Hill* the Court considered whether the Endangered Species Act (ESA)⁴ directed judicial discretion to the extent that a court had no choice but to enjoin the completion of a federally funded dam, an action that all parties agreed would destroy the habitat of an endangered pupfish. Finding that the ESA specifically directed federal agencies not to take actions jeopardizing an endangered species or its habitat, the Court held that Congress had already balanced any competing equities and that the lower court had no choice but to enjoin the completion of the dam. The focus of judicial inquiry from the trial court to the Supreme Court was on whether Congress intended the ESA to prohibit such federal actions, rather than on the extent to which the trial court retained any equitable discretion in considering

¹⁰An interesting example of this is found in *United States v. Armco Steel Corp.*, 333 F. Supp. 1073, 1 *Envtl. L. Rep. (Envtl. L. Inst.)* 20517 (S.D. Tex. 1971). This was a Refuse Act suit to halt discharges containing toxic wastes into the Houston ship channel. The pollution problem could have been solved either by properly treating the wastes prior to discharge or by disposing of the wastes through deep-well injection. Texas, which was impleaded, ordered Armco to use deep-well injection. EPA refused to allow injection unless 18 local abandoned oil and gas wells were first plugged to prevent reentry of the wastes to the surface. The court was unwilling to act as a mediator between two government agencies on the appropriate remedial measures and merely ordered immediate cessation of the discharge, the worst alternative from Armco’s perspective.

¹¹A good example of such an injunction can be found in *United States v. Whizco, Inc.*, 841 F.2d 147, 18 *Envtl. L. Rep. (Envtl. L. Inst.)* 20571 (6th Cir. 1988). The district court in that case had issued an unappealed order to a coal miner not to conduct coal mining activities anywhere in the United States until he restored strip mined land as required by SMCRA.

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¹*Tennessee Valley Authority (TVA) v. Hill*, 437 U.S. 153, 8 *Envtl. L. Rep. (Envtl. L. Inst.)* 20513 (1978).

²*Weinberger v. Romero-Barcelo*, 456 U.S. 305, 12 *Envtl. L. Rep. (Envtl. L. Inst.)* 20538 (1982).

³*Amoco Production Co. v. Village of Gambell*, 480 U.S. 531, 17 *Envtl. L. Rep. (Envtl. L. Inst.)* 20574 (1987).

⁴16 U.S.C.A. §§ 1531 to 1544.

whether to issue an injunction and, if so, how to fashion it. Of the three dissenting justices, only then-Associate Justice Rehnquist explored those questions.

In *Romero-Barcelo* the Court considered whether the CWA directed judicial discretion to the extent that a court had no choice but to enjoin the dropping of bombs into the ocean during practice runs by Navy fighter planes in the absence of a CWA permit, a practice that the trial court found caused no harm to the receiving waters. Applying the traditional analysis for balancing the equities, the trial court denied a permanent injunction against further bombing runs in the absence of a permit, but instead ordered the Navy to apply for a permit. The First Circuit reversed, holding that the trial court erred in applying the traditional balancing test unaffected by the congressional ordering of priorities in the CWA. The appeals court reasoned that by prohibiting the discharge of pollutants into navigable waters through point sources without a permit, and by extending the prohibition to federal parties, Congress had struck the balance between the need for compliance with the statute and other federal activities.⁵

The Supreme Court reversed, finding that the CWA in no manner circumscribed courts' exercise of their equitable discretion. It distinguished *Hill* as addressing a situation in which the only way to vindicate the objective of the statute at issue was a prohibitory injunction. The Court reasoned that the objective of the CWA is to protect water quality, not the integrity of the Act's permit program. Because the bombing practice did not result in damage to water quality, the resulting violations did not jeopardize the CWA's objectives. Accordingly, the violations could be addressed in a number of ways short of a flat prohibition on further practice bombing. The injunction issued by the trial court was among the appropriate ways of vindicating those objectives.

The Court's opinion is a curious homily on injunctive relief. As Justice Stevens rightly pointed out in dissent, the holding is based on a mischaracterization of the First Circuit's opinion. The majority characterized it as imposing an absolute duty on the district court to mechanically issue an order immediately enjoining any violation of the CWA, regardless of the violation at issue or the facts and equities of the case. In truth, the First Circuit more narrowly held only that the traditional balancing of equities undertaken by the district court was in error because it entirely disregarded the effect of the public interest in water pollution control expressed by Congress in enacting the CWA. Moreover, much of the analysis is questionable. For instance, in balancing the equities it discussed at length the provision in the CWA of many other remedies for the complained of violation, e.g., administrative orders, civil penalties, contract debarment, and criminal sanctions. It failed to note, however, that these remedies were not available to the citizen plaintiff in the case.⁶ In balancing equities between the plaintiff and the defendant, what is the relevance of remedies not available to the plaintiff? Even the Court's distinction among the necessity of injunctive relief for violations that jeopardize the purpose of the statute, the preservation of water quality, and the lack of necessity of such relief for violations of the means chosen by Congress to achieve such purpose, does not ring true. It disregards the fact that Congress rewrote water pollution legislation in 1972 to prohibit the discharge of pollutants without a permit, even in the absence of damage to water quality, the previous regulatory system based on water quality having

⁵*Romero-Barcelo v. Brown*, 643 F.2d 835, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20391 (1st Cir. 1981).

⁶The case was a citizen suit under CWA § 505, brought by the governor of Puerto Rico. Of course, citizens cannot issue administrative orders or seek criminal sanctions. Compare CWA § 309 (providing for governmental issuance of compliance orders and criminal penalties) with CWA § 505 (providing no such authority to citizens). Even though § 505 authorized courts to assess civil penalties in citizen suits, the Court subsequently held that the waiver of sovereign immunity was not explicit enough to allow the assessment of penalties against the United States. *Department of Energy v. Ohio*, 112 S. Ct. 1627, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20804 (1992).

failed. That fact had been recognized earlier by the Court.⁷ Indeed, the Court subsequently used the importance of maintaining the integrity of the CWA's permit system as a reason to interpret the statute to undercut the application of state common law to improve water quality.⁸

Finally, in *Gambell* the Court considered whether oil exploration activities, which were authorized by an exploration lease entered into under the Outer Continental Shelf Lands Act,⁹ were required to be enjoined because the lease had been entered into without undergoing the full process provided in the Alaskan National Interest Lands Conservation Act (ANILCA)¹⁰ for consideration of the subsistence needs of native Alaskans. The trial court found that those needs had indeed been considered and that the government retained sufficient control over any subsequent leases for oil production to assure that native subsistence interests were protected. Finding that the plaintiffs suffered no irreparable harm from the exploration lease and that balancing the equities favored the defendants, the trial court denied a preliminary injunction. The court of appeals reversed, holding that (1) the failure of an agency to satisfy a statutory requirement to evaluate fully the environmental impact of its proposed actions raises a presumption of irreparable harm, and (2) the public interest favors interests protected by federal environmental statutes over other interests.

The Supreme Court reversed, holding that the trial court's application of traditional injunction doctrine was appropriate and that the presumptions made by the court of appeals had no validity. The Court found the case to be on all fours with *Romero-Barcelo* and distinguished *Hill* on the same grounds that it had in *Romero-Barcelo*. But the Court acknowledged something close to a presumption of irreparable harm from violations of environmental statutes: "Environmental injury, by its nature, can seldom be adequately remedied by money damages and is often permanent or at least of long duration, i.e., irreparable. If such injury is sufficiently likely, therefore, the balance of harms will usually favor the issuance of an injunction to protect the environment."¹¹

The holdings of these cases may be summarized in a deceptively uncomplicated manner. When Congress enacts a statute that simply authorizes courts to issue injunctions enforcing against violations, Congress has not thereby affected or directed how courts are to exercise their traditional discretion in deciding whether and how to issue such injunctions. On the other hand, Congress may explicitly affect or direct how courts exercise their discretion. Indeed, it may remove the discretion altogether and direct that injunctions be issued under particular circumstances, but it must do so explicitly and clearly. At the same time, if the violation thwarts the very purpose of the statute, a court must have very good reasons for denying an injunction. Moreover, although violation of an environmental statute cannot be presumed to cause irreparable harm, something close to a presumption exists when the violation causes environmental harm rather than procedural irregularity. The last two sentences of this summary, of course, belie its ease of application.

Lower courts exercised their equitable discretion in decisions on injunctions using the traditional tests even before the conclusion of the Court's troika of environmental injunction cases. Most courts attempted to fashion equitable remedies for violations of environmental statutes to fit the circumstances of the case and cautioned EPA

⁷See *EPA v. California*, 426 U.S. 200, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20563 (1976).

⁸See *International Paper Co. v. Oullette*, 479 U.S. 481, 17 *Envtl. L. Rep.* (Envtl. L. Inst.) 20327 (1987).

⁹43 U.S.C.A. §§ 1331 et seq.

¹⁰16 U.S.C.A. § 3120.

¹¹*Amoco Production Co. v. Village of Gambell*, 480 U.S. 531, 545, 17 *Envtl. L. Rep.* (Envtl. L. Inst.) 20574, 20577 (1987).

not to seek or expect draconian judicial orders.¹² They specifically refused to shut down violating operations where cessation of business would not appreciably help alleviate the environmental damage at issue;¹³ where additional time would allow the violator to correct the violation;¹⁴ where the prayed for relief would cause more harm than good,¹⁵ or would be impossible to perform.¹⁶ Even in cases where the requested remedy is less drastic than shutdown, courts have refused to order relief that would bankrupt the defendant¹⁷ or that was unnecessary because the defen-

¹²In holding that the 1972 Federal Water Pollution Control Act Amendments really did require POTWs to meet secondary treatment requirements by 1977, the Fourth Circuit Court nevertheless admonished EPA:

Our holding . . . does not mean . . . severe sanctions will inevitably be imposed on municipalities who, despite good faith efforts are economically or physically unable to comply with the 1977 deadline. We fully expect that, in the exercise of its prosecutorial discretion, EPA will decline to bring enforcement proceedings against such municipalities. Furthermore, in cases where enforcement proceedings are brought, whether by EPA or by private citizens, the courts retain equitable discretion to determine whether and to what extent fines and injunctive sanctions should be imposed for violations brought about by good faith inability to comply with the deadline.

State Water Control Bd. v. Train, 559 F.2d 921, 927, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20571, 20573 (4th Cir. 1977). *See also* *Friends of the Earth v. Potomac Elec. Power Co.*, 419 F. Supp. 528, 535, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20090, 20093 (D.D.C. 1977).

¹³In *O'Leary v. Moyer's Landfill, Inc.*, 516 F. Supp. 517, 11 *Envtl. L. Rep.* (Envtl. L. Inst.) 21005 (E.D. Pa. 1981), the court refused to enjoin further operation of a landfill found violating both CWA and RCRA, since leachate would escape from the landfill even if it was no longer operating. Instead, the court ordered the landfill to develop and execute plans to stop leachate from escaping its boundaries. According to defendant's counsel, the continued operation of the landfill was the only source of revenue to correct the environmental harm it was found to have caused. This is a good example of circumstances under which a mandatory injunction is a less drastic remedy than a prohibitory injunction. *But see* *City of Gallatin v. Cherokee County*, 563 F. Supp. 940, 13 *Envtl. L. Rep.* (Envtl. L. Inst.) 20395 (E.D. Tex. 1983).

¹⁴In *Union Elec. Co. v. EPA*, 427 U.S. 246, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20570 (1976), the Court indicated, among other things, that federal enforcement under CAA section 113 would allow for a "reasonable" time to comply. In *United States v. Vertac Chem. Corp.*, 489 F. Supp. 870, 877, 10 *Envtl. L. Rep.* (Envtl. L. Inst.) 20709, 20717 (E.D. Ark. 1980), the court cited the importance of continued operation of a plant to its employees and customers in giving it reasonable time to correct the problems at issue. And in perhaps the most celebrated environmental litigation, *Reserve Mining Co. v. EPA*, 514 F.2d 492, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) 20596 (8th Cir. 1975), *aff'd en banc*, 543 F.2d 1210, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20051 (8th Cir. 1976), the court of appeals reversed a district court shutdown order and gave Reserve Mining a schedule to construct on-land disposal facilities before ordering it to cease discharging its taconite tailings to Lake Superior.

These last two cases are especially significant in that the pollutants at issue were dioxin, found by the *Vertac* court to be the most acutely toxic substance synthesized by man, and asbestos, found by the *Reserve Mining* court to pose a danger of cancer in the Duluth, Minnesota water supply. If time to comply was given in these cases, it surely will be in others. *See also* *Pymatuning Watershed Citizens for a Hygenic Env't v. Eaton*, 506 F. Supp. 902, 11 *Envtl. L. Rep.* (Envtl. L. Inst.) 20498 (E.D. Pa. 1980), *aff'd*, 644 F.2d 995, 11 *Envtl. L. Rep.* (Envtl. L. Inst.) 20790 (3d Cir. 1981); *United States v. Public Serv. Co. of Ind.*, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20998 (S.D. Ind. 1977).

¹⁵*Maryland v. Train*, 415 F. Supp. 116, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20496 (D. Md. 1976), *rev'd in part*, 566 F.2d 575, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20443 (4th Cir. 1977); *see also* *United States v. Town of N. Hempstead*, 610 F.2d 1025, 10 *Envtl. L. Rep.* (Envtl. L. Inst.) 20060 (2d Cir. 1979) (injunction against further use of incineration would increase odor problems from landfill).

¹⁶*State Water Control Bd. v. Train*, 559 F.2d 921, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20571 (4th Cir. 1977). In *Friends of the Earth v. Potomac Elec. Power Co.*, 419 F. Supp. 528, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20090 (D.D.C. 1977), the court refused to consider the impossibility of compliance with a regulatory requirement in conjunction with a motion to dismiss, but indicated it could be considered in fashioning a remedy.

¹⁷In *United States v. American Capital Land Corp.*, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) 20705 (S.D. Miss. 1975), the court refused to order complete restoration of damage caused by unpermitted dredge and fill activity where it would bankrupt the defendant, no special environmental harm had been done, and the defendant was willing to undertake a lesser but still satisfactory remedial operation.

dant did not threaten to violate the statute in the future.¹⁸ Of course, they have not been reluctant to shut down operations where there is no other means of compliance.¹⁹ In short, most courts have resorted to a balancing of equities in determining whether to issue an injunction and its contents. The factors they have considered are varied, and include: the technical feasibility of compliance;²⁰ the financial feasibility of compliance, its effect on the future of the operation, and the importance of the operation;²¹ the existence or nonexistence of a threat to public health; the ability of the court to manage the remedy sought;²² and whether the violation was caused in part by reliance on government action or inaction.²³

But the fact that courts do not lightly order the cessation of violating operations does not mean they apply to the traditional balancing of equities test, completely unaffected by the enactment of the environmental statutes. As the Supreme Court noted in *Virginia Railway v. System Federation No. 40*: “Courts of equity may, and frequently do, go much further both to give and withhold relief in furtherance of the public interest than they are accustomed to go when only private interests are involved.”²⁴ By enacting the environmental statutes, Congress established the public interest in a clean environment. At the very least, public interest must be taken into account in balancing the equities. Indeed, lower courts have cited the Supreme Court’s troika in support of mandatory injunctions to comply with environmental statutes. The Sixth Circuit summarized its reading of the law in a recent decision upholding in part and reversing in part a trial court’s injunction to comply with various RCRA requirements:

¹⁸*United States v. Louisiana-Pacific Corp.*, 682 F. Supp. 1141, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20912 (D. Colo. 1988) (courts will not issue “obey the law” injunctions); *United States v. SCM Corp.*, 667 F. Supp. 1110, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20073 (D. Md. 1987). *But see* *United States v. Tzavah Urban Renewal Corp.*, 696 F. Supp. 1013, 19 *Envtl. L. Rep.* (Envtl. L. Inst.) 20351 (D.N.J. 1988). But when defendant had ceased the activities causing the violation, an injunction was appropriate when the defendant did not assure the court the violation would not recur. *Stone v. Naperville Park Dist.*, 38 F. Supp. 2d 651 (N.D. Ill. 1999).

¹⁹In *Bicknell v. City of Boston*, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) 20712 (Mass. Super. Ct. 1975), a state court ordered the shutdown of an incinerator not complying with state Clean Air Act requirements when it could not feasibly be made to comply, its emissions constituted a nuisance, and alternative means of trash disposal were available.

²⁰*Union Elec. Co. v. EPA*, 427 U.S. 246, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20570 (1976); *Friends of the Earth v. Carey*, 535 F.2d 165, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20488 (2d Cir. 1976).

²¹*Union Elec. Co. v. EPA*, 427 U.S. 246, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20570 (1976). *State Water Control Bd.* strongly suggested that courts would not order cities to build sewage treatment plants in the absence of federal grants to do so. *State Water Control Bd. v. Train*, 559 F.2d 921, 925–26, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20571, 20572–73 (4th Cir. 1977). *Contra* *United States v. Wayne County Dep’t of Health*, 571 F. Supp. 90 (E.D. Mich. 1979), vacated sub nom. *United States v. City of Detroit*, 710 F.2d 443, 14 *Envtl. L. Rep.* (Envtl. L. Inst.) 20164 (6th Cir. 1983).

²²*Pymatuning Watershed Citizens for a Hygenic Env’t v. Eaton*, 506 F. Supp. 902, 11 *Envtl. L. Rep.* (Envtl. L. Inst.) 20498 (W.D. Pa. 1980), *aff’d*, 644 F.2d 996, 11 *Envtl. L. Rep.* (Envtl. L. Inst.) 20790 (3d Cir. 1981); *United States v. Vertac Chem. Corp.*, 489 F. Supp. 870, 10 *Envtl. L. Rep.* (Envtl. L. Inst.) 20709 (E.D. Ark. 1980).

²³*United States v. Pennsylvania Indus. Chem. Corp.*, 411 U.S. 655, 670–75, 3 *Envtl. L. Rep.* (Envtl. L. Inst.) 20401, 20405–07 (1973) (exclusion of evidence that Corps of Engineers regulations misled defendants as to requirements under statute reversed); *United States v. Kennebec Log Driving Co.*, 491 F.2d 562, 4 *Envtl. L. Rep.* (Envtl. L. Inst.) 20047, 20051 (1st Cir. 1973), cert. denied, 417 U.S. 910 (1973) (reliance on seventy-five years of government inaction a factor to be considered in fashioning relief); *United States v. Martin*, 517 F. Supp. 211, 11 *Envtl. L. Rep.* (Envtl. L. Inst.) 20997 (D.S.C. 1981) (reliance on participation by government agents in project precludes subsequent claim it is illegal); *California Tahoe Regional Planning Agency v. Sahara Tahoe Corp.*, 504 F. Supp. 753, 768–69 (D. Nev. 1980) (failure of federal and state government to act on application for permit and variance precludes immediate relief). It should be noted, however, that the general rule is that the United States is not subject to the defense of estoppel. *See* *Annot., Modern Status of Applicability of Doctrine of Estoppel Against Federal Government Agencies*, 27 *A.L.R. Fed.* 702.

²⁴*Virginia Railway v. System Federation No. 40*, 300 U.S. 515, 552 (1937).

[T]he traditional requirements for injunctive relief are less rigid when environmental legislation is at issue. Following the Supreme Court's decision in *Gambell*, if the purpose of the legislation is thwarted by failure to comply, and the legislation specifically authorizes injunctive relief, no finding of irreparable injury or balancing of the equities need be made. Even if these traditional prerequisites are considered by the court, equitable relief will often issue given that an environmental injury is usually irreparable, plaintiffs rarely have an adequate remedy at law, and special weight must be given to the public interest in balancing the equities.²⁵

Using this analysis, the court concluded that an injunction must issue to require closure of an unpermitted hazardous waste disposal site, even before a hearing on the equities, but that an injunction need not issue before such a hearing to require compliance with RCRA's financial assurance requirements. Its rationale for this distinction was that the purpose of RCRA is to minimize the threat of hazardous waste to public health and the environment, a purpose that would be thwarted by allowing an unpermitted waste disposal site to remain operating, but might not be thwarted by the absence of financial assurances once the site was closed. In a similar factual situation, the Seventh Circuit upheld an injunction ordering closure of an unpermitted hazardous waste disposal site issued at the behest of citizen plaintiffs. The court did not mention the Supreme Court's troika, but approved the trial court's application of the traditional tests and noted that an injunction could have been issued even without the traditional balancing of equities where the defendant's conduct had been willful or where the plaintiff is a sovereign or "private attorney general" and the complained of activity may endanger public health.²⁶ Other decisions have reached the same result.²⁷ Indeed, even when the Third Circuit reversed the issuance of an injunction because the trial court did not consider the traditional balancing test but rather presumed irreparable damage, the appeals court noted that under *Gambell* irreparable damage was likely to have resulted from the violations.²⁸

Despite lower courts' reliance on the Supreme Court's troika in considering injunctive relief in environmental cases and the sweeping directives of the Court in *Romero-Barcelo*, there is a very important distinction between the troika and normal pollution control cases. *Hill*, *Romero-Barcelo*, and *Gambell* all involve reconciling conflicting federal interests, respectively: (1) the integrity of endangered species protected by the ESA and power generation, flood control, and recreational interests served by federally financed dams; (2) the integrity of the nation's waters protected by the CWA and national defense interests in practice bombing; and (3) the integrity of the environment for native subsistence protected by ANILCA and the management of energy development on federal lands. The normal pollution control case, however, involves reconciling federal and private interests: the integrity of the

²⁵United States v. Production Plated Plastics, Inc., 955 F.2d 45, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20899 (6th Cir. 1992) (adopting opinion at 762 F. Supp. 722, 729, 21 Env'tl. L. Rep. (Env'tl. L. Inst.) 21214, 21217 (W.D. Mich. 1990)). See also United States v. Power Eng'g Co., 10 F. Supp. 2d 1145, 28 Env'tl. L. Rep. (Env'tl. L. Inst.) 21325 (D. Colo. 1998), aff'd 191 F.3d 1224 (10th Cir. 1999).

²⁶United States v. Environmental Waste Control, Inc., 917 F.2d 327, 21 Env'tl. L. Rep. (Env'tl. L. Inst.) 20007 (7th Cir. 1990).

²⁷Citing *Romero-Barcelo*, the court in United States v. Power Eng'g Co., 10 F. Supp. 2d 1145, 1148, 28 Env'tl. L. Rep. (Env'tl. L. Inst.) 21325, 21326 (D. Colo. 1998), aff'd 191 F.3d 1224 (10th Cir. 1999), observed, "[n]ormally, the most important equitable factor is irreparable harm. When a case is brought pursuant to an environmental or public health statute, however, the primary focus shifts from irreparable harm to concern for the general public interest." Although the court noted this, a plaintiff still had to demonstrate irreparable harm absent express congressional intent to the contrary. See, e.g., United States v. Bethlehem Steel Corp., 38 F.3d 862, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 21499 (7th Cir. 1994); Environmental Defense Fund, Inc. v. Lamphier, 714 F.2d 331, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 21094 (4th Cir. 1983).

²⁸Natural Resources Defense Council v. Texaco Ref. & Mktg., Inc., 906 F.2d 934, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20949 (3d Cir. 1990).

environment protected by the federal statutes and the freedom of the regulated public from the costs of pollution control. In the normal pollution control case the rationale of the First Circuit in *Romero-Barcelo* makes perfect sense; Congress has ordered priorities between environmental protection and the everyday conduct of affairs. But Congress may not have ordered priorities between environmental protection and the conduct of all other federal affairs.²⁹ Indeed, one interpretation of *Romero-Barcelo* is that its view of the strict application of the CWA's procedural requirements to Navy practice bombing is a reflection of the Court's traditionally narrow view of waivers of sovereign immunity in environmental statutes to permit federal activity to proceed unencumbered by procedural niceties in the absence of the most explicit congressional directives to the contrary.³⁰

In any event, the Court's rejection of the mechanical issuance of an injunction against any violation of a statute just because the statute authorizes injunctions is clearly sound. Such injunctions could lead to results that are inequitable or even contrary to the purposes underlying the statute.³¹ On the other hand, denying injunctions against violations of statutory requirements on a traditional balancing of the equities alone threatens judicial rewriting or abrogation of statutes. The Court's attempt to split the difference by hinting that injunctions should issue to prevent violations jeopardizing the substantive purposes of a statute, but not necessarily to prevent violations of mere procedural requirements, is at best difficult to apply and at worst disingenuous. If a court denies an injunction against a statutory violation, hasn't it rewritten the statute to exempt its application under the circumstances of the case? Is it permissible for a court to rewrite a statute's procedures but not its substance? If so, why? After all, procedure is calculated to achieve substance and the two can become inextricably mixed. In *Romero-Barcelo* the Court held that an injunction requiring the Navy to apply for a permit while it continued to bomb vindicated the statutory purpose of the CWA. What if the Navy applied for a permit, the permit was denied, the Navy continued to bomb, and an injunction was sought? In the absence of damage to water quality, may an injunction still be denied? If so, haven't the Courts rewritten the basic prohibition of the CWA to exclude coverage of discharges not causing damage to water quality? Since Congress amended earlier pollution control legislation to outlaw the unpermitted discharge of pollutants, regardless of whether they damage water quality, isn't this a significant rewriting of the statute?

§ 9:28 Judicial remedies—Injunctive relief—Forms of injunctive relief

Injunctions can take a number of forms to reflect the equities of the case. Most injunctions under the environmental statutes require schedules of compliance to

²⁹The clearest mandate for all federal activities to include environmental considerations in decision making is the National Environmental Policy Act (NEPA), 42 U.S.C.A. §§ 4321 to 4370d. NEPA does not attempt to order priorities between environmental considerations and other federal interests. On the other hand, it can be argued that Congress meant for the requirements of the CWA to come before other federal interests because of the broad waiver of sovereign immunity in the statute. See CWA § 313, 33 U.S.C.A. § 1323.

³⁰See *Department of Energy v. Ohio*, 112 S. Ct. 1627, 22 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20804 (1992); *EPA v. California*, 426 U.S. 200, 6 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20563 (1976); *Hancock v. Train*, 426 U.S. 167, 6 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20355 (1976).

³¹Should a court enjoin the operation of a sewage treatment plant that is violating its permit limitations by ten percent, when the only two other courses of action are to allow raw sewage to be discharged directly without treatment or to allow raw sewage to back up through the sewer system into the community? These alternatives are clearly worse than the status quo, perhaps even from the perspective of water quality.

meet the requirements being violated.¹ Some allow additional time to secure government action on requests for permits or variances,² although most do not. An occasional shutdown order will be issued where compliance cannot be achieved³ or other statutory objectives are paramount.⁴

Injunctions ordering restoration of the environment to its pre-violation condition are commonplace under CWA section 404, which prohibits dredge or fill activity in navigable waters, including wetlands, without or in violation of a permit.⁵ These decisions normally consider the reasonableness and feasibility of the restoration requested and the financial ability of the defendant to perform it, weighed against the incremental environmental benefit of restoration the defendant could better afford.⁶ The defendant's obdurate flouting of the law may, however, be an additional factor in the balance, justifying more extensive restoration than might otherwise have been required.⁷ But courts may adjust the terms of restoration to take into account the age and other personal condition of defendants, however obdurate they may be.⁸ Where restoration of a wetland destroyed as a result of a violation of CWA section 404 was not feasible, one court ordered the defendant to pay a fine or to

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¹United States v. Homestake Mining Co., 595 F.2d 421, 423, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20515, 20245-46 (8th Cir. 1979); United States v. City of Providence, 492 F. Supp. 602, 605, 10 Env'tl. L. Rep. (Env'tl. L. Inst.) 20857, 20858 (D.R.I. 1980); United States v. City of Detroit, 476 F. Supp. 512, 516-17 (E.D. Mich. 1979); United States v. Ketchikan Pulp Co., 74 F.R.D. 104, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20368 (D. Alaska 1977); Commonwealth v. United States Steel Corp., Env't Rep. Cas. (BNA) Env't Rep. Cas. (BNA) (PA.C.P. 1973).

²California Tahoe Regional Planning Agency v. Sahara Tahoe Corp., 504 F. Supp. 753 (D. Nev. 1980).

³Bicknell v. City of Boston, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20712 (Mass. Super. Ct. 1975).

⁴United States v. City of Painesville, 644 F.2d 1186, 11 Env'tl. L. Rep. (Env'tl. L. Inst.) 20630 (6th Cir. 1981), aff'g, 431 F. Supp. 496, 7 Env'tl. L. Rep. (Env'tl. L. Inst.) 20221 (N.D. Ohio 1977).

⁵United States v. Pozsgai, 999 F.2d 719, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 21012 (3d Cir. 1993); United States v. Hobbs, 947 F.2d 941, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20331 (4th Cir. 1991); United States v. Context-Marks Corp., 729 F.2d 1294, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20459 (11th Cir. 1984); United States v. Whichard, 718 F.2d 1094, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20093 (4th Cir. 1983); United States v. Larkins, 852 F.2d 189, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21416 (6th Cir. 1988); United States v. Van Leuzen, 816 F. Supp. 1171, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 21107 (S.D. Tex. 1993); United States v. Edwards, 667 F. Supp. 1204, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20126 (W.D. Tenn. 1987); United States v. Cumberland Farms of Conn., Inc., 647 F. Supp. 1166, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20301 (D. Mass. 1986); United States v. Lambert, 589 F. Supp. 366, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20588 (M.D. Fla. 1984); United States v. City of Fort Pierre, 580 F. Supp. 1036, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20200 (D.S.D. 1983), rev'd, 747 F.2d 464, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20177 (8th Cir. 1984); United States v. Robinson, 570 F. Supp. 1157, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20056 (M.D. Fla. 1983). See also United States v. Whizco, Inc., 841 F.2d 147, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20571 (6th Cir. 1988), ordering restoration of strip mined land under SMCRA.

⁶United States v. Joseph G. Moretti, Inc., 526 F.2d 1306 (5th Cir. 1976); Weiszmann v. District Corps of Eng'rs, 526 F.2d 1302, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20219 (5th Cir. 1976); United States v. Sexton Cove Estates, Inc., 526 F.2d 1293, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20216 (9th Cir. 1976), cert. denied, 423 U.S. 865 (1975); United States v. Cumberland Farms of Conn., Inc., 647 F. Supp. 1166, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20301 (D. Mass. 1986); United States v. Fleming Plantations, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20103 (E.D. La. 1978); United States v. Sunset Cove, Inc., 514 F.2d 1089, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20407 (5th Cir. 1976); United States v. American Capital Land Corp., 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20705 (S.D. Miss. 1975).

⁷See, e.g., United States v. Pozsgai, 999 F.2d 719, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 21012 (3d Cir. 1993); United States v. Van Leuzen, 816 F. Supp. 1171, 23 Env'tl. L. Rep. (Env'tl. L. Inst.) 21107 (S.D. Tex. 1993).

⁸In *Van Leuzen*, the defendant filled a coastal wetland in blatant disregard of repeated cease and desist orders from the Corps of Engineers and EPA, saying that no one would stop an old man from doing what he wanted with his property. The court ordered immediate restoration of all the filled property except for the property underlying the house, in which the defendant was allowed to live out his days on the condition that he establish a trust fund to remove the house and restore the remaining

develop a comparable wetland at another location.⁹ Where a coal miner had not restored strip mined land as required by SMCRA, the district court enjoined him from further coal mining anywhere in the country until restoration was complete.¹⁰ The use of restorative remedies under section 404 is explained by its origins in the Refuse Act and the traditional willingness of courts to order removal of obstructions to waterways under the Act and previous authorities.¹¹ The enforcement sections in CWA, RCRA, and SMCRA all authorize “appropriate” relief, which could include restoration from damage caused by violation of the Acts. The government apparently seldom pursues such remedies, except for violations of CWA section 404, for there are few reported cases for violations of other sections of the Act where restoration is at issue.¹²

Injunctive orders under the environmental statutes are enforced by contempt proceedings in the same manner as other equitable decrees.¹³ It is noteworthy, however, that a number of courts have appointed monitors, receivers, and administrators to determine remedies in detail and to assure that injunctive relief is accomplished.¹⁴ This has occurred when fault lies with the defendant rather than with physical, technological, or financial impossibility. In each case violations of the decrees were repeated and serious, and the defendants appeared to be incompetent or unwilling to comply. In most cases the defendant was a public body, for which contempt penalties are not particularly appropriate or are difficult to administer. The receivership remedy is a particularly appropriate device to keep the judge from becoming mired in complex technical issues that may need constant attention.

wetland on his death. Moreover, he was required to erect a billboard on the coastal highway adjoining the property advising passersby that he was removing his illegal fill at his own expense. He was lucky to have avoided criminal prosecution. *United States v. Van Leuzen*, 816 F. Supp. 1171, 23 *Envtl. L. Rep.* (Envtl. L. Inst.) 21107 (S.D. Tex. 1993). For additional examples, see the facts in *United States v. Ellen*, 961 F.2d 462, 22 *Envtl. L. Rep.* (Envtl. L. Inst.) 21282 (4th Cir. 1992), and *United States v. Pozsgai*, 757 F. Supp. 21, 22 *Envtl. L. Rep.* (Envtl. L. Inst.) 20536 (E.D. Pa. 1991), *aff'd in part and rev'd in part*, 947 F.2d 938, 22 *Envtl. L. Rep.* (Envtl. L. Inst.) 20353 (3d Cir. 1991).

⁹*United States v. Board of Trustees of Fla. Community College*, 531 F. Supp. 267 (S.D. Fla. 1981).

¹⁰*United States v. Whizco, Inc.*, 841 F.2d 147, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20571 (6th Cir. 1988).

¹¹See *In re Debs*, 158 U.S. 564 (1934); *United States v. Republic Steel Corp.*, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20982 (N.D. Ill. 1980).

¹²*Illinois v. Outboard Marine Corp.*, 619 F.2d 623, 10 *Envtl. L. Rep.* (Envtl. L. Inst.) 20323 (7th Cir. 1980), vacated and remanded on other grounds, 453 U.S. 917 (1981), same case on remand, 680 F.2d 473, 12 *Envtl. L. Rep.* (Envtl. L. Inst.) 20797 (7th Cir. 1982); see also *United States v. Kennebec Log Driving Co.*, 399 F. Supp. 754 (D. Me. 1975), *aff'd*, 530 F.2d 446 (1st Cir. 1976), cert. denied, 429 U.S. 821 (1976).

¹³A good example is *United States v. Ciampitti*, 669 F. Supp. 684, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20419 (D.N.J. 1987), in which a defendant was held in contempt for failure to restore a wetland he had filled without a CWA section 404 permit. The court established a new compliance schedule and a penalty of \$2,000 a day for violating the schedule, which the court indicated it would raise *sua sponte* if the amount was insufficient to coerce compliance. The court also assessed civil penalties of \$1,000 a day for violating the Act in the meantime. Finally, the court indicated it would jail the defendant if economic sanctions were insufficient to coerce compliance. See also *United States v. Pozsgai*, 999 F.2d 719, 23 *Envtl. L. Rep.* (Envtl. L. Inst.) 21212 (3d Cir. 1993); *United States v. Jones & Laughlin Steel Corp.*, 804 F.2d 348, 17 *Envtl. L. Rep.* (Envtl. L. Inst.) 20004 (6th Cir. 1986); *United States v. Wheeling-Pittsburgh Steel Corp.*, 642 F.2d 468, 17 *Envtl. L. Rep.* (Envtl. L. Inst.) 20672 (W.D. Pa. 1986); *PIRG of N.J., Inc., v. Ferro Merchandising Equip. Corp.*, 680 F. Supp. 692, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 21368 (D.N.J. 1987).

¹⁴*United States v. City of Detroit*, 720 F.2d 443, 14 *Envtl. L. Rep.* (Envtl. L. Inst.) 20164 (6th Cir. 1983); *O'Leary v. Moyer's Landfill, Inc.*, 516 F. Supp. 517, 11 *Envtl. L. Rep.* (Envtl. L. Inst.) 21005 (E.D. Pa. 1981); *United States v. City of Providence*, 492 F. Supp. 602, 10 *Envtl. L. Rep.* (Envtl. L. Inst.) 20857 (D.R.I. 1980); *Town of Greenwich v. Department of Transp.*, 10 *Envtl. L. Rep.* (Envtl. L. Inst.) 20178 (D. Conn. 1979); *State v. Chem-Dyne Corp.*, 10 *Envtl. L. Rep.* (Envtl. L. Inst.) 20387 (Ohio Ct. App. 1981).

Temporary restraining orders or preliminary injunctions are specifically authorized by most of the citizen suit sections. Although variously stated by the different circuits, four factors are generally considered in exercising judicial discretion to order temporary or preliminary relief: (1) the significance of the threat of irreparable harm to the plaintiff if the injunction is not granted; (2) the state of the balance between the harm and the injury that granting the injunction would inflict on defendant; (3) the probability that plaintiff will succeed on the merits; and (4) the public interest.¹⁵ Courts have used the same criteria in pollution control cases,¹⁶ although they may be more swayed by the last criterion than in a normal case between two private parties.¹⁷

§ 9:29 Criminal sanctions—The statutory provisions

The criminal sanctions in the environmental statutes vary considerably from one statute to the next, although they raise many common issues. Most of the statutes make knowing violations criminal offenses, punishable by fines and/or imprisonment. Some greatly enhance punishment for knowing violations that the defendant knew would put others in imminent danger of life or limb. A few make even negligent violations criminal offenses, but subject to lesser sanctions. Most double the maximum sanctions for second offenses. Many provide separate provisions for failures to submit required reports and submissions of false reports.

CWA § 309(c)(1) provides criminal sanctions for negligent violations and CAA § 113(c)(4) provides criminal sanctions for negligent releases of hazardous air pollutants in excess of regulatory or permit limits, which negligently put others in imminent danger.¹ TSCA § 16(b) subjects willful violations to criminal sanctions and SDWA § 1423(b)(2) does so for willful violations of its underground injection requirements.² But most statutes provide criminal sanctions for knowing violations, e.g., FIFRA § 14(b), TSCA § 16(b), CWA § 309(c)(2), MPRSA § 105(b), RCRA § 3008(d), and CAA § 113(c).³ The degree of *scienter* required and the burden of proving it under these statutes are contentious issues, leading to considerable litigation. This is particularly the case under RCRA, in which the format of the main criminal provision lends ambiguity to whether some elements of some offenses

¹⁵Wright, Miller, & Kane, *Federal Practice & Procedure* 2d § 2948 (1989).

¹⁶In *re* Permanent Surface Mining Regulation Litig., 617 F.2d 807 (D.C. Cir. 1980); *United States v. Tzavah Urban Renewal Corp.*, 696 F. Supp. 1013, 19 *Envtl. L. Rep. (Envtl. L. Inst.)* 20351 (D.N.J. 1988); *United States v. Akers*, 15 *Envtl. L. Rep. (Envtl. L. Inst.)* 20243 (E.D. Cal. 1985); *Shawnee Coal Co. v. Andrus*, 11 *Envtl. L. Rep. (Envtl. L. Inst.)* 20041 (S.D. Ohio 1979), *rev'd*, 11 *Envtl. L. Rep. (Envtl. L. Inst.)* 21040 (6th Cir. 1981). In *United States v. Lambert*, 695 F.2d 536, 13 *Envtl. L. Rep. (Envtl. L. Inst.)* 20436 (11th Cir. 1983), the court upheld the trial court's denial of a preliminary injunction against further construction in a wetland, where the only showing of irreparable harm was that further construction would make restoration more difficult and expensive.

¹⁷In *Vertac Chem. Co.*, for instance, the court considered: (1) the nature of the harm to be abated; (2) the economic burden on the defendant; (3) the defendant's financial ability to initiate different waste disposal practices; and (4) providing a margin of safety to protect public health. *United States v. Vertac Chem. Co.*, 489 F. Supp. 870, 886, 10 *Envtl. L. Rep. (Envtl. L. Inst.)* 20709, 20717-18 (E.D. Ark. 1980). *See also* *United States v. D'Annolfo*, 474 F. Supp. 220 (D. Mass. 1979) (court looked only to the public interest in granting a preliminary injunction against illegal filling of a wetland).

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¹33 U.S.C.A. § 1319(c)(1), 42 U.S.C.A. § 7413(c)(4). The CAA provision appears to apply to releases of air pollutants generally rather than those that otherwise violate the CAA. However, CAA § 113(c)(5), 42 U.S.C.A. § 7413(c)(4), exempts releases that are in compliance with emission limitations in regulations or permits. The practical effect of the combination is that § 113(c)(4) applies to emissions in violation of such limitations.

²15 U.S.C.A. § 2615(b), 42 U.S.C.A. § 4910(a)(1), 42 U.S.C.A. § 300h-2(b)(2).

³7 U.S.C.A. § 136I, 42 U.S.C.A. § 2615(b), 33 U.S.C.A. § 1319(c)(2), 33 U.S.C.A. § 1415(b), 42 U.S.C.A. § 6928(d), 42 U.S.C.A. § 7413(c).

are subject to the knowing requirement.⁴ Also contentious is whether the responsible corporate officer doctrine applies and, if so, the extent to which the knowledge of such defendants may be inferred from their positions. This is affected by the inclusion of “responsible corporate officers” in the definition of persons subject to criminal sanctions in statutes such as the CWA and CAA.⁵

The differences in criminal penalties under the statutes for the same types of violations are dramatic. At the low end of the scale, FIFRA § 14(b)(2) provides a fine of \$1,000 and thirty days in prison for violations by private applicators. FIFRA § 14(b) (for violators other than registrants, registration applicants, distributors, and private applicators), TSCA § 16(b) and CWA § 309(c)(1) (for negligent violations) provide fines of up to \$25,000 and/or up to one year imprisonment. CWA § 309(c), however, specifies a minimum fine of \$2,500 per day of violation, a holdover from the Refuse Act from which it was derived.⁶ RCRA § 3008(d), CWA § 309(c)(2), MPRSA § 105(b), and FIFRA § 136l(b)(1)(A) all provide fines of up to \$50,000 and/or two years in prison for most violations, and up to five years for some violations. Again, CWA § 309(c)(2) sets a minimum fine, this time \$5,000. FIFRA § 136l(b)(1)(A) and MPRSA § 105(b) authorize imprisonment not to exceed one year; CWA § 309(c)(2) (for knowing violations only) authorizes imprisonment not to exceed three years; and RCRA § 3008(d) authorizes imprisonment not to exceed two or five years, depending on the provision violated. MPRSA § 105(b)(2) enhances the sanctions up to \$250,000 and five years in prison if the violation involves dumping medical waste at sea, and also authorizes seizure of property used in, or derived from the proceeds from, the dumping. Rather than establishing maximum fine levels, CAA § 113(c)(1) merely authorizes the imposition of fines in accordance with the applicable provisions of Title 18, with imprisonment of up to five years.⁷

In calculating maximum sanctions, TSCA § 16(b), MPRSA § 105(c), CWA § 309(c), and RCRA § 3008(d) all provide for penalties per day or per day of violation. FIFRA § 14(b), SDWA § 1423(b), and CAA § 113(c) contain no such qualifiers. Both of these formulations raise the issue whether the maximum sanctions apply to each separate violation on a given day or to an aggregate of all violations occurring during a day. Remember that in the context of civil penalties, most courts interpreted “per day of violation” in CWA § 309(d) as establishing a maximum penalty per day, no matter how many violations occurred that day.⁸ But Congress thereafter amended CWA § 309(d) to make the statutory maximum civil penalty apply “per day for each violation,” while making no such change in the criminal sanctions. Based on case law and the amendment to the CWA, the criminal sanctions should be applied as a maximum on any day, regardless of the number of violations occurring on that day.⁹ Under CWA § 113(c), RCRA § 3008(d), and CAA § 113(c), the maximum sanctions for second offenses are doubled. As discussed below, although past criminal activity is an aggravating factor under the Sentencing Guidelines,¹⁰ they do not double sentences for second offenses.

The CWA, CAA, and RCRA all have a “knowing endangerment” provision, which, in essence, provides enhanced sanctions for knowing violations that the actor knew at the time placed others in imminent and substantial endangerment of serious

⁴See § 9:31.

⁵See § 9:32.

⁶33 U.S.C.A. §§ 407, 411, 412.

⁷Title 18 provides that fines may be imposed of no more than the greater of twice the economic gain to the defendant or loss to the victim from the offense or \$250,000. 18 U.S.C.A. § 1871.

⁸See § 9:24 note 52 and accompanying text.

⁹That result is fortified in the application of the rule of lenity in criminal cases. See § 9:31.

¹⁰See § 9:33.

bodily injury.¹¹ The CAA appears to vary from this pattern by applying to “knowing releases” of air pollutants rather than to knowing violations. But because it exempts releases that are in compliance with emission limitations in regulations or permits, the practical application of the provision is to releases that are in violation of such limitations. The sanctions applicable under all three statutes are fines of up to \$250,000 (\$1 million for organizations) and/or up to fifteen years in prison. Maximum sanctions are doubled for second convictions. The provisions define “knowing” conduct to be actual awareness or belief. The CAA again departs from the general pattern by also providing criminal sanctions for negligent releases of air pollutants that negligently place others in imminent and substantial endangerment of serious bodily injury: up to one year in prison and/or a fine pursuant to Title 18.

CERCLA and the oil spill response section of the CWA both provide criminal sanctions for the failure to report to federal authorities releases to the environment of hazardous substances or oil.¹² Under CERCLA § 103(b), a person in charge of a releasing facility who fails to notify the government of the release as soon as he or she has knowledge of it is subject to fines pursuant to Title 18 and/or imprisonment of up to three years; five years for a second conviction. The notification and any information derived from its exploitation may not be used against the notifier except in charges of perjury in the notification. CWA § 311(b)(5) differs in making the first conviction subject to five years imprisonment, with no doubling of sanctions for second convictions, and by limiting the notification use immunity to natural persons. EPCRA § 325(b)(4) provides imprisonment of not more than two years and fines of not more than \$25,000 for persons required to report releases under CERCLA § 103 who do not report them to state and local authorities.¹³ Since EPCRA provides no use immunity for reports made to state and local authorities, it effectively abrogates the immunity provided in CERCLA § 103(b).

Several of the statutes provide separate—usually lesser—sanctions for those convicted of submitting false information to the government or of other offenses relating to information and records.¹⁴

Clearly there is more variation among the statutes in their criminal sanction provisions than among their other enforcement authorities—and there is no justification for it. Why should there be enhancement for knowing endangerments under some but not all of the statutes, when there is a real potential for endangerment from violations of any of them? Why is there so much variation in the maximum amounts of the fines and the length of prison terms for violations that have similar potential to cause environmental or public health damage? The apparent answer to these and similar questions is probably that the less severe provisions occur in statutes whose enforcement provisions have not been amended since their enactment in the early to mid-1970s. The knowing endangerment provision first appeared in the 1984 amendments to RCRA and was incorporated in the other statutes during subsequent major amendments. The statutes with more severe sanctions began with less severe sanctions when they were originally enacted in the 1970s, and got to their present state during subsequent amendments. Such differences, of

¹¹CWA § 309(c)(3), 33 U.S.C.A. § 1319(c)(3); CAA § 113(c)(5), 42 U.S.C.A. § 7413(c)(5); RCRA § 3008(f), 42 U.S.C.A. § 6928(f).

¹²CERCLA § 103(b), 42 U.S.C.A. § 9603(b); CWA § 311(b)(5), 33 U.S.C.A. § 1321(b)(5).

¹³42 U.S.C.A. § 11045(b)(4).

¹⁴CWA § 309(c)(4), 33 U.S.C.A. § 1319(c)(4) (up to a \$10,000 fine and/or two years in prison for false statements or tampering with monitoring devices; doubled for second convictions); CAA § 113(c)(2), 42 U.S.C.A. § 7413(c)(2) (same, except fine is as provided in Title 18); RCRA § 3008(d)(3), 42 U.S.C.A. § 6928(d)(3) (fines of not more than \$50,000 and/or up to two years in prison for false statements; doubled for second offenses); CERCLA § 103(d), 42 U.S.C.A. § 9603(d) (fine under Title 18 and/or three years in prison for destruction or concealment of required records; five years in prison for second conviction).

course, are not principled reasons for varying significantly the punishments accorded to violations of similar gravity.

§ 9:30 Criminal sanctions—The development of criminal enforcement

Most commentators observe that there was no concerted effort to prosecute environmental crimes until the late 1970s or the early 1980s.¹ In fact, concerted criminal prosecution efforts played a large role in EPA's early water pollution and pesticide enforcement programs.² In both cases, however, criminal prosecutions reflected the lack of other effective enforcement tools in earlier legislation.³ Once the statutes were amended to provide effective regulatory and enforcement provisions, EPA relied almost wholly on its new civil and administrative enforcement remedies.⁴ Criminal prosecution of environmental offenses became rare and was reserved primarily for those evading the regulatory system altogether.⁵ This was appropriate for violations of regulatory requirements that were new and not entirely understood. It also reflected the realities that civil penalties provided as great a monetary sanction as criminal fines and that corporations cannot be incarcerated. Even for individuals, environmental offenses at the time were only misdemeanors and sentences for misdemeanors are customarily short.⁶ The added stigma of criminal prosecution and the scant jail terms imposed at the time seldom warranted the extra efforts necessitated by the heavier burden of proof and extra procedural safeguards entailed in a

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¹“Not until the late 1970s, however, did law enforcement officials begin to address the application of criminal sanctions to environmental violations.” Judson W. Starr, *Turbulent Times at Justice and EPA: The Origins of Environmental Criminal Prosecutions and the Work That Remains*, 59 *Geo. Wash. L. Rev.* 900, 901 (1991).

²During EPA's first two years, it referred 168 cases to the Department of Justice for criminal prosecution for water pollution without a permit under the Refuse Act of 1899, 33 U.S.C.A. §§ 401, 407, 410, and 172 cases for criminal prosecution for distribution of unregistered pesticides under the pre-1972 FIFRA. EPA Office of Enforcement and General Counsel, *The First Two Years: A Review of EPA's Enforcement Program 19* (1972).

³The enforcement mechanisms in the CWA's predecessor legislation were weak, cumbersome, and ineffective. *See* § 9:1. When federal officials began serious efforts to abate water pollution, they turned instead to the Refuse Act of 1899, a criminal statute intended to prevent obstruction to navigation, but worded broadly enough to support a pollution control effort. Nothing could be introduced to navigable waters that would impede navigation without a permit from the Corps of Engineers. EPA and the Corps established a permit program, with the Corps providing the administration and EPA providing the permits' pollution abatement requirements. Criminal prosecutions were brought against those who polluted without applying for a permit. The statute authorized no administrative enforcement and no civil penalties.

The pre-1972 FIFRA had no civil penalties; its criminal provision provided the only sanction. *See* § 8 of the original FIFRA, reprinted in *United States Code Congressional and Administrative News* pp 170, 176. Surveys of marketplaces disclosed that a significant percentage of pesticides being sold were not registered as required. In response EPA began a campaign to prosecute pesticide manufacturers distributing unregistered goods. The campaign had its intended effect as later marketplace surveys found few unregistered pesticides offered for sale.

⁴From fiscal years 1982 to 1990, EPA took 22,564 administrative enforcement actions, and referred 2,561 civil and 383 criminal actions to the Department of Justice. EPA Rep. 21E-2002, FY 1990 Enforcement Accomplishments Report, Appendix. This is a wholly different mix of enforcement actions from the heavy emphasis on criminal prosecution in the early water and pesticide enforcement efforts.

⁵*See, e.g., United States v. Frezzo Bros.*, 602 F.2d 1123, 9 *Envtl. L. Rep.* (Envtl. L. Inst.) 20556 (3d Cir. 1979) (mushroom-growing company and its two principals convicted of discharging runoff from manure compost piles into a river without a permit).

⁶Indeed, the very definition of a misdemeanor is a crime punishable by a year or less. 18 U.S.C.A. § 3559. For an example of criminal sanctions imposed during this earlier era, *see United States v. Frezzo Bros.*, 602 F.2d 1123, 1124 9 *Envtl. L. Rep.* (Envtl. L. Inst.) 20556 (3d Cir. 1979) (company fined \$50,000, individuals fined an aggregate of \$50,000 and imprisoned for thirty days each).

criminal, as opposed to civil, prosecution. Thus neither EPA nor prosecutors had a great incentive to institute widespread criminal prosecutions.

With the passage of time, however, much of the regulatory system became assimilated into the normal conduct of affairs and criminal sanctions for violations became more appropriate. Moreover, the attention of environmental enforcers turned to waste disposal, an industry that was suspected of close ties to organized crime.⁷ Thus, toward the end of the 1970s both EPA and the Department of Justice initiated measures to establish a credible environmental crimes enforcement effort and to work for enhancement of the criminal sanctions.⁸

Ironically, political developments revolving around the anti-regulatory persuasion of the Reagan Administration jump-started the environmental crimes program. A series of actions by the early Reagan EPA raised public and congressional suspicion that the administration was silently dismantling EPA and its programs. Those activities included EPA Administrator Ann Gorsuch's abolition of EPA's enforcement program, EPA's withdrawal of essential RCRA regulations, the conviction of the EPA Assistant Administrator in charge of RCRA and CERCLA for contempt of Congress, and the resignation of EPA's Administrator to escape prosecution for a similar offense.⁹

While this was occurring, the Department of Justice sought to distance itself from EPA by becoming an aggressive environmental enforcer. It could not initiate civil enforcement cases without a referral from EPA,¹⁰ but it could initiate criminal investigations and prosecutions on its own, using FBI agents as investigators.¹¹ Consequently, it augmented its criminal investigation and prosecution program considerably.

In an attempt to restore EPA's credibility, Reagan appointed William Ruckelshaus as EPA Administrator. Ruckelshaus had been EPA's first Administrator during the Nixon administration and was generally thought to have done well in that position. He later established his integrity by resigning his post as second in command at the Department of Justice rather than firing Archibald Cox as the Special Prosecutor during the Watergate scandals. Not to be outdone by the Justice Department's well received efforts, the Ruckelshaus EPA also augmented its criminal investigative program.¹² The end result was that by the mid-1980s, there was a nascent federal environmental crimes effort of some magnitude. Congress approved of the enhanced

⁷See, e.g., Hearing on Organized Crime and Hazardous Waste Disposal, 96th Cong., 2d Sess. 289 (Dec. 16, 1980).

⁸The development of these efforts at both EPA and the Department of Justice is well chronicled by Starr. Judson W. Starr, *Turbulent Times at Justice and EPA: The Origins of Environmental Criminal Prosecutions and the Work That Remains*, 59 Geo. Wash. L. Rev. 900 (1991). Starr was the first Chief of the Environmental Crimes Section at the Department of Justice and was instrumental in its creation. Of particular interest to students of government is his account of the "turf wars" within both EPA and the Department of Justice that had to be resolved before these efforts were well launched.

⁹See generally Christopher Harris, *Hazardous Waste: Confronting the Challenge* 35-40 (1987); Richard J. Lazarus, *The Tragedy of Distrust in the Implementation of Environmental Law*, 54 Law & Contemp. Probs. 311 (1991); Joel Mintz, *Agencies, Congress, and Regulatory Enforcement*, 18 *Envtl. L.* 683 (1988).

¹⁰The statutes authorize the EPA Administrator to bring civil enforcement actions in court. *E.g.*, CWA § 309(b), 33 U.S.C.A. § 1319(b); CAA § 113(b), 42 U.S.C.A. § 7413(b). They also direct the Administrator to request the U.S. Attorney General to represent the Administrator in court, but reserve the Administrator's authority to be represented by EPA attorneys if the Attorney General declines. *E.g.*, CWA § 506, 33 U.S.C.A. § 1366; CAA § 305, 42 U.S.C.A. § 7605. For a bizarre example of reading a statute on its face in this regard, see *United States v. Associated Elec. Coop., Inc.*, 503 F. Supp. 92, 11 *Envtl. L. Rep. (Envtl. L. Inst.)* 20240 (E.D. Mo. 1980).

¹¹Judson W. Starr, *Turbulent Times at Justice and EPA: The Origins of Environmental Criminal Prosecutions and the Work That Remains*, 59 Geo. Wash. L. Rev. 900, 909 (1991).

¹²For the development of criminal investigation and prosecution programs at both EPA and the Department of Justice, see Judson W. Starr, *Turbulent Times at Justice and EPA: The Origins of*

criminal prosecution of environmental offenses. It sought to assure that the prosecution of environmental crimes continued to grow by enacting the Pollution Prosecution Act of 1990.¹³ This measure called on EPA to establish an Office of Criminal Investigation and to hire an increasing number of criminal investigators over time, adding up to 250 by 1996.

Two other developments in the 1980s encouraged EPA to expend resources on criminal rather than civil sanctions. The first, detailed at the outset of this discussion, was amendment of most of the environmental statutes to increase criminal sanctions from misdemeanors to felonies. The second was the enactment of the Sentencing Reform Act of 1984, discussed in detail below, which resulted in increasing penalties actually imposed and which provided the basis for more comprehensive sanctions applicable to corporations.

Although by no means the predominant method of enforcing environmental laws, criminal prosecution is a growing and significant part of the environmental enforcement program. By the end of fiscal year 1994, EPA had 123 special agents¹⁴ and the FBI devoted as much time to investigating environmental crimes as did EPA's special agents.¹⁵ The Department of Justice had an Environmental Crimes Section of forty-six,¹⁶ a number that is effectively doubled by the time devoted to environmental crimes by Assistant U.S. Attorneys.¹⁷ In 1993 indictments for environmental crimes were returned against 186 individuals and corporations, 144 convictions were obtained, and sentences were imposed for an aggregate of 55 years.¹⁸ Criminal prosecution presently comprises more than 40 percent of EPA's judicial regulatory enforcement effort.¹⁹ With the requirement that EPA continue increasing the ranks of its special agents, the rate of prosecution will no doubt increase in the future.

§ 9:31 Criminal sanctions—*Scienter*

The environmental statutes provide criminal sanctions for violations accompanied by a wide range of culpability. Some require criminal sanctions for merely negligent

Environmental Criminal Prosecutions and the Work That Remains, 59 Geo. Wash. L. Rev. 900 (1991); see also John F. Cooney et al., Criminal Enforcement of Environmental Laws: Part I, 25 Env'tl. L. Rep. (Env'tl. L. Inst.) 10459 (Sept. 1995).

¹³Pub. L. No. 101-593, § 205, 104 Stat. 2954, 2963 (1990).

¹⁴EPA 300-R-95-004, Office of Enforcement and Compliance Assurance, FY 1994 Enforcement and Compliance Assurance Accomplishments Report 4-2 (May 1995) [hereinafter EPA FY 1994 Enforcement Report].

¹⁵Conversation with Steven Solow, Assistant Chief, Environmental Crimes Section, Department of Justice (Feb. 10, 1995) [hereinafter Solow Conversation].

¹⁶Department of Justice, Environment and Natural Resources Division, Statistical Report Fiscal Year 1993, at 2 [hereinafter DOJ FY 1993 Report].

¹⁷Conversation with Steven Solow, Assistant Chief, Environmental Crimes Section, Department of Justice, 419 (Feb. 10, 1995).

¹⁸Department of Justice, Environment and Natural Resources Division, Statistical Report Fiscal Year 1993, at 23.

¹⁹In fiscal year 1994 EPA referred 220 criminal cases and 430 civil cases to the Department of Justice. But 144 of the civil cases were for CERCLA remedial actions or cost recovery, rather than for enforcement of regulatory requirements. The remaining 286 civil enforcement referrals are not much more than the number of criminal enforcement referrals, a somewhat startling comparison. Of course, EPA's enforcement program can hardly be characterized and dominated by criminal prosecutions, as EPA initiated some 1,600 administrative enforcement actions during the same period. EPA 300-R-95-004, Office of Enforcement and Compliance Assurance, FY 1994 Enforcement and Compliance Assurance Accomplishments Report 2-3, 4-3, 4-8 (May 1995).

behavior,¹ some for willful behavior.² Negligence, of course, may involve no culpability at all, while willfulness requires that the actor know his or her action is unlawful, but not that he or she know of the specific legal requirement violated.³ But for the most part, the environmental statutes provide criminal sanctions for violations that are “knowing” in one of two ways: either the actor knows of the activity in which he or she is engaging⁴ or the actor knows that he or she is violating the statute.⁵ It would appear from these wording differences that where statutes only require knowledge of the activity, they require knowledge of facts alone, and where they require knowledge of the violation, they require knowledge of both facts and law, but many courts tend to ignore the difference. Most of the litigated issues on *scienter* revolve around the issues (1) whether the statute requires knowledge of facts alone or of both facts and law, and (2) how much knowledge is required in either event. The issues tend to blur in many cases, as courts allow a rather low level of knowledge of both facts and law to suffice for conviction. Indeed, they may even regard failure to instruct on *mens rea* as an error, but not a reversible one.⁶

The first set of issues arises primarily under RCRA § 3008(d)(2), which provides criminal sanctions for persons who “knowingly” treat, store, or dispose of hazardous waste either (A) without a RCRA permit, (B) in “knowing” violation of an applicable RCRA permit, or (C) in “knowing” violation of an applicable interim status regulation.⁷ The two most litigated issues are whether the initial “knowingly” requires only knowledge of treatment, storage or disposal of a substance or also requires knowledge that the substance is a hazardous waste and that the activity is conducted without a required permit. For the most part, courts hold that the initial “knowingly” requires knowledge that the substances handled are hazardous wastes,⁸ but not knowledge of the need for, or lack of, a permit.⁹ These conclusions flow from

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¹See, e.g., CWA § 309(c)(1), 33 U.S.C.A. § 1319(c)(1); CAA § 113(c)(4), 42 U.S.C.A. § 7413(c)(4). Criminal negligence under the Clean Water Act has been held to be ordinary negligence, *United States v. Hanousek*, 176 F.3d 1116 (9th Cir. 1999).

²See SDWA § 1423(b)(2), 42 U.S.C.A. § 300h-2(b)(2); TSCA § 16(b), 15 U.S.C.A. § 2615(b); EPCRA § 325(d)(2), 42 U.S.C.A. § 11045(d)(2). TSCA provides criminal sanctions if the violation is knowing or willful and EPCRA provides them if the violation is knowing *and* willful.

³*Bryan v. United States*, 524 U.S. 184 (1998); *Crandon v. United States*, 494 U.S. 152 (1990).

⁴CWA §§ 309(c)(2)(B) and (c)(4), 311(b)(5), 33 U.S.C.A. §§ 1319(c)(2)(B) and (c)(4), 1321(b)(5); RCRA § 3008(d), 42 U.S.C.A. § 6928(d); CAA § 113(c)(2), 42 U.S.C.A. § 7413(c)(2); CERCLA § 103(b)(5), 42 U.S.C.A. § 9603(b)(5); EPCRA § 325(d)(2), 42 U.S.C.A. § 11045(d)(2).

⁵TSCA § 16(b), 15 U.S.C.A. § 2615(b); CWA § 309(c)(2), 33 U.S.C.A. § 1319(c)(2); MPRSA § 105(b), 33 U.S.C.A. § 1415(b); CAA § 113(c)(1), 42 U.S.C.A. § 7413(c)(1).

⁶*United States v. Ellis*, 172 F.3d 864 (4th Cir. 1999).

⁷42 U.S.C.A. § 6928(d)(2)(A) to (C).

⁸*United States v. Self*, 2 F.3d 1071, 23 *Envtl. L. Rep. (Envtl. L. Inst.)* 21301 (10th Cir. 1993); *United States v. Heuer*, 4 F.3d 723, 23 *Envtl. L. Rep. (Envtl. L. Inst.)* 21357 (9th Cir. 1993) (must have knowledge that the substance is waste); *United States v. Hoflin*, 880 F.2d 1033, 19 *Envtl. L. Rep. (Envtl. L. Inst.)* 21140 (9th Cir. 1989), cert. denied, 493 U.S. 1083 (1991); *United States v. Dee*, 912 F.2d 741, 21 *Envtl. L. Rep. (Envtl. L. Inst.)* 20051 (4th Cir. 1990), cert. denied, 499 U.S. 919 (1991); *United States v. Sellers*, 926 F.2d 410, 21 *Envtl. L. Rep. (Envtl. L. Inst.)* 20787 (5th Cir. 1991); *United States v. Baytank (Houston), Inc.*, 934 F.2d 599, 21 *Envtl. L. Rep. (Envtl. L. Inst.)* 21101 (5th Cir. 1991). *Contra United States v. Hayes Int'l Corp.*, 786 F.2d 1499, 16 *Envtl. L. Rep. (Envtl. L. Inst.)* 20717 (11th Cir. 1986); *United States v. Weintraub*, 273 F.3d 139 (2d Cir. 2001) (holding that defendant only had to know that substance involved was asbestos, not that the asbestos was of the type to trigger the work practice standard).

⁹*United States v. Wagner*, 29 F.3d 264, 24 *Envtl. L. Rep. (Envtl. L. Inst.)* 21353 (7th Cir. 1994); *United States v. Laughlin*, 10 F.3d 961, 24 *Envtl. L. Rep. (Envtl. L. Inst.)* 20221 (2d Cir. 1993), cert. denied, 114 S. Ct. 1649 (1994); *United States v. Hoflin*, 880 F.2d 1033, 19 *Envtl. L. Rep. (Envtl. L. Inst.)* 21140 (9th Cir. 1989), cert. denied, 493 U.S. 1083 (1991); *United States v. Dee*, 912 F.2d 741, 21

the structure of the subsection and follow logically from the policy and structure of the statute.¹⁰

The second set of issues revolves around just how much knowledge “knowing” or “knowingly” requires, whether it be of relevant facts or law. On these issues, courts tend to take a relaxed view of *scienter*, holding that it requires that the defendant have a general idea of the actions he or she is taking, but not have a knowledge of the law violated.¹¹ For instance, although most courts hold that conviction of a RCRA offense requires proof that the defendant knew that he or she was handling hazardous waste, it is enough that the defendant knew the substance was potentially harmful to people and the environment, rather than that it had been listed as hazardous by EPA.¹² Knowledge may be proven by circumstantial evidence¹³ or inferred from the defendant’s position and responsibility in an organization.¹⁴ Virtually every court considering the issue has based its ruling on the public welfare offense doctrine enunciated in *United States v. International Minerals & Chemical Corp.*¹⁵

In *International Minerals* the Supreme Court held that conviction of a “knowing” violation of a regulation issued by the ICC for the safe transportation of corrosive

Envtl. L. Rep. (Envtl. L. Inst.) 20051 (4th Cir. 1990), cert. denied, 499 U.S. 919 (1991); *United States v. Baytank (Houston), Inc.*, 934 F.2d 599, 21 Env’tl. L. Rep. (Envtl. L. Inst.) 21101 (5th Cir. 1991). *Contra United States v. Johnson & Towers, Inc.*, 741 F.2d 662, 14 Env’tl. L. Rep. (Envtl. L. Inst.) 20634 (3d Cir. 1984).

¹⁰“Knowingly,” of course, is an adverb, modifying the verb that follows and describes an activity. It could be argued that the adverb’s force stops at the verb as a matter of grammar. But the phrase to “knowingly treat, store, or dispose of” is meaningless unless it is coupled with an object, in this case “hazardous waste.” Indeed, if a person reasonably believed that he or she was storing bottled drinking water that in reality was an acid, would the person be “knowingly storing acid” as that phrase would be commonly understood? On the other hand, only the first of the three following subparagraphs of § 3008(d)(2), (A) managing hazardous waste without a permit, fails to begin with “in knowing violation.” Indeed, all seven paragraphs of § 3008(d) begin with “knowingly,” followed by a verb. None of the other paragraphs has subparagraphs or uses the phrase “in knowing violation,” except § 3008(d)(7). It has two subparagraphs, both of which begin with “in knowing violation.” The failure of § 3008(d)(2)(A) to include “in knowing violation” is a significant variant in the structure of the subsection and should be accorded some meaning. The most logical meaning is that the actor need have no knowledge of the lack of a permit to violate the prohibition. Not requiring knowledge of the lack of a permit in § 3008(d)(2)(A), but requiring knowledge of a permit or interim status provision in § 3008(d)(2)(B) and (C) is also consistent with the dominant policy of RCRA to protect people and the environment from exposure to hazardous waste. It is far more likely that treatment, storage, or disposal of hazardous waste outside the permit system, e.g., by “midnight dumping” in violation of § 3008(d)(2)(A), will result in more significant environmental and human exposures than will violations of particular requirements by waste handling accomplished within the permitting system, in violation of § 3008(d)(2)(B).

¹¹*See United States v. Weintraub*, 273 F.3d 139, 147 (2d Cir. 2001) (holding that defendant had to know facts and circumstances comprising a statutory violation, but “specific knowledge” that he was acting illegally was not required).

¹²*United States v. Self*, 2 F.3d 1071, 23 Env’tl. L. Rep. (Envtl. L. Inst.) 21301 (10th Cir. 1993); *United States v. Goldsmith*, 978 F.2d 643, 23 Env’tl. L. Rep. (Envtl. L. Inst.) 20281 (11th Cir. 1992); *United States v. Hoflin*, 880 F.2d 1033, 19 Env’tl. L. Rep. (Envtl. L. Inst.) 21140 (9th Cir. 1989), cert. denied, 493 U.S. 1083 (1991); *United States v. Dee*, 912 F.2d 741, 21 Env’tl. L. Rep. (Envtl. L. Inst.) 20051 (4th Cir. 1990), cert. denied, 499 U.S. 919 (1991); *United States v. Sellers*, 926 F.2d 410, 21 Env’tl. L. Rep. (Envtl. L. Inst.) 20787, 20878 (5th Cir. 1991); *United States v. Baytank (Houston), Inc.*, 934 F.2d 599, 21 Env’tl. L. Rep. (Envtl. L. Inst.) 21101 (5th Cir. 1991).

¹³*United States v. Weitzenhoff*, 35 F.3d 1275, 24 Env’tl. L. Rep. (Envtl. L. Inst.) 21504 (9th Cir. 1994), amending 1 F.3d 1523, 23 Env’tl. L. Rep. (Envtl. L. Inst.) 21322 (9th Cir. 1993); *United States v. Self*, 2 F.3d 1071, 23 Env’tl. L. Rep. (Envtl. L. Inst.) 21301 (10th Cir. 1993); *United States v. Greer*, 850 F.2d 1447, 18 Env’tl. L. Rep. (Envtl. L. Inst.) 21387 (11th Cir. 1988); *United States v. Hayes Int’l Corp.*, 786 F.2d 1499, 16 Env’tl. L. Rep. (Envtl. L. Inst.) 20717 (11th Cir. 1986).

¹⁴*United States v. Self*, 2 F.3d 1071, 23 Env’tl. L. Rep. (Envtl. L. Inst.) 21301 (10th Cir. 1993); *United States v. Johnson & Towers, Inc.*, 741 F.2d 662, 14 Env’tl. L. Rep. (Envtl. L. Inst.) 20634 (3d Cir. 1984).

¹⁵*United States v. Int’l Minerals & Chem. Corp.*, 402 U.S. 558 (1971).

liquids did not require knowledge of the legal requirement violated. The Court concluded that with regard to public welfare statutes, “[w]here . . . dangerous or deleterious devices or products or obnoxious waste materials are involved, the probability of regulation is so great that anyone who is aware that he is in possession of them or dealing with them must be presumed to be aware of the regulation.”¹⁶ The shipment in that case was of sulfuric acid. The Court noted that the government had to prove the defendant’s knowledge of the transport of sulfuric acid, for a “person thinking in good faith that he was shipping distilled water when in fact he was shipping some dangerous acid would not be covered.”¹⁷

Thus, the Court drew a distinction between the requisite degree of knowledge of relevant fact and law to sustain a conviction of a knowing violation of a public welfare statute. Of course, this distinction does not indicate how much knowledge of fact is required or whether only a good-faith mistake of a material fact is a defense. Courts, however, tend to ignore the distinction between knowledge of facts and law and use the opinion for the proposition that the government need not even prove that the defendant had knowledge of all the relevant facts, but of only facts sufficient to put the defendant on notice that his or her actions may pollute the environment or harm public health.¹⁸ While courts acknowledge the possibility of a mistake-of-fact defense, defendants have yet to avail themselves of it successfully.¹⁹

Reliance on *International Minerals* for the proposition that “knowing” violation of an environmental statute does not include knowledge of the law and requires only slender knowledge of the relevant facts ignores several significant differences between these statutes and the statute at issue in that case. The statute in *International Minerals* was simple, straightforward, and easy to understand.²⁰ Environmental statutes are generally just the opposite. The statute in *International Minerals* governed the transportation industry—a well defined, rather small community traditionally subject to pervasive regulation by federal and state governments. Environmental statutes govern such communities, but at times may also govern the actions of everyone in the country. Most importantly, violation of the statute in *International Minerals* was a misdemeanor, for which no incarceration is required, even under the current Sentencing Guidelines.²¹

There is some indication that courts may be ready to recognize and deal with these differences. The Second Circuit recently reversed a CWA criminal conviction, applying the rule of lenity and holding that pollutants discharged to navigable water by point sources did not include pollutants placed there by human hands, the

¹⁶United States v. Int’l Minerals & Chem. Corp., 402 U.S. 558, 565 (1971).

¹⁷United States v. Int’l Minerals & Chem. Corp., 402 U.S. 558, 563–64 (1971).

¹⁸See United States v. Self, 2 F.3d 1071, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 21301 (10th Cir. 1993); United States v. Goldsmith, 978 F.2d 643, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 20281 (11th Cir. 1992); United States v. Hoflin, 880 F.2d 1033, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 21140 (9th Cir. 1989), cert. denied, 493 U.S. 1083 (1991); United States v. Dee, 912 F.2d 741, 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 20051 (4th Cir. 1990), cert. denied, 499 U.S. 919 (1991); United States v. Sellers, 926 F.2d 410, 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 20787, 20878 (5th Cir. 1991); United States v. Baytank (Houston), Inc., 934 F.2d 599, 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 21101 (5th Cir. 1991).

¹⁹United States v. Weitzenhoff, 35 F.3d 1275, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 21504 (9th Cir. 1994), amending 1 F.3d 1523, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 21322 (9th Cir. 1993); United States v. Baytank (Houston), Inc., 934 F.2d 599, 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 21101 (5th Cir. 1991); United States v. Buckley, 934 F.2d 84, 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 21113 (6th Cir. 1991); United States v. Hayes Int’l Corp., 786 F.2d 1499, 16 Env’tl. L. Rep. (Env’tl. L. Inst.) 20717 (11th Cir. 1986); United States v. Reilly, 827 F. Supp. 1076, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20097 (D. Del. 1993).

²⁰18 U.S.C.A. § 834(a) and (f).

²¹Crimes punishable for a year or less are misdemeanors. 18 U.S.C.A. § 3559. Although most of the environmental statutes initially provided criminal sanctions of a year or less, most now authorize longer sentences. See *supra* notes 396-97 and accompanying text. As to sentencing for misdemeanors under the Sentencing Guidelines, see 18 U.S.C.A. § 3561(a)(3) and § 9:33.

definition of “point sources” being at best ambiguous.²² The reason most often given for the rule of lenity is that a statute must give the public fair notice of conduct that will lead to criminal sanctions.²³ This, too, suggests that knowledge of the legal standard being violated is germane. Perhaps the most forcefully articulated reexamination of the application of the public welfare offense doctrine to criminal prosecutions under the environmental statutes is a five-judge dissent from the denial of a petition for *en banc* rehearing in *United States v. Weitzenhoff*.²⁴ The dissent argued that the wording, context, and legislative history of CWA § 309(c) supported reading “knowingly violates” as requiring knowledge of relevant facts and law. It further argued that any ambiguity in such reading had to be decided in favor of the defendant under the rule of lenity. Finally, it argued that *International Minerals* was inapposite because of the difference between the statute at issue in that case and the CWA, discussed above. Though not mentioning the rule of lenity, other courts have strictly interpreted the environmental standards alleged to have been violated when the standards were not clear on their faces.²⁵

A series of civil enforcement cases has reacted to the complexity and ambiguity of EPA regulations by applying the fair notice doctrine either to reverse administrative determinations of liability for violations or to mitigate penalties assessed for the violations in whole or in part.²⁶ The rationale behind the fair notice doctrine is that the regulated public should not be held liable for violating a standard it could not—and did not—understand. If an understanding of the legal standard is necessary for imposing civil liability even when violations need not be “knowing,” it should be more important for imposing criminal liability, particularly when violations must be “knowing.” These cases all considered knowledge of law, not of relevant facts. If knowledge of law is required by “knowing,” surely knowledge of relevant facts is also required—even *International Minerals* appears to assume that.

§ 9:32 Criminal sanctions—Responsible corporate officers

For years enforcement authorities have made it a priority to prosecute responsible corporate officers for environmental crimes.¹ Indeed, a major deterrent value of criminal prosecution is lost when pursuing an organization unless its officers are pursued as well, because while an organization cannot be incarcerated, its officers can be.² Thus, it is not surprising that most reported criminal cases against organizations also name individual, high-ranking officers or employees. There are three grounds for charging corporate officers with crimes committed by their

²²*United States v. Plaza Health Labs., Inc.*, 3 F.3d 643, 23 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21526 (2d Cir. 1993), cert. denied sub nom. *United States v. Villegas*, 114 S. Ct. 2764 (1994). For an earlier, similar case, see *United States v. Frezzo Bros.*, 642 F.2d 59, 11 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20914 (3d Cir. 1981).

²³*Ratzlaf v. United States*, 114 S. Ct. 655, 663 (1993).

²⁴*United States v. Weitzenhoff*, 35 F.3d 1275, 1293, 24 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21504, 21512 (9th Cir. 1994).

²⁵See *United States v. Hayashi*, 2 F.3d 859, 24 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20985 (9th Cir. 1994) (unclear statute); *United States v. Self*, 2 F.3d 1071, 23 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21301 (10th Cir. 1993) (unclear regulation); *United States v. Heuer*, 4 F.3d 723, 23 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21357 (9th Cir. 1993) (unclear permit).

²⁶See *General Elec. Co. v. U.S. EPA*, 53 F.3d 1324, 25 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20982 (D.C. Cir. 1995); *Rollins Env'tl. Servs. (NJ) v. EPA*, 937 F.2d 649, 21 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21353 (D.C. Cir. 1991); see also *United States v. Louisiana-Pacific Corp.*, 682 F. Supp. 1141, 18 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20912 (D. Colo. 1988).

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¹F. Henry Habicht II, *The Federal Perspective on Environmental Criminal Enforcement: How to Remain on the Civil Side*, 17 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 10478 (Dec. 1987).

²U.S. Department of Justice Manual §§ 5-11.311 (1991-1992 Supp.).

organizations: (1) the officers personally participated in the offense, aided or abetted in it, or were part of a conspiracy to commit it; (2) the officers were made liable by the CWA's and CAA's inclusion of "any responsible corporate officer" in the definition of "person" for the purpose of criminal liability; or (3) the officers are liable under the "responsible corporate officer" doctrine enunciated in *United States v. Park*³ and *United States v. Dotterweich*.⁴

The first type of liability does not depend on whether the defendant was a corporate officer; the individual is liable because of his or her own acts and can hardly expect to be shielded behind his or her status as corporate official. The second type of liability is more problematic. At first blush, the definition of "person" as including a "responsible corporate officer" seems to add nothing to the provision that "any person who knowingly violates" the statute is subject to criminal sanctions. An officer would be a person in any event and a person must knowingly violate the statute to be criminally liable. But this flies in the face of the canon of statutory construction that every word in a statute be interpreted to give it meaning, an admonition that must apply even more forcefully to an entire subparagraph.⁵ At the same time, the rule of lenity makes it difficult to ascribe any less *scienter* to a knowing corporate officer than to a knowing person of another description.⁶ In the end the definition does not appear to change the degree of participation or *scienter* necessary to convict a person who is a corporate officer from that necessary to convict any other person.

The responsible corporate officer doctrine, however, could erode even further the degree of *scienter* necessary to convict a corporate officer of an environmental offense. The doctrine that a corporate officer with responsibility and authority to prevent a violation is criminally liable for crimes committed by the corporation is based on *Park* and *Dotterweich*. Both of those cases involved violations of the Food, Drug, and Cosmetic Act (FDCA), a statute that imposed strict criminal liability—i.e., not predicated on knowing or willful behavior—but provided only misdemeanor sanctions.⁷ The doctrine was squarely rebuffed under RCRA in *United States v. MacDonald & Watson Waste Oil Co.*⁸ and *United States v. White*,⁹ because RCRA, as most other environmental statutes, requires knowing actions or violations to impose criminal sanctions. The courts also noted the difference between the misdemeanor status of FDCA crimes and the felony status of environmental crimes. The Department of Justice appears to have acceded to this.¹⁰

³United States v. Park, 421 U.S. 658 (1975).

⁴United States v. Dotterweich, 320 U.S. 277 (1943).

⁵See *United States v. Brittain*, 931 F.2d 1413, 21 *Envtl. L. Rep. (Envtl. L. Inst.)* 21092 (10th Cir. 1991).

⁶In *Ratzlaf*, the Court applied the rule of lenity to interpret the meaning of "willfully violates" in a statute more narrowly than the government had argued it should be interpreted. *Ratzlaf v. United States*, 114 S. Ct. 655 (1993).

⁷21 U.S.C.A. § 333(a) provides criminal fines of up to \$1,000 and not more than one year in jail.

⁸*United States v. MacDonald & Watson Waste Oil Co.*, 933 F.2d 35, 21 *Envtl. L. Rep. (Envtl. L. Inst.)* 21449 (1st Cir. 1991).

⁹*United States v. White*, 766 F. Supp. 873, 22 *Envtl. L. Rep. (Envtl. L. Inst.)* 20050 (E.D. Wash. 1991).

¹⁰See Hartman & DeMonaco, *The Present Use of the Responsible Corporate Officer Doctrine in the Criminal Enforcement of Environmental Laws*, 23 *Envtl. L. Rep. (Envtl. L. Inst.)* 10145, 10151, 10153 (Mar. 1993) (stating that the Department of Justice follows the teachings of *MacDonald & Watson*, but cautioning that the agency may not always do so in the future).

At the same time, it must be remembered that courts are willing to infer knowledge from the defendant's position and responsibility in an organization.¹¹ Such an inference may give the prosecutor all he or she needs to convict a responsible corporate officer, without a conspicuous shift in legal doctrine.

§ 9:33 Criminal sanctions—Sentencing guidelines

The Sentencing Reform Act of 1984 (SRA)¹ was enacted to correct abuses in earlier sentencing and parole practices. The dominant concern behind its enactment was that persons with similar criminal records who were convicted of similar offenses were often given widely divergent sentences—from probation to incarceration of ten or twenty years or even more, depending on the predilections of the particular judge, or worse, it was suspected, on the basis of the convicted felon's race, religion, or gender.² Disparity of sentencing was thought to occur because the statutes violated did not suggest to judges how to exercise sentencing discretion, and the only check on individual judges' sentencing practices was the remote possibility that a court of appeals would reverse a sentence for a particularly egregious abuse of discretion. A secondary concern was that sentences were not reducing the prevalence of criminal behavior, either by deterring criminal activity or by removing criminals from the streets. The perceived reason for this failure was that felons did not serve enough time in prison because of lenient parole practices. This was thought to occur in large part because of the lack of consultation and common approaches between judges and the Parole Commission.³

The SRA addressed these concerns by creating a Sentencing Commission to establish sentencing guidelines and by abolishing the Parole Commission and the possibility of parole.⁴ Without parole, the only sentence reduction possible is early release for good behavior of up to 15 percent of the term imposed by the judge.⁵ As a result, sentences appear to be more uniform and the terms of incarceration actually served are longer.⁶ The SRA instructs the Sentencing Commission on how to develop guidelines and courts on how to sentence. The Commission is to develop guidelines requiring sentences that reflect both the nature and circumstances of the offense and the history and characteristics of the offender.⁷ The guidelines are to provide both certainty in sentencing and flexibility to reflect individual aggravating and

¹¹See § 9:31; *United States v. Self*, 2 F.3d 1071, 23 *Env'tl. L. Rep.* (*Env'tl. L. Inst.*) 21301 (10th Cir. 1993); *United States v. Johnson & Towers, Inc.*, 741 F.2d 662, 14 *Env'tl. L. Rep.* (*Env'tl. L. Inst.*) 20634 (3d Cir. 1984).

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¹Pub. L. No. 98-473, 98 Stat. 20332 (1984) (codified at 18 U.S.C.A. §§ 3551 et seq. and 28 U.S.C.A. §§ 991 et seq.).

²Sen. Rep. No. 98-225, at 41-9, 52-6, *reprinted in* *United States Code Congressional and Administrative News* pp 3182, 3224-32, 3235-39.

³Sen. Rep. No. 98-225, at 46-9, 56-8, *reprinted in* *United States Code Congressional and Administrative News* pp 3229-32, 3239-41.

⁴28 U.S.C.A. § 994; 18 U.S.C.A. § 3553.

⁵18 U.S.C.A. § 3624(b).

⁶For example, an offender with no criminal record convicted of armed bank robbery of less than \$10,000 was sentenced before the Guidelines to from 0 to 216 months in prison. After the Guidelines, the felon would be sentenced to 24 to 84 months in prison. The average sentence before the Guidelines was 71 months; after, it was 40 months. But the actual period of incarceration increased from an average of 24 months to an average of 35 months. At least for this example, disparities in sentences during the earlier period were largely compensated for by parole and the chief effect of the guidelines was to increase prison time actually served by 50 percent. U.S. Sentencing Commission, *A Report on the Operation of the Guidelines System* (1992). *Contra* G. Heaney, *The Reality of Guidelines Sentencing: No End to Disparity*, 28 *Am. Crim. L. Rev.* 161 (1991).

⁷28 U.S.C.A. § 994(c) to § 994(e).

mitigating circumstances.⁸ These policies are often irreconcilable and the Commission itself has admitted its inability to reconcile them.⁹ Courts must follow the guidelines unless there is an “aggravating or mitigating circumstance of a kind, or to a degree” not considered by the Commission in developing the guidelines.¹⁰ Sentences that fail to adhere to the guidelines are to be reversed on appeal.¹¹

Environmental crimes have presented special problems for the Commission. To develop the Guidelines, the Commission analyzed 10,000 pre-sentencing reports as well as guidelines and statistics developed by the former U.S. Parole Commission.¹² But there were few earlier sentences for environmental crimes to review, and most of the sentences that could be reviewed had been imposed when the offenses were misdemeanors and, therefore, did not provide appropriate guidance for offenses that had been upgraded to felonies. Thus, although the guidelines for other crimes were generally established to reflect the average sentences previously imposed for particular crimes,¹³ for environmental crimes the Guidelines self-consciously increased the sentences over those previously imposed.

The Sentencing Guidelines for individuals took effect in 1987. They consist primarily of a set of guidelines for specific offenses, a set of general adjustments, and a sentencing table. The first step in determining a sentence is to identify the guideline applicable to the specific offense. For environmental crimes, it will be in Chapter 2, Part Q of the U.S. Sentencing Guidelines (U.S.S.G.), which contains seven guidelines, §§ 2Q1.1 to.7, each covering a specific set of offenses. For each guideline there is a base offense level, a series of specific offense characteristics and guided departures to adjust the base level, and commentary. Once the base level has been adjusted to reflect these characteristics and guided departures, one of a number of general adjustments may apply, such as the defendant’s role as a leader or organizer.¹⁴ The final step in the process is to consult the Sentencing Table, U.S.S.G. § 5A, which provides ranges of sentences for the adjusted level depending on the criminal history of the defendant, and the fine guideline, U.S.S.G. § 5E1.2, which does the same for fines.

Determining the sentence for the operator of a city sewage treatment plant violating its CWA permit by ten percent provides an illustration of how the Guidelines work. Assuming for the moment that the indictment did not charge that the sewage discharged was a hazardous substance, § 2Q1.3 applies, with a base level of six.¹⁵ Specific offense characteristic § 2Q1.3(b)(1) adds either four or six levels because the offense was the discharge of pollutants. It adds six levels if the discharge was ongoing, continuous, or repetitive, and four levels if it was not. Specific characteristic § 2Q1.3(b)(4) adds another four levels because the offense involved a discharge without, or in violation of, a permit. The levels total either fourteen or sixteen, depending on whether the discharge was a one-time or repeated event. Assuming that the operator had no previous criminal history, the sentencing table provides

⁸28 U.S.C.A. § 994(f).

⁹U.S. Sentencing Guidelines, ch. 1, at 2-3 [hereinafter U.S.S.G.].

¹⁰18 U.S.C.A. § 3553(b).

¹¹18 U.S.C.A. § 3742. Unjustified departures from the Guidelines constitute reversible error. *United States v. Rutana*, 932 F.2d 1155, 21 *Envtl. L. Rep.* (Envtl. L. Inst.) 21241 (6th Cir. 1991), cert. denied, 112 S. Ct. 300 (1991).

¹²U.S.S.G., ch. 1, at 3.

¹³The SRA required that average sentences imposed previously for a crime be considered, but not controlling, in developing a guideline for that crime. 28 U.S.C.A. § 994(m).

¹⁴U.S.S.G. § 3B1.1; *see also* *United States v. Liebman*, 40 F.3d 544, 25 *Envtl. L. Rep.* (Envtl. L. Inst.) 20591 (2d Cir. 1994).

¹⁵If the indictment charges that the pollutant discharged was a hazardous or toxic substance, § 2Q1.2 applies, if not, § 2Q1.3 applies. *United States v. Goldfaden*, 959 F.2d 1324, 22 *Envtl. L. Rep.* (Envtl. L. Inst.) 21069 (5th Cir. 1992).

sentence ranges of from fifteen to twenty-seven months, again depending on whether or not the discharge was a one-time event. The Guidelines also require a fine of between \$4,000 and \$50,000, depending on the same variable, as well as other factors.¹⁶ Because the minimum sentence under either of the two possibilities is more than zero months, probation is not an alternative to incarceration.¹⁷ The only possibility of sentence reduction is up to 15 percent off for good behavior. If the discharge was a hazardous substance, § 2Q1.2 would apply, adding another two levels to the base offense level, for a sentence of twenty-seven to thirty-three months. Enhancements to the base level are commonly given for repeated discharges to the environment,¹⁸ discharging without a permit,¹⁹ and contamination requiring cleanup.²⁰

Indictments for environmental crimes often contain charges for common crimes, such as fraud or mail fraud. Those illegally disposing of hazardous waste for hire, for instance, may defraud their customers by representing they are disposing of it legally and may use the mails to further their deceptions. Violations of the environmental laws may involve conspiracies to do so, which are separately charged. Where common actions constitute two offenses, it is permissible for the court to use the sentencing guideline for either offense.²¹

Most violations of the environmental statutes involve (1) the release of a pollutant into the environment, (2) either without, or in violation of, a permit. Yet specific offense characteristics § 2Q1.3(b)(1) and (4) significantly enhance the sentence because of these two factors, as do the corresponding offense characteristics in § 2Q1.2. Efforts to defeat such enhancements on the basis that they double count the underlying offense have been unsuccessful.²² But criticism of such double counting was taken seriously enough by the Sentencing Commission to propose a partial cure.²³ The Commission has never taken final action on its proposal, however. Application

¹⁶U.S.S.G. § 5E1.2 requires that a fine be assessed unless the defendant is unable to pay. It establishes a fine table with a minimum and maximum for each offense level. At an offense level of fourteen, the range is from \$4,000 to \$40,000, and at a level of sixteen, it is from \$5,000 to \$50,000. In any case, the minimum is the greater of the defendant's gain from the violation, less any restitution, or the minimum in the fine table. The maximum is the maximum in the fine table, or twice the loss to the victim or three times the gain realized by the defendant. There is no maximum if the authorizing statute provides for a fine of \$250,000 or more, or for a fine for each day of violation.

¹⁷18 U.S.C.A. § 3561(a)(3) precludes probation for a defendant sentenced to a term of imprisonment for the same offense. Unless the applicable Sentencing Guideline authorizes a term of zero months, imprisonment is required and probation is not authorized. The only offenses for which it provides a term of zero months are misdemeanors.

¹⁸United States v. West Indies Transp., Inc., 127 F.3d 249, 28 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20202 (3d Cir. 1997) (6 levels); United States v. Eidson, 108 F.3d 1336, 27 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20853 (11th Cir. 1997) (6 levels); United States v. Catucci, 55 F.3d 15, 25 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21439 (1st Cir. 1995) (4 levels); United States v. Strandquist, 993 F.2d 395 (4th Cir. 1993) (5 levels); United States v. Goldfaden, 959 F.2d 1324, 22 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21069 (5th Cir. 1992) (6 levels).

¹⁹United States v. Ferrin, 994 F.2d 658, 23 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20854 (9th Cir. 1993) (4 levels).

²⁰United States v. Eidson, 108 F.2d 1336, 27 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20853 (11th Cir. 1997).

²¹United States v. Henry, 136 F.3d 12, 28 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21048 (1st Cir. 1998). The court reasoned that the two offenses involved multiple victims: the customers were defrauded and the public weal was polluted. The court used the fraud sentencing guidelines when conspiracies to violate both RCRA and fraud statutes were charged.

²²See United States v. Ellen, 961 F.2d 462, 22 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21282 (4th Cir. 1992); United States v. Schmidt, 47 F.3d 188, 192 n.3, 25 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20617, 20618 n.3 (7th Cir. 1995).

²³See 57 Fed. Reg. 97 (Jan. 2, 1992). The Commission proposed amending § 2Q1.2(b)(4) to make it inapplicable if § 2Q1.2(b)(1) had already been applied to enhance the sentence. The cure was partial in that it did not make a similar proposal for § 2Q1.2(b)(4), but only asked whether it should. Moreover, § 2Q1.2(b)(1) and (4) and their § 2Q1.3 counterparts all double count elements of their respective base

Note 5 to § 2Q1.2 states that its application “assumes a discharge or emission into the environment resulting in actual environmental contamination. . . . Depending upon the harm resulting . . . a departure of up to two levels in either direction . . . may be appropriate.” Application Note 4 to § 2Q1.3(b)(1) contains the same language. Perhaps the most litigated issue under the Guidelines for environmental crimes results from unsuccessful attempts by defendants to contest enhancements under these provisions in the absence of proof of environmental harm by the government, or to obtain downward departures from the enhancements on the basis that there was little or no such damage.²⁴

Sentencing Guidelines for organizations did not come into effect until 1991. They are based on four general principles: (1) restitution; (2) divestiture of all assets from organizations operated primarily for criminal purposes or by criminal means; (3) punishment of other organizations in accordance with the seriousness of the offense and the culpability of the organization; and (4) terms of probation to reduce the likelihood of further criminal conduct.²⁵ The “guts” of the Guidelines, the calculation of fine levels in §§ 8C2.2 through 2.9,²⁶ do not apply to environmental crimes.²⁷ Instead, courts are referred to 18 U.S.C.A. §§ 3553 and 3572.²⁸ In 1993 the Sentencing Commission’s Advisory Working Group on Environmental Sanctions released a Working Draft for public comment. The draft was as long as the organizational guidelines for all other crimes and generally treated environmental crimes more harshly than other crimes.²⁹ They generated a storm of opposition.³⁰ The Advisory Working Group made some changes in the Working Draft as a result of the comments it received and recommended it to the Commission. Despite the changes, the recommendations would still create harsher sanctions on organizations for

offenses. The basic prohibition of the CWA, for instance, is § 301(a), 33 U.S.C.A. § 1311(a). That section, read together with the definitions in § 502, 33 U.S.C.A. § 1362, makes it illegal to discharge a pollutant into navigable waters from a point source without, or in violation of, a permit. Here, both § 2Q1.2(b)(1) and (4) are quite clearly elements of the base offense and, therefore, both should be eliminated.

²⁴United States v. Freeman, 30 F.3d 1040, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 21361 (8th Cir. 1994) (acquittal on charge of discharging a pollutant without a permit does not prevent enhancement for such discharge under § 2Q1.2(b)(1)(B); contamination assumed from volatility of the waste); United States v. Strandquist, 993 F.2d 395, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 21429 (4th Cir. 1993) (contamination inferred from discharge of sewage to storm grate); United States v. Goldfaden, 959 F.2d 1324, 22 Env’tl. L. Rep. (Env’tl. L. Inst.) 21069 (5th Cir. 1992) (commentary takes contamination as given), conviction on remand aff’d, 987 F.2d 225, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 20774 (5th Cir. 1993); United States v. Irby, 994 F.2d 902 (4th Cir. 1991) (table decision); United States v. Sellers, 926 F.2d 410, 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 20787 (5th Cir. 1991) (contamination assumed from one leaking barrel); United States v. Bogas, 920 F.2d 363, 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 20356 (6th Cir. 1990) (visual soil contamination). Compare United States v. Ferrin, 994 F.2d 658, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 20854 (9th Cir. 1993) (actual contamination a prerequisite to enhancement).

²⁵U.S.S.G., ch. 8, Introductory Comments, § 8A1.2.

²⁶The basic fine assessment is set forth in § 8C2.4. It provides a fine that is the greatest of: (1) the fine table therein; (2) the gain to the organization from the violation; or (3) the loss to others from the violation. At an offense level of sixteen (typical for routine environmental offenses), the fine table amount is \$175,000.

²⁷U.S.S.G. § 8C2.1, application note.

²⁸U.S.S.G. § 8C2.10.

²⁹Comments submitted to the Commission by a coalition of industry concerns noted that the draft environmental guidelines for organizations treated at least twenty issues differently—and more harshly—than the general guidelines for organizations. “Ch 9 and 18 U.S.C.A. § 3571 set the alternative fine as the greatest of the fine table, the pecuniary gain or the pecuniary loss. The Working Draft chooses the greater of the fine table or the economic gain plus costs (loss), thereby mandating a larger fine in most instances.” Comments of Benjamin S. Sharp et al. (Apr. 16, 1993).

³⁰See Rosin, *New Chapter 9: An Analysis of the Proposed Sentencing Guidelines for Organizational Environmental Offenders*, 3 N.Y.U. Env’tl. L.J. 559, 560 (1994). The divergence of viewpoints on the proposals is captured, in muted tones, in *Sentencing Corporate Polluters*, Env’tl. Forum (Mar./Apr. 1994).

environmental crimes.³¹ The Commission announced that it would consider comments on the Working Draft,³² but has since taken no further action.

II. OVERSIGHT OF STATE ENFORCEMENT*

§ 9:34 Introduction

Achieving a high rate of regulatory compliance is critical to the success of each environmental program. Compliance is the ultimate test for whether environmental permits, regulations, or standards are leading to real changes in behavior or are just so many words on paper. The corollary is that without credible enforcement, there will be little incentive to comply.

Oversight of state enforcement by the Environmental Protection Agency (EPA) is central to an effective national enforcement program. Most of the federal environmental statutes anticipate a shift of primary responsibility for program administration, which includes enforcement, from EPA to states or local governments through delegation or program approval.¹ However, EPA remains responsible for ensuring overall compliance with and enforcement of federal statutes. Furthermore, except for some unique notice provisions,² EPA usually retains full legal authority to pursue its own direct enforcement action without regard to any state enforcement action, even in delegated or approved states.³

EPA's dual role of general oversight and direct federal enforcement in delegated

³¹Two examples of the differences illustrate the point. The fine table for the general organizational guidelines provides a fine of \$175,000 at an offense level of sixteen (typical of routine environmental offenses). U.S.S.G. § 8C2.4(d). The fine from the proposed guidelines for environmental offenses, however, establishes a range of from 50 to 70 percent of the statutory maximum for the same offense level. If a violation continued for twenty days, this could mean a penalty of \$250,000 to \$350,000 under proposed § 9E1.1. Moreover, the sort of internal compliance controls that a corporation would have to develop to mitigate a fine, or that a court could impose as a condition of probation, are far more stringent in the case of environmental crimes vis-à-vis other crimes. *See* Rosin, *New Chapter 9: An Analysis of the Proposed Sentencing Guidelines for Organizational Environmental Offenders*, 3 N.Y.U. *Envtl. L.J.* 559, 581–87 (1994).

³²58 Fed. Reg. 764 (1993).

*By Cheryl E. Wasserman

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¹For a summary of the program by which states may administer delegated or approved programs. *See* § 4:4. With some exceptions, only enforcement under the Toxic Substances Control Act 15 U.S.C.A. §§ 2601 to 2629, and portions of the mobile source emissions control program under the Clean Air Act 42 U.S.C.A. §§ 7401 to 7642, are not delegable or approvable for states. However, EPA has expanded its grant and delegation of compliance inspection programs to include fifteen states under TSCA § 28, 15 U.S.C.A. § 2627. In addition, the Office of Compliance Monitoring recently established a federal-state coordinating organization, the Forum on State and Tribal Toxic Action (FOT TSA), to encourage state and tribal management and enforcement of toxics. EPA's Office of General Counsel is reviewing whether states can adopt state laws and implement enforcement programs consistent with the preemption provision of TSCA § 18, 15 U.S.C.A. § 2617.

²Federal Insecticide, Fungicide and Rodenticide Act § 27, 7 U.S.C.A. § 136w-2; Safe Drinking Water Act §§ 1414(a) & 1423(a), 42 U.S.C.A. §§ 300g-3(a) & 300h-2(a); Resource Conservation and Recovery Act § 3008(a)(2), 42 U.S.C.A. § 6928(a)(2); Clean Air Act §§ 113(a)(1), (b), 42 U.S.C.A. §§ 7413(a)(1), (b).

³Under the major environmental statutes, CAA, CWA, and RCRA, it is well established that EPA may pursue federal enforcement without limitation even in delegated or approved states. *See* *United States v. City of Youngstown*, 109 F. Supp. 2d 739, 741 (N.D. Ohio 2000) for CWA, and *United States v. Murphy Oil U.S.A., Inc.*, 143 F. Supp. 2d 1054, 1091 (W.D. Wis. 2001) for CAA. In the case of RCRA, *see* *Wyckoff Co. v. EPA*, 796 F.2d 1197, 1199, 16 ELR 20866, 20867 (9th Cir. 1986) (upholding EPA's enforcement authority in delegated or approved states under RCRA). Note, however, there are conflicting holdings in regard to whether federal enforcement is limited under RCRA if a state has initiated its own enforcement action (*see* *Harmon Indus., Inc. v. Browner*, 191 F.3d 894, 899, 29 ELR 21412, 21413 (8th Cir. 1999)), but the law is still unsettled on this point as *Harmon* has either been rejected (*see* *United States v. Power Eng'g Co.*, 125 F. Supp. 2d 1050, 31 ELR 20335 (D. Colo. 2000) and *United*

or approved states can be highly sensitive; it is the subject of a continuing public policy debate.⁴ While the states and EPA have often had fundamental disagreements on the meaning of enforcement, both must work in partnership to ensure the most productive use of the limited resources of each level of government in pursuing enforcement actions and in achieving compliance.

EPA has interpreted its federal oversight role and the federal-state partnership differently at various times in its history. In the late 1970s, EPA adopted a heavy, direct federal role. By the early 1980s, however, EPA had adopted a “hands off” role, indicating that delegation should imply only general oversight, with direct federal enforcement as a last resort. At various other times, EPA has limited its oversight focus to a narrow set of sources or environmental concerns. In an attempt to stabilize the federal-state enforcement partnership, in April 1984 EPA established a Steering Committee on the State/Federal Enforcement Relationship, chaired by EPA’s Office of Enforcement. The Committee was initially charged with helping to define the contents and process for reaching state- and program-specific enforcement agreements which define, in advance, oversight criteria and approach, criteria for direct federal action and protocols for advance notification and consultation with states, and state reporting of performance and accomplishments.⁵ The Agency then established a “Policy Framework for Implementing State/Federal Enforcement Agreements,”⁶ which, along with program specific guidances,⁷ sets forth how EPA will oversee the state enforcement programs in the foreseeable future. This process

States v. Elias, 269 F.3d 1003, 32 ELR 20218 (9th Cir. 2001)) or distinguished away (*see, e.g.*, United States v. Flanagan, 126 F. Supp. 2d 1284 (C.D. Cal. 2000)). The issue takes on less importance in light of EPA policy self-limiting its own actions in States with delegated or approved programs as described in this Section.

⁴See “Environmental Enforcement Becomes Federalism’s Hazardous Battleground,” *Env’t. Rep.* (BNA) (May 2000). *See also* Testimony from Hearing on the Enforcement of Environmental Laws Before the Senate Comm. on Environment and Public Works, 105th Cong. 173 (June 10, 1997); *Harmon Indus. v. Browner*, 191 F.3d 894, 29 *Env’tl. L. Rep.* (*Env’tl. L. Inst.*) 21412 (8th Cir. 1999) (viewed as an isolated ruling that specific language in RCRA did not allow EPA to seek federal penalties in an authorized state unless the state failed to initiate enforcement action or withdraws authorization). *See also* 131 Cong. Rec. S8098-102 (daily ed. June 13, 1985) (proposed amendment to the Clean Water Act to encourage EPA to refrain from pursuing independent enforcement action where a state is taking or has already completed an appropriate enforcement action). *See also* In the Matter of BKK Corporation EPA, Docket No. IX-84-0012 (Initial Dec. 4-13-84) (Region IX case; opinion by Judge Nissen), affirmed by the Chief Judicial Officer, May 10, 1985, vacated by the Administrator, Oct. 23, 1985. EPA’s Administrator Thomas vacated the decision that EPA was estopped from taking enforcement action by reasonably equivalent state enforcement action and directed that the Agency’s Office of General Counsel prepare an opinion as to EPA’s right to overfile under RCRA as a matter of law, and directed EPA enforcement to review existing policy on overfiling in consultation with the states. Memorandum from A. James Barnes, Deputy Administrator, to Regional Administrators, et al., titled “Overfiling under RCRA” (Apr. 1986), with attached legal opinion from EPA General Counsel (concluded that apart from the notice requirements contained in RCRA § 3008(a)(2) there is no legal impediment to EPA’s right to overfile under RCRA).

⁵See Memorandum from Alvin L. Alm, Deputy Administrator to Assistant Administrators, Regional Administrators, et al., titled “Forging an Effective State/Federal Enforcement Relationship” (Apr. 9, 1984); Memorandum from Courtney M. Price, Assistant Administrator for Enforcement and Compliance Monitoring to Alvin L. Alm, Deputy Administrator titled “Steering Committee on the State/Federal Enforcement Relationship” (June 22, 1984) (updated 1/86 and again 4/86 by the Office of Enforcement and Compliance Monitoring, Compliance Policy and Planning). The Steering Committee is composed of about thirty individuals representing EPA Headquarters and Regional Offices, Executive Directors of state associations, and representative state environmental officials.

⁶See Memorandum from Alvin L. Alm, Deputy Administrator to Assistant Administrator, Regional Administrators, et al., titled “Implementing the State/Federal Partnership in Enforcement: State/Federal Enforcement ‘Agreement’ ” (June 26, 1984) [hereinafter referred to as Policy Framework]. *See also* Memorandum from A. James Barnes, Deputy Administrator, titled “Revised Policy Framework for Implementing State/EPA Enforcement Agreements” (Aug. 26, 1986) [hereinafter Revised Policy Framework]. *See also* the following addenda to the Policy Framework: Memorandum from Steven A. Herman, Assistant Administrator, to EPA Addressees, titled “Oversight of State and Local Penalty

fully implements the more general Agency-wide EPA policies on oversight and delegations to states.⁸

EPA and the States have revisited the Policy Framework on numerous occasions, but it remains the guiding document for defining the Federal-State enforcement relationship and oversight of State enforcement. Nevertheless issues remain as do significant gaps in its implementation. This section discusses, in turn, each element of EPA's oversight criteria and approach as set forth in the Policy Framework, briefly describes how EPA oversight of state enforcement is working, including a brief description of the State Review Framework (SRF)—the latest mechanism developed by EPA to implement state oversight—and the most recent efforts to improve the federal-state partnership.

§ 9:35 Oversight criteria and approach: Defining good performance

EPA reviews state enforcement programs on a regular basis through semi-annual program reviews; quarterly reporting on key performance measures; reviews of progress in addressing certain violations (usually monthly); and other less formal contacts. Problems are generally addressed through agreed upon corrective actions which may involve EPA assistance. EPA also may choose to take direct enforcement action. Ultimately, while poor performance may be a basis for withdrawal by EPA of a state's delegation or program approval, this has rarely occurred in practice.

The Policy Framework establishes oversight criteria for enforcement to be applied to each of its statutory programs through tailored guidance as a basis for assessing

Assessments: Revisions to the Policy Framework" (July 20, 1993); Memorandum from Scott C. Fulton, Acting Assistant Administrator, Office of Enforcement, titled "Criminal Enforcement Addendum to the Policy Framework for State/EPA Enforcement Agreements" (Feb. 1, 1993) [hereinafter Criminal Enforcement Addendum to the Policy Framework]; Memorandum from Herbert H. Tate, Jr., Assistant Administrator, Office of Enforcement, titled "Final Addendum on Multi-Media Enforcement to the Policy Framework on State/Federal Enforcement Agreements" (May 13, 1992).

⁷See Memorandum from Larry J. Jensen, Assistant Administrator for Water to Regional Administrators et al., titled "FY 1987 National Guidance for Oversight of NPDES Programs" (Apr. 18, 1986) (updating prior guidances for FY 85 and FY 86); Memorandum from Eric Schaeffer, Director of the Office of Regulatory Enforcement, titled "Issuance of Policy on Timely and Appropriate Enforcement Response to High Priority Violations" (Dec. 22, 1998) (in regard to the air program), which specifically supercedes Memorandum from Joseph A. Cannon to Regional Administrators, titled "Guidance on 'Timely and Appropriate' EPA/State Enforcement Response for Significant Air Violators" (June 28, 1984) (updated by Memorandum from J. Craig Potter, Assistant Administrator for Air and Radiation to Regional Administrators, titled "Timely and Appropriate Enforcement Response Guidance" (Apr. 11, 1986)); "National Air Audit System Guidelines for FY 86" (Feb. 1986); Memorandum from Lee M. Thomas, Administrator, to Regional Administrators, titled "Compliance and Enforcement Program Descriptions in Final Authorization Application and State Enforcement Strategies" (June 12, 1984); "Interim National Criteria for a Quality Hazardous Waste Management Program Under RCRA," Office of Solid Waste and Emergency Response (reissued June 1986, original May 1984); Memorandum from J. Winston Porter to Regional Administrators, titled "FY 87 RCRA Implementation Plan," issued May 19, 1986 (updates prior guidances for FY 85 and FY 86); Memorandum from Victor J. Kimm, Director Office of Drinking Water, to Water Management Division Directors et al., titled "FY 85 Initiative on Compliance Monitoring and Enforcement Oversight" (June 29, 1984); Memorandum from Victor J. Kimm, Director, Office of Drinking Water, to Regional Drinking Water Branch Chiefs, titled "Guidance for the Development of FY 86 PWSS State Program Plans and Enforcement Agreements" (July 3, 1985); Memorandum from Victor J. Kimm, Director, Office of Drinking Water, to Water Division Directors, titled "Guidance for FY 86 UIC Enforcement Agreements Underground Injection Control Program Guidance #40" (June 28, 1985). See also 48 Fed. Reg. 404 (1983) (Interpretative Rule—FIFRA State Primary Enforcement Responsibility).

⁸See Memorandum from William D. Ruckelshaus, Administrator, to Assistant Administrators, et al., titled "Agency Policies on Delegation and Oversight: Making the State/EPA Partnership Work" (Apr. 4, 1984); see also Memorandum from Carol Browner, Administrator, to All EPA and State Environmental Managers, titled "A New Framework for the State/EPA Partnership" (July 14, 1994); Memorandum from Carol Browner, USEPA, Fred Hansen, USEPA, Tom Looby, Colorado Office of Environment, Mary Gary, Illinois EPA, titled "Joint Commitment to Reform Oversight and Create a National Environmental Performance Partnership System" (May 17, 1995).

good program performance. These criteria were developed to apply equally to the states or the EPA, whichever is responsible for administering the program. The Policy Framework identifies eight oversight criteria that generally are used by most of EPA's enforcement programs: (1) clear identification of and priorities for the regulated community; (2) clear and enforceable requirements; (3) accurate and reliable compliance monitoring; (4) high or improving rates of continuing compliance; (5) timely and appropriate enforcement response; (6) appropriate use of penalty and other sanctions; (7) accurate recordkeeping and reporting; and (8) sound overall program management.

**§ 9:36 Oversight criteria and approach: Defining good performance—
Clear identification of and priorities for the regulated community**

The first step in EPA oversight of state programs is EPA's own statement of annual program priorities. This may take various forms, including operating-year guidance or guidance directed toward state grants, performance partnerships, or memoranda of agreement. National Guidance is the basis for negotiations on specific state and EPA regional commitments for identified areas of performance. It contains specific measures by which state and regional performance will be judged. These commitments are made during annual negotiations between the state and EPA Regions.

One of the issues in EPA oversight of state enforcement programs is whether state programs should be judged solely on the basis of federal priorities, or whether EPA oversight should take into account state priorities. The Policy Framework recognizes the need to balance national and state priorities but this has proven difficult in practice. In the air and water programs, for example, the federal program has concentrated on major sources¹ for permitting, inspections, and enforcement response to violations. In the hazardous waste program, national priorities have been hazardous waste land disposal facilities. However, minor air and water sources and municipal solid waste landfills may pose significant environmental concerns in the states, and are often the source of citizen complaints to which the state and local agency must respond.

EPA programs attempt to target enforcement commitments on the most environmentally and programmatically significant violations. Nevertheless, these state-specific problems may not be addressed by national priorities. The Policy Framework promises that EPA will seek targeting of both state and federal enforcement for enhanced environmental and deterrence results. One approach, mentioned in the Policy Framework and employed only relatively infrequently is for EPA and the states to identify geographically based environmental problems for targeted compliance monitoring and enforcement. The areas receiving more intensive scrutiny also would focus on relevant smaller sources of pollution. Under this approach, EPA managers entertain proposals for adjusting other national commitments to accommodate more important environmental priorities where such adjustments are necessary to achieve better environmental results.² At various times EPA has emphasized multi-media initiatives, focused on particular geographic areas, pollutants, industries, and companies or facilities. The multi-media initiatives on the

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¹See 40 C.F.R. § 122.2 (NPDES). Clean Air Act § 169, 42 U.S.C.A. § 7479.

²See Memorandum from Sylvia K. Lowrance, Acting Assistant Administrator, to Deputy Regional Administrators, *et al.*, titled "Final Fiscal Year 2002/2003 Office of Enforcement and Compliance Assurance Memorandum of Agreement Guidance," (June 19, 2001); Memorandum from Lee M. Thomas, Administrator, to Assistant Administrator for Policy, Planning and Evaluation, *et al.*, titled "EPA's Geographic Enforcement Initiative" (Dec. 31, 1985); Memorandum from Courtney M. Price to Regional Administrators, *et al.*, titled "EPA's Geographic Enforcement Initiative and EMR Action Plans" (Jan. 15, 1986); Memorandum from Lee M. Thomas, Administrator, to Assistant Administrators, *et al.*, titled

federal level have, in turn, put pressure on implementing the commitment to adopt more flexible priority-setting for the states.³

Federal priority setting is directly related to the need, in program oversight and administration, for having accurate and credible state and federal data bases to identify the regulated community and its compliance status. EPA and the states have literally spent years trying to perfect information systems on the most important subset of sources, in the attempt to satisfy national priorities. This means that little information on minor air and water sources or hazardous waste generators is available to EPA for use in EPA's oversight of the states.⁴

§ 9:37 Oversight criteria and approach: Defining good performance— Clear and enforceable requirements

Poorly drafted regulations, standards, and permits can and do interfere with effective state and federal enforcement. This had been a particular problem in the air program, where many State Implementation Plan (SIP) requirements were vague and subject to differing interpretations. In addition, state-issued operating permit requirements—which may not have been submitted as part of the federally enforceable SIP—can alter or conflict with state approved regulations which were adopted as federally enforceable requirements. Both situations can greatly complicate EPA oversight of state enforcement. Moreover, because the regulated community did not give older regulatory requirements the same degree of scrutiny now given the newer requirements, the states face an uphill battle in the attempt to clarify the older, existing regulations.

Permit issuance can aid in enforcement. In processing a permit, general regulations are adapted to source-specific situations. A permit provides one location in which all relevant requirements are interpreted and described for site-specific application, thus increasing the likelihood that requirements will be clear, compatible, and accessible. This was a key reason for the 1990 Clean Air Act Amendments' creation of a national air permit program, which was designed to overcome long-standing problems with outdated and inconsistent SIP requirements. Nevertheless, permit processes also can impede enforcement when permitting is slow (as was the case with hazardous waste permitting), when requirements are not clear, or when

"Instructions for Preparing the 1986 Environmental Action Plan Pilot Project" (Feb. 27, 1986). Note also the program-specific flexibility allowed in individual program guidance documents.

³See EPA's Enforcement Four-Year Strategic Plan: Enhanced Environmental Enforcement in the 1990's, Feb. 1991; Enforcement in the 1990's, Office of Enforcement, 1991; Memorandum, F. Henry Habicht II, Guidance for the FY 1992 State/EPA Enforcement Agreements Process, June 23, 1991, EPA; Memorandum, Raymond B. Ludwiczewski, "Multi-Media Enforcement Addendum to the Policy Framework on State/EPA Enforcement Agreements (Draft)," Aug. 9, 1991, Office of Enforcement, EPA; Air Compliance Program Operating Guidance Project, Stationary Source Compliance Division, OAR, May 7, 1991, EPA; FY 1992 RCRA Implementation Plan, OSWER, May 1, 1991. See also Memorandum from Sylvia K. Lowrance, Acting Assistant Administrator, to Deputy Regional Administrators, *et al.*, titled "Final Fiscal Year 2002/2003 Office of Enforcement and Compliance Assurance Memorandum of Agreement Guidance" (June 19, 2001).

⁴EPA has an improved information management system to support multi-media enforcement by developing the Integrated Data for Enforcement Analysis (IDEA), which offers the prospect of making the strategic use of underlying data far more useful to the states, thus enhancing prospects for securing quality and timely data input and use for priority setting. It is available to EPA and states alike. Considerable effort has been put into making this system and its information available to the general public as well. IDEA provides quick and easy access to all EPA compliance and enforcement data systems and the ability to postulate several schemes for targeting and identifying problem facilities, companies, industries, and geographic areas. See Memorandum from Gerald A. Bryan, "Request for Comments on: Draft Interim Access and Security Procedures for EPA's Recently Developed Integrated Data for Enforcement Analysis (IDEA) Capability," May 31, 1991.

the permits do not provide for the collection of adequate information to determine compliance.¹

Most national environmental statutes provide for permit-by-permit review by EPA with an opportunity to veto or disapprove a proposed state permit that fails to meet minimum federal requirements for performance and enforceability. Routinely challenged by states with proven track records that view real-time review as a nuisance, this important oversight tool is nevertheless preserved in legislative mandates for EPA review that recognize the need to ensure that permits provide an adequate basis for both state and federal enforcement. Just this year EPA issued its Clean Water Act Action Plan² which puts a renewed emphasis on the enforceability of permits issued under the national pollutant discharge elimination system (NPDES). Although enforceability of permits already was covered to a limited extent in program reviews undertaken by both the enforcement and water offices, there will be more of an integrated and concerted effort to focus on enforcement in integrated Water Program and Enforcement reviews.³

§ 9:38 Oversight criteria and approach: Defining good performance— Accurate and reliable compliance monitoring

The Policy Framework focuses attention on both coverage and quality of compliance monitoring, recognizing both that effective deterrence requires a credible likelihood of detection of violations of environmental requirements and that compliance monitoring is the backbone of any effective enforcement program. The elements of the accurate and reliable compliance monitoring include: a) quality of inspections, b) corroboration of the accuracy of source self-monitoring, record keeping and reporting, c) a balance between breadth and depth of coverage of inspections and d) information on compliance status and sufficient rigor to support follow up enforcement where needed, and sufficient coverage to provide a reliable basis for assessing the overall success in achieving compliance.

To ensure a credible likelihood of violations detection and at least a minimum enforcement presence, EPA has set forth national minimum levels and frequency of source inspections.¹ EPA oversees state compliance monitoring by reviewing the number of source inspections, based on annual state commitments, reviewing state inspection files, and by conducting field oversight inspections. Inspector training

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¹The importance of enforceable requirements was underscored most recently in the Enforcement in the 1990's Project and Enforcement Four Year Strategic Plan. The plan recommends increased attention to enforceability of permits and regulations, use of field testing, and enforceability assessments in the development of significant new regulations.

²See Memorandum from Cynthia Giles, Assistant Administrator, Office of Enforcement and Compliance Assurance to Administrator Lisa Jackson, "The Clean Water Act Action Plan" October 15, 2009, transmitting the Plan, see www.epa.gov: The Clean Water Act Action Plan HYPERLINK, prior to February 22, 2010 known as the Clean Water Act Enforcement Action Plan.

³See Memorandum from Lisa C. Lund, Director, Office of Compliance, and Jim Hanlon, Director, Office of Wastewater Management, "Using Results of NPDES and Enforcement Reviews to Address Significant Issues," October 22, 2009.

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¹See Memorandum from Sylvia K. Lowrance, Acting Assistant Administrator, to Deputy Regional Administrators, *et al.*, titled "Final Fiscal Year 2002/2003 Office of Enforcement and Compliance Assurance Memorandum of Agreement Guidance," (June 19, 2001); Environmental Protection Agency, NPDES Inspection Strategy and Guidance (Apr. 1985); Memorandum from Chuck Elkins, Acting Assistant Administrator for Air and Radiation, to Regional Administrators, titled "FY 1986 Inspection Frequency Guidance" (Mar. 19, 1985) (reissued Aug. 26, 1986); Memorandum from J. Winston Porter, Assistant Administrator for Solid Waste and Emergency Response, titled "FY 1987 RCRA Implementation Plan (Apr. 1986). Note that most national environmental program guidance calls for annual inspections of major air and water pollution sources, hazardous waste landfills, and permitted facilities.

and provision by EPA of inspection expertise, which the states may lack, is an increasing challenge. As the enforcement programs are moving to address complex toxic chemicals and groundwater contamination, new skills are needed, but typically, there is a high turnover rate for both state and EPA inspectors because of low wages and limited opportunities for advancement. This puts increased demand on using new methods to deliver training at lower cost and more frequently through advances such as webinars and the internet.

Oversight of compliance monitoring includes how well the state and EPA regions are targeting for more frequent or intense inspections those facilities which are likely violators of environmental or of programmatic significance such as clusters of facilities in highly polluted communities, including environmental justice concerns, and targeting inspections at potential violators in and around sensitive ecosystems like the Chesapeake Bay, Great Lakes and Puget Sound. A good state or EPA regional inspection program should utilize all sources of information, such as complaints, facility characteristics, self monitoring, and reporting in addition to environmental problems to balance the two competing goals of breadth of inspection coverage and a focus of inspection resources on achieving improved environmental, program, and/or compliance results. Attempts to focus inspections solely on environmental priorities such as bays, estuaries and environmental justice communities have encountered problems in the past if inspections turn up empty-handed, underscoring the importance of using multiple factors in targeting. Advances in computer technology are providing the capacity state and federal enforcement officials need from their information support systems to fully utilize an array of information to target inspections including the likelihood of finding violations. If EPA and the States can agree on priorities, it will enable EPA oversight to take on the larger issue of how to effectively and objectively review and evaluate the procedures and algorithms used by state and local agencies to assign inspections.

Finally, although oversight of the compliance monitoring component of state enforcement has focused on the number and quality of inspections, other sources of information are used to monitor compliance and to target where inspectors are being sent. Information such as source self-monitoring reports provide the increased coverage of information on the regulated community that is essential for any effective enforcement program. The Policy Framework tried to recognize these other tools to address depth and breadth of coverage but they tend to get lost within a focus on inspections.

§ 9:39 Oversight criteria and approach: Defining good performance—High or improving rates of continuing compliance

It may seem self-evident that the major goal of enforcement is continuing compliance, but there have been times when the compliance goal was not paramount in the oversight approaches employed by EPA; some states would argue that this still is not the focus of EPA oversight. There are two aspects to compliance in enforcement oversight: How well the program is achieving high rates of overall compliance and how well individual enforcement actions return violators to compliance.

States would generally prefer that EPA oversee their enforcement programs solely on the basis of general compliance rates for the state. There are two practical reasons why EPA does not do this. First, because of the imprecision in reporting and in inspection practices, and because of the difficulties in gaining full coverage of sources, compliance rates have not been as credible as they should be. Second, even though a state might have higher reported violation rates, it could be running a more effective enforcement program, doing a better job of finding and addressing

Later measures called for reporting of the % of a universe of priority sources over the course of a year, advancing each quarter with a goal of 100% coverage.

violators, or setting more stringent limitations. EPA accordingly views compliance rates as a measured and important goal, but not the primary basis for oversight.

In the more general sense of good program performance, which would account for the factors noted above, rates of compliance are supposed to be taken into account in the degree of oversight. The Policy Framework indicates that the level of review, reporting, and so on should be tailored to state specific performance. Historically, EPA regions have not done well in treating states differentially. In fact, the states with better performance often receive more attention, as EPA has better data and communications on problem sources. A more focused oversight approach based upon state performance is clearly needed if EPA is to use its resources to the best advantage.

EPA now prefers to focus on progress in returning significant violators to compliance instead of just examining rates of compliance. With this approach, EPA tracks, on an objective basis, specific named lists of significant violators until they have been returned to compliance, either on their own or as a result of specific enforcement actions taken by the state agency or by EPA. Named lists have in the past been used to help focus and manage the national enforcement program. During the Major Source Enforcement Effort undertaken in the late 1970s, EPA and the states used lists of major air and water national pollutant discharge elimination system (NPDES) sources and worked their way down the lists to ensure that either compliance was achieved or that administrative or judicial enforcement taken. The emphasis was on enforcement actions and, consequently, the enforcement effort did not explicitly address ensuring compliance with agreed-upon schedules and commitments in final orders or consent decrees.

The approach taken by EPA in using significant noncomplier or high priority violator lists, as defined by each program,¹ is to track how many are either in compliance, on an enforceable schedule, or are violating without any enforcement action being taken. In contrast with EPA's earlier approach, this list is tracked until final compliance is achieved. To reinforce the emphasis on compliance, in 1985, EPA introduced its own Consent Decree Tracking System and internal performance measures for tracking key milestones in judicial decrees until final physical compliance is achieved and then subsequently did the same to cover EPA administrative actions as well.

§ 9:40 Oversight criteria and approach: Defining good performance— Defining timely and appropriate enforcement response

No enforcement program has sufficient resources to prevent and correct each and every violation. The programs must rely upon deterrence to achieve compliance by a majority of sources. The literature on deterrence and enforcement cites four ingredients for success: (1) credible likelihood of detection; (2) consistency and speed of enforcement response; (3) severity of the sanction and likelihood of its full implementation; and (4) the perception of the first three ingredients.¹ Until 1985, the national enforcement programs lacked norms for defining how quickly most enforcement cases should be developed and brought to resolution. In addition, guidance on appropriate responses and sanctions were not as clear as they needed to be to support effective oversight. As directed by the Policy Framework, each EPA

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¹Memorandum from Eric Schaeffer, Director of the Office of Regulatory Enforcement, titled "Issuance of Policy on Timely and Appropriate Enforcement Response to High Priority Violations" (Dec. 22, 1998).

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¹See Compliance Policy and Planning Branch, Office of Enforcement and Compliance Monitoring, Study of Literature Concerning the Roles of Penalties in Regulatory Enforcement (Sept. 1985).

program has defined what constitutes timely and appropriate enforcement responses for each of the milestones noted below. Specifically, the Policy Framework calls for milestones to define how well the state or regional program is ensuring timely initial response to violations once detected; timely formal enforcement (with penalties or equivalent sanctions where appropriate) if efforts to achieve compliance have not been successful in returning the violator to compliance; timely escalation to a judicial referral if not already initiated, and the violator is not in compliance; timely case filing following judicial referral; and final physical compliance, firmly established by a date certain.

Three key aspects of these timeframes are, first, that they apply primarily to significant violations so that artificial deadlines do not inappropriately drive limited agency resources to address less important violations. Second, that they are not intended to be deadlines but rather are general expectations for good performance, trigger points for review, and presumptions in favor of federal intervention, depending on the circumstances of the case. Third, EPA and the states are to adapt and tailor both the timely and appropriate enforcement response timeframes and the definitions of appropriate enforcement response to state-specific authorities and procedures during the enforcement agreements negotiations, as a mutually agreed-upon basis for federal oversight. The Policy Framework explicitly states that past state performance or resources are not a basis for extending national timeframes; adjustments can only be made for state legal and other required procedures. EPA regions are to work with the state to review discretionary or legally mandated procedures that result in a slower enforcement process to assess where these procedures could be made more expeditious.

The air program guidance on timely and appropriate response originally used forty-five days and 120 days, respectively, for initial response and formal action. The guidance called for EPA regions to issue a Notice of Violation at day 120 if a state had failed to take appropriate formal enforcement action. EPA revised this approach to adopt a more realistic timeframe of 150 days and subsequent extensions providing an even longer period² with the states, since the experience of the past several years has shown that even with the most streamlined procedures, the majority of air cases will take longer to develop. The water NPDES program uses thirty days for initial response and uses an exceptions reporting system based on two quarters on the quarterly noncompliance report (QNCR) to trigger a requirement for formal enforcement action. The hazardous waste program, the Resource Conservation and Recovery Act (RCRA),³ was the first to develop timeframes; that system introduces several additional milestones beyond those set forth both in the original version of the Policy Framework and those employed by the air and water NPDES programs. According to the RCRA guidance, response to Class I RCRA violations should take place within thirty days of detection, and escalation to an administrative order or judicial referral within 150 days thereafter. The timeframes for high priority violations are shorter, moving directly to administrative orders or referrals.

Although not explicitly required to do so, the hazardous waste (RCRA) program initially was the only program to have set forth a timeframe of sixty days from judicial referrals to filing of a judicial action, which was the same timeframe EPA used with the Department of Justice to manage its caseload. The water NPDES program has subsequently added a goal for states to process referrals. Experience

²Memorandum from John Seitz and Robert Van Heuvelen, to EPA addresses, "Issuance of Guidance on the Timely and Appropriate Enforcement Response to Significant Air Pollution Violations" (Feb. 7, 1992), which was superseded by Memorandum from Eric Schaeffer, Director of the Office of Regulatory Enforcement, titled "Issuance of Policy on Timely and Appropriate Enforcement Response to High Priority Violations" (Dec. 22, 1998).

³42 U.S.C.A. §§ 6901 to 6987.

has shown that EPA regions and states need some management leverage to follow up on cases that have been referred by a state agency to the state Attorney General (AG) or other appropriate state legal staff. State AGs or others responsible for taking a formal enforcement action are often outside the control of the state agency; the enforcing authority may fail to act on a case which a state agency has referred because of competing nonenvironmental priorities and prosecutorial discretion. In addition, state AGs are generally uncomfortable when subject to specific timeliness measures.

In defining an “appropriate” enforcement response, there are several factors in EPA oversight: whether the remedies are adequate to correct the violation and maintain compliance; whether expeditious physical compliance is required; whether a penalty or equivalent sanction is required in appropriate circumstances to create the necessary deterrence; and whether the enforcement vehicle is appropriately formal, given the amount of time that has or will elapse before compliance has been achieved for a significant violation.

The Policy Framework defines characteristics of what constitutes a formal administrative enforcement action for purposes of the timely and appropriate enforcement response milestones. The two primary characteristics are that the enforcement mechanism compels compliance by a date certain and is independently enforceable so that failure to comply can be quickly and efficiently addressed. States and regions are to use these characteristics to accommodate different state mechanisms which essentially accomplish the same purposes. In addition to defining what constitutes a formal enforcement response, the Policy Framework directed programs to define those circumstances in which a penalty or other sanction is an essential part of the enforcement action, which the programs have now done.

The philosophical underpinnings behind the timely and appropriate enforcement response criteria are an important consideration. First, most states would rather avoid formal enforcement action because the legal process is such a costly way to do business. They argue that it should make no difference how compliance is achieved, so long as it is achieved. The timely and appropriate enforcement milestones accept this argument up to a point, *e.g.*, they accept the notion that a more formal enforcement response is not necessary if compliance can be successfully achieved in some other manner. However, the less formal approaches are considered ineffective if compliance is not being achieved on a timely basis. Beyond a certain period of time, therefore, states and EPA agreed that the process should be formal. In addition, by defining where penalties or other sanctions are essential, EPA guidance pushes state programs toward a more formal enforcement response, since only certain enforcement mechanisms carry sanctions. The importance of sanctions in the enforcement program is discussed more fully below.

EPA uses the timely and appropriate enforcement response in reviewing the status of lists of significant noncompliers (and other violators of concern where appropriate) on a monthly basis with the states. If the milestones have not been met, discussions take place, after which EPA will take action if the state is not making sufficient progress in taking timely and appropriate enforcement action.

To encourage multimedia enforcement approaches and recognizing that such cases may sometimes take longer to develop, initiate, and complete, the addendum to the Policy Framework addressing multimedia enforcement clarifies that cases-specific milestones can be adopted for such cases.⁴

⁴See Memorandum from A. James Barnes, Deputy Administrator, titled “Revised Policy Framework for Implementing State/EPA Enforcement Agreements” (Aug. 26, 1986).

§ 9:41 Oversight criteria and approach: Defining good performance—Appropriate use of penalty and other sanctions to create deterrence

Without some deterrence of future violations, an enforcement program is forced to become reactive. Without sanctions, there is little incentive for pollution sources to comply on time and on their own initiative. Instead, enforcement is likely to result in an endless series of agreed upon—and delayed—schedules for reaching compliance. Nevertheless, the severity of sanctions, specifically state civil penalty assessments, is the most controversial area of EPA oversight.

This area of oversight has been problematic, but not without some very good reasons. First, for many years, penalty assessments have been highly subjective, with a great potential for second guessing. Second, although states share EPA's concern about deterrence, in the day-to-day operations of an enforcement program, states are more likely not to want to prolong otherwise successful negotiations on the steps the violator will take to achieve compliance: Unless the violator is recalcitrant or difficult, states appear less likely to invest resources for general deterrence, as opposed to source-specific deterrence. This preference also shows up in some state practices of using stipulated penalties which go into effect only if the compliance measures are not taken as agreed to in the enforcement action. In contrast, EPA wants to see "up front" penalties for specific types of violations. Third, levels of penalty assessments are often outside the control of state and local regulatory agencies. These agencies are dependent on state AGs or other state legal staff for judicial actions, or on independent administrative boards for some administrative penalty authorities. State regulatory agencies are understandably reluctant to be held accountable for something outside their control.

Finally, a penalty amount often is negotiated very late in a case. After all other areas of dispute on a violation have been agreed upon, any EPA intervention based on the amount of a penalty is likely to be viewed as untimely. Therefore, the prospect of EPA taking its own action where it thinks the state has not obtained sufficient penalties is highly distasteful and looms large, even though it happens rarely in practice.

The issue of EPA oversight of state penalty assessments is hotly debated every time EPA makes an effort to improve its own penalty assessment practices for federal cases. For every step forward EPA takes, there is a tendency to want the states to do the same. The last great debate occurred over the period of time from 1984 through 1985, following the issuance of EPA's Uniform Policy on Civil Penalties¹ and the development of program-specific implementing policies. In contrast to previous agency policies,² the Policy on Civil Penalties of 1984 required—not merely encouraged—EPA program policies and regional office enforcement actions to recover the economic benefit of noncompliance. This policy is designed to deter noncompliance due to economic self-interest, and to offer some equity to compliers. The approach has theoretical appeal and is one that has been advocated by many academicians in the field of deterrence and penalties.³

The Agency had to consider carefully the issue of oversight of state civil penalties.

[Section 9:41]

¹See Policy on Civil Penalties, EPA General Enforcement Policy #GM-21 (Feb. 16, 1984).

²See Civil Penalty Policy applicable to Section 309(d) of the Clean Water Act and Section 311(b) of the Clean Air Act (Apr. 11, 1978) (updated 1981).

³See *Friends of the Earth v. Laidlaw Env'tl. Servs. (TOC), Inc.*, 120 S. Ct. 693, 30 Env'tl. L. Rep. (Env'tl. L. Inst.) 20246 (2000); Compliance Policy and Planning Branch, Office of Enforcement and Compliance Monitoring, Study of Literature Concerning the Roles of Penalties in Regulatory Enforcement (Sept. 1985). At this time, no program has issued specific guidance for oversight of state penalties following the Clean Air Act Amendments of 1990 and a critical report by the General Accounting

The 1984 EPA Uniform Civil Penalty Policy applied only to EPA enforcement actions, but since it was sufficiently specific as a methodology to determine penalty amounts, its use raised the issue of whether states also should be made to seek recovery of the economic benefits of noncompliance and to follow other factors articulated in the Policy. While states were subject to the Civil Penalty Policies of 1978 (amended in 1981) for the air and water programs, it was never clear what was expected or acceptable. In previous years, EPA oversight of its own and some selected state penalties consisted of a Civil Penalty Panel, organized following the 1978 policy and created to review EPA enforcement cases taken under the air and water NPDES program's Major Source Enforcement Effort. The Panel, which included some state participants as well as the Department of Justice, was disbanded in February 1981, as one of several steps to reorganize enforcement. Few regretted its passing. Its deliberations were reportedly highly subjective, but it did serve to focus Agency attention on using consistent factors.

The 1984 Policy Framework focused on two aspects of oversight. First, it required each program to state in advance those instances in which "nothing less than a penalty or equivalent sanction will be acceptable."⁴ For the first time, EPA oversight could focus on the overall use of penalty authorities, rather than limit oversight to amounts requested in a subset of state cases. Second, the Policy Framework indicated that unless and until national programs clearly defined what was expected by way of state penalty amounts in guidance issued in consultation with the states—after some experience in actual implementation in EPA regions—EPA would only take "penalties only" cases where a state either obtained no penalty where required or it was deemed to be "grossly deficient, e.g., *de minimis*, after considering all of the circumstances of the case and the national interest."⁵

According to the 1986 revised Policy Framework, to make the "grossly deficient" determination, EPA will take into consideration the state's own penalty authority, any applicable state penalty policy, whether there is any reasonable relationship to the seriousness of the violation, and whether an economic benefit was gained by the violator. EPA promised the states that it would evaluate EPA's adherence to its own penalty policies before considering further guidance on overseeing state penalties.

EPA's review of its own penalty practices was instructive. It showed that documentation was generally good for administrative penalty programs using simple matrices under the RCRA, toxics (TSCA),⁶ and pesticides (FIFRA)⁷ programs. However, there was poor documentation to support internal EPA oversight in judicial case files principally under the air and water programs. The review also found that EPA regions believed it was not uncommon for final administrative penalties to be about 50 to 60 percent of the initial calculations based on the penalty policies. Moreover, the judicial penalty levels through 1984 were lower than expected if EPA would have been recovering the economic benefit of noncompliance; up to that date this had been a general policy goal, but not a requirement. It was therefore clear that the 1984 policy was ushering in a new era in penalty assessments by

Office. *See* Air Pollution: Improvements Needed in Detecting and Preventing Violations (B-233555, Sept. 27, 1990). The air program established a work group to develop such guidance. It is likely to require recovery of economic benefit of noncompliance at a minimum, a penalty amount commensurate to the gravity of the harm, and a regulatory scheme to be determined by state policy.

⁴*See* Memorandum from Alvin L. Alm, Deputy Administrator to Assistant Administrator, Regional Administrators, et al., titled "Implementing the State/Federal Partnership in Enforcement: State/Federal Enforcement 'Agreement,'" 14 (June 26, 1984).

⁵Memorandum from Alvin L. Alm, Deputy Administrator to Assistant Administrator, Regional Administrators, et al., titled "Implementing the State/Federal Partnership in Enforcement: State/Federal Enforcement 'Agreement,'" 18 (June 26, 1984).

⁶*See* 15 U.S.C.A. §§ 2601 to 2629.

⁷U.S.C.A. §§ 136 to 136y.

requiring amounts at least equal to the economic benefit of noncompliance and that EPA needed more experience with the policy before it could begin to set an example for the states. EPA also needed clearer tracking and guidance on the use of alternate penalties, such as benefit projects that are part of settlements, and impose an economic cost beyond what is required to achieve compliance. It was also clear that any penalties policy needed some flexibility in application and that EPA's application of its own penalty policies had greatly improved over time. Similarly, requiring state penalty policies would be no guarantee they would be applied immediately and successfully in practice. As with most aspects of program implementation, it was evident that penalty policies require a real management commitment to make them work, and that the policies will improve over time.

As a result of this additional staff work, EPA's oversight criteria were refined.⁸ The Policy Framework does not now and probably will not require that states specifically use EPA's penalty policies; however, states are encouraged to develop their own penalty policies. The rationales for encouraging state penalty policies are that written policies lead to improved consistency; are more defensible in court; generally place the agency in a stronger position to negotiate with the violator; improve communication and support within the administering agency and among the agency officials, attorneys, and judges; provide for enhanced deterrence and equity to the extent any economic benefit of noncompliance is recovered; and, finally, they can be used by judges as a basis for penalty decisions. EPA will require states to make a reasonable effort to calculate economic benefit and will encourage them to recover this amount in negotiations. Most important, EPA will review a state's penalties in the context of the state's overall enforcement program, will review amounts in individual cases, and will determine whether the relative amounts reflect the increasing severity of the violation, recalcitrance, or recidivism, and will assess whether the amounts bear some reasonable relationship to the economic benefit of noncompliance. EPA will accomplish this by requiring states to more clearly document the basis for their penalty assessments in case files.

The Policy Framework requires the states to have a general plan for using their penalty authorities and to agree in advance with EPA on the use of other sanctions, consistent with national program guidance. Further, EPA will encourage states to acquire administrative penalty authority to facilitate the imposition of penalties and the creation of deterrence in each program.

In 1993, EPA completed further revisions to the Policy Framework regarding oversight of state penalty assessments, which were the final steps toward harmonizing penalty policies at the federal and state levels.⁹ The revisions established: (1) a common goal at the federal, state, and local levels that penalties should seek to recover, at a minimum, the economic benefit to the violator, plus an additional penalty reflecting the gravity of the harm, if applicable; (2) that federal over-filing decisions would be based on more objective criteria—in particular, whether the state recovered, at a minimum, the economic benefit to the violator, taking into account the impact of such action on federal and state programs as a whole. EPA more explicitly addressed issues of state flexibility, such as states' use of supplemental environmental projects to mitigate harm caused by the violation or to serve as alternatives for penalties. The Policy itself reflected a maturing of the relationship

⁸See Memorandum from Alvin L. Alm, Deputy Administrator to Assistant Administrator, Regional Administrators, et al., titled "Implementing the State/Federal Partnership in Enforcement: State/Federal Enforcement 'Agreement,'" 14 (June 26, 1984) (as revised Aug. 26, 1986, to reflect Memorandum from Richard H. Mays, Acting Assistant Administrator for Enforcement and Compliance Monitoring, to A. James Barnes, Deputy Administrator, titled "Policy Framework on State/EPA Enforcement Agreements: Draft Addendum on Oversight of State Civil Penalties" (Feb. 28, 1986)).

⁹See Memorandum from Steven A. Herman, Assistant Administrator, to EPA addressees, "Oversight of State and Local Penalty Assessments: Revisions to the Policy Framework for State/EPA Enforcement Agreements" (July 20, 1993).

between EPA and the states, and a fairly widespread acceptance of recovering the economic benefit as a tenet of sound penalty policy. The Policy Framework does not require states to alter their penalty policies or laws if they provide sufficient bases to recover the economic benefit in practice. States must at least calculate and compare the economic benefit total to the amount calculated under their existing policies.

§ 9:42 Criteria for direct federal enforcement

EPA regards the states as having primary responsibility to enforce environmental laws for delegated or approved programs as was intended by most of the statutes EPA is entrusted to implement. However, EPA's willingness to use its own authority for direct enforcement in delegated or approved states remains the most important leverage EPA has in oversight of state enforcement. While not constrained by law, EPA has decided as a matter of policy to circumscribe its direct enforcement activities within delegated or approved states. EPA generally will take direct enforcement action in a delegated or approved state only if the state is unwilling or unable to take a timely and appropriate enforcement response. The Policy Framework also sets forth other limited circumstances in which federal enforcement may be pursued: where a state requests EPA action; where national legal or program precedent is involved; areas where state authority may be inadequate; or where there is a violation of an EPA order or consent decree. In addition, if a state is taking timely and appropriate action, but has a history of inability to get a repeat violator back into compliance, federal enforcement may be undertaken.

The State/EPA Enforcement Agreements and the Policy Framework attempt to overcome several problems with the way EPA was using its parallel enforcement authority. These problems were typified by state views that any federal enforcement in a state is a failure of that state's program, and that the federal EPA had a license to come in at any stage in a state proceeding and take a case away from the state, grandstand, and get credit for any action taken.

The Policy Framework attempts to address these concerns in several ways. First, it establishes objective reasons for federal enforcement which go beyond the question of whether a state is doing a good job or not. The state also has some assurance that if it is taking timely and appropriate enforcement response, EPA generally will not step in. Further, it establishes that where EPA believes that federal enforcement is needed, it will be carried out in a manner that does not damage the credibility of the state enforcement program. Also, under the policy EPA will offer to take joint action with the state; use state inspection or other data and witnesses as appropriate; involve states in creative settlements and encourage states to participate in case development; arrange for division of penalties with states when involvement in the case warrants it;¹ issue joint press releases and share credit with the state; and keep states continually apprised of events and reasons for federal actions.

Even when there is national program or legal precedent involved, EPA guidance on nationally managed or coordinated cases sets forth a strong preference for working in partnership with a willing state to ensure that issues of national concern are adequately addressed, and to minimize the need to replace or disrupt a state enforcement action undertaken in an approved program. In advance of any EPA action, consistent with the protocols for advance notification and consultation outlined

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¹See Memorandum from Alvin L. Alm, Deputy Administrator to Assistant Administrator, Regional Administrators, et al., titled "Implementing the State/Federal Partnership in Enforcement: State/Federal Enforcement 'Agreement'" (as revised 1986). Memorandum from Courtney M. Price, Assistant Administrator for Enforcement and Compliance Monitoring, titled "Division of Penalties with State and Local Governments" (Oct. 30, 1985).

below, EPA should seek to make arrangements with the state, either that it will not pursue inappropriate action or that any pending action would be withdrawn or coordinated with EPA to avoid inconsistent or duplicative state and federal enforcement.

Despite all the guidance and the agreements reached with states on expectations for timely and appropriate enforcement response, EPA overfiling of state enforcement actions—that is, the subset of cases in which EPA takes an enforcement action after a state has initiated action because the state action is deemed inadequate—remains very controversial.² This is because there still remains a great deal of judgment in determining when a state penalty is “grossly deficient” or where a remedy is inadequate. A presumption in favor of accepting state action if there is a “grey area” is clearly desirable because of the sizeable job such an action presents for both state and federal enforcers. Yet controversy will continue to arise as EPA exercises judgment as to the appropriateness of state action on a case-by-case basis.

§ 9:43 Protocols for advance notification and consultation

The Policy Framework sets forth a policy of “no surprises” in undertaking federal inspections and enforcement actions within delegated or approved states. The State/EPA Enforcement Agreements are to contain protocols for who, what, when, where, and how a state is to be notified of EPA actions; the protocols emphasize the need for true consultation and advance planning. These protocols are also to include a dispute resolution process, as well as processes for coordinated press releases and issuance of public information on enforcement activities at the federal and state levels where desired.

One weak link in protocols for advance notification and consultation has been the coordination with state AGs or other state legal staff responsible for civil or administrative litigation. EPA has traditionally worked directly with state program staff in administering and overseeing EPA program implementation. State agencies receiving delegation or approval are accountable to EPA. Most importantly, their enforcement responsibilities include ensuring adequate legal support to successfully take timely enforcement actions. Legal support, however, which can make or break state enforcement, comes from groups with which EPA has neither oversight authority nor direct contact on a regular basis.

The lack of protocols for advance notification and consultation which involve state AGs or other appropriate legal staff has been a particular problem in the municipal enforcement effort under the Clean Water Act, which requires that the federal government join a state in any enforcement suit against a municipality (for example, either as a codefendant or with EPA in an action).¹ This was designed to ensure the state will bear any expense necessary to comply with a judgment to the extent state laws prevent the municipality from doing so. The state’s role in these suits has important political ramifications, and the AG’s involvement is critical.

In attempting to draw all of the parties into an improved state/federal enforcement relationship, EPA has had to steer away from internal state politics to ensure that enforcement works more smoothly. The state AG is often independently elected and may be of a political party different from that of the governor.

In the 1986 revised Policy Framework on Implementing State/EPA Enforcement

²See § 9:34; see also *In re Martin Electronics*, EPA Docket No. V-W-85-R-002 (Initial Dec. 1–14–86) (Region V case opinion by Judge Yost) (ALJ was obviously concerned with the timing of EPA’s action, which followed a state enforcement action in which the state was neither consulted nor made aware of the fact that use of its administrative penalty authority would be inadequate); *Harmon Indus. v. Browner*, 191 F.3d 894, 29 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21412 (8th Cir. 1999)

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¹Clean Water Act § 309(e), 33 U.S.C.A. § 1319(e).

Agreements, a state agency is asked to supplement the State/EPA protocol for advance notification and consultation with its own internal state procedures for notifying and consulting key legal support staffs on potential EPA enforcement actions. This places the responsibility for effective communications in the first instance with the state agency and treats state AG or legal staff involvement as an internal state matter. Similarly, EPA is requiring states to have an internal procedure for consulting with legal staff on the legal resource requirements needed to support commitments the state is making to EPA on its own enforcement efforts. This is done to ensure projected state enforcement commitments are realistic and to facilitate advance planning for state and federal enforcement actions. It remains to be seen how well this approach will work to bridge this gap in the relationship.

§ 9:44 State reporting and accountability

Over the years, various criteria or performance measures have been used by EPA and the public to evaluate the effectiveness of national enforcement and compliance monitoring programs. The Policy Framework lays the groundwork for state and EPA regional office reporting and accountability by defining core measures, reinforcing the importance of routine reporting on progress and establishing an even handed process for how general program information and key measures will be used and interpreted. Despite basic agreement on measures, “bean counting” remains a sensitive issue with states and EPA Regions alike because of the manner in which performance or activity numbers are reported, used, or misused to describe success or weakness. Further, although the Policy Framework provides a basis for both: a) differential oversight—that is oversight that is adjusted based upon state performance thereby treating good state performers differently from those with significant program deficiencies, and b) balancing criticism for program deficiencies with support through targeted capacity building, these remain elusive goals.

The Policy Framework lays out five core measures of performance that are reported regularly by both EPA and the states to ensure that national programs are achieving their desired goals: (1) the rate of compliance with permit, regulatory, and statutory requirements; (2) progress in returning significant violators into compliance; (3) the extent of compliance monitoring and number of inspections made; (4) the number of administrative enforcement actions taken; and (5) the number of judicial enforcement actions taken, both civil and criminal.

The first two of these measures are used to assess program results, looking at both compliance rates and progress in returning significant violators to compliance to evaluate how well programs are achieving the ultimate program objectives of high and continuing rates of compliance. The next three “activity measures” are used to ensure that there are healthy levels of enforcement activity to create the necessary deterrence to noncompliance and to justify reported rates of compliance.

Both the states and EPA would like to assess the effectiveness of the compliance and enforcement programs in terms of environmental results¹ and the Policy Framework explicitly sets this as a goal for the future. Attributing a specific environmental benefit to the taking of specific enforcement action is difficult to quantify, but more attention is being paid to attempting to do this for each enforce-

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¹See Memorandum from Michael M. Stahl, Deputy Assistant Administrator, titled “Enforcement and Compliance Assurance Measures in Performance Partnership Agreements and State—EPA Agreements” (Sept. 26, 1997). See Joint Commitment to Reform Oversight and Create a National Environmental Performance Partnership System (May 17, 1995), available at http://www.epa.gov/ocirp/age/nepps/pdf/joint_commit_create_nepps.pdf and background information on NEPPS at <http://www.epa.gov/ocirpage/nepps/about.htm>.

ment action individually and collectively at the federal level.² Data systems have undergone significant transformations in the past several years, allowing cross-manipulation of pollutant release and ambient monitoring databases with enforcement databases. Although these systems have not been able to make gross comparisons of ambient quality improvements and enforcement actions in the past, that day is approaching. Several years ago, the Office of Enforcement began to assess the value and environmental impact of injunctive relief and supplemental environmental projects in each of its settlements; however, that level of reporting is not required of states under EPA's oversight capacity. On behalf of the Steering Committee on the State/Federal Enforcement Relationship, the Office of Enforcement, in cooperation with the air and water program offices, developed two case studies of enforcement effectiveness using environmental results, one involved enforcement of the ban on lead in gasoline, the other enforcement of the National Municipal Policy. The case studies demonstrated the value and potential for environmental results measures, but environmental results have never been accepted as adequate in isolation to be used to judge program performance. This is not only due to the inherent inadequacies of the scope of monitoring available and the confounding factors related to causation for changes in environmental monitoring results. It is also related to the tension between overall trends and performance and the responsibility to hold individual violators in often localized settings to account for their compliance.

To move closer towards developing a system of outcome-based measurement, the Office of Enforcement and Compliance Assurance (OECA) conducted the National Performance Measurement System (NPMS).³ The NPMS, developed through a stakeholder process, outlined three basic categories of measures: (1) indicators of the impacts on environmental or human health problems; (2) outcomes of the effects on behavior or regulated populations; and (3) outputs of EPA activities. Specific types of outcome measures identified by the NPMS are rates of compliance, improvements in human health resulting from enforcement actions, and the effects of compliance assistance.

The Office of Enforcement and Compliance Assurance, OECA, has incorporated these additional measures into the overall enforcement and compliance assurance program reporting on federal enforcement results. EPA has succeeded reporting pounds of pollutants eliminated, and has even linked air emission reductions to health benefits. However, these advances have not translated into mainstream application of these measures in oversight of state enforcement. OECA is working with state environmental agencies who also are piloting a number of the NPMS measures for their own use and for possible use in performance partnership agreements. However, it will be some time before there are specific results from these efforts to develop environmental outcome-based performance measures for purposes of State oversight. And, although new approaches to measuring environmental results will continue to be pursued by EPA and the states, states seeking to substitute environmental-results measures for enforcement activity indicators are unlikely to succeed in using only this information to provide both the public and EPA "overseers" with a grasp on whether violations are detected, corrected, prevented, and deterred in a timely and effective manner.

Formal commitments for good performance are negotiated with EPA regions and states. Progress is reported each quarter against targets. It is critical that the Agency be able to obtain reliable statistics on state enforcement activities, but this

²EPA's enforcement program has made more of an effort to assess the dollar value of injunctive relief, and has added sections to its annual national penalty report on the extent and type of supplemental environmental projects employed in settlements.

³Michael M. Stahl, Deputy Assistant Administrator, OECA, National Performance Measures Strategy—"Final Report for Public Distribution" (Dec. 22, 1997).

can be hampered because of definitional problems and inconsistency of reporting. The State/EPA Enforcement Agreements are supposed to define what state enforcement actions might be considered to be comparable to EPA administrative orders and judicial referrals and filings. Despite this effort and direction, definitional problems still exist with some state data.

How the reporting by States is used by EPA for purposes of oversight of their enforcement program goes beyond just the numbers. There are several other means EPA uses to assess the efficiency and effectiveness of compliance and enforcement programs. One of these is whether enforcement responses are timely and appropriate. The Office of Enforcement and Compliance Assurance coordinates an annual report that highlights how well regional and state enforcement efforts were able to achieve the goals for timely and appropriate enforcement response.⁴ The concept of timely and appropriate enforcement response is used monthly in the regions to decide whether direct federal enforcement is appropriate and to prod any slowed state responses. Another application in addition to the annual report is that used in the NPDES program, which integrated overall goals and reporting of exceptions into its national quarterly reporting and accountability scheme. This seemed to work more effectively than other program designs in delivering timely resolution of cases. However, before further consideration could be given to applying this approach more broadly to other programs to enhance state oversight, the national EPA reporting and accountability systems were decentralized in the latest wave of government streamlining reports.

Another important measure of success is the magnitude of the deterrent message conveyed through the imposition of penalties or other consequences of having violated environmental requirements. While EPA publishes annually a report on penalties, fines, and jail terms assessed for violators, such data from state counterparts is maintained but not systematically reported. A cooperative effort with state officials to pilot the first state penalty report fell victim to the reorganization of the Office of Enforcement and Compliance Assurance in the early 1990s as did the Steering Committee on the State/Federal Enforcement Relationship. The Policy Framework does require states to maintain reviewable files and information on state specific dollar penalties and the value of supplemental enforcement projects in settlements, but it is not collected and reported in any concerted manner. EPA oversight also should be taking into account State criminal enforcement actions to reflect the overall state effort to enforce environmental statutes and different state enforcement response schemes. However, unlike civil enforcement, EPA's criminal enforcement program is not "delegated" to the states, nor are state programs "approved" by EPA. Both EPA and the states have their own independent criminal enforcement capability.⁵ This makes the opportunity to collect and use this information difficult.

Two other factors have influenced EPA's measurement of enforcement success. The first was the Government Performance and Results Act (GPRA), passed by Congress in 1993, which requires all Federal agencies to institute a performance management system that sets goals and measures the outcomes achieved in attaining those goals. Under GPRA, EPA established agency-wide goals, which attempt to capture and measure performance of enforcement and compliance assistance

⁴See Memorandum, Edward E. Reich, Acting Assistant Administrator, "FY 1990 Consolidated Report on Implementation of the Timely and Appropriate Enforcement Response Criteria," Compliance Policy and Planning Branch, Office of Enforcement, EPA, Garvey, Mark et al., Aug. 30, 1991. *See also* Annual Accomplishments Reports for Enforcement. For 1999 issues, see US EPA, Annual Report on Enforcement and Compliance Assurance Accomplishments in 1999 (July 2000).

⁵See Memorandum from Scott C. Fulton, Acting Assistant Administrator, to EPA addressees, "Criminal Enforcement Addendum to the Policy Framework for State/EPA Enforcement Agreements" (Feb. 1, 1993).

programs. Initially, EPA's nine-part strategy included Goal 9, "a credible deterrent to polluters and greater compliance with the law." Subsequently the goals were reduced to five in number, integrating enforcement within a new Goal 5,⁶ Environmental Stewardship and Pollution Prevention for which various objectives related to key groups include compliance and enforcement goals. This change reflected more than just an effort to streamline, but the view that enforcement is more of a tool than an overall goal, and that compliance is a means to an end that being environmental stewardship. Most recently as part of a policy of underscoring the importance of enforcement under the Obama Administration, enforcement has been restored as its own strategic plan goal: Goal 5: Enforcing Environmental Laws rather than being treated as just another tool in the toolbox to achieve environmental results. States often have different views on the role of enforcement within their larger program responsibilities.

The second influence is the National Environmental Performance Partnership System (NEPPS), which was designed to change the state/EPA relationship by instituting Performance Partnership Agreements (PPAs) and Performance Partnership Grants (PPGs) between EPA and states that emphasize joint environmental goals and the use of outcome-based performance measures.

§ 9:45 How it is working: Continuing oversight issues

The approaches to oversight set forth in the Policy Framework remain the foundation for constructive oversight of state enforcement programs by EPA and a successful federal-state enforcement working relationship. However, by all accounts it has achieved tangible results but has not been fully or consistently implemented. This section will explore what has worked, what aspects of the oversight relationship continue to pose challenges, and how other forces and trends in the program may affect oversight of state enforcement.

First, the Policy Framework sets the performance mark for both Federal and State enforcement response in the tracking of significant noncompliance and commitments for states and/or EPA to take enforcement actions needed to return them to compliance and in defining what constituted timely and appropriate enforcement response. It is clear that both approaches resulted in the closing of a substantial gap between EPA and state expectations for the use of formal enforcement mechanisms, including the appropriate application of penalty policies to correct current and deter future violations. Within a very short period of time these concepts were widely understood and used throughout the country to manage and oversee enforcement. Both state and federal enforcement actions increased to record levels as did state use of penalty authorities or sanctions in response to significant violations. (For example, state air enforcement went from around 60 to 90% in the use of legal enforcement mechanisms and penalties within one year of the policies on timely and appropriate enforcement response).

The early successes in achieving a common set of expectations for federal and state enforcement response have been challenged and at times eroded, by several developments. Within EPA new management began to focus on targeted national enforcement initiatives and less on systematic approaches—to track significant violators and timely and appropriate enforcement response.¹ This only served to reinforce state fears that these management systems were merely a thinly veiled

⁶Strategic Plan and GRPA measures have been updated in the new strategic plan. See document pp 38-41 (adobe pages 43-45) at <http://www.epa.gov/ocfo/plan/plan.htm>.

[Section 9:45]

¹Joel A. Mintz, *Enforcement at the EPA: High Stakes and Hard Choices* (1995); "Treading Water": A Preliminary Assessment of EPA Enforcement During the Bush II Administration," 34 *ELR*, 10933 (Oct. 2004).

justification for federal enforcement in approved states instead of their intended purpose of establishing performance expectations for both federal and state enforcement. EPA's enforcement initiatives and national packaging of cases for greater attention by the media and the regulated community were designed to achieve greater deterrent effect from fewer enforcement actions, an important development. Although used in a limited number of cases, it put an immediate strain on the state/federal enforcement relationship. Multimedia enforcement began to threaten role delineations, suggesting that some violations were now being "federalized," concerns which were addressed to some extent by the timely and appropriate enforcement response goals, but which did not easily fall within its boundaries. The Multi Media Addendum to the Policy Framework, was developed to reassure states that the basic principles of a presumption of state enforcement will not be altered by the new approaches.

From a state perspective, the national initiatives also provided EPA with the freedom to pursue enforcement as it chose rather than follow a systematic approach, a luxury that states were not afforded under the policies without the threat of federal action. Although the Policy Framework calls upon EPA to implement these systems with flexibility to allow for innovation and anomalies in state enforcement response such as for complex multimedia cases (something EPA addressed in the multimedia enforcement addendum to the Policy FrameworkEPA) EPA never addressed the issue of state directed smart enforcement initiatives, which focus state enforcement on a subset of a targeted group in order to get the remaining violators to comply without the benefit of a formal enforcement response. In this author's opinion, a disciplined system could be put in place to provide some accommodation for "smart enforcement," which targets a random segment of a specific population of violators in the hope and expectation that the remainder will get the compliance message, without giving up expectations for principled enforcement response. Systems such as these can "up the ante" over time for those who remain in violation or who are repeat violators and overlook those who quickly got the message. This is not how the current state oversight system works, but small adjustments could be made to avoid conflicts and preserve basic principles of recovery of economic benefit, perhaps by making it more of a question of "when" not "whether" such benefits are recovered.

Further complicating the picture are declining state and federal resources to address all the significant noncompliers in a timely manner, competing resources for new compliance incentive and assistance programs, and the inherent difficulty of refining definitions of what constitutes a significant violator to respond to legitimate state concerns that the definition did not always focus on those violators posing the greatest threats to the environment and program integrity.

The continued success of this aspect of the oversight system also clearly depends on EPA access to timely and accurate facility level compliance information from the States. Overcoming a built-in bias for states to under-report significant noncompliance if ignored can compromise the underlying principles for timely and appropriate enforcement response guidance and significant non complier lists in presenting to violators a seamless and united expectation of state or federal enforcement response.² Furthermore, the continued need for facility specific data to support this approach is under constant pressure in the ongoing debate that EPA should focus on the overall program performance and not individual source compliance status. As noted below, a successful enforcement oversight effort should do both, but in the absence of a sound review of overall performance, this aspect of the oversight system will continue to draw criticism for its narrow focus.

²See Inspector General Report on the State of Pennsylvania, Department of Environmental Protection's (PDEP) program under the Clean Air Act in February, 1997, commissioned by the EPA region III office because it was concerned that the state was not reporting significant violators to the region.

Perhaps one indication of whether the significant noncomplier and timely and appropriate enforcement response aspects of State oversight are working over time would be whether the resulting mix of federal and state enforcement actions properly reflects a primary state enforcement role and whether the violators are repeat violators. Presumably, states should be assuming an increased role over time and the lists of significant violators would be smaller over time for the same definition of significant violator community. Unfortunately, there is no ready basis for comparison since requirements are constantly changing and the lists are not distinguished by the nature of the violation or the violators.

Second, States and EPA have found themselves in an uneven playing field when it comes to enforcement, something that continues to undermine effective oversight and the federal-state relationship. This is manifest in several areas. Disparities exist in the efficiency and efficacy of federal and state enforcement authorities, particularly in regard to administrative enforcement mechanisms and levels of penalties states can assess. States have made tremendous advances over the past several years to close this gap,³ but it still exists, complicated by the fact that States were not required to have administrative, as opposed to judicial, penalty authority as a prerequisite for program approval under any of EPA's delegable programs. On rare occasions, EPA has overfiled on the basis that the state penalty was inadequate, which continues to raise tensions in the relationship. New strains on the relationship have also emerged, from state environmental audit privilege statutes, which EPA officials believe will undermine and slow effective enforcement proceedings and could be grounds for disapproving a state program.⁴

The enhancement of both federal and state criminal enforcement programs poses a different type of challenge to state oversight and working relationships in enforcement. Although EPA is charged with overseeing state enforcement, that is usually focused on civil enforcement. Criminal enforcement programs often involved completely different players than do civil enforcement programs. At the state level, criminal enforcement is often delegated to district attorneys or separated from other functions of the Attorney General. Although many state environmental agencies have their own legal support, administrative authorities, or established working relationships with the state's Attorney General, these do not exist for criminal enforcement. Given the complexity of possible relationships (for example, federal civil enforcement/state criminal relationships), EPA developed the Criminal Enforcement Addendum to the Policy Framework to specifically address these issues, including needed communications, roles and relationships.⁵

Disparities also exist in regard to access to and management of information. For example, despite State pushes for performance-based partnerships with bottom-line

³Environmental Law Institute, "State Civil Penalty Authorities 1986 and 1994" (unpublished). This report was prepared by ELI in cooperation with EPA.

⁴*See, e.g.*, Memorandum from Steven A. Herman, Assistant Administrator, OECA, and Mary Nichols, Assistant Administrator, OAR, to Jackson Fox, Region X Counsel, titled "Effect of Audit Immunity/Privilege Laws on States' Ability to Enforce Title V Requirements" (Apr. 5, 1995); Letter from Jane N. Saginaw, Region VI Counsel, to Dan Pearson, Executive Director, Texas Natural Resource Conservation Commission, re: Review of Texas Underground Injection Program (Sept. 16, 1996). EPA's position that audit reports should not be considered confidential per se nor a that a program to audit, detect, correct, and disclose result in either immunity from enforcement or elimination of penalties is a source of continuing controversy between EPA and many states that have adopted audit privilege and laws granting immunity from prosecution for such activity.

⁵One potential issue involves coordinating state and federal civil and criminal enforcement actions in response to the same violation. The federal government would naturally be concerned about how a state would resolve a case, especially if "double jeopardy" considerations were to preempt the federal government from taking further action. *Cf. United States v. Halper*, 490 U.S. 435, 109 S. Ct. 1892 (1989). *See also* Memorandum from Scott C. Fulton, Acting Assistant Administrator, to EPA addressees, titled "Criminal Enforcement Addendum to the Policy Framework for State/EPA Enforcement Agreements" (Feb. 1, 1993).

environmental results, ironically it is EPA that is now measuring environmental results from its enforcement actions leaving reporting of national accomplishments almost without benefit of state performance statistics.⁶ Several years ago the innovation was to ensure that state performance was reported on a par with EPA enforcement performance to portray a national effort that was seamless. Unless state capacity to report accomplishments is equivalent to EPA's, then a distorted portrayal of our national compliance and enforcement picture is going to continue to exist, playing into a view of EPA that it is going it alone without its state and local partners.

Third, on a more general level, states continue to be critical of EPA's focus on numbers of enforcement actions to the exclusion of a qualitative review of the entire state program and overall compliance and enforcement results. This is an aspect of oversight that will require a more profound change in the attitude and approach of EPA staff and will take more time to put into effect than the oversight tools of tracking violator lists and timely and appropriate enforcement response.⁷ The oversight function has yet to be implemented in accordance with the principles in the Policy Framework: a constructive process to review state program operations as a whole; identify and implement capacity building steps to strengthen the program; and form the basis for explicit decisions on differential oversight. This is partly due to failures of leadership and partly due to the lack of resources for this purpose. Strapped for resources, EPA and States focus all too frequently on the individual enforcement cases or violators and less on the overall health of the program. As a result, it becomes difficult to acknowledge state efforts to provide compliance assistance and incentives as anything but diversions from the main task at hand. For oversight to work effectively, it must garner the resources to offer expert advice and provide a unique perspective on a state program's operations, which would provide value, professionalism, and forward direction. National funds need to be available for state partners to join in the oversight of their peers to cross-fertilize ideas and share expertise. Some have suggested further, that this overall assessment cannot occur until state and federal enforcement performance is more transparent and public⁸ or until EPA and the States invest more in statistically valid sampling of compliance.

The current mechanism for state oversight, called the State Review Framework or SRF, is under review by the new administration. It lists and has been providing data on state performance in 12 essential elements of a complete compliance assurance program, and there may be additional, state program elements in an optional, thirteenth item. The Framework list follows:

1. Data completeness
2. Data accuracy
3. Timely reporting
4. Completion of commitments
5. Inspection coverage

⁶See Environmental Results through Smart Enforcement, FY 2002 Enforcement Accomplishments Report (US EPA, June 27, 2003).

⁷See Report of the Colloquium on Federal/State Relations in Environmental Enforcement (Jan. 1991). See also the Enforcement in the 1990's Project reports on "Strengthening the State/EPA Relationship for Environmental Enforcement," and "Environmental Management and Environmental Measures;" Clifford Rechtschaffen and David L. Markell, Reinventing Environmental Enforcement and the State/Federal Relationship 186 (Environmental Law Institute, 2003) ("Many states have made little progress toward developing outcome-based measures"); and NAPA, Evaluating Environmental Progress: How EPA and the States Can Improve the Quality of Enforcement and Compliance Information 17 (2001).

⁸See Clifford Rechtschaffen and David L. Markell, Reinventing Environmental Enforcement and the State/Federal Relationship 186 (Environmental Law Institute, 2003).

6. Quality of inspection reports
7. Identification of alleged violations
8. Identification of significant noncompliance
9. Enforcement actions promote return to compliance
10. Timely and appropriate enforcement actions
11. Penalty calculation method
12. Final penalty assessment and collection
13. Optional state program activities or tools (*i.e.*, compliance promotion or incentive programs); use of outcome data, coordination with State Attorneys General, etc.

These elements are consistent with the Policy Framework. Procedures have been developed in consultation with the States. Although touched upon in reviews, the list of 12 does not highlight two aspects of the relationship that have recently been given more prominence: clear and enforceable requirements, and priority setting. Certainly EPA checks for clear requirements, policies and procedures if problems are identified in any of the 12 listed elements, but it relies principally on the case by case review of permits that the statutes authorize and indeed require. Indeed in the course of deploying the SRF, EPA has recognized that many of the Memoranda of Understanding with the states that authorized state programs were outdated and missing important program elements.

EPA, in carrying out its general oversight response, also will have to make several important changes to its oversight practices in response to the changing nature of the regulated community: (1) continuing compliance in air and water NPDES programs; (2) larger numbers of smaller sources affected by new regulatory requirements and by the need to address localized environmental problems; and (3) a new focus on toxic chemicals and hazardous waste management. The shift in emphasis from installation and operation of air and water pollution control equipment to continuing compliance means the programs need improved data systems and reported information to array patterns of performance and to examine sources that may have been moving in and out of compliance. The air and water NEPA programs have been making plans to address this shift in program emphasis.⁹ This type of information rarely received close scrutiny either in public accountability or management oversight within the executive or legislative branches.

The large numbers of smaller sources now being regulated (for example, under the pretreatment and underground storage tank programs and controls of volatile organic compounds to address ozone) make large national data systems and reporting on compliance status of individual sources impractical. EPA will have to find other approaches to oversee state performance, namely to examine more broadly each state's unique operating programs. In addition, as the programs have become more effective in gaining high levels of compliance for larger sources, smaller source violations take on added environmental significance. Again, budget shortfalls have forced a focus on the bigger, more obvious deficiencies. The 1990 Clean Air Act § 507 provisions, which created a compliance assistance program targeted on small businesses, provided an opportunity for EPA to develop its enforcement response policy. EPA is using information it obtained while giving such assistance in a manner that attempts to reconcile its orientation toward formal enforcement with more of a focus on compliance results, allows a limited period to correct problems without enforce-

⁹See Memorandum from J. Craig Potter, Assistant Administrator for Aid and Radiation to Regional Administrators, titled "Guidance on Federally Reportable Violations for Stationary Air Sources" (Apr. 11, 1986). The water NPDES program is also making plans to analyze trends in Discharge Monitoring Reports, usually submitted monthly or quarterly by permittees.

ment consequences, and allows certain information to be kept confidential.¹⁰ EPA programs are beginning to address these missed groups of significant “minor” sources in other ways, either nationally or in select geographic areas. In several instances, citizen suits being brought under the Clean Water Act have provided more impetus for agencies to address them.

Finally, EPA’s criteria and approach to program review needs to be more cognizant of alternative means of achieving success, particularly in the area of the adequacy of compliance monitoring. Inspections are the sole focus of state reporting for EPA oversight purposes and yet the programs predominantly rely upon source self-monitoring and reporting. Toxic chemical and hazardous waste management requirements are straining the ability of agencies to define simple and affordable compliance monitoring approaches, to train inspectors, and to derive objective definitions of compliance status for purposes of oversight. It is very costly to monitor levels of individual chemical substances and very subjective to report on overall management concerns in industry practice. EPA needs to go back to the basic criterion that a sound enforcement program must be able to demonstrate accurate and reliable compliance monitoring. This should allow for greater use of self reported information augmented by a statistically significant inspection and other means to verify the integrity of reported data.

Advances in information and communications technology will of course continue to have an impact. Information technology is enabling EPA and the states to introduce a new emphasis on environmental results for enforcement from individual cases and for enforcement in the aggregate. Communications technology is enabling EPA to hold individual facilities and companies as well as states accountable for compliance and enforcement performance by providing greater public access to facility specific compliance and enforcement data. Transparency and accountability are two forces that provide additional leverage for program results.¹¹

Each of these trends are likely to take the relationship more in the direction anticipated by the formulation in the Policy Framework and should lead to a new generation of approaches for effective oversight of state enforcement and internal management of enforcement within EPA. However, the push to more effective EPA oversight of state enforcement is unlikely to go away. Experience has shown that when oversight is relaxed, performance suffers. It is important to bear in mind that an enforcement program can have powerful and wide-ranging authorities, efficient enforcement procedures, and reliable, low-cost compliance monitoring and instrumentation and still not be effective. Authority and resources will not achieve results unless there is the requisite will to enforce and the management framework to articulate objectives and hold all officials accountable for achieving them. Indeed, this is the message of the environmental justice movement, which is pushing EPA toward greater oversight of state enforcement and responsiveness to problems inadequately addressed.

The approaches for oversight of state programs described above, while they can be improved, are in the right direction for assuring increased accountability and long-term stability of environmental enforcement. They will be greatly enhanced by technological advances in communications and computing that will enable the national enforcement program to provide unprecedented public access to both compliance status information on the regulated community and information on the

¹⁰Memorandum from Steven A. Herman, Assistant Administrator, to EPA addressees, titled “Enforcement Response Policy for Treatment of Information Obtained Through Clean Air Act Section 507 Small Business Assistant Programs” (Aug. 12, 1994).

¹¹See E.G. Stanley & A. L. Teplitzky, Public Access to Compliance Monitoring and Enforcement Data: A Look at the Sector Facility Indexing Project and Other Agency Initiatives, 1 Proceedings of the Fifth International Conference on Environmental Compliance and Enforcement 179-92 (Monterey, Cal. 1998).

effectiveness of federal and state enforcement responses. This promise of greater public accountability can also greatly augment EPA oversight of state enforcement. At the same time, states are strenuously arguing that EPA should oversee their programs at a higher level, eliminating the very level of facility-specific data needed to make such information meaningful as an oversight or strategic planning tool. These arguments are spurred by EPA oversight practices that have not addressed the entire state program in context and that too easily fall back on specific cases or “bean counting” in isolation. The challenge to EPA is to overhaul its oversight practices, at a sufficiently fast pace, to hold states accountable, focus on state capacity building, and reflect the differences among state programs, before the Agency and the public lose access to the opportunity to use more constructively the information that is currently collected.

The oversight function and relationship between EPA and the states continue to evolve. New leadership at EPA under the Obama Administration has established “resetting our relationship with states to make sure we are delivering on our joint commitment to a clean and healthy environment” as one of its three top enforcement goals and specifically within that the strengthening of EPA oversight of state enforcement. The focus on state oversight is bolstered by a larger agency focus on healthy communities and on environmental justice, seeking fairness and a level playing field from the national enforcement effort, and the emphasis on state oversight as part of the Clean Water Act Action Plan. The Policy Framework for the State/Federal Enforcement Agreements will have continued relevance as EPA seeks to reset the relationship between the federal and state governments as will the challenges EPA continues to face in carrying out its oversight responsibilities: how to take into account differences among states, the expanding universe of regulated sources, the balancing of both deterrence and compliance incentives, actions and results, declining federal and state resources, and the competing pulls for greater state independence and greater accountability of both EPA and the States to the public.

III. NEGOTIATED SETTLEMENT OF EPA CIVIL ENFORCEMENT CASES*

§ 9:46 Introduction

It is a distinct feature of environmental law that the rules which effect concrete changes in behavior not only derive from the statutes and regulations but are also fashioned in litigation activity against specific sources of pollution. Enforcement activity taken as a whole clearly shapes policy. This activity includes state and federal enforcement both in court and administrative (non-judicial) proceedings. At the same time, when the stakes and emotions are high, particularly in an area of scientific uncertainty, litigation of any sort is often a poor means of resolving these issues.¹ Therefore, enforcement actions are normally resolved through negotiation. This section will describe the negotiation process in both judicial and administrative civil enforcement litigation, focusing on the policies and practical factors which affect the result in such negotiations. The resolution of criminal enforcement litigation, which often involves distinctly different rules and considerations are addressed in § 9:52. All other references are to civil enforcement matters.

In order to establish a context, it should be observed that in the federal courts, two types of environmental cases are common, each of which, in a sense, has been

*By **F. Henry Habicht II** and **Terrell E. Hunt**, with contributing authors as noted by section; updated by **Susan E. Bromm**.

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¹Burns, Colloquium on Improving Dispute Resolution: A View from the Department of Justice, 1 Admin. L.J. 441-49 (1987).

brought to enforce compliance with the environmental laws. The first category comprises suits by citizens against the government challenging federal regulatory decisions or federal actions alleged not to comply with substantive requirements of statutes such as the Clean Water Act, or procedural review requirements of statutes such as the National Environmental Policy Act (NEPA).² The second category concerns actions by federal or state governments or citizen groups to enforce the requirements of the environmental laws.³

The first category of cases largely involve challenges to a government agency's generalized scientific or policy judgments. While it may be that negotiated rulemaking can minimize the need for litigation over many regulatory decisions,⁴ settlement with the government of subsequent litigation challenging such decisions involves some distinctly different considerations than does settling enforcement cases. The principal reason for this distinction is that in regulatory decisions, the federal government (i.e., the Environmental Protection Agency (EPA) Administrator) benefits from an extremely deferential standard of review in which a court may overturn a regulatory judgment only if, based upon the administrative record developed by the Agency, that decision is shown to be arbitrary and capricious or otherwise not in accordance with the law.⁵ Armed with such a standard of review, the government will not be inclined to make significant concessions in settlement unless quite vulnerable on the record—as might be the case when the government has failed to meet a statutory deadline. Settlement in such cases would in any event involve little more than a remand and reconsideration of the decision by the government, subject to full Administrative Procedure Act (APA) review upon completion of the reconsideration.⁶

Civil environmental enforcement cases, on the other hand, are likely in the vast majority of instances to result in settlement.⁷ These are individualized disputes, involving technical compliance issues and penalty calculations.⁸ Moreover, because the government in enforcement has a strong interest in achieving efficiency and maximizing the number of cases handled, the government can be expected to be receptive to reasonable settlement proposals which obviate the need for time consuming and resource intensive litigation. Indeed, as will be discussed in more detail below, Congress has gone so far as to address settlement explicitly in statutory language governing Superfund enforcement, in order to facilitate this result whenever appropriate.

The following discussion of the settlement of environmental enforcement litigation with the government proceeds from the premise that the successful resolution of enforcement disputes with the government involves far more than the sterile application of legal rules to a particular set of facts. It is critical to bear in mind that environmental enforcement cases receive extensive scrutiny from Congress, the press, and interest groups. Each settlement represents an enforcement policy decision by government officials; a determination of the public interest influenced by the law, agency policy, assessments of the equities and litigation risk, public opinion,

²See, e.g., §§ 10:52 and 13:124, concerning the National Environmental Policy Act and Clean Water Act.

³See generally §§ 9:1 and 9:34.

⁴For a helpful discussion of regulatory negotiation, see G. Bingham, *Resolving Environmental Disputes* (1985).

⁵See Administrative Procedure Act, 5 U.S.C.A. § 706; see also *Chevron, U.S.A. v. NRDC*, 467 U.S. 837, 14 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 20507 (1984) (discussion of principles of deferential review).

⁶Such regulatory settlements are described generally in Habicht, *Settling Cases with the Land and Natural Resources Division*, 1 *Nat. Resources & Env't* 5, 74 (1985).

⁷The settlement rate ranges as high as 95 percent of the civil environmental enforcement docket (unpublished Land and Natural Resources Division, Department of Justice, judicial statistics).

⁸See § 9:34.

and the institutional and individual motivations and goals of the officials involved. In this sense, the consent decrees negotiated in judicial enforcement matters and their administrative counterparts—consent orders and settlement agreements—are important threads in the fabric of environmental enforcement law and policy.

Accordingly, this section will provide a holistic view of the settlement process by focusing upon the following factors: first, the general institutional constraints and factors which affect the judgment of the enforcement personnel of EPA—and the Department of Justice (DOJ) in judicial cases; second, the increasing use of policy and guidance documents by EPA to make its goals and objectives more clear to the public and to channel the discretion of its regional staff; and third, the specific statutory and Agency policy objectives of each program being enforced in a given cases. Finally, this section will examine innovations in enforcement being explored by EPA which in the future may facilitate more rapid settlement of even the most complex enforcement cases.

§ 9:47 Constraints and influences on the settlement process

The government agency, particularly in enforcement matters, is motivated by factors often quite different from those which govern the decisions of private litigants. This is especially true in environmental enforcement, which is almost uniquely characterized by extensive congressional and public scrutiny and formal rights of the public to participate in the process, as described in § 9:76. As a result of this distinctive context, government decisions to litigate or to settle environmental enforcement cases are inspired not only by hard judgments about litigation risk on the particular facts of the case, but also by institutional and policy considerations which transcend the case at bar.¹ For example, the FY 2000/2001 MOA guidance sets forth media specific “core program: priorities, as well as “sector” priorities.² These priorities guide compliance assistance as well as enforcement work and are useful in helping understand decisions on selection of compliance monitoring and enforcement focuses.

As a general proposition, the government in settling a case must determine whether the result is in the public interest. All persons negotiating with the government must recognize that their opposite numbers are most serious and proud about their roles as guardians of “the public interest.” Fortunately, the government lawyer’s determination of the public interest is neither mystical nor idiosyncratic; it is guided by a substantial body of written policy and implementing guidance.

These written sources will be described below. It is also clear, however, that human and institutional factors impact the judgments made by government attorneys. Therefore, these factors are also described below as significant constraints and influences on the settlement process.

§ 9:48 Constraints and influences on the settlement process—EPA’s enforcement goals and priorities

The government lawyer in assessing the public interest is likely first to refer to the statute and to general EPA policy priorities for enforcement. The increasingly sophisticated and priority role played by enforcement in EPA programs is discussed in some detail in § 9:34. Enforcement results are now viewed inside and outside the

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¹See Habicht, *Settling Cases with the Land and Natural Resources Division*, 1 Nat. Resources & Env’t 5, 6 (1985).

²The 2000/2001 MOA establishes two priority sectors: petroleum refining (SIC code 291) and metal services (electroplating and coating, SIC code 347), “Final FY 2000/2001 OECA Memorandum of Agreement (MOA) Guidance,” Steven A. Herman, OECA, April 14, 1999.

EPA as an important measure of the Agency's success in protecting environmental media; moreover, enforcement is now an integral tool used by EPA management to implement its program goals.

Since the 1994 reorganization of EPA's enforcement functions into a single, consolidated Office of Enforcement and Compliance Assurance (OECA), the Agency has set enforcement priorities on both a traditional media specific basis as well as a new, cross media, sector and place basis. OECA's strategic plan establishes broad, overarching goals such as "use enforcement tools to deter violations, return violators to compliance, and to restore and remediate places" and "use enforcement and compliance assurance authorities to deliver protection under federal environmental laws to ensure that all populations regardless of race, color, national origin and income live in clean and sustainable communities." These broad goals are translated into biennial operational priorities in the OECA Memorandum of Agreement (MOA) guidance.¹ For example, the FY 2000/2001 MOA guidance sets forth media specific "core program" priorities, as well as "sector" priorities.²

These priorities guide compliance assistance as well as enforcement work and are useful in helping understand decisions on selection of compliance monitoring and enforcement focuses.

§ 9:49 Constraints and influences on the settlement process—Institutional factors—Civil judicial enforcement cases

The federal government is an increasingly complex bureaucracy; it is critical to understand precisely what offices and persons are involved in the EPA enforcement and settlement decision process. Between FY 1994 and FY 1997, EPA Headquarters and all ten regional offices underwent reorganizations that significantly affected enforcement functions. In Headquarters, the previously decentralized organization with media specific enforcement offices located within each programmatic Assistant Administrators office was replaced with a large Office of Enforcement and Compliance Assurance (OECA). OECA was formed by the consolidation of the former Office of Enforcement (OE) with the media specific enforcement offices.

There is no single template for regional organizations. Some retained the traditional structure of media divisions and a separate Office of Regional Counsel (*i.e.*, Regions 3, 4, and 5). Others formed newly consolidated, multimedia Enforcement Divisions. In some cases, these Enforcement Divisions include only the technical enforcement staff, with legal staff remaining in the Office of Regional Counsel (*i.e.*, Region 2). In other cases, both technical and legal enforcement staffs are housed within the same organizational unit (*i.e.*, Regions 6 and 8).

As discussed generally in § 9:2, a typical judicial enforcement case will be initiated by the EPA regional office through an inspection or investigation of discharge monitoring reports or other data. A referral package will be prepared by a regional attorney with input from technical enforcement staff. This referral package, following approval by a senior Regional official, is generally referred directly to the Department of Justice (DOJ), Environment and Natural Resources Division. Most civil referrals are now direct referrals to DOJ under a policy agreement with EPA

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¹See "Final FY 98/99 OECA Memorandum of Agreement (MOA) Guidance," Steven A. Herman, OECA, June 5, 1997.

²The 2000/2001 MOA establishes two priority sectors: petroleum refining (SIC code 291) and metal services (electroplating and coating, SIC code 347). "Final FY 2000/2001 OECA Memorandum of Agreement (MOA) Guidance," Steven A. Herman, OECA, April 14, 1999.

designed to streamline the system for filing civil enforcement complaints.¹ In certain classes of cases, EPA and DOJ have agreed to pre-referral negotiations with prior approval and referral of proposed consent decrees to DOJ instead of just the referral package.²

In 1994, following the reorganization that created OECA, significant changes were made to the role of headquarters in regionally-initiated enforcement actions.³ Across all the major media statutes, headquarters' concurrence on both judicial referrals and judicial and administrative settlements is only required for cases of "national significance."⁴ Generally, civil judicial and administrative cases that seek a bottom line penalty of less than \$500,000 are presumed not to be nationally significant and thus no headquarters' concurrence is necessary unless the cases "are national in terms of their impact or attention, are sensitive in nature, raise unresolved policy issues, establish an important precedent, arise in an area where national consistency is of paramount importance . . . or otherwise affect the overall program."⁵ Even for cases with bottom line penalties over \$500,000, headquarters can "opt-out" of their concurrence role if they believe the case raises no issues of

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¹See Memorandum from Thomas L. Adams Jr., Expansion of Direct Referral of Cases to the Department of Justice, Jan. 14, 1988.

²Process for Conducting Pre-referral Settlement Negotiations on Civil Judicial Enforcement Cases, Apr. 13, 1988, OE Policy GM-73. See Memorandum from Thomas L. Adams, Jr., Expanded Civil Judicial Referral Procedures, Aug. 28, 1986 [hereinafter Referral Guidance Memorandum]. In recent years, Environmental Protection Agency (EPA) and the Department of Justice (DOJ) have gradually increased the number of enforcement cases to be directly referred by EPA Regions to the Justice Department. Referral procedures are also governed by program specific guidance, see, e.g., Memorandum from Courtney Price, Guidance on Drafting Judicial Consent Decrees, Oct. 18, 1983 and Policy for Municipality and Municipal Solid Waste CERCLA Settlements at NPL Co-Disposal Sites, OECA, Feb. 5, 1998. See also Expansion of Direct Referral Cases to Department of Justice, Jan. 14, 1988, GM-69. Under this agreement, all cases will be directly referred from EPA.

All Media: Parallel Proceedings—Federal civil enforcement matters where a criminal investigation of the same violations is pending.

RCRA/CERCLA: Underground Storage Tank (UST) enforcement; Enforcement of RCRA land ban and minimum technology regulations; Enforcement of Administrative orders for access and penalty cases for failure to comply with requests for access (CERCLA § 104); Referrals to enforce Title III of SARA, the Community Right-to-Know provisions.

TSCA/FIFRA: Referrals to compel compliance with or restrain violations of suspension orders under FIFRA § 6(c); FIFRA actions for stop sales, use, removal, and seizure under section 13; Referrals to enforce Title III of SARA, the Community Right-to-Know provisions; Injunctive actions under section 7 of TSCA (actions for injunctive relief to enforce the regulations promulgated under section 17 or section 6 could be directly referred).

Water: Clean Water Act pretreatment violations—failure of a POTW to implement an approved local pretreatment program; Clean Water Act permit violations relating to or determined by biological methods or techniques measuring whole effluent toxicity; PWSS cases to enforce against violations of administrative orders which were not issued using an adjudicatory hearing process; Cases brought under the Marine Protection, Research and Sanctuaries Act (MPRSA); Underground Injection Control (UIC) cases.

Air: Smelter cases.

³See Memorandum from Steven A. Herman, Assistant Administrator, to Assistant Administrators, et al., Redelegation of Authority and Guidance on Headquarters Involvement in Regulatory Enforcement Cases, July 11, 1994.

⁴Memorandum from Steven A. Herman, Assistant Administrator, to Assistant Administrators, et al., Redelegation of Authority and Guidance on Headquarters Involvement in Regulatory Enforcement Cases, July 11, 1994.

⁵Memorandum from Steven A. Herman, Assistant Administrator, to Assistant Administrators, et al., Redelegation of Authority and Guidance on Headquarters Involvement in Regulatory Enforcement Cases, 3, July 11, 1994. Additional definition of "national significance" is contained in a memorandum from Robert J. Van Heuvelen, Director, Office of Regulatory Enforcement, to Deputy Regional Administrators, Regions I-X, et al., OECA/Regional Procedures for Civil Judicial and Administrative Enforcement Case Redelegation, Nov. 9, 1994.

national significance and is unlikely to have a national profile. The practical effect of this change has been to reduce the number and type of cases that headquarters becomes involved in and to focus headquarters' efforts to best affect policy outcomes.

In a majority of cases, unless significant precedential issues are being raised, there are three key negotiators: a regional technical enforcement representative, a regional attorney, and a Department of Justice trial attorney. In those cases where national or precedential issues are raised, an OECA (Headquarters) representative may also play a key role in the settlement process. In the vast majority of cases, if these three parties are satisfied, a settlement will be approved. If a case is an administrative action or a not-yet filed judicial action, regional officials will be key negotiators. If a complaint has been filed or has been approved at the Department of Justice, the Department of Justice trial attorney will often be the lead negotiator.

By statute, the Attorney General represents the agencies of the United States in court.⁶ The initiation, conduct, and compromise of litigation are to be controlled by the Attorney General, principally to ensure that the United States does not take contradictory positions of law or policy in federal courts throughout the country and to ensure that the resolution of a lawsuit does not involve concessions which could unduly adversely impact federal agencies in litigation elsewhere in the United States.⁷ Litigation authority has at times been fragmented by Congress.⁸ Very interesting separation of powers issues beyond the scope of this discussion are implicated by the question whether all litigation authority must be centralized in the Attorney General in order to ensure the President's ability faithfully to execute the law.⁹

Notwithstanding the foregoing theoretical concerns and the potential for friction resulting from differing agency perspectives, the Department of Justice attorneys and EPA personnel work closely together to minimize institutional tension and, above all, to be sure that they reach consensus on the merits of settlement. If there is disagreement, there may be the opportunity for private litigants to present proposals to officials with approval authority such as the relevant EPA Regional Administrator or Division Director or Assistant Attorney General. With the exception of truly novel issues, such as precedential Superfund proposals discussed below, such appeals are likely to be unavailing and should be invoked selectively.¹⁰

After a consent decree is signed by the defendant and EPA (*i.e.*, the Region and, when applicable, Headquarters), it is forwarded to DOJ for review, final signature, and filing. The Department seeks in its final review to assure that the settlement is consistent with the law, with prior settlements in that program area, that it will not have adverse impacts upon cases in other regions or other programs which are currently at trial or on appeal, and that it raises no unanticipated issues of first impression. Each consent decree is reviewed at DOJ by the supervising attorney and by the Chief or Deputy Chief of the Environmental Enforcement Section. These persons review the results for consistency with government enforcement policy and precedent, as described below. If the action was jointly commenced with a state agency, state review would proceed at this time, as well. The consent decree is then forwarded to the Assistant Attorney General for the Environment and Natural Resources Division for sign-off.

⁶28 U.S.C.A. §§ 523, 528.

⁷See Letter from Assistant Attorney General Robert A. McConnell, to Chairman John Dingell, concerning Department of Justice litigation authorities (Oct. 23, 1983).

⁸See, *e.g.*, Federal Trade Commission Act, 15 U.S.C.A. §§ 41 to 58; Tennessee Valley Authority Act, 16 U.S.C.A. §§ 831-831dd; TSCA § 7(e), 15 U.S.C.A. § 2608(e).

⁹See U.S. Const. art. II, §§ 1, 3. See also EPA/DOJ policy on Supplemental Environmental Projects, discussed further in § 9:66.

¹⁰See Habicht, *Settling Cases with the Land and Natural Resources Division*, 1 Nat. Resources & Env't 5, 7 (1985).

§ 9:50 Constraints and influences on the settlement process—Institutional factors—Administrative settlements

While often the largest enforcement cases, particularly those requiring complex injunctive relief, are brought judicially, the bulk of federal environmental enforcement cases are administrative actions. The authority to initiate administrative enforcement cases is now expressly set forth in most of the environmental statutes.¹ In FY 1999, EPA issued a record 1,654 administrative complaints and 1,878 administrative compliance orders and field citations.² In FY 1997, EPA brought 3131 formal administrative actions. Its administrative enforcement activities resulted in significant penalties³ and broadbased action to correct violations, to initiate supplemental environmental projects, and to institute internal supplemental environmental and auditing programs.⁴

The venue of most administrative cases is the EPA Regional Office in which the violation occurred. However, as discussed earlier, headquarter's concurrence is required for cases of national significance. For any complex administrative matter, several levels of review will be required within the Regional Office (and possibly headquarters) before a proposed settlement can be deemed acceptable to the Agency. These include the Regional Branch Chief and Division Director of the media program (air, water, waste) or enforcement division, as well as the Office of Regional Counsel (ORC) Branch Chief and Regional Counsel.⁵ Administrative settlements are signed by the Regional Administrator or, in some cases, by his delegee.⁶ Terms given high scrutiny by reviewers include statements of statutory or regulatory jurisdiction, consistency with national penalty policy, the nature of (and rationale for) any supplemental environmental projects, the size of the trigger for stipulated penalties, the force majeure clause, and "enforcement release" or other provisions limiting the exercise of future enforcement discretion.

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¹See Clean Air Act § 120, 42 U.S.C.A. § 7420; Clean Air Act Amendments of 1990, Pub. L. No. 101-549, 104 Stat. 2399 (Nov. 15, 1990) (assessment of civil penalties against a stationary source that is not in compliance with any applicable emission requirement); Clean Water Act § 309(d), 33 U.S.C.A. § 1319(d) (assessment of civil penalties against violators of effluent limitations, national standards of performance, recordkeeping/reporting requirements or NPDES permit requirements); Resource Conservation and Recovery Act § 3008, 42 U.S.C.A. § 6928 (the assessment of civil penalties and issuance of compliance orders for failure to comply with requirements relating to the generation, transportation, treatment, storage and disposal of hazardous waste); Toxic Substances Control Act § 16(a), 15 U.S.C.A. § 2615(a) (the assessment of civil penalties for failure to comply with any requirement under the Act); Marine Protection, Research and Sanctuaries Act § 105(a), 33 U.S.C.A. § 1415(a) (assessment of civil penalties for violations of the restrictions on ocean dumping); Federal Insecticide, Fungicide and Rodenticide Act § 14(a), 7 U.S.C.A. § 1361(a) (assessment of a civil penalty for any violation of the Act); Safe Drinking Water Act, 42 U.S.C.A. § 300f et seq.; Clean Water Act, 33 U.S.C.A. § 1251 et seq.; EPCRA, 42 U.S.C.A. § 11001 at 11045. Assessment of administrative penalties is covered by the Consolidated Rules at 40 C.F.R. Part 22.

²Press Release, U.S. EPA, EPA Sets Enforcement Records in 1999 (Jan. 19, 2000).

³See Enforcement and Compliance Assurance Accomplishments Report, FY 1997, OECA, July 1998.

⁴Enforcement and Compliance Assurance Accomplishments Report, FY 1997, OECA, July 1998. For examples of cases with management audit requirements, see Eagle Aviation, RCRA-04-97-0519; Puerto Rico Aqueduct and Sewer Authority, CWA-02-94-0055. See also § 9:116, for a discussion of environmental auditing.

⁵As a means of streamlining the administrative enforcement process, agreements have been negotiated between some regional media divisions and Office of Regional Counsel (ORC) which eliminate ORC review of settlements that involve minor violations and meet pre-established parameters.

⁶40 C.F.R. Part 22 contains EPA's Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties and the Revision or Suspension of Permits. In delegations of authorities implementing the provisions of each statute, the Administrator has delegated to the Regional Administrators authority to issue final orders and execute settlement agreements. See EPA Delegations Manual.

Certain administrative actions arising from enforcement cases are not appropriate subjects of negotiated settlements. For example pursuant to the Clean Water Act § 508 and Clean Air Act § 306,⁷ federal agencies are prohibited from entering into contracts, grants, or loans with any person who has been convicted of a criminal offense under CWA § 309(c) or CAA § 113(c), respectively.

This statutory prohibition, and the resulting placement of the facility or facilities owned, operated, or supervised by the convicted person, on the EPA List of Violating Facilities and the “GSA Lists of Parties Excluded from Federal Procurement or Nonprocurement Programs,” is automatic upon conviction under CWA § 309(c) or CAA § 113(c). Mandatory contractor listing under these statutes is nonnegotiable. It may not be compromised in the context of so-called global settlements (which purport to settle all aspects of a criminal case). Facilities which have been listed may not be removed from the list until EPA certifies that the condition giving rise to the listing has been corrected. Such certification shall not be made prior to or simultaneously with the entry of a judgment of conviction, and no agreement as to the timing or result of any request for removal from the EPA List of Violating Facilities may be made as part of plea negotiations or a plea agreement.

In contrast, discretionary listing actions brought against facilities with continuing or recurring Clean Air or Clean Water Act violations, and which are the subject of a preexisting civil enforcement action, are often the subject of negotiated settlements.⁸

§ 9:51 Constraints and influences on the settlement process—Institutional factors—The role of state enforcement agencies

While discussion of the specific enforcement procedures of individual states with federally enforceable state programs approved by EPA is beyond the scope of this section, it is important to observe that in all media, particularly in Resource Conservation and Recovery Act (RCRA) and Superfund enforcement matters, joint federal-state enforcement cases are not uncommon. The general federal-state relationship is discussed at some length in § 9:3, but it should be recognized that state actions will often involve officials with the State Attorney General’s office and a separate state environmental agency. In joint cases, the federal and state governments will need to agree upon the appropriate injunctive relief, and may well share in the penalties to be paid under any settlement. Generally, a complete resolution by the federal government of an enforcement matter should preclude subsequent federal law actions by states or citizen groups for the same transactions, but states which were non-parties are usually free to pursue actions in state court. In addition, if there are pending actions, particularly by state agencies, defendants should either ensure that their claims are merged in the federal judgment or, if separate state law claims are involved, should pursue the opportunity to resolve them as part of a global settlement.¹

⁷33 U.S.C.A. § 1368; 42 U.S.C.A. § 7606.

⁸For example, in 1991 a discretionary listing proceeding against three Wheeling Pittsburgh Steel Corporation facilities was settled as part of a negotiated settlement pending civil CWA enforcement action.

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¹See *United States v. Jones & Laughlin Steel Corp.*, 804 F.2d 348, 17 *Envtl. L. Rep.* (Envtl. L. Inst.) 20004 (6th Cir. 1986).

EPA and Department of Justice policy allows the federal government to share a penalty with a state or local entity where the state or local government has: (1) an independent claim that supports its entitlement to a penalty; (2) independent authority to seek such penalties; (3) participated actively in prosecuting the case; and (4) for contempt actions, has participated in the underlying actions giving rise to the contempt. Courtney M. Price, *Division of Penalties with State and Local Governments*, at 2-3, Oct. 30, 1985 (Policy Compendium GM-45).

§ 9:52 Constraints and influences on the settlement process—Institutional factors—Settlement of criminal charges¹

Criminal enforcement is usually reserved for cases involving deliberate, intentional or knowing violations, document falsification, unauthorized discharge, emission, shipment or release, tampering with monitoring or control equipment, or where repeat violations suggest any of the above.²

The criminal enforcement program is structured differently than the civil enforcement program, with different players and processes for initiating and resolving criminal charges. EPA develops criminal enforcement actions by performing background investigations by the special agent criminal investigators and legal analysis by the criminal enforcement attorney within the Office of Regional Counsel. The agents are part of the EPA Office of Criminal Enforcement, Forensics and Training within OECA. Proposed criminal cases go through EPA Headquarters before being referred to the DOJ Environmental Crimes Division. At DOJ the cases are either referred to the appropriate U.S. Attorney or handled by an Environmental Crimes attorney from DOJ, who represents the government. Developing the terms of a plea agreement or a sentencing recommendation requires coordination of these several roles. Recommendations for a remedy for environmental compliance or environmental damage remediation may involve EPA or state civil compliance review.

Environmental cases requiring remediation of environmental damage, such as the Ashland Oil spill in the Monongahela River in Pennsylvania and Exxon Valdez in Alaska³ have demonstrated the need to resolve criminal cases in the context of resolving the environmental problem. EPA has become more involved in plea negotiations, sentencing recommendations, and conditions of probation recommendations.

The Sentencing Guidelines for Organizational Defendants⁴ provide specific sentencing guidance on restitution, remedial requirements, community service, and probation. The Guidelines comment that “a court should consider the views of any governmental regulatory body that oversees conduct of the organization relating to the instant offense.”

In addition, the mandatory contractor listing provisions for criminal convictions under the Clean Air and Clean Water Acts is an increasingly important factor in plea bargaining and sentencing terms affecting compliance status. Delisting decisions are, however, a separate administrative determination based on “correcting the condition” which led to the violation.⁵

§ 9:53 Constraints and influences on the settlement process—The role of precedent

As has already been observed, the government attorney is motivated by factors which transcend the facts of the individual case. Two major influences on the government prosecutor’s assessment of the public interest can both be characterized as concern for “precedent.” The first concern of the government attorney is to ensure

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¹By **Bruce G. Bellin** and **A.A. Varela**; updated by **Susan E. Bromm**

²See “Regional Enforcement Management: Enhanced Regional Case Screening,” James M. Strock, OE, Dec. 3, 1990.

³United States v. Ashland Oil Co., Crim. Docket 88-146, W.D. Pa., sentencing Mar. 9, 1989; United States v. Exxon, Cr. No. 198-6-1 (D. Alaska). Exxon criminal and civil charges are under negotiation. Sentencing in Clean Air and Clean Water Act cases may also involve resolution of Contractor Listing actions. See § 9:15.

⁴U.S. Sentencing Commission, Nov. 1, 1991.

⁵See § 9:15, for a discussion of Listing.

reasonable consistency with prior settlements involving similar facts and similarly situated violators. At a minimum, professional pride prevents the government negotiator from entering into a settlement with terms far less favorable than those attained in prior similar cases. This does not signify a quest for foolish consistency, but rather reflects a major tenet of any effective enforcement program: deterrence and respect for the Agency requires that similarly-situated violators receive consistent treatment. Thus, the written policies concerning the terms of model consent decree decisions and the data base of prior consent decrees retained by EPA provide important insights into what the government's expectations will be in a given case.¹ It must be noted, however, that precedent is not always a good indicator. New policies (*e.g.*, penalty policies and model consent decree provisions) can have significant effects.

The second way in which precedent guides a government prosecutor's assessment of a settlement occurs when an enforcement case involves a new program or new regulations, and judicial interpretation of particular statutory or regulatory provisions is important to future enforcement cases. Thus, a case which might otherwise be appropriate for settlement may not be settled if government attorneys see the need to set a judicial precedent. This was the case in the *Chem Dyne* Superfund litigation in 1982. There, settlement was delayed while the parties submitted the question whether Superfund provided for strict, joint and several liability.² In appropriate cases, the government may be receptive to negotiating settlements in such cases if all issues can be wrapped up with the exception of the one question of precedential significance, which can then be efficiently presented to the court for summary disposition.

§ 9:54 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process

Increasingly, the inherently discretionary process of prosecuting and settling administrative and judicial environmental enforcement actions has been constrained by legal documents and directives which channel that discretion. Uniquely, the environmental enforcement field is one of the few areas of litigation in which Congress has expressly addressed the subject of settlement in statutory language. In 1982, in the Steel Industry Compliance Extension Act (Steel Stretchout Act), Congress provided statutory authority to EPA to grant steel corporations the chance to extend Clean Air Act compliance deadlines if they met certain criteria and agreed to use funds otherwise earmarked for Clean Air Act compliance to modernize plants and equipment. This statute was to be implemented through the negotiation or renegotiation of consent decrees.¹ More significantly, Congress has devoted a very substantial portion of its debate over the reauthorization of Superfund to the fashioning of statutory language to guide the exercise of the federal government's settlement discretion in Superfund enforcement situations.

Congress has also ventured into the arena of penalty mitigation in its passage of

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¹EPA maintained a database of all Consent Decrees; the provisions of what could be termed a "Model Consent Decree" can be found in Memorandum from Courtney Price, Guidance on Drafting Judicial Consent Decrees, Oct. 18, 1983 and in program specific model consent decree and settlement policies. *See, e.g.*, Policy for Municipality and Municipal Solid Waste CERCLA Settlements at NPL Co-Disposal Sites, OECA, Feb. 5, 1998.

²The seminal opinion of Judge Rubin appears in *United States v. Chem-Dyne Corp.*, 572 F. Supp. 802, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20986 (N.D. Ohio 1983).

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¹Steel Industry Compliance Extension Act of 1981, Pub. L. No. 97-23, 95 Stat. 139, codified at 42 U.S.C.A. §§ 7410, 7413.

the Small Business Regulatory Enforcement Act (SBREFA) in 1996.² Section 223 of SBREFA requires regulatory agencies, such as EPA, to implement a program or policy to provide for the reduction or elimination of civil penalties for certain types of violations by small entities³ and requires agencies to report to Congress on its policy, actions against small entities and dollar amounts of penalty mitigation.

In one sense, this sort of statutory language is distressing. It can be viewed as another example of Congress' distrust of, and related propensity to micromanage, the Executive Branch through, for example, the use of strict deadlines and mandatory duties.⁴ Because enforcement is inherently one of the most discretionary functions of government,⁵ it is important to all parties that the sound exercise of that discretion not be unduly constrained.

The statutory provisions described above, however, do serve one salutary function: they are helpful in signaling to the Executive the broad range of settlement options which are within its discretion and which should be immune from the criticism of congressional oversight committees. In the environmental area, the programs are often so complex that resolution of issues without litigation is particularly important. To achieve settlement, however, both the career professional staff and the regulated community needs some guidance as to what the government's objectives are and what kinds of settlement terms are legitimately open to discussion. While congressional preoccupation with settlements is in the long run not an appropriate employment of legislative resources, up to a point it can be helpful.

EPA and DOJ have appropriately recognized the importance of providing some measure of policy guidance to ensure that the discretion in this high-stakes area is not unbridled and that all parties to negotiations have some degree of certainty.⁶ Therefore, in addition to observing the will of Congress in this area, EPA and the Department of Justice are articulating the government's enforcement objectives and procedures in the following array of settlement policies and guidance documents.

§ 9:55 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—EPA policies influencing the settlement process

The overwhelming majority of EPA's enforcement cases are initiated by the staffs of EPA's ten regional offices pursuant to guidance developed in EPA Headquarters. Guidance regarding the legal requirements of a settlement agreement and the assessment and negotiation of penalties is issued by the Office of Enforcement and Compliance Assurance.¹ These documents appropriately seek to achieve consistency and predictability without unduly constraining prosecutorial judgment.

²Pub. L. No. 104-121 (1996), 110 Stat. 857 (codified in scattered sections of 5 U.S.C.A. and other titles).

³See discussion in § 9:121, for a description of EPA's policy implementing this mandate.

⁴For a discussion of some of these prescriptive requirements, see Ch 14 (discussion of Resource Conservation and Recovery Act).

⁵The Supreme Court set forth the principles of discretionary law enforcement in *Heckler v. Chaney*, 470 U.S. 821, 15 Env'tl. L. Rep. (Env'tl. L. Inst.) 20335 (1985).

⁶In K.C. Davis, *Discretionary Justice* (1976), there appears a seminal discussion of the often unduly broad latitude enjoyed by enforcement officials in the modern administrative state. A jurisprudential discussion of this at times distressing state of affairs is beyond the scope of this Section; it does, however, point out the important role that guidance documents play in bringing some degree of predictability and focus to the settlement process.

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¹The environmental defense bar closely monitors settlements in the various regions. EPA negotiators are frequently presented with data indicating the precise terms of settlements executed in other regions for offenses similar to those present in the instant case.

§ 9:56 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—EPA policies influencing the settlement process—EPA policy guidance regarding consent decrees

The Agency has provided general and specific guidance on the form and substance of consent decrees.¹ The guidance clearly states that actual or potential enforcement actions must be settled by a consent agreement or decree. Voluntary agreements made by violating firms but not executed by the government or lodged with the adjudicating body are strongly discouraged.²

Agency guidance sets forth standard provisions to be used in settlement documents.³ It addresses the form used to identify the parties and the causes of action,⁴ the procedural history, including the relationship of the case to any prior decree or orders. Any facts admitted by the defendant should also be detailed in the decree.

§ 9:57 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—EPA policies influencing the settlement process—EPA policy guidance regarding consent decrees—Jurisdictional provisions

The decree will include a statement of the court's jurisdiction over the subject matter and defendant in the case and will note that the complaint states a claim upon which relief can be granted.¹ The decree will clearly outline those parties, officers, or successors in interest (for example, subsequent purchasers of property covered by the decree) to whom the decree applies. The decree will also note that settlement without further litigation is the most effective and desirable means of resolving the matter.

§ 9:58 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—EPA policies influencing the settlement process—EPA policy guidance regarding consent decrees—Compliance provisions

Agreements must require compliance with applicable statutes or regulations, and

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¹Memorandum by Courtney M. Price, Special Counsel for Enforcement, Guidance for Drafting Judicial Consent Decrees, Oct. 18, 1983 (Policy Compendium GM-17). Guidance on model settlement documents for specific media programs are issued by the specific media enforcement offices. *See* Memorandum from Courtney Price, Guidance on Drafting Judicial Consent Decrees, Oct. 18, 1983 and Policy for Municipality and Municipal Solid Waste CERCLA Settlements at NPL Co-Disposal Sites, OECA, Feb. 5, 1998.

²A voluntary agreement may be entertained only where the settlement requires *no* prospective action by the defendant. *See* Memorandum by Courtney M. Price, Special Counsel for Enforcement, Guidance for Drafting Judicial Consent Decrees, 2, Oct. 18, 1983 (Policy Compendium GM-17).

³While each settlement applies to a unique set of facts, compliance problems, negotiation experience, and the use of standard provisions and language simplifies internal EPA review. Agency guidance acknowledges the need to conform to specific requirements of local court rules.

⁴The identification must be sufficient to identify the legal status (corporation or partnership) and to establish the personal jurisdiction of the court. Intervenor (typically states) should be identified to assure that their interests are fully addressed, and any pending motions to intervene should be resolved in the decree.

[Section 9:57]

¹The proper recitation of subject matter, personal jurisdiction, and the statement of a claim are particularly essential where the defendant has raised such matters as defenses in the pre-settlement litigation. This makes clear that the court or agency has authority to approve the settlement. *See also* discussion of the supplemental environmental projects at § 9:66.

must commit the defendant to a particular course of action by a date certain.¹ They will also define the methods (for example, tests, or reports) EPA can use to evaluate the defendant's success in meeting the provisions.² More stringent compliance monitoring provisions will be required when negotiating with defendants with repeated violations. Where the ability of the firm to perform is in doubt, or where full accomplishment of the conditions is deemed to be particularly important to the government, the defendant may be required to post a performance bond.

§ 9:59 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—EPA policies influencing the settlement process—EPA policy guidance regarding consent decrees—Sanctions and penalties

Settlements which require the payment of a cash penalty will clearly set forth the amount of the penalty to be paid and the form, terms, procedure for payment and the after tax effect of the penalty amount.¹ Settlements involving supplemental environmental projects (*i.e.*, settlements with provisions in addition to those necessary to resolve the specific violation) must be consistent with established policy as to the required nexus between the violation and the proposed project. *See* discussion at § 9:66.

§ 9:60 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—EPA policies influencing the settlement process—EPA policy guidance regarding consent decrees—Dispute resolution

Defendants should always ensure that consent decrees include specific provisions for resolving disputes which may arise between the government and the defendant in the operation of the agreement. Such provisions are intended to speed the resolution of disputes, take advantage of the technical expertise of the parties, and avoid taxing the court with minor matters.¹

[Section 9:58]

¹It is not sufficient for the Agreement simply to require the defendant to purchase and install control equipment, for example. Such provisions should also require compliance with the appropriate standard to make clear that installation of the equipment does not relieve the defendant from the responsibility of achieving and maintaining compliance with the applicable standard. Draft EPA guidance instructs government negotiators to seek to require defendants to certify (subject to criminal sanctions) that they have performed the actions required under the decree. EPA also seeks to require documentation of required performance. This may entail submission to the Agency of invoices documenting equipment purchases, laboratory results documenting sample analysis, or photographs documenting drum removals. *See* Memorandum, Verification of Consent Decree Provisions, from Terrell E. Hunt to Enforcement Office Directors (Mar. 11, 1988).

²Monitoring provisions will consider the impact upon Agency resources and the burden upon the defendant. EPA will seek to stipulate its right of access and entry to monitor compliance with compliance provisions.

[Section 9:59]

¹Defendants may be allowed to make installment payments if they demonstrate an inability to make a lump sum payment and still perform the remedial action or continue in business, and the government has reason to believe that installment payments will in fact be made. A more detailed description of the guidance given on the assessment and negotiation of final penalty amounts appears in § 9:66. EPA also has agreements with the SEC and the IRS to exchange information and report environmental liabilities and penalty amounts to ensure that penalties are properly characterized and treated by the violator. *See* Memorandum of Understanding, EPA and IRS, 1988.

[Section 9:60]

¹Approaches to dispute resolution include an agreement to negotiate for a limited period and petition the court if agreement is not reached, or to submit any dispute to binding arbitration. A recent

§ 9:61 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—EPA policies influencing the settlement process—EPA policy guidance regarding consent decrees—Preservation of claims

In settling one set of claims, the government cannot waive the right to pursue other claims arising from the same set of actions. Accordingly, the government will seek to assure that the agreement does not affect the defendant's other liability under other statutes or regulations. Wherever a consent agreement is not intended to resolve all aspects of the case, it will preserve the right to bring additional actions to resolve specified instances of potential violations. As a matter of policy, civil consent agreements do not release criminal liability.

§ 9:62 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—EPA policies influencing the settlement process—EPA policy guidance regarding consent decrees—Stipulated penalties

Guidance instructs negotiators to provide for stipulated penalties as a means of assuring that actions required under an agreement are actually performed.¹ and simplifying consent decree enforcement. Stipulated penalty clauses are appropriate in agreements which impose final compliance requirements (for example, remedial action, reporting, testing, or monitoring requirements) or other performance standards. The provisions should set forth an objective procedure for determining whether stipulated penalties are due, how they would be calculated, how they will be paid, and to whom. Any stipulated penalty clause would also clearly state that stipulated penalties are not the sole remedy, and that the government preserves the right to seek injunctive or other relief.² The notion of stipulated penalties is offensive to many defendants because it reflects distrust and can be too rigid in rolling up large penalties for minor breaches spanning long periods. EPA is, however, clearly committed to this tool. *Force majeure* and related provisions can be used to mitigate its harsh impact.

§ 9:63 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—EPA policies influencing the settlement process—EPA policy guidance regarding consent decrees—Force majeure

Agency guidance allows limited leeway to excuse the performance of consent agreement conditions based upon circumstances beyond the defendant's control (for example, acts of God). Government negotiators will seek to define narrowly the force majeure events, place upon the defendant the burden of proving that the causal events were beyond his control, and require defendant to notify EPA promptly of the

administrative consent agreement established a formal fact-finding procedure before a neutral third party to resolve disputes arising under the agreement. *See* § 9:123.

[Section 9:62]

¹*See, e.g.*, Memorandum from James H. Strock, Use of Stipulated Penalties in EPA Settlement Agreements, Jan. 24, 1990.

²Stipulated penalty clauses are to be tailored to the precise nature and scope of potential consent agreement violations. The government may seek to escalate the size of stipulated penalties based upon the number of days of noncompliance, the amount of any exceedance, or the toxicity of the violative material. The Agreement could allow penalties paid for interim violations to be placed into an escrow account. Funds would be returned to the defendant if final compliance is achieved in a timely manner.

occurrence of an event which may delay compliance.¹ The provision must note that events triggering the clause merely enlarge the period provided for full compliance with the requirements of the agreement; they do not excuse the defendant from complying with such terms.

§ 9:64 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—EPA policies influencing the settlement process—EPA policy guidance regarding consent decrees—Termination of the agreement and satisfaction

A judicial consent decree or administrative settlement assessment remains within the active jurisdiction of the court or Administrative Law Judge until the defendant has complied with all of its provisions. An agreement may terminate automatically upon completion of its terms, or may provide a time lag between completion and termination to ensure that the defendant *continues* to comply for a specified period. As a matter of jurisprudential policy, all should support the notion of termination dates in consent decrees; perpetual judicial receiverships are not an optimal employment of public resources.

§ 9:65 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—EPA policies influencing the settlement process—EPA policy guidance regarding consent decrees—Covenants not to sue

Agency guidance strongly opposes settlement provisions which limit the government's ability to pursue future enforcement actions. Defendants may insist on provisions noting that the agreement constitutes a full settlement of the action and barring any further enforcement action based upon the facts which gave rise to the underlying action. The public interest in certainty and finality strongly support such provisions. Such clauses are narrowly drawn to limit any release solely to matters set forth in the complaint and only to defendants who had fully corrected the violations charged.

§ 9:66 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—EPA policies influencing the settlement process—EPA's policy on civil penalties

Of all EPA guidance affecting the exercise of settlement discretion, one of the most significant and revealing is EPA's *Policy on Civil Penalties*.¹ This generic policy applies "to all administratively imposed penalties and settlements of civil (judicial) penalty actions." Deviations from the prescribed approach are authorized only if they are justified and documented.² The guidance set broad policy objectives and established a framework which each media program has used to develop its own specific guidelines on the assessment and settlement of penalties under its statutes.

[Section 9:63]

¹EPA guidance instructs negotiators to include language in the Agreement that specifies that the failure to notify EPA within the period prescribed in the Agreement precludes the defendant from invoking the force majeure provision based upon that event.

[Section 9:66]

¹Guidance by Courtney M. Price, Assistant Administrator for Enforcement and Compliance Monitoring, Policy on Civil Penalties, Feb. 16, 1984 (Policy Compendium GM-21). *See also* § 9:41.

²Guidance by Courtney M. Price, Assistant Administrator for Enforcement and Compliance Monitoring, Policy on Civil Penalties, 1, Feb. 16, 1984 (Policy Compendium GM-21).

The penalty policy establishes a three-prong analysis for calculating the penalty for settling a given case. First, the government calculates the *economic benefit* of the delayed compliance. Secondly, it considers the actual or inherent seriousness of the violation, or the *gravity* of the violation. Third, the policy allows certain upward and downward *adjustments* to be made based upon the circumstances and the attitude of the defendant.

§ 9:67 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—EPA policies influencing the settlement process—EPA’s policy on civil penalties—Calculating the “economic benefit component”¹

The Policy requires penalties of sufficient magnitude to remove any economic advantage gained by the firm’s delayed compliance. Violators gain an economic benefit, by delaying costs,² avoiding costs,³ and by securing a competitive advantage in the marketplace.⁴ The Agency’s penalty policy requires specific calculations to determine this economic gain in appropriate cases. This calculation provides one of the key components of the overall penalty calculation, the “benefit component.”

EPA has developed a computer model, known as “BEN,” to calculate the economic benefit of delayed compliance. The model consists of a series of sophisticated inter-related financial formulas with thirteen independent variables. The BEN user must provide specific data for seven of these variables which identify the magnitude of the delayed capital expenditures, the savings in foregone annual expenses, the number of months between the time that the expenditures should have been made and when they actually were (or will be) made, and the date on which a penalty will be paid.⁵

The product of a BEN calculation is a dollar amount which represents the eco-

[Section 9:67]

¹Updated by **Jonathan D. Libber**

²Deferring significant one-time capital outlays until an EPA or state enforcement action forces such expenditures can be of substantial economic benefit. The following types of violations result in savings from deferred costs: failure to install pollution control equipment, failure to effect process changes needed to eliminate pollutants from products or waste streams, or failure to obtain permits, where permits would likely be granted.

³A number of kinds of violations enable the violator to *permanently* avoid costs associated with: the operation and maintenance of equipment not installed; the failure to properly operate and maintain existing control equipment; the manpower costs of personnel not hired or trained; the failure to establish or follow precautionary procedures which would be required in permits; failure to make insurance payments and the failure to conduct necessary periodic tests.

⁴The economic gain attributable to some violations arises from the violator’s enhanced market position. In some instances this derives solely from the violator’s willingness to provide goods and services which are not lawfully available (and, therefore, are not available elsewhere in the marketplace). Examples include the selling of cancelled, suspended or otherwise banned pesticides, the selling of pesticides for banned uses, selling of banned products without required labelling/warnings, removing or tampering with pollution control equipment for a fee (automobile emissions controls), or selling products without required regulatory clearances (unregistered pesticides, new chemicals which have not undergone required premanufacture toxicological review by EPA).

⁵The seven items for which case-specific data is needed in each case are: (1) *Case Name*; (2) *Initial Capital Investment*: the dollar amount of the delayed investment as the sum of the direct purchase cost plus the sales tax, the cost of site preparation and engineering design work, and all shipping and installation costs. To allow continual adjustments for inflation, these amounts are expressed in year-dollars, e.g., \$2 million in 1983 dollars; (3) *One-Time Expenditures*: any non-depreciable expenditures associated with the capital investment, such as the cost of land purchased or cleaning up a disposal site. The variable will specifically consider whether each one-time expenditure is tax deductible; (4) *Annual Expense*: insurance premiums, equipment leases, estimate of the average incremental cost of operating the required control equipment, considering labor, power, raw materials, supplies, increase in property tax, etc.; (5) *Date of Noncompliance*: the month and year in which the violator first failed to comply; (6) *Date of Compliance*: the month and year in which the violator first achieved

conomic benefit component of the penalty given the financial assumptions inherent in the standard values⁶ entered into the computer. Government attorneys will generally view this amount as a minimum penalty amount in a settlement, although the numbers and assumptions applied to the model will often be topics of some limited negotiations.⁷

§ 9:68 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—EPA policies influencing the settlement process—EPA’s policy on civil penalties—Calculating the “gravity component” of a penalty

Removing the economic gain of non-compliance, however, merely places the violator in the same position he would have been in if he had achieved timely compliance. To provide an affirmative disincentive for future violations, government policy calls for additional penalties. The magnitude of these additional penalties should reflect the seriousness or gravity of the violation.

The government will seek to quantify the gravity of the violation by considering (a) the risk to health or the environment inherent in the violation at the time it was committed, (b) the actual harm that resulted from the violation, and (c) the impact of the violation upon the ability of the Agency to perform its regulatory functions. Because inaccurate reporting impairs this ability, the Agency does place great importance on this third criterion. While this is not an exact science, in evaluating the gravity component, the government considers specific factors relating to the level of risk created and the duration of the violation.

§ 9:69 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—EPA policies influencing the settlement process—EPA’s policy on civil penalties—Initial and adjusted penalties

One goal of EPA’s penalty policy is to assure that similarly-situated violators are treated similarly, while allowing legitimate differences between cases to be taken into account.¹ The adjustment factors allow discretionary adjustments in the Gravity Component of the initial penalty of plus or minus 20 percent. Increases or decreases of greater than 20 percent may also be made, but only in exceptional circumstances. These percentage adjustments may be applied upon consideration of the following factors:

compliance or is expected to come into compliance; (7) *Penalty Payment Date*: the month and year in which the penalty will be paid.

⁶The model contains standard values data for the following variables: (1) *Useful Life of Pollution Control Equipment*: uses 15 years; (2) *Marginal Income Tax Rate (One-Time)*: marginal tax rate the year the investment should have been made. BEN uses the maximum federal corporate tax rate and the average state tax rate; (3) *Marginal Income Tax Rate (Delayed)*: marginal tax rate the year the investment was actually made; (4) *Inflation Rate*: uses rate of increase in the *Chemical Engineering Plant Cost Index*; (5) *Discount Rate*: uses the sum of the annual average yield on Treasury bonds over the last five years plus the average market risk premium; (6) *Low Interest Financing*: BEN assumes that defendants utilize *no* low interest debt through industrial development bonds or other sources. If company-specific data exists, that data can be entered for any of these variables.

⁷BEN calculations are made in virtually all EPA cases involving significant economic benefit from noncompliance. EPA’s penalty guidance provides “rules of thumb” for estimating the value of the delayed costs, avoided costs, or competitive advantage without using the computer. Computer-time logs indicate, however, that BEN calculations are being made at a rate of over 250 per month.

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¹The policy notes that “equitable treatment is a two-edged sword. While it means that a particular violator will receive no higher penalty than a similarly situated violator, it also means that the penalty will be *no* lower.” Guidance by Courtney M. Price, Assistant Administrator for Enforcement and Compliance Monitoring, Policy on Civil Penalties, 17, Feb. 16, 1984 (Policy Compendium GM-21).

- Degree of Willfulness and/or Negligence of the Violator's Conduct²
- Degree of Cooperation in Reporting the Violation or Initiating Prompt Corrective Action³
- Past Compliance History⁴

Favorable penalty adjustments are most likely to be given to parties who demonstrate good faith and take corrective action prior to the initiation of litigation. This is designed to provide incentives for the initiation of prompt corrective action, and to reinforce the government's litigating philosophy that the cost of settlement *goes up* the farther a matter goes down the litigation path.

Ability to pay can also lead to unfavorable adjustments or at least delayed payment schedules. The "ABEL" computer model has been developed to help negotiators evaluate a firm's ability to pay.⁵ Like BEN, this model utilizes financial formulae to analyze the liquidity and solvency of a firm. The government negotiator will likely be moved by evidence that a heavy penalty may put a firm out of business, unless the violation is extremely serious or the violator demonstrates significant recalcitrance. The ABEL model utilizes income tax data to perform a sophisticated analysis of the violator's financial condition. This model contains sophisticated models of financial analysis which utilize input data gained from a firm's standard income tax returns, SEC filings, and annual reports. Unlike the economic benefits model which generates a single dollar amount representing the gains to the firm of its non-compliance, the ability to pay model calculates the *probability* that a firm can pay a given penalty. Accordingly, the litigation team has more discretion in evaluating a firm's ability to pay.

To accommodate the need to provide sufficient flexibility to reach settlements that reflect the equities of individual circumstances, EPA policy allows negotiators an additional degree of absolute discretion to adjust penalties up or down 10 percent of the gravity component. This reflects a mandate under some statutes that, after having considered a wide range of substantive penalty-assessment criteria, the government also consider "other factors which justice may require."⁶

²The government would consider whether the violator controlled the events constituting the violation and could have foreseen their occurrence, took reasonable precautions to avoid violations, knew or should have known of the hazards associated with the conduct, or in fact knew of the legal requirement violated. Guidance by Courtney M. Price, Assistant Administrator for Enforcement and Compliance Monitoring, Policy on Civil Penalties, 18, Feb. 16, 1984 (Policy Compendium GM-21).

³Discretion will be exercised depending upon whether the violator initially reported the violation to the government, took prompt corrective action to mitigate harm once instructed to do so by EPA, or demonstrated real initiative to minimize risk (*e.g.*, contacted customers, or recalled product from commerce).

⁴In evaluating a firm's compliance history, the government will consider whether the firm has experienced recent violations for similar offenses and the violator's response to such violations. A prior violation will adversely impact the penalty calculation if the same persons or organizational unit were responsible for the prior violative conduct. Note that the guidance allows *upward* penalty adjustments of up to 70 percent for firms with a poor compliance history involving similar violations. Guidance by Courtney M. Price, Assistant Administrator for Enforcement and Compliance Monitoring, Policy on Civil Penalties, 22, Feb. 16, 1984 (Policy Compendium GM-21).

⁵In addition to ABEL, the Agency has the INDIPAY model that evaluates claims of inability to pay by individuals and the MUNIPAY model to evaluate municipalities', towns', sewer authorities', and state governments' ability to pay. All of these models and their user's manuals are on EPA's internet web page: <http://www.epa.gov/oeca/models>.

⁶Toxic Substances Control Act § 16(a), 15 U.S.C.A. § 2625(a).

§ 9:70 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—EPA policies influencing the settlement process—EPA’s policy on civil penalties—The use of supplemental environmental projects¹

A number of enforcement settlements provide for the payment of a substantial dollar penalty along with supplemental environmental projects (SEPs) which provide useful environmental benefits beyond what can be secured solely through injunctive relief. Such settlements have appeared attractive to defendants who, depending on the nature of the project, benefit from such expenditures by enhancing their environmental compliance performance or enhancing their image within industry, within the financial community, or the public at large.² The use of “supplemental projects” can promote the settlement of claims and minimize the transaction costs associated with major litigation when approved under EPA policy. Neither EPA nor the Department of Justice favor the unrestricted use of “penalty reduction” projects since they may circumvent the intent of Congress that monetary penalties be collected from violators and deposited into the Treasury and may encourage courts in the erroneous belief that they possess the power to order *sua sponte* alternative remedies. However, the carefully crafted and executed use of SEPs provide additional health and environmental protection while maintaining the necessary deterrent impact of federal enforcement actions.³

Agency policy sets several conditions upon the acceptance of SEPs as a basis for reducing the cash penalty arising from the original violation. First, they must fall into one of seven eligible categories of environmentally beneficial projects:⁴

1. *Public Health* projects, which provide diagnostic, preventive and/or remedial components of health care, related to actual or potential human health damage caused by the violations;
2. *Pollution prevention* projects, which substantially reduce or prevent the generation or creation of pollutants through use reduction (i.e., by changing industrial processes, or by substituting different fuels or materials) or through application of closed-loop recycling;
3. *Pollution reduction* projects, which reduce the discharge of pollutants through more effective “end-of-pipe” technologies, or through improved operation and maintenance;
4. *Environmental restoration* projects, which enhance the environment in the vicinity of the violating facility;
5. *Environmental auditing* projects, which seek corrections to existing management or environmental practices, or both, whose deficiencies appear to be contributing to recurring or potential violations; and
6. *Environmental compliance promotion* projects, which provide training or support to others in the regulated community on achieving or exceeding environmental requirements; and

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¹Updated by **Peter D. Rosenberg** and **Susan E. Bromm**

²The use of Supplemental Environmental Projects (SEPs) is guided by a new policy, EPA Supplemental Projects Policy, OECA, May 1, 1998. This policy supersedes both the 1991 SEP policy and the 1995 Interim Revised SEP Policy. Examples of some recent SEPs include a remediation project at a brownfield site in an environmental justice community near the facility where the violations occurred, purchase of emergency response equipment for the local community, conduct of a pollution prevention audit, and installation of monitoring equipment beyond that required by law.

³In FY 99, EPA obtained \$166.7 million in civil penalties and \$236.8 million in SEPs. *See* Press Release, U.S. EPA, EPA Sets Enforcement Records in 1999 (Jan. 19. 2000).

⁴There is limited opportunity to include as SEPs projects that do not fit within one of the seven categories, provided that they meet the nexus and other criteria in the policy. The policy also identifies several types of projects that are not acceptable as SEPs.

7. *Emergency planning and preparedness* projects, which provide assistance, such as equipment or training to state or local emergency planning and response authorities.

Second, the SEP must be a project that the defendant or respondent is not otherwise legally required to perform. Third, SEPs must have an adequate “nexus” or relationship between the nature of the violation and the environmental benefits to be derived from the project. “Nexus” provides the legal basis for EPA and DOJ’s authority to approve or accept a SEP. “Vertical” nexus exists when the SEP reduces pollutant loadings to a given environmental medium to offset earlier excess loadings of the same pollutant in the same medium which were created by the violation in question. For example, if sludge pollutants were discharged in violation of the Clean Water Act, an acceptable “vertical” environmental restoration project would be to reduce the amount of sludge produced as a byproduct of the manufacturing process. Typically, such projects follow a violation back into the manufacturing process to address the root cause of the pollution.

“Horizontal” nexus exists when the SEP involves either (a) relief for different media at a given facility or (b) relief for the same medium at different facilities. An example of a “horizontal” pollution prevention SEP would be settling a TSCA violation with a condition that the defendant or respondent establish a closed loop recycling system to reduce the amount of that facility’s product manufacturing waste which must be sent to a RCRA Subtitle C landfill. The nexus will be met only if the SEP would reduce the overall health or environmental risk posed by the facility responsible for the violation or enhance the prospects for eliminating the likelihood of future violations substantially similar to those which are the basis for the enforcement action.

Fourth, the Agency will consider only the after tax consequences of the project in determining how much of the assessed penalty can be reduced by the project. In settlements involving a SEP, the final penalty must equal or exceed the economic benefit of noncompliance plus 10 percent of the gravity component or 25 percent of the gravity component only, whichever is greater.

The federal government’s interest in considering SEPs is to provide additional amelioration of the adverse public health or environmental impacts of violations or both which go beyond the benefits of full compliance with the law. Projects will not be favored if the government feels that it significantly reduces the general deterrent impact of the settlement. Projects also are *not* intended to reward the defendant for undertaking activities which are obviously in his economic self interest (*e.g.*, modernizing a plant to become more competitive). In addition, where possible, EPA will seek local community input on possible SEPs.

§ 9:71 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—Department of justice litigation and settlement policies

As noted above, while the Department of Justice shares EPA’s substantive enforcement objectives, the Department’s jurisprudential perspective on settlement issues may be different and must be understood as a key element in the determination of whether a settlement proposal is consistent with the “public interest.”¹

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¹The following discussion is drawn from Habicht, *Settling Cases with the Land and Natural Resources Division*, 1 *Nat. Resources & Env’t* 5, 74 (1985).

§ 9:72 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—Department of justice litigation and settlement policies—Principles—Constitutional implications

As the government's chief lawyer, the Attorney General is vigilant to any constitutional implications of a settlement proposal, particularly separation of powers concerns. The Constitution vests the executive branch with the duty to execute the laws, and the executive must above all properly implement the law as passed by Congress. In those areas in which the executive is given a measure of policy flexibility in assessing how to implement the law, the executive, in the author's view, should not bind the hands of its successors by bargaining away this policy flexibility, nor should it concede in settlement its core function of executing the laws to private parties or to the courts in terms of continuing judicial oversight without clear points at which such oversight will terminate. The Department also seeks to ensure that a settlement does not obtain for the government or the parties more than what Congress has provided by statute. The Attorney General also seeks consistency among settlements in related cases.

§ 9:73 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—Department of justice litigation and settlement policies—Principles—Litigation risks

In the initial objective evaluation of a lawsuit the Department in its own "public interest" assessment evaluates practical litigation risks and the interests and exposure of the U.S. Treasury. This is a process similar to that conducted by any litigant. If the lawsuit under consideration for settlement contains a request for injunctive relief, the Department must assess not only the likelihood of success on the merits of the case but also the manner in which the court may balance the relative equities of the parties.

§ 9:74 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—Department of justice litigation and settlement policies—Principles—Impact on agency program

Public interest factors require the Department to assess the benefits a particular settlement might provide to a federal agency's program. Often, the delay involved in resolving a dispute through litigation injures the public interest by deferring compliance with law and by delaying the accomplishment of legislative goals. Litigation is resource-intensive for the government, as well as for opposing parties. Often, settlement advances the public interest by allowing the executive branch agencies to allocate their litigation resources to more pressing and significant matters.

§ 9:75 Constraints and influences on the settlement process—Legal authorities and documents influencing the settlement process—Department of justice litigation and settlement policies—Written evidence of justice department policies

The foregoing principles and key Justice Department procedures and authorities are, as in the case of EPA, often set forth in available policy documents. The relationship between the Washington, D.C., divisions of the Department of Justice, such as the Environment and Natural Resources Division, and the United States Attorney offices are set forth in the United States Attorneys' Manual and Title 28 of

the Code of Federal Regulations.¹ These references also describe who in the Department of Justice has authority to give final approval to certain settlements.²

The Department also occasionally issues litigation policy documents which directly impact the settlement process. For example, in 1986, Attorney General Meese issued written guidance on consent decrees and settlements. This policy exhorts the federal government to operate in a constitutionally sound manner in its dealings with the courts and its citizens, and seeks to ensure that those branches of government charged by the Constitution with specific responsibilities are able to exercise their assigned role. Accordingly, the policy, for example, discourages the Justice Department attorney from acquiescing in consent decrees that inappropriately allow the courts to intervene in the normal political processes for funding the government—processes which properly involve the Congress and the President, but not the judiciary. Unless avoided, consent decrees containing terms that agree with specific levels of appropriations can be the subject of court orders compelling the President to ask Congress for specific funds, or court orders compelling Congress to appropriate specific funds. This is particularly troubling when, years after negotiation of the consent decree, later Presidents and members of Congress (who know nothing of the consent decree) find a court ordering them to include specific funding authorizations in the federal budget.

In addition, the consent decree policy disfavors the executive branch committing in a consent decree to make specific policy or regulatory decisions in the future, because this too would unduly bind the hand of future officials. It may also possibly violate the Administrative Procedure Act by setting regulatory policy without the normal public process. Settlements which constrain the exercise of discretion by future officials also burden judicial resources with the task of long-term supervision of agency and party activities. The practical result of these policies is that Justice attorneys will argue for consent decrees to terminate in a reasonable period of years rather than being subject to perpetual court jurisdiction.³

In addition to policy concerns of constitutional dimensions, the Environment and Natural Resources Division has directives and policies—usually coordinated with EPA—for referral, post-referral and pre-filing settlement negotiations and similar logistical issues.

The significance of the EPA and DOJ policies described here is that they provide a useful picture of Agency enforcement objectives and practices and give a sense where the Agency and Justice Department may not be entirely of one mind on settlement issues. In this way, the policy documents reveal what terms should be easy to negotiate in settlement and those which will be much more difficult. If the agencies take the guidance process seriously and adhere to that guidance—although such policy guidance should never be enforceable in court—a climate of better understanding will be achieved in which settlements can be concluded much more efficiently. While the government prefers to settle when all issues are resolved, at least—as noted above—when one or two precedential issues exist, perhaps in the

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¹28 C.F.R. Pts. 0 to 65 (1987); *see also* The Department of Justice Manual (1987) (recounts the pertinent provisions of the United States Attorneys' Manual).

²*See* 28 C.F.R. §§ 0.160 to 0.172 (settlement authority). For example, the Assistant Attorney General has general approval authority unless a settlement compromises a claim of United States by an amount in excess of \$750,000 or involves novel policy issues; in such cases, settlements must be approved by Deputy Attorney General and, if significant policy issues are involved, are often discussed with the Attorney General.

³*Attorney General's Policy on Consent Decrees in Settlements* (issued May 1985); another example of Attorney General policy affecting infortunate litigation is the *Attorney General's Policy on Special Masters*, which sets forth a policy of opposing judicial appointment of Special Masters, for example, in Superfund litigation, where those Masters will exercise authority to decide merits issues.

future all other possible issues can be settled leaving a manageable case for the court. These are goals to which all can aspire.

§ 9:76 Constraints and influences on the settlement process—The role of public participation and scrutiny

The environmental enforcement process is subject to public participation and intense public and congressional scrutiny. This participation and scrutiny can have a very concrete, substantive impact on the settlement results in particular cases. In order to fully understand the dynamics of the settlement process it is critical to appreciate the extent to which members of the public have been given access to EPA and the courts and how that access can influence the settlement and enforcement process.

First, the principal environmental statutes generally have two types of citizen litigation provisions. One, typified by section 505 of the Clean Water Act,¹ confers upon citizens the authority to bring enforcement actions for specified violations in the absence of federal or state suits. If a citizen enforcement action is legitimately filed and then followed by a federal enforcement action, citizens may have a very significant role to play in settlement negotiations. Similarly, the federal government has asserted that it is not bound by a settlement with a citizen group in an enforcement action in which the federal government did not take part. The federal government's position is set forth as follows:

It is a well-recognized principle of *res judicata* jurisprudence that the parties' settlement, or even the court's approval of a consent decree, cannot dispose of the valid claims of third parties. *See, e.g.* United States Steel Corp. v. EPA, 614 F.2d 843, 845-46 (3d Cir. 1979); Wheller v. American Home Products Corp., 563 F.2d 1233, 1237-38 (5th Cir. 1977). This principle is especially true in the case of governmental law enforcement. The continuing authority of the United States to institute an enforcement action following a suit by a private plaintiff has been repeatedly upheld. *See, e.g.*, United States v. East Baton Rouge Parish School Board, 594 F.2d 56 (5th Cir. 1979); Hawthorn v. Lovorn, 457 U.S. 255, 268 n. 23 (1982); City of Richmond v. United States, 422 U.S. 358, 373-74 n. 6 (1975); Donovan v. Cunningham, 716 F.2d 1455, 1462 (5th Cir. 1983). This authority exists because the interests of the United States and private plaintiffs are distinct. "The United States has an interest in enforcing federal law that is independent of any claims by private citizens." United States v. East Baton Rouge Parish School Board, 594 F.2d at 58. *See generally* 18 C. Wright and A. Miller, Federal Practice and Procedure ¶ 4458 at 517-20 (1981). Accordingly, to the extent that the terms of the proposed consent decree can be read to restrict impermissibly the authority of the United States or otherwise adversely affect its interests, the United States must object to such restrictive language.²

A second area of citizen group pressure and scrutiny concerns citizen authority to seek judicial review of EPA actions which relate to settlements. For example, section 309(g) of the amended Clean Water Act provides for limited citizen review of

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¹Citizen enforcement provisions, for example, appear in the following laws: Clean Air Act § 304, 42 U.S.C.A. § 7604; Federal Water Pollution Control Act (Clean Water Act) § 505, 33 U.S.C.A. § 1365; Resource Conservation and Recovery Act (RCRA) § 7002, 42 U.S.C.A. § 1365; Comprehensive Environmental Response, Compensation, and Liability Act § 310, 42 U.S.C.A. § 9659; Emergency Planning and Community Right-to-Know Act § 326, 42 U.S.C.A. § 11046; Toxic Substances Control Act § 20, 15 U.S.C.A. § 2619; Safe Drinking Water Act § 1449, 42 U.S.C.A. § 300j-8; Surface Mining Control and Reclamation Act § 520, 30 U.S.C.A. § 1270.

²Quoted from Letter to Lorraine Laudati, from Raymond Ludwiczewski, Special Assistant to the Assistant Attorney General, dated June 24, 1987. *But see* Marino v. Ortiz, No. 86-1415 (U.S. slip op. 1-13-88) (equally divided Supreme Court affirmed holding that non-parties *can* be bound by a consent decree in Title VII litigation).

administrative penalty assessments.³ In Superfund Amendments and Reauthorization Act (SARA), citizen review provisions in section 310⁴ permits citizens to review various stages of the remedy, sue to enforce an order or sue the United States for failure to perform a nondiscretionary duty. These, like many other judicial review provisions in the APA and environmental laws, provide for a public accountability on the injunctive issues in a case that impact on the Agency's review of remedy provisions in settlement agreements.⁵

The U.S. government strenuously argues that settlements in its enforcement litigation cannot be subject to collateral attack by third parties, including citizens, but as a matter of formal Department of Justice policy citizens are given a full opportunity to comment on a proposed consent decree after it is lodged but before it is entered by the court.⁶ Normally, parties have thirty days to comment. The United States generally responds in writing, and the court in its discretion can hold a public hearing. As a rule, the standard of court review is most deferential—to determine whether the settlement was the product of arms-length bargaining and is generally consistent with the public interest. Courts typically hold that, other things being equal, settlement of litigation is manifestly in the public interest.⁷

Citizens may influence the enforcement process through means other than initiating a lawsuit alleging violations of applicable standards. Under CERCLA, for example, citizens can review and comment on documents in EPA's administrative record relating to selection of a remedial action, and thereby influence the terms of cleanup ultimately embodied in a settlement agreement. (See sections 113(k) and 117 of CERCLA.) In addition, affected citizens can intervene as a matter of right in government judicial actions under CERCLA, and thus become a party to settlement, unless the government can show that it is adequately representing the interests of the proposed intervenor (CERCLA section 113(i)). This provision essentially codifies Federal Rule of Civil Procedure 24(a), except that the burden to demonstrate adequate representation is shifted to the original plaintiff.

The 1986 EPA Community Relations Policy, reflecting its "fishbowl" approach to environmental policymaking, also endorses public disclosure and comment on settlement proposals themselves.⁸ It must be observed that in general jurisprudence concerning enforcement litigation, the notion that settlement discussions should be confidential and not public is fairly deeply rooted.⁹ Most litigants recognize that there must be some accommodation of this principle to the realities of litigating environmental enforcement matters. These matters are always potentially the subject of intense scrutiny by Congress or its oversight committees,¹⁰ and this potential has a marked impact—for better or worse—on the approach in positions taken by EPA and Justice Department representatives. Given that public or Congressional review is likely, litigants must ensure that the record of the litigation risks and settlement benefits is sufficient to withstand legal and political scrutiny.

³33 U.S.C.A. § 1319(g) (1987). Section 309(g)(8) provides for a right to review if a citizen commented at the time of the penalty assessment.

⁴42 U.S.C.A. § 9659.

⁵The rules applicable to federal enforcement cases may be distinguishable from those in private litigation. See, e.g., Letter to Lorraine Laudati, from Raymond Ludwiczewski, Special Assistant to the Assistant Attorney General, dated June 24, 1987.

⁶This policy is embodied in 28 C.F.R. § 50.7.

⁷See, e.g., *United States v. Seymour Recycling Corp.*, 554 F. Supp. 1334, 13 *Envtl. L. Rep.* (Envtl. L. Inst.) 20195 (S.D. Ind. 1982); *United States v. Hooker Chems. & Plastics Corp.*, 607 F. Supp. 1052, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20801 (W.D.N.Y. 1984) (S-area settlement).

⁸See EPA, *Community Relations in Superfund: a Handbook*, Ch. 6 (Jan. 1986).

⁹This policy is embodied, for example, in the Fed. R. Evid. 408 (1987).

¹⁰The settlement of the *United States v. Seymour Recycling Corp.*, 554 F. Supp. 1334, 13 *Envtl. L. Rep.* (Envtl. L. Inst.) 20195 (S.D. Ind. 1982), was the subject of many oversight hearings, and the memories of those hearings linger in the minds of many government negotiators.

§ 9:77 Constraints and influences on the settlement process—Other important dynamics bearing upon the settlement process

The enforcement process, as demonstrated below, is a staged, escalating process. A natural consequence of this fact is that the more time and resources the government expends to achieve compliance, the higher its settlement expectations become. These expectations result from the fact that once the government has expended a certain level of resources—particularly in pretrial preparation after a judicial complaint is filed—the resource justification to settle before trial diminishes. In addition, in each case the government enforcement professionals develop the sense that the defendant who delays is a recalcitrant. Thus, the attorney in charge may feel the need—and possibly peer pressure—to bring home, in cases of longer duration, an enhanced settlement result. Accordingly, the defendant who has a legitimate explanation or defense should contact EPA and be as forthcoming as possible as soon as the first notice of violation is received. Given the dynamics applicable to any negotiating situation, getting off on the right foot is critical before the government develops perceptions which will be difficult to overcome.

§ 9:78 Settlements in particular programs

The principles, general policies and institutional factors will affect the settlement process in all EPA programs, but in slightly varying ways. As is clear from the discussion of EPA statutes and programs throughout this treatise, the means by which EPA enforces its programs are probably as varied as those in any government agency. This situation was clearly influenced by the decentralized organization of EPA's enforcement function beginning during the Reagan administration up until the creation of OECA in 1994. During this period, media-specific enforcement policies (such as civil penalty policies and enforcement response policies) were being developed by the separate media offices. Depending on the law upon which the action is based or the facts of a particular case, EPA may invoke any of several administrative enforcement responses or refer a case to the Department of Justice for judicial enforcement. To some extent, the centralization of enforcement in OECA has ameliorated the situation. The Agency's philosophy throughout this spectrum of enforcement responses is to encourage resolution of matters at the earliest possible time. This reflects, among other things, obvious concerns about maximizing enforcement results with minimal commitment of resources. In addition to program-specific enforcement response policies which set forth how authorities should be used for particular categories of violations, EPA placed greater emphasis on internal case screening procedures to assist EPA's Regions in determining when it might be most appropriate to pursue judicial or administrative, criminal or civil, single or multi-media enforcement response.

The discussion below will focus upon how the federal government—principally EPA—applies the general governing policies and principles to particular cases. First, the concrete factors which distinguish the administrative from the judicial settlement will be described. Then three typical and distinct forms of civil settlements will be described: first the judicial settlement in the air program, then the administrative consent order in TSCA cases, and finally the *sui generis* settlements in the Superfund program.

§ 9:79 Settlements in particular programs—Factors distinguishing administrative from judicial settlements

The consequences of proceeding on tracks leading to administrative consent orders or judicial consent decrees will be discussed in turn below. General guidance on case screening favors judicial as opposed to administrative enforcement after considering several factors, including whether there is criminal enforcement potential; a repeat

violator within or among media programs; a need to establish legal or program precedents; the need for the greater deterrent value of judicial as compared to administrative enforcement in sending a message to the source or regulated community, particularly from the publicity surrounding judicial action; the need to consolidate cases in a judicial forum; or the need for extensive discovery which may be more available in judicial cases. In addition, program-specific enforcement response policies may favor judicial or administrative enforcement.

§ 9:80 Settlements in particular programs—Factors distinguishing administrative from judicial settlements—Administrative settlements and EPA’s choice of enforcement sanctions

EPA makes wide use of administrative enforcement tools, particularly under statutes such as RCRA and TSCA, which have broad administrative authorities. Authority to issue administrative money penalties was first included in an environmental statute when the 1972 amendments to the Federal Insecticide, Fungicide and Rodenticide Act authorized EPA to assess civil penalties of up to \$5,000 against pesticide producers who improperly formulate or label commercial products.¹ The Agency implemented this remedy by promulgating rules of practice modeled after analogous programs operated by other agencies.² Since 1972, virtually each new environmental statute has contained administrative civil penalty authority,³ and a number of the preexisting laws have been amended to authorize administrative penalties.⁴

EPA has media specific enforcement response policies that establish detailed criteria for determining which sanction is the most appropriate response to a given violation. These guidelines reflect the different strengths and weaknesses of administrative and judicial casework and the differing powers of administrative law judges and the federal judiciary. The legal status and enforceability of settlements obtained in these respective forums is pivotal in determining the initial choice of remedy.

In some media programs, EPA would generally initiate an administrative civil penalty action where the violation appears to constitute a relatively isolated instance of noncompliance which had not resulted in extensive environmental harm. In such an action, the Agency seeks the payment of monetary penalty in an amount corresponding to the magnitude of the violation. However, in some cases EPA has obtained significant injunctive relief and penalties using administrative tools.⁵

Situations that might lead to a civil action in federal court include where the pre-

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¹The civil penalty provisions of FIFRA, for example, provide for administrative penalty hearings which must be conducted “in the county, parish, or incorporated city of the residence of the person charged.” 7 U.S.C.A. § 136(1)(3).

²The authority to initiate administrative enforcement actions is delegated to specific Headquarters and Regional personnel. See EPA Management and Organization Division, EPA Delegations Manual; Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties and the Revocation or Suspension of Permits, 40 C.F.R. § 22.18(c).

³Newer statutes, such as TSCA, RCRA, and CERCLA/SARA include administrative provisions as a matter of course.

⁴For example, the 1990 Amendments to the Clean Air Act added administrative enforcement provisions to the statute. 42 U.S.C.A. 7413(d).

⁵For example, on October 7, 1997, an ALJ assessed a penalty of more than \$1.2 million against Newell Recycling Company, Inc. for improper disposal of PCB-contaminated soil. See FY 1997 Accomplishments Report, OECA. In 1994, EPA entered into a consent agreement and consent order (CACO) under TSCA with Tennessee Gas Pipeline Company and Tenneco Inc. for violations related to the use and disposal of PCB’s dating back to 1979. The CACO required the companies to pay a civil penalty of \$6.4 million. See FY 1994 Accomplishments Report, OECA.

liminary or permanent injunctive power of a court is needed, where a violator whose repeated or continuing violations indicate that civil money penalties would not sufficiently motivate compliance, and where complex legal or regulatory issues of first impression may be resolved by direct judicial opinion.⁶

Agency enforcement actions may be dictated solely by drafting anomalies among the various environmental laws. While the Agency is attempting to take a holistic approach to enforcement despite these anomalies, a more rational, integrated approach by Congress may be indicated: for example, due to peculiarities of legislative draftsmanship, the Agency may not assess monetary penalties in federal court under the Toxic Substances Control Act or the Federal Insecticide, Fungicide and Rodenticide Act. Accordingly, the Agency must bring actions for immediate or permanent injunctive relief in federal court, but assess civil penalties for the violations associated with the injunctive case in a parallel administrative action.

Under the Clean Water Act, money penalties can be imposed in either the administrative or judicial forums. The amendments establishing the administrative civil penalty remedy, however, make it clear that the Agency may not seek to impose both types of penalties for the same violation. As a matter of policy, however, EPA intends to avoid the “splitting” of claims or the imposition of an administrative penalty for any violation for which a judicial penalty has already been assessed.⁷

Yet another body of violations will evidence intentional, willful, or knowing misconduct or an intent to breach regulatory standards, conceal misconduct, or defraud the government.⁸ These cases will warrant full-scale investigation by EPA’s trained criminal investigators and referral to the Department for further grand jury investigation and/or prosecution.

The Agency may find it necessary to pursue parallel administrative and civil judicial actions. These are appropriate where the intentional or willful nature of the violation warrant the imposition of criminal sanctions, but where the Agency determines that immediate injunctive relief is also required to protect health or the environment from further harm. Such parallel civil and criminal proceedings are initiated with great care to maintain the independence of the respective investigative, case development and case prosecution processes, and to protect the confidentiality of the grand jury process.⁹

⁶See § 9:53; *see also* S. Rep. No. 50, 99th Congress, 1st Sess. (1985) (accompanies S. 1128).

⁷Under the Clean Water Act, money penalties can be imposed in either the administrative or judicial forums. The amendments establishing the administrative civil penalty, however, make it clear that the Agency may not seek to impose both types of penalties for the same violation. As a matter of policy, however, EPA intends to avoid the “splitting” of claims or the imposition of an administrative penalty for any violation for which a judicial penalty has already been assessed. *See* Jensen & Adams, Guidance on “Claim-Splitting” in Enforcement Actions Under the Clean Water Act.

⁸The standard for criminal prosecution differs somewhat in each statute. The Clean Water Act empowers criminal prosecution for “negligent” violations. 33 U.S.C.A. § 1319(c). In determining whether to initiate criminal prosecution, EPA looks to whether the conduct was intentional, repeated, egregious in nature, would cause foreseeable environmental harm, is of a type which should especially be deterred, was committed by a category of violator requiring a specific deterrent message, or reflected direct involvement by policy level corporate officers or employees. *See* Habicht, *The Federal Perspective on Environmental Criminal Enforcement: How to Remain on the Civil Side*, 17 *Envtl. L. Rep. (Envtl. L. Inst.)* 10478 (1987).

⁹*See* Memorandum from Steven A. Herman, Ass’t Administrator, to Ass’t Administrators et al., *Parallel Proceedings Policy*, June 22, 1994.

§ 9:81 Settlements in particular programs—Factors distinguishing administrative from judicial settlements—The distinguishing characteristics of judicial consent decrees¹

As discussed above, the government, in the interests of efficiency and economy, will proceed in a judicial forum if the enforcement case will require significant injunctive relief, such as construction schedules, which require deadlines and the contempt and enforcement powers of an Article III judge.

Thus, the decision to embody a settlement in a judicial consent decree is based on several factors, including the complexity of the agreement, the likelihood that judicial assistance will be required to enforce its terms, and the parties' intentions with respect to barring future litigation on the underlying claim. On the one hand, relatively simple settlements can be handled through a voluntary release or a covenant not to sue. On the other hand, both parties may desire to give their agreement the force and effect of a court order. This can be accomplished by a consent decree,² negotiated by the parties and ratified by the court³ and subject to its continuing jurisdiction.⁴

The consent decree is a hybrid. Having been negotiated by the parties, it serves as a contractual agreement spelling out the terms of their understanding.⁵ In addition, because it provides for the entry of judgment in a pending or contemplated proceeding, it has the authority of a judicial decree.⁶ As such, it can be enforced by means of a contempt citation,⁷ and can be modified by the court to fulfill the parties' underlying purpose.⁸ Because it reflects a compromise, entering a consent decree saves the time, effort, and expense of litigation and avoids the risk of one party coming up the loser in an "all or nothing" lawsuit.⁹ In this regard, consent decrees have been particularly useful in enforcement actions brought by the United States against private parties. Indeed, CERCLA requires that consent decrees be used in enforcement cases, with limited exceptions.¹⁰ Consent decrees are also used frequently to

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¹By **Donald C. Baur**

²See *Rufo v. Inmates of Suffolk County Jail*, 502 U.S. 367, 378 (1992).

³Administrative cases are settled with a consent agreement and final order.

⁴See *generally* Note, *The Consent Judgment as an Instrument of Compromise and Settlement*, 72 *Harv. L. Rev.* 1314 (1959); Fleming, *Consent Judgments as Collateral Estoppel*, 108 *U. Pa. L. Rev.* 173 (1959).

⁵*United States v. ITT Continental Baking Co.*, 420 U.S. 223, 236 (1972); *United States v. Armour & Co.*, 402 U.S. 673, 681-82 (1971); *Citizens for a Better Env't v. Gorsuch*, 718 F.2d 1117, 1124, 13 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 20975, 20979 (D.C. Cir. 1983), cert. denied, 467 U.S. 1219 (1984).

⁶*United States v. ITT Continental Baking Co.*, 420 U.S. 223, 236 (1972). See also *United States v. Swift & Co.*, 286 U.S. 106, 115 (1932).

⁷*United States v. City of Miami*, 664 F.2d 435, 440 (5th Cir. 1981); *United States ex rel. Shell Oil Co. v. Barco Corp.*, 430 F.2d 998, 1000 (8th Cir. 1970).

⁸*United States v. Swift & Co.*, 286 U.S. 106, 114-15 (1932); *United States v. Atlantic Refining Co.*, 360 U.S. 19, 22-23 (1959); *Monsanto Co. v. Ruckelshaus*, 753 F.2d 649, 653 (8th Cir. 1985). See *United States v. G.K. Techs.*, 1996 WL 164374, No. IP-90-2122-C-D/F (S.D. Ind. 1996); *Building and Constr. Trades Council of Phila. and Vicinity v. NLRB*, 64 F.3d 880, 887-888 (3d Cir. 1995).

⁹"High judicial favor" is conferred on the voluntary settlement of litigation. *Autera v. Robinson*, 419 F.2d 1197, 1199 (D.C. Cir. 1969). In addition to the advantages for the parties, "general public" benefit is derived "from the saving of time and money." *Citizens for a Better Env't v. Gorsuch*, 718 F.2d 1117, 1126, 13 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 20975, 20979 (D.C. Cir. 1983), cert. denied, 467 U.S. 1219 (1984). See also *Schneider v. Dumbarton Devs.*, 767 F.2d 1007, 1015 (D.C. Cir. 1985).

¹⁰42 U.S.C.A. § 9622(d)(1)(A).

settle enforcement actions brought through citizen suits directly against polluters, without government intervention.¹¹

The contractual nature of consent decrees gives rise to the standards that govern their interpretation.¹² The primary rule of interpretation is the “four corners” doctrine, under which the decree is construed according to its terms, not on the basis of “what might satisfy the purpose of one of the parties to it.”¹³ In addition, certain “aids to construction” commonly employed in construing contracts may be applied. Such aids include the circumstances surrounding the agreement, the technical meaning ascribed by the parties to the words used in the decree, and any documents incorporated by reference.¹⁴

In approving a settlement agreement, it is not the function of the court to address the merits or determine if a violation has occurred.¹⁵ Instead, its role is limited to assessing the decree’s “overall fairness to beneficiaries and consistency with the public interest.”¹⁶ The court’s authority to adopt and enforce a consent decree comes from the statute that it is intended to enforce.¹⁷ Accordingly, approval is conditional on a determination by the court that the settlement is consistent with the purposes of the underlying statute.¹⁸

Considering their increasing importance in the settlement of environmental cases, consent decrees must be drafted carefully. More recently, EPA has encouraged uniformity among consent decrees by issuing Model Consent Decrees.¹⁹ In 1991, EPA issued several model CERCLA consent decrees that have since been revised.²⁰ Although each consent decree will be different, reflecting the unique agreement of the parties, certain provisions are relatively standard, as discussed in § 9:55, *supra*, on EPA Guidance. This is as it should be, in that “reinventing the wheel” on standard consent decree provisions is a poor use of resources.²¹

Consent decrees entered into by the United States are governed by Department of Justice Guidelines issued in 1986.²² These Guidelines are intended to prevent such agreements from infringing upon the discretion of Executive Branch agencies. Of particular concern was the effect a consent decree negotiated by one administration

¹¹This is best illustrated by cases brought under Clean Water Act § 505, 33 U.S.C.A. § 1365. *See* L. Jorgensen & J. Kimel, “Environmental Citizen Suits: Confronting the Corporation” (BNA Special Report, 1988).

¹²*United States v. ITT Continental Baking Co.*, 420 U.S. 223, 235 (1972).

¹³*United States v. Armour & Co.*, 402 U.S. 673, 682 (1971).

¹⁴*United States v. ITT Continental Baking Co.*, 420 U.S. 223, 235 (1972). *See* *United States v. Charter Int’l Oil Co.*, 83 F.3d 510, 516, 26 *Env’t. L. Rep. (Env’t. L. Inst.)* 21331, 21323 (1st Cir. 1996). *See* Thomas M. Mengler, *Consent Decree Paradigms: Models Without Meaning*, 29 *B.C. L. Rev.* 291, 328, 331 (1988).

¹⁵*United States v. Swift & Co.*, 286 U.S. 106, 114 (1932).

¹⁶*United States v. Allegheny-Ludlum Indus.*, 517 F.2d 826, 850 (7th Cir. 1975).

¹⁷*System Fed’n No. 91, Ry. Employees’ Dep’t v. Wright*, 361 U.S. 642, 651 (1961).

¹⁸*Local No. 91, Int’l Ass’n of Firefighters v. City of Cleveland*, 478 U.S. 501 (1986); *Citizens for a Better Env’t v. Gorsuch*, 718 F.2d 1117, 1125, 13 *Env’t. L. Rep. (Env’t. L. Inst.)* 20975, 20979 (D.C. Cir. 1983), cert. denied, 467 U.S. 1219 (1984). *See also* *United States v. Akzo Coatings of Am.*, 949 F.2d 1409, 1426, 22 *Env’t. L. Rep. (Env’t. L. Inst.)* 20405, 20411 (6th Cir. 1991) (setting forth a “standard of fairness, reasonableness, and consistency with the statute” as the “court’s general test for consent decrees”).

¹⁹*See* Melissa F. Levine, *The 1995 Revised Model CERCLA RD/RA Consent Decree*, 2 *Env’t. Law* 777, 778 (1996).

²⁰*See* *Revised Model CERCLA RD/RA Consent Decree*, 60 *Fed. Reg.* 38817 (1995); *Revisions to Model CERCLA RD/RA Consent Decree*, 63 *Fed. Reg.* 9541 (1998); *Superfund Program; Final Model CERCLA Past Costs Consent Decree and Administrative Agreement*, 60 *Fed. Reg.* 62446 (1995).

²¹*See* *Revised Model CERCLA RD/RA Consent Decree*, 60 *Fed. Reg.* 38817 (1995).

²²Memorandum from the Attorney General, “Department Policy Concerning Consent Decrees and Settlement Agreements” (Mar. 13, 1986).

which limits an agency's power would have upon a subsequent administration that would not elect to so circumscribe its authority. This objection is rooted not only in political concerns, but also in the concept of separation of powers: if a court enforces a consent decree that intrudes into an agency's discretion, it is usurping the authority vested by the Constitution exclusively in the Executive Branch.²³ To avoid the result, the Guidelines prohibit consent decrees that: (1) limit the power to promulgate regulations;²⁴ (2) limit the power to seek or spend funds;²⁵ and (3) limit an agency's discretion in any other way.²⁶

The effect of the Guidelines is to limit the availability of consent decrees as a tool to settle litigation. Nonetheless, careful drafting to avoid separation of powers problems,²⁷ use of public review in the adoption of such decrees,²⁸ and reliance upon the courts to exercise their continuing jurisdiction to modify the decrees when warranted by changed circumstances, can maintain the usefulness of consent decrees as an alternative to full litigation.

§ 9:82 Settlements in particular programs—Judicial settlements in traditional media programs¹—Characteristics of the Judicial Action

Section 9:34 describes how the states and EPA share responsibility for enforcing most federal environmental statutes. Thus, in the traditional media programs, the state will play a central role and affect the government's posture. Through the MOA process² EPA and the states negotiate the specific categories of regulated sources of pollution which EPA and the states have decided to target for inspection and subsequent enforcement activities where violations are found. The targeted sources are monitored to determine whether they are operating in compliance with the applicable federal environmental standards. Pursuant to the media specific enforcement response policies, targeted sources which are found to be violating federal environmental standards may be determined to be in "significant non-compliance."

Section 9:34 also describes the EPA state oversight process in detail. Assuming that EPA has decided to proceed with a federal judicial enforcement action, the process pursued under the Clean Air Act provides a useful illustration of how a consent decree might be developed.

²³Memorandum from the Attorney General, "Department Policy Concerning Consent Decrees and Settlement Agreements" at I (Mar. 13, 1986). The premise appears to have been rejected, however, in *Citizens for a Better Env't v. Gorsuch*, 718 F.2d 1117, 1126-27, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20975, 20979-80 (D.C. Cir. 1983), cert. denied, 467 U.S. 1219 (1984); and *Local No. 93 v. City of Cleveland*, 478 U.S. 501, 526 (1986).

²⁴Memorandum from the Attorney General, "Department Policy Concerning Consent Decrees and Settlement Agreements," at II(A)(1) (Mar. 13, 1986).

²⁵Memorandum from the Attorney General, "Department Policy Concerning Consent Decrees and Settlement Agreements," at II(A)(2) (Mar. 13, 1986).

²⁶Memorandum from the Attorney General, "Department Policy Concerning Consent Decrees and Settlement Agreements," at II(A)(3) (Mar. 13, 1986).

²⁷The tests for satisfying this doctrine are set forth in *Bowsher v. Synar*, 478 U.S. 714, 721-22 (1986) and *Commodity Futures Trading Comm'n v. Schor*, 478 U.S. 833, 847-57 (1986).

²⁸For example, the 1990 Amendments to the Clean Air Act require that consent decrees be published for comment in the *Federal Register* before they are adopted. 42 U.S.C.A. § 7413(g).

[Section 9:82]

¹By Tracy Gipson, updated by Kenneth R. Harmon, Gary A. Jones, Jon D. Silberman, and Susan E. Bromm

²See discussion at § 9:48.

Prior to the Clean Air Act Amendments of 1990, EPA had no administrative enforcement authority.³ Consequently, the only mechanism available to EPA under which it could obtain both an enforceable compliance schedule for a stationary source and substantial penalties was a judicial civil action under section 113(b). For this reason, a judicial civil action has been the most frequently used enforcement response against stationary sources of air pollution which are significant violators of the Clean Air Act.⁴

§ 9:83 Settlements in particular programs—Judicial settlements in traditional media programs—The features of a negotiated judicial settlement: The Air Act Example

After a complaint is filed, a civil judicial action may be settled only by a consent decree, or, where appropriate, a stipulation of dismissal.¹ As discussed above, EPA's consent decree guidance describes and explains the appropriate use of various standard provisions for consent decrees and provides sample language for those provisions.²

The Agency has a longstanding firm policy that any settlement of an enforcement action against a stationary source of air pollution must require the source to comply with the standard.³ Section 110(i) of the Clean Air Act, added by the 1977 amendments, prohibits EPA or a state from modifying or suspending any stationary source

³Section 113(a) authorizes EPA to issue an order requiring a person to comply with a State Implementation Plan (SIP) or any requirement or prohibition of the Act (other than Title II). Section 113(d) authorizes EPA to issue administrative penalty orders of up to \$25,000 per day of violation, so long as the total penalty does not exceed \$200,000 and the first alleged date of violation occurred no more than twelve months prior to the initiation of the administrative action. The \$200,000 cap and the twelve-month limit can be waived if the Administrator of EPA and Attorney General jointly determine that such action is appropriate. The procedures EPA will follow when bringing Clean Air Act administrative actions are identical to those it employs in the TSCA context, as discussed in § 9:53.

⁴EPA has issued a guidance document that enumerates factors it will consider in deciding whether to use an administrative or judicial forum. *See* Guidance on Choosing the Appropriate Forum in Clean Air Act Stationary Source Civil Enforcement Actions, Oct. 29, 1991.

[Section 9:83]

¹Memorandum by Courtney M. Price, Assistant Administrator for Enforcement and Compliance Monitoring, Form of Settlement of Civil Judicial Cases, July 24, 1985 (Policy Compendium GM-42).

²EPA Guidance in the General Enforcement Policy Compendium Relevant to Judicial Settlements include:

- Guidance for Drafting Judicial Consent Decrees (10/19/83)—GM-17
- Policy on Civil Penalties (2/16/84)—GM-21
- A Framework for Statute-Specific Approaches to Penalty Assessments (2/16/84)—GM-22
- Guidance for Calculating Economic Benefit of Noncompliance for a Civil Penalty Assessment (11/5/84)—GM-33
- Enforcement Settlement Negotiations (5/22/85)—GM-39
- Implementing the State/Federal Partnerships in Enforcement: State/Federal Enforcement "Agreements" (see p. 12 "Appropriate Enforcement Response") (6/26/84) Form of Settlement of Civil Judicial Cases (7/24/85)—GM-42
- Division of Penalties with State and Local Governments (10/30/85)—GM-45
- Guidance on Calculating After Tax Net Present Value of Alternative Payments (10/28/86)—GM-51
- Guidance on Determining Violator's Ability to Pay a Civil Penalty (12/16/86)—GM-56

There are also media-specific civil penalty policies. Examples include: The RCRA Civil Penalty Policy, EPA, Oct. 26, 1990 (covering all RCRA administrative complaints and civil and administrative settlements, with the exceptions of underground storage tank (UST) cases), the U.S. EPA Penalty Guidance for Violations of UST Regulations, OSWER, Nov. 14, 1990, and Interim Policy on Settlement of CERCLA § 106(b)(1) Penalty Claims and § 107(c)(3) Punitive Damage Claims for Non-compliance with Administrative Orders, OECA, Sept. 30, 1997.

³Memorandum from Stanley W. Legro, Enforcement of SIPs Undergoing Revision, Aug. 12, 1976. Prior to the 1977 amendments, the only standards for stationary sources were SIPs; Memorandum

requirement of an applicable state implementation plan except by means of a SIP revision under sections 110(a) or 110(c), or a suspension under sections 110(f) or 110(g), a delayed compliance order under section 113(d), or in accordance with certain limited provisions enumerated in sections 118 and 119.

A violating source which elects not to install the controls necessary to achieve compliance with the applicable standard may be required to cease operations as expeditiously as possible. On November 27, 1985, the Agency issued guidance for stationary sources intending to comply by shutdown.⁴ In cases where EPA decides to exercise its enforcement discretion to delay shutdown until the replacement of the violating source with a complying facility, the owner of the source must enter into a judicially enforceable consent decree providing, *inter alia*, shutdown of the violating source by a certain date, and the posting of a surety bond in an amount representing the cost of installing adequate controls, which will be forfeited in the event that shutdown does not occur by the specific date.

There have been several guidances to address enforcement actions and continued operations beyond statutory attainment dates when they are exceeded. Guidance issued by the Administrator in September 1982, established EPA's policy for enforcing SIP requirements after December 1, 1982.⁵ This guidance, referred to as the "Post-1982 Policy," sets forth criteria that must be met by a court order permitting continued operation of a noncomplying source located in a nonattainment area.

The post-1982 Policy was superseded by a November 23, 1987 memorandum.⁶ This memorandum acknowledges both the earlier compliance extension to December 31, 1987, and the probability that many areas would not be in attainment by that date, while asserting that shutdown of noncomplying sources need not be mandatory if the source:

- (1) Is unable to comply by the attainment date other than by shutdown,
- (2) Demonstrates that there is a public interest in its continued operation which outweighs the environmental cost of an additional period of noncompliance,
- (3) Demonstrates that its financial condition permits it to comply expeditiously, and
- (4) Is, and has been, making good faith efforts to comply.

The Clean Air Act Stationary Source Civil Policy, first issued on September 12, 1984, and revised and reissued on March 25, 1987, applies the Agency's Policy on Civil Penalties to stationary sources of air pollution.⁷ In addition to a general policy for stationary sources, there are nine adaptations of the general policy to specific types of sources: (1) violators of permit requirements; (2) vinyl chloride sources; (3) asbestos demolition and renovation sources; (4) sources of volatile organic compounds that are complying through the use of low solvent technology; (5) vola-

from Terrell B. Hunt and John S. Seitz, Revised Guidance on Enforcement of State Implementation Plan Violations Involving Proposed SIP Revisions, Aug. 29, 1989; Memorandum from Michael S. Alushin and John B. Rasnic, Revised Guidance on Enforcement During Pending State Implementation Plan Revisions, March 1, 1991.

⁴Memorandum from Courtney M. Price, Assistant Administrator for Enforcement and Compliance Monitoring, Enforcement Policy Respecting Sources Complying With Clean Air Act Requirements By Shutdown, Nov. 27, 1985.

⁵Memorandum from Anne M. Gorsuch, Administrator, to Regional Administrators, Enforcement Action Against Stationary Sources Which Will Not Be In Compliance By December 31, 1982, Sept. 20, 1982.

⁶Memorandum from Thomas L. Adams and J. Craig Potter, Settling Enforcement Actions in Clean Air Act Nonattainment Areas Against Stationary Sources Which Will Not Be In Compliance By the Applicable Attainment Date, Nov. 23, 1987.

⁷In 1995, a clarification of the policy was issued. See Memorandum from Kathie Stein, Clarification of the Use of Appendix I of the Clean Air Act Stationary Source Civil Penalty Policy, July 23, 1995.

tile hazardous air pollutant sources; (6) manufacturers and distributors of wood heaters; (7) manufacturers and importers of stratospheric ozone-depleting chemicals; (8) servicers of motor vehicle air conditioners; and (9) maintenance, service, repair, and disposal of appliances containing refrigerant.⁸

§ 9:84 Settlements in particular programs—Administrative consent orders: The TSCA/EPCRA example

The overwhelming majority of administrative cases have been resolved by consent orders since the Agency began issuing administrative Complaints in 1974. Indeed, less than five percent (5%) of the administrative cases proceed to hearing.

§ 9:85 Settlements in particular programs—Administrative consent orders: The TSCA/EPCRA example—Relationship of settlement negotiations to administrative litigation

Once an administrative complaint is filed and an Administrative Law Judge (ALJ) is assigned to a case, the matter enters a pre-hearing stage of motion practice, discovery, stipulations, simplification of issues, and other traditional pre-trial exchanges of witness lists and matters at issue. Most administrative litigation is pursued on dual tracks, *i.e.*, a litigation track and a settlement track. The same team of individuals, consisting of technical staff and enforcement attorneys, are typically engaged in both efforts.

§ 9:86 Settlements in particular programs—Administrative consent orders: The TSCA/EPCRA example—Form and execution of administrative settlements

Administrative consent agreements are formal legal documents executed by the defendant and its counsel, as well as by EPA's Regional Administrator (or delegee) under whose jurisdiction the case arose and the Assistant Administrator for OECA (or his delegee) for cases brought by headquarters or requiring headquarters' concurrence.

Once fully executed, reviewed and filed, a consent agreement is accompanied by a final order officially incorporating the legal substance of the consent agreement and ordering the parties to perform the agreed to tasks.¹

§ 9:87 Settlements in particular programs—Administrative consent orders: The TSCA/EPCRA example—Contents of an administrative consent agreement

While there are as many variations in the exact form and style of administrative consent agreements as there are enforcement attorneys, they all address the following matters.

§ 9:88 Settlements in particular programs—Administrative consent orders: The TSCA/EPCRA example—Contents of an administrative consent agreement—Caption and docket identification

Each case will bear the formal caption of the case which appeared in the com-

⁸Memorandum from Thomas L. Adams, Assistant Administrator for Enforcement and Compliance Monitoring, and J. Craig Potter, Assistant Administrator for Air and Radiation, Clean Air Act Stationary Source Civil Penalty Policy, Mar. 25, 1987, amended July 19, 1993 and June 1, 1994.

[Section 9:86]

¹In 1984, the Agency promulgated consolidated rules of practice governing the assessment of civil penalties under each of statutes providing for formal hearings of the type that warrant the due process protections of the Administrative Procedures Act. 40 C.F.R. pt. 20.

plaint initiating the action. The Office of the ALJ will assign a case docket number which is used to identify the action in all subsequent pleadings.

§ 9:89 Settlements in particular programs—Administrative consent orders: The TSCA/EPCRA example—Contents of an administrative consent agreement—Notice of confidential business information

A number of administrative cases, like judicial cases, involve the presentation of information which the defendant deems to be trade secret, proprietary, or otherwise subject to protection as confidential business information, for segregation in a non-public portion of the agreement.¹

§ 9:90 Settlements in particular programs—Administrative consent orders: The TSCA/EPCRA example—Contents of an administrative consent agreement—Preliminary statement

The preliminary statement summarizes the factual history of the proceeding, the procedural status of the case and recites the general nature of the allegations set forth in the complaint. It will explain that the consent agreement is voluntarily undertaken in good faith in pursuit of the mutual interests of both parties and will describe the rights preserved or waived by the settlement.

§ 9:91 Settlements in particular programs—Administrative consent orders: The TSCA/EPCRA example—Contents of an administrative consent agreement—Findings of fact and conclusions of law

The consent agreement will likely recite in detail the factual background to the case (*i.e.*, dates on which inspections occurred, complaints were issued) and the evidentiary foundation of the case (*i.e.*, the uncontested results of sample analyses). It would also recite the statutory and regulatory basis of the action. Note that all aspects of the consent agreement are the product of negotiations. As such, the preliminary statement and the findings of facts need not reflect concessions by defendants on ultimate facts establishing liability. Some cases include a negotiated caveat: “respondent neither admits nor denies the allegations in the complaint.”

§ 9:92 Settlements in particular programs—Administrative consent orders: The TSCA/EPCRA example—Contents of an administrative consent agreement—Terms of the settlement

The most important aspect of the consent agreement is the articulation of the precise performance and consideration required of the defendant in settlement of the case. EPA routinely seeks performance in addition to penalties as a condition of administrative settlement. Where the violation resulted from inadequate manage-

[Section 9:89]

¹Protected information which may appear in a Consent Agreement could include, for example, the chemical formula of a new chemical which the firm will produce under the Agreement, the engineering design of a new thermal destruction unit which the firm is required to utilize in disposing of its industrial wastes, production volume of a chemical in commerce, or lists of customers contacted in the recall of a product prohibited for distribution under the Agreement.

The Toxic Substances Control Act established particularly detailed procedures for the handling of any information which the firm claims meets the standard for protection against disclosure to the public. EPA has established procedures for verifying the validity of such claims *sua sponte* or in response to a request for the information under the Freedom of Information Act. 40 C.F.R. pt. 2. If challenged, the proponent of protection must demonstrate the proprietary nature of the claimed information. Until administrative action is taken by the Agency or initiated by a third party, however, all information with respect to which a timely claim is made will be treated with the full safeguards afforded verified proprietary information.

ment practices, EPA will seek to utilize the consent agreement as a vehicle of enhancing internal management practices.¹

Where the violation stems from poor operational practices, EPA will seek to utilize the consent agreement to encourage the firm to impose compliance audits, quality assurance, and other oversight mechanisms to enable the firm to understand and minimize its risk of enforcement and/or third party liability. The Agency's goal in resolving an enforcement action against a firm with widespread compliance problems is to attempt to use the enforcement action to help institutionalize a flow of information within the company to ensure timely notice of violations and a strategy to correct them and to elevate the awareness of environmental compliance concerns to the most senior levels of management within the company.²

Finally, consent agreements have been utilized in other innovative ways as well. They have provided experience with new waste processing/solidification technology shown to work at the laboratory scale but never previously undertaken in the field under controlled conditions.³ They have provided a means of compliance promotion within targeted regulatory communities and with the public at large. Settlements have required firms to develop and present training courses at specialized trade association meetings.⁴ Others have required firms to assist the Agency in designing and marketing public service announcements, and in placing advertisements in gen-

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¹These include developing and broadcasting within the firm a clear corporate policy on environmental compliance, establishing an internal group which is responsible and empowering that unit to accomplish its function, designing and implementing programs to train all operational and management personnel in how to perform their part of the overall environmental management job, and developing management and accountability systems to track and reward performance. A recent example is In the Matter of Sharp Electronics, a 1994 TSCA settlement in which Sharp agreed to develop and implement a TSCA training program for internal and trade-wide use, to improve its internal compliance program, to produce a compliance manual and video, and undertake a TSCA audit covering the preceding five years, *see* FY 1994 Accomplishments Report, OECA, at A-7. *See also* Union Carbide Corp., Docket No. TSCA-85-H-02; American Tel. & Tel. Co., Docket No. TSCA-87-H-08-B. *See also* § 9:116 on environmental audits.

²These may include audits of waste management operations (receipt, characterization, compatibility tests); preparation of self-monitoring reports documenting operations (groundwater monitoring programs which go beyond regulatory requirements); development of on-site laboratory capability; undertaking needed construction (building PCB storage facilities, installing leachate collection systems); initiation of relevant quality assurance and control programs; establishment of internal incident reporting procedures; review of employee medical records and "complaint" reports; review of the toxicological results of studies performed over the years on input or product chemicals (for providing notice of "substantial risk" situations); and enhancing personal accountability by requiring line managers to certify as to the actions they have taken under the auditing program. Provisions such as these have been incorporated into a recent Consent Agreement executed with Alaska Railroad Company (AARC). AARC agreed to install new, state of the art hazardous waste accumulation buildings, conduct, and implement findings of, an audit of its waste generation and management practices, and fund and sponsor a seminar series for the public and other industries on proper management of used oil. *See* FY 1994 Accomplishments Report, OECA, at A-74.

³Chemical Waste Management, Inc. studied an innovative in-cell waste solidification technique under the provisions of the Settlement Agreement involving its Emelle, Alabama facility.

⁴Under the Canon Industries Consent Agreement, Canon agreed to translate into the Japanese language all of EPA's guidance on the implementation of the premanufacture notification program and to present training courses on EPA's program at the annual meeting of Japan's chemical manufacturers association. Because EPA had reason to believe that the American electronics and semiconductor industries engaged in conduct regulated under the premanufacture notification (PMN) provisions of TSCA, *see* TSCA § 5, 15 U.S.C.A. § 2604, EPA's Consent Agreement with the American Telephone and Telegraph Co., American Tel. & Tel. Co., Docket No. TSCA-87-H-08-B, required AT&T to develop and execute a training program which applies the PMN program to the electronics/semiconductor industry. *See also* § 9:116.

eral circulation newspapers and magazines.⁵ As discussed above, there will obviously be limits to the extent to which the government will forgive penalty liability for such actions; however, within these limits, such good acts can be beneficial to a violator's public image.

§ 9:93 Settlements in particular programs—Administrative consent orders: The TSCA/EPCRA example—Contents of an administrative consent agreement—Penalties and related provisions

The consent agreement will record the amount of the original civil penalty which was proposed to be assessed in the complaint, and the amount of the money penalty which is actually required to be paid under the terms of the settlement.¹ In negotiating stipulated penalty provisions, EPA will seek penalty amounts equal to those set forth in established penalty policies for the respective violations.² Standard force majeure provisions are also included.

§ 9:94 Settlements in particular programs—Administrative consent orders: The TSCA/EPCRA example—Contents of an administrative consent agreement—Dispute resolution

While disputes can arise under any agreement, the subject matter of the settlement will make disputes more or less likely and more or less important to the fundamental legal posture of the parties. Common dispute resolution clauses emphasize the interest of the parties in reaching agreement through continued and good faith negotiations. Upon failure of the parties to reach a mutually satisfactory agreement, the dispute may be brought back before the ALJ who oversaw the litigation leading to the settlement and who reviewed, executed, and entered the agreement.

The *Union Carbide (UC)* case turned on the question of whether test results indicating the undisputed carcinogenicity of a widely-used chemical constituted new

⁵The AT&T Consent Agreement, American Tel. & Tel. Co., Docket No. TSCA-87-H-08-B, required AT&T to place a full-page advertisement in a national trade magazine. The advertisement emphasized the fact that TSCA is not just a matter of concern to chemical companies and utilities, but to firms operating in other industries as well. EPA's criminal enforcement program has long utilized newspaper advertisements as a means of enhancing the deterrent impact of its casework. Note also the advertisement required to be placed by American Caster Corporation in the Los Angeles Times, Feb. 12, 1985.

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¹The Agreement may also set forth payment terms, if any, and a rationale for the difference between the proposed penalty and the final penalty if the "penalty gap" is unusually large. EPA has issued guidance for communicating to the public about a final penalty amount which is appreciably different from the proposed penalty. This guidance instructs EPA spokespersons to stress that "the civil penalty was the product of negotiation after careful consideration by the government of the facts constituting the violation, the gravity of the misconduct, the strength of the government's case, and the established EPA penalty policies." It also instructs spokespersons to emphasize any long-term environmentally beneficial performance to be accomplished by the firm under the Agreement. Memorandum from Thomas L. Adams, Jr., Policy on Publicizing Enforcement Activities, Aug. 4, 1987.

²See also Memorandum from James M. Strock, Use of Stipulated Penalties in EPA Settlement Agreements, Jan. 24, 1990 and Memorandum from Robert Van Huevelen, Use of Penalty Policies in Administrative Litigation, Dec. 15, 1995. The AT&T settlement, American Tel. & Tel. Co., Docket No. TSCA-87-H-08-B, established per day stipulated penalties for each potential failure to perform under the Agreement. The Union Carbide settlement, Union Carbide Corp., Docket No. TSCA-85-H-02, on the other hand, contains no headnote on "stipulated penalties." Rather, it contains a narrative discussion of the applicability of established penalty policies, and groundrules for determining how the "per day per violation" provisions will be calculated. It also provides criteria for determining whether the event triggering the disputed regulatory duty has occurred. Where that event has occurred, EPA may initiate a separate enforcement action to impose such penalties. In re Monsanto, 1989, TSCA-89-H-21 (Jan. 30, 1990); TSCA Compliance Audit Program, 56 Fed. Reg. 10256 (Apr. 17, 1991); see Union Carbide Corp., Docket No. TSCA-85-H-02.

“substantial risk” information, or were simply corroborative of other studies showing the same chemical to be carcinogenic. The *UC* studies involved previously unreported routes of exposure, in previously untested laboratory species, and utilizing previously unexamined dose-response relationships. Although EPA and the firm could not agree that the *UC* results showed previously unknown risks, both parties saw a real value in having *UC* audit all prior toxicological studies of chemicals in commerce to determine whether additional useful information may have gone unreported to EPA.

In order to provide a vehicle for resolving highly complex technical questions about the risk assessment value of new toxicological data generated by this audit, the parties negotiated an unprecedented provision pursuant to which disputes arising under the agreement would be presented to a neutral factfinder who has no financial or other interest in the dispute, but who does possess technical expertise relevant to the determinations before him. The agreement provides that the determination of the neutral factfinder regarding whether the information is required to be submitted to EPA is not reviewable by the ALJ or by the Administrator. The determination of the neutral factfinder is binding and conclusive and shall not be overturned unless achieved through fraud, misrepresentation, misconduct, or mutual mistake of fact.

This use of a neutral factfinder as the dispute resolution vehicle in the *Union Carbide* case is the first substantive use of alternative dispute resolution (ADR) techniques in environmental enforcement litigation.¹

In sum, the Agency relies heavily on administrative tools to implement its enforcement program. Parties interested in settlement must recognize that on the one hand, EPA will seek to ensure that those settlements mirror consent decrees as much as possible, but on the other hand, EPA will also use these vehicles to experiment with more innovative auditing and other provisions to get maximum return for enforcement expenditures in each case. Some of these innovative provisions are discussed in detail in § 9:116. More than in judicial enforcement cases, the government will be open to proposals which are unprecedented, as long as they promise sound, efficient results.

§ 9:95 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program¹—Introduction

EPA’s approach to settlement of enforcement cases perhaps is manifested most clearly within the context of the Superfund program. Unlike nearly every other program administered by the Agency, Superfund is not “regulatory” in nature, with extensive uniform standards and guidelines governing the conduct of the regulated community. Under Superfund, EPA addresses each hazardous waste site essentially *de novo*, deciding which regulations and standards are relevant to the site and generating an individualized plan to remedy the hazards presented by the contamination.

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¹The AT&T case noted in § 9:92 also provides that the parties will utilize ADR to resolve disputes arising under that Agreement. Unlike the Union Carbide decree, however, it does not set forth with specificity the role of the Neutral, the binding nature of his decision, his technical and ethical qualifications, or the procedures for obtaining (and paying for) the Neutral’s services. For a complete list of cases where ADR has been incorporated into settlement documents, see Status Report Use of Alternative Dispute Resolution in Enforcement and Site Related Actions (Through FY’s 1995 & 1996), EPA, undated, at p. 40.

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¹By Steven L. Leifer, Megan Berge, Michael Heister, Amber MacIver, and Melissa P. Marshall.

In the Superfund program “compliance” is measured against protocols that are in large part negotiated site by site. Thus, the settlement is critical to and, indeed, a driving force behind, the process of cleaning up hazardous waste. Although EPA selects a remedy as part of an open, informal administrative rulemaking based on the development of an administrative record, the decision document reflecting the selection (called the “Record of Decision” or ROD) is fairly general, and it is often left to the consent decree to flesh out the details of the cleanup program.

Privately-funded, negotiated cleanups are critical to the overall success of the Superfund cleanup program. Since the passage of CERCLA, many hundreds of settlements between EPA and private parties have been entered into, accounting for billions of dollars worth of cleanup activities. Almost seventy percent of all remedial work is privately funded.²

Given its significance, the Superfund settlement process has received a great deal of attention both inside and outside the government. EPA, with help from the Department of Justice, has developed a body of policy and guidance documents governing settlement, while Congress has enacted legislation addressing, to an unprecedented extent, the mechanics of the settlement process.³ As discussed in § 9:132, the settlement process is also subject to extensive public scrutiny. In addition, industry officials and representatives of the defense bar have been quite active in criticizing the government’s approach to settlement.

This subsection will examine how these forces have shaped the settlement process. It will first briefly review how negotiations and settlement mesh with the cleanup program. Next we will provide a historical perspective on the Agency’s settlement policy, and then discuss how and why Congress chose to provide ground rules for settlement in the Superfund Amendments and Reauthorization Act of 1986 (SARA). Finally, we will see how EPA, through policy development and in actual practice, has implemented the settlement process set forth in amended CERCLA.

§ 9:96 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—Integrating negotiations and settlement into the cleanup process

EPA has established a staged process for evaluating a hazardous waste site, determining whether to place the site on the National Priorities List, and actually remediating any contamination or threat thereof.¹ The Agency first conducts a Preliminary Assessment/Site Inspection (PA/SI) as an initial review of the potential hazards posed by the site. Based on the data generated by the PA/SI, the Agency then assigns a numerical score to the site utilizing an assessment model known as the Hazard Ranking System. Sites whose scores exceed a specified threshold are proposed to be, and then finally, listed on the NPL.

²See Jonathan L. Ramseur and Mark Reisch, Superfund: Overview and Selected Issues, CRS Report for Congress, May 17, 2006, at CRS-12. In FY 2009 alone, EPA secured through settlements more than \$2.4 billion in private party funding commitments to compensate EPA for past expenditures and to pay for future cleanups. See U.S. Environmental Protection Agency, Superfund National Accomplishments Summary Fiscal Year 2009, available at: <http://www.epa.gov/superfund/accomp/numbers09.htm>; see also Compliance and Enforcement Annual Results: FY2009 Superfund Enforcement, available at: <http://www.epa.gov/compliance/resources/reports/endofyear/eoy2009/2009-sp-superfund.html>. As of 2003, private parties had funded over \$21 billion worth of cleanup activities since the start of the program. See Robert W. Varney, Superfund Program Brings Environmental and Economic Benefits to New Hampshire, August 29, 2003, available at: http://www.epa.gov/region01/ra/column/archive/2003/superfund_nh_082903.html (last visited November 29, 2010).

³EPA’s guidance cited in this subsection, which is constantly being revised, can be found at: <http://cfpub.epa.gov/compliance/resources/policies/cleanup/superfund/> (last visited November 29, 2010).

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¹See 40 C.F.R. pt. 300, subpt. E.

Based on PA/SI or other data, and at any point during the investigation and cleanup process, EPA may decide to undertake a “removal” action partially to control the threat the site poses to human health or the environment. EPA will occasionally enter into negotiations designed to yield an agreement providing for a private party removal, but since removals are frequently time-critical, negotiations for such activities are often truncated or dispensed with entirely.

The next step is the performance of a Remedial Investigation and a Feasibility Study (RI/FS). The RI will fully characterize environmental conditions on the site. The FS will evaluate alternative methods of remedying the problems presented by the site, and will yield a recommended alternative. The RI/FS and proposed cleanup plan will be issued for public review and comment. EPA will then respond to public comment and indicate its choice of remedy by issuing a Record of Decision. The ROD is followed by “Remedial Design” and actual implementation of the cleanup plan, or “Remedial Action” (collectively, RD/RA). As will be discussed below, CERCLA contemplates negotiations with those individuals, organizations, and companies responsible for the contamination (commonly referred to as “potentially responsible parties” or PRPs) both prior to the RI/FS and prior to RD/RA.

§ 9:97 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—Pre-SARA settlement policy

In the early years of the Superfund program following passage of Superfund in December 1980, the government worked through negotiations and settlement on a site-by-site basis. An overall approach to settlement gradually evolved, and a broad-ranging settlement policy was finally issued in December 1984.¹ The “Interim CERCLA Settlement Policy” established criteria for evaluating offers of settlement, and set forth the Agency’s position on key settlement terms. The Settlement Policy provided, *inter alia*:

In return for work performed or financed by settling parties, EPA will grant releases from liability, or “covenants-not-to-sue.” The scope of the covenant-not-to-sue depended upon the nature of the cleanup—the more extensive or comprehensive the remedy, the broader the covenant. In addition, the Policy specified that covenants-not-to-sue should be limited through the reservation of the right to seek additional relief from the settling parties if the remedy selected did not prove effective in abating the threat posed by the site. In other words, EPA could “reopen” the settlement agreement if, following the emergence of previously unknown conditions or the receipt of new information concerning the effectiveness of the remedy, the Agency determined that the site presented an imminent and substantial endangerment to public health or the environment.

EPA generally would not invest substantial resources in negotiating settlements with parties who contributed a relatively small amount of waste to the site. Cash settlements would be accepted from these “*de minimis*” parties, but the Agency would not negotiate over covenants-not-to-sue, insulation from contribution actions by other jointly and severally liable parties, or other protective clauses.

Although EPA’s goal is to negotiate a comprehensive cleanup or complete recoupment of cleanup expenses, partial settlements would be acceptable if: there were weaknesses in the government’s case; the responsible parties had limited financial resources; the settling parties contributed only a portion of the total amount of waste found at the site and the government had a good case against viable non-settling parties; or other equitable factors argued in favor of a less-than-100 percent settlement.

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¹The policy was later published in the Federal Register on Feb. 5, 1985. 50 Fed. Reg. 5034 (1985).

§ 9:98 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—Congressional reaction to the settlement policy

EPA's Superfund settlement program generated a great deal of comment from several different quarters. Some in industry launched a campaign to roll back the joint and several liability standard established by CERCLA. Counsel for PRPs criticized the government for providing inadequate opportunity for settlement, for demonstrating little flexibility in considering settlement offers, and for refusing to enter into agreements which provided PRPs a fixed and final determination of their liability. Environmental organizations and other groups argued that certain prior settlements were "sweetheart deals" between industry and government.

With these comments and criticisms in mind, Congress attempted to legislate its vision of the ideal settlement program as part of the process of reauthorizing CERCLA in 1986. Two major, but somewhat conflicting, themes were common to the provisions of SARA related to settlement. First, the Agency should encourage settlement by being more flexible in negotiations and more receptive to settlement offers. Second, the Agency must seek in settlements to minimize the risk that cleanup costs will have to be borne by the government.

§ 9:99 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—Congressional reaction to the settlement policy—Encouraging settlement

SARA contained a number of provisions designed to encourage settlement.

Section 113(f)(2) of amended CERCLA codified the concept of *contribution protection*. If a party settles with the government, that party is immunized from contribution actions brought by other jointly liable potentially liable parties for matters addressed in the settlement.

In section 122(b) Congress authorized the Agency to contribute Superfund dollars to PRP-conducted cleanups through the mechanism of *mixed funding*. In this type of settlement, EPA would pre-authorize the PRPs to make a claim against the Superfund following cleanup for a specified percentage of their costs. Furthermore, if the remedy implemented at the site failed, and the government sought additional relief from the settling PRPs, the PRPs would only be liable to the extent of their percentage contribution to the original cleanup.

In section 122(e)(3) Congress granted EPA the discretion to prepare "*nonbinding preliminary allocations of responsibility*." Where the Agency believed it would expedite settlement, EPA may assign shares of responsibility to PRPs at multi-party sites. The allocations are based on the amount and nature of waste contributed by each party to the site, as well as other "traditional" settlement factors, such as ability to pay and the strength of the government's case. The hope was that government assistance in the process of dividing up responsibility for site cleanup—a process heretofore left largely to the PRPs—would expedite settlement.

Although the allocation is nonbinding and is not subject to review by the courts (section 122(e)(3)(C)), the use of this mechanism is not without legal effect. Under section 122(e)(3)(E), if PRPs make a substantial offer of settlement following a government allocation, and such offer is rejected, the government must provide a written explanation of why the offer was not acceptable.

Congress also directed the Agency to follow a particular process for negotiation and settlement of Superfund cases. Section 122(e)(1) provides that if the govern-

ment determines that a period of negotiation would facilitate settlement,¹ EPA will issue a *special notice* to the PRPs. The notice will include the names of all identified PRPs and any available information on the extent to which each PRP contributed waste to the site. The special notice, whether issued prior to an RI/FS or RD/RA, triggers a sixty-day *moratorium* on enforcement- or fund-financed action.² If EPA receives a good faith settlement offer within the sixty-day period, the moratorium may be extended for thirty or sixty days for RI/FS or RD/RA actions, respectively.

SARA evidences Congress' particular concern with the plight of *de minimis* contributors of waste at multi-party sites. These *de minimis* parties could incur considerable transaction costs in defending their interests within the PRP group and in negotiations with the Agency—costs which may ultimately exceed their proportionate share of actual cleanup expenses. Transaction costs would be especially high if settling parties brought contribution actions against the *de minimis* group.

Congress' solution was to direct the Agency, in section 122(g), to reach a final settlement with *de minimis* parties as soon as possible (contrary to the Agency's prior policy of avoiding expending enforcement resources on comprehensive settlements with such parties). These settlements (as is the case for settlement with any party under CERCLA) would insulate *de minimis* parties from contribution actions by larger contributors.³

§ 9:100 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—Congressional reaction to the settlement policy—Ensuring quality settlements

What Congress can give, Congress can also take away. While SARA granted EPA more settlement options and opportunities, the amendments also limited Agency discretion in a number of significant ways.

Congress largely adopted into law the Agency's policy on granting covenants-not-to-sue. Section 122(f) authorized EPA to grant covenants, but mandated the inclusion in almost all settlements of a reopener allowing the government to seek additional cleanup if conditions discovered after the cleanup is performed so warrant.¹ The government under current policy need not demonstrate that an imminent and substantial endangerment exists as a prerequisite to invoking this reopener. SARA also mandated that with respect to future liability, any covenant-not-to-sue may not take effect until the cleanup is completed (section 122(f)(3)). In addition, Congress directed EPA to review the effectiveness of remedies selected at sites where some contaminants remained on-site, and permitted EPA to take or require such action

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¹Of course, periods of negotiations generally *do* facilitate settlement, and thus the Agency uses the special notice process in the large majority of cases.

²Notwithstanding the moratorium, EPA may take response or enforcement action if the site presents a significant threat to public health or the environment. SARA § 122(e)(5), codified at CERCLA § 122(e)(5), 42 U.S.C.A. § 9622(e)(5).

³Section 122(g) was amended in 2002, by the Small Business Liability and Brownfield Revitalization Act (SBLBRA), which, among other things, gives EPA greater flexibility to settle with PRPs that contributed comparatively small volumes of waste to a site. Pub. L. No. 107-118.

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¹See SARA § 122(f)(6)(A). Covenants governing the site undergoing remediation need not include this reopener: (1) if the remedy performed completely eliminates or destroys the hazardous substances, SARA § 122(f)(2)(B), codified at CERCLA § 122(f)(2)(B), 42 U.S.C.A. § 9622(f)(2)(B); (2) in settlements with *de minimis* parties, SARA § 122(f)(6)(A), codified at CERCLA § 122(f)(6)(A), 42 U.S.C.A. § 9622(f)(6)(A); or (3) if extraordinary circumstances exist which warrant the waiver of the reopener, SARA § 122(f)(6)(B), codified at CERCLA § 122(f)(6)(B), 42 U.S.C.A. § 9622(f)(6)(B).

as may be necessary to ensure that the remedy is adequate to protect public health or the environment (section 121(c)). Many private parties have asserted that the notion of perpetual liability unnecessarily inhibits settlements due to the uncertainty and uninsurability of unrestricted contingent future liability, even in cases when remedies are performed to specifications.

As amended, CERCLA now requires that all consent decrees calling for remedial action contain stipulated penalties of up to \$37,500 per day (§ 121(e)(2)). In addition, SARA added § 122(l), which deemed any violation of a settlement agreement punishable by a civil penalty of up to \$37,500 per day.²

Because of its desire to ensure that privately funded response actions pursuant to settlement were technically adequate, Congress required EPA to hire a qualified person to oversee all PRP-conducted RI/FSs (section 104(a)(1)). Congress also required the PRPs to agree, as part of an RI/FS settlement, to reimburse the Agency for the cost of the third party overseer.

§ 9:101 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—EPA’s post-SARA settlement policy

With these statutory imperatives as a context, one must turn to internal EPA policies to assess how the government chose to interpret section 122 and other settlement-related amendments.

In briefly reviewing these statements of Agency policy, one can see how EPA has aimed for that delicate balance between facilitating settlement and ensuring quality agreements.

§ 9:102 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—EPA’s post-SARA settlement policy—NBAR guidelines

The first post-SARA document to be issued contained statutorily required guidelines for preparing the nonbinding allocations of responsibility (NBARs) under section 122(e).¹ Based on resource concerns, the guidelines flatly stated the NBARs would not be prepared as a matter of course. The Agency might be more willing to prepare an NBAR if several PRPs requested one, if the government was a PRP, or if there were a large number of PRPs at a site who may be having trouble organizing themselves to make an offer of settlement.

To date, few PRPs have asked EPA to perform an allocation. The reasons for this reluctance probably are twofold. First, any allocation most likely would be based almost entirely on each PRP’s volumetric contribution of waste to a site, and since EPA releases any such data in its possession to the PRPs anyway, the benefits of an allocation may be minimal. Second, section 122(e)(3)(D) requires parties making an offer of settlement under an NBAR to reimburse the government for the costs of preparing the allocation.

²The maximum amount of daily penalties collectible under CERCLA and many other environmental statutes is subject to change per the Debt Collection Improvement Act of 1996, Pub. L. No. 104-134. Many of these statutes specified a maximum amount of \$25,000 per day, but this ceiling has escalated over time.

[Section 9:102]

¹See Interim Guidelines for Preparing Nonbinding Preliminary Allocations of Responsibility, 52 Fed. Reg. 19919 (May 28, 1987).

§ 9:103 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—EPA’s post-SARA settlement policy—*De minimis* guidances

In its first round of post-SARA policy statements on settlement under section 122(g)(1)(A) with *de minimis* contributors of hazardous substances,¹ the Agency recognized the value of such settlement to the government as well as PRPs. While early settlement with small contributors would minimize their transaction costs, settling with these parties would also simplify the government’s task of managing multi-defendant litigation and would generate funds which could be applied to the outstanding liability of other prospective settlers.

The *de minimis* guidances continued the Agency’s prior policy of seeking a single settlement with all *de minimis* parties at a site. Unlike its pre-SARA policy, however, EPA would grant covenants-not-to-sue to *de minimis* contributors with certain caveats. First, the policies recommend that any *de minimis* settlement containing a covenant-not-to-sue be conditioned on the premise that the settling parties truly were *de minimis*, so that if new information comes to light regarding the nature of a particular party’s contribution, that party could lose the protections of the settlement. Second, Agency policy is to include in settlements the “unknown conditions reopener” mentioned above unless *de minimis* parties provide some protection against the risk that additional response action, beyond that currently contemplated, would be necessary. This protection would take the form of the payment of an amount above their share of projected costs, *i.e.*, the payment of a “premium.”

The *de minimis* guidances also addressed how a party may qualify as *de minimis* and at what stage in the cleanup process settlement would be appropriate. SARA specified that the volume and toxicity of the waste contributed by a *de minimis* party must be minimal in comparison to the total amount of waste at the site. In its guidances, EPA focused on volumetric considerations,² since the toxicity of each party’s contribution is difficult to discern. No particular percentage cutoff was established, but rather the relative concept of *de minimis* was left to the discretion of the Agency based on site-specific considerations. In addressing the timing of *de*

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¹See Interim Guidance on Settlements with *de minimis* Waste Contributors Under Section 111(g) of SARA, 52 Fed. Reg. 24333 (issued in memorandum form June 19, 1987, and published in the *Federal Register* June 30, 1987); see also 54 Fed. Reg. 34235 (Aug. 18, 1989); Methodologies for Implementation of CERCLA Section 122(b)(1)(A) *De Minimis* Waste Contributor Settlements (OSWER Directive No. 4834.7-1B) (Dec. 20, 1989); Methodology for Early *De Minimis* Waste Contributor Settlements Under CERCLA Section 122(g)(1)(A) (OSWER Directive No. 9834.7-1C) (June 6, 1992); Model U.S. Environmental Protection Agency & U.S. Dep’t of Justice CERCLA Section 122(g)(4) *De Minimis* Contributor Consent Decree and Administrative Order on Consent (Sept. 29, 1995); Communications Strategy for Settlements with Small Volume Waste Contributors (Sept. 30, 1993); Streamlined Approach for Settlements with *De Minimis* Waste Contributors under CERCLA Section 122(g)(1)(A) (OSWER Dir. 9834.7-1D) (July 30, 1993); and, Interim Guidance on the Ability to Pay and *De Minimis* Revisions to CERCLA Section 122(g) by the Small Business Liability Relief and Brownfields Revitalization Act (April 30, 2008).

EPA has also issued guidance addressing settlements with *de minimis* landowners, as opposed to contributors, under § 122(g)(1)(B) of CERCLA. This document primarily addresses the contours of the so-called “innocent landowner” defense to liability created by § 101(35). See EPA Memorandum, Guidance on Landowner Liability Under Section 107(a)(1) of CERCLA, *De Minimis* Settlements Under Section 122(b)(1)(B) of CERCLA, and Settlements With Prospective Purchasers of Contaminated Property (OSWER Directive No. 9835.9) (June 6, 1989); see also, Revised Model CERCLA *De Minimis* Landowner Consent Decree and Revised Model CERCLA *De Minimis* Landowner Administrative Order on Consent (May 13, 2004); 54 Fed. Reg. 34235 (Aug. 18, 1989).

²The June 1987 policy, however, did state that if a small contributor’s contribution to a site was significantly more toxic than substances contributed by others, the party would not qualify for *de minimis* status.

minimis settlements, EPA stated that in general, *de minimis* settlements would be entertained only if the Agency had fairly good data on the relative contributions of each PRP and the projected cost of the remedial action.

Finally, the guidances considered what Congress meant by its statement in section 122(g)(1) that the government should settle with *de minimis* parties where “practicable and in the public interest.” The guidance notes two scenarios where a *de minimis* settlement would not be consistent with the goals of the Act. First, if nearly all PRPs contributed similarly small amounts to the site, an early settlement with a subset of these contributors would not be equitable. Second, if many of the non-*de minimis* parties were insolvent or unidentifiable, EPA may want to invoke the principle of joint and several liability to support a settlement calling for somewhat more than a “fair share” payment by the *de minimis* settlers.

More recent policy statements³ have encouraged EPA to negotiate alternative settlements with *de minimis* PRPs who establish an inability or limited ability to pay (ATP) their full liability at a site.⁴ Although EPA has the discretion to take ATP into account for any liable PRP, *de minimis* PRPs that receive a settlement offer from EPA may specifically request an ATP settlement, which EPA must at least consider. The guidance directs EPA to consider alternative payment methods—including reduced one-time payments, installment payments, and contingent payments—when ATP PRPs are unable to pay the total settlement amount at the time of settlement. The goal of the Agency’s policy is to enter alternative payment settlements designed to maximize the actual net amount returned to the Superfund.⁵

§ 9:104 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—EPA’s post-SARA settlement policy—*De micromis* guidance

The Agency has issued guidance building on the limited statutory exemption for *de micromis* parties at NPL sites¹ in order to encourage settlement with very small waste contributors (generally smaller than the traditional *de minimis* party’s vol-

³Interim Guidance on the Ability to Pay and De Minimis Revisions to CERCLA § 122(g) by the Small Business Liability Relief and Brownfields Revitalization Act (May 17, 2004).

⁴A *de minimis* PRP claiming inability or limited ability to pay status has the burden of proving financial hardship. EPA will generally make such a determination only at the request of a PRP that provides the necessary information.

⁵Following the Supreme Court’s decision in *United States v. Atlantic Research Corporation* (“ARC”), EPA issued interim revisions to certain *de minimis* and ATP model notice letters issued under CERCLA. 551 U.S. 128 (2007) (allowing PRPs to seek recovery of site-related costs from other PRPs under section 107(a)(4)(B)); see EPA Memorandum, Interim Revisions to CERCLA Notice Letters and Update of Superfund Small Waste Contributors Brochure to Notify Potential Settlers about *Atlantic Research Corporation* Decision, (April 30, 2008). The changes correct language in the model notice letters relating to protection from contribution claims afforded by *de minimis* settlements that EPA views as overly broad and potentially misleading after *ARC*. See also, EPA Memorandum, Interim Revisions to CERCLA Judicial and Administrative Settlement Models to Clarify Contribution Rights and Protection from Claims Following the *Aviall* and *Atlantic Research Corporation* Decisions, (March 16, 2009) (providing interim revisions to *de minimis* and *de micromis* judicial and administrative settlement models).

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¹Section 107(o) provides a statutory exemption for parties meeting the following criteria: (1) the total amount of material containing hazardous substances contributed by the party to a site was less than 110 gallons or less than 200 pounds of solid materials; (2) the site is listed on the NPL; and (3) all or part of the party’s disposal, treatment, or transport occurred before April 1, 2001. 42 U.S.C.A. § 9607(o).

ume) at the very early stages of the cleanup process.² EPA considers settlement with non-exempt *de micromis* parties to be a subset of *de minimis* settlements under CERCLA section 122(g). Accordingly, such settlements generally will contain the same elements as a *de minimis* settlement.³

The Agency believes non-exempt *de micromis* parties should not be pursued and, as a matter of national policy, will offer a settlement to non-exempt *de micromis* parties only if they have been sued, or face the concrete threat of suit, by other PRPs at the site.⁴ EPA guidance accords the Regions considerable flexibility in determining whether a party is eligible for non-exempt *de micromis* settlement. Regions may determine a cutoff amount greater than the statutory limit for *de micromis* parties at an NPL site (provided a party's contribution is still a minute percentage of the total waste volume at the site), the toxic or other hazardous effects of the substances, and the effect of multiple non-exempt *de micromis* settlements on the remaining parties at the site.⁵ Typically, non-exempt *de micromis* settlements will be "zero dollar settlements," reflecting EPA's position that it would be inequitable to require such small volume parties to finance or perform cleanup at the site because their allocable share of the cleanup costs is negligible at most.⁶

§ 9:105 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—EPA's post-SARA settlement policy—Policy on granting covenants-not-to-sue

In July 1987, EPA issued its initial guidance on providing covenants-not-to-sue to settling PRPs.¹ The guidance tracked the statutory provisions regarding the criteria for granting covenants and the requirement that covenants be limited by the "unknown conditions reopener." The key policy issue addressed in the guidance was whether any further reopeners should be included in most settlements. Here the Agency focused on the intent of Congress as reflected in two provisions: (1) as noted in the discussion of the mixed funding provision (section 122(b)), if a remedy fails, settling parties in a mixed funding agreement are only liable to the extent of their original contribution, but they are liable; and (2) section 121(c) of CERCLA authorized EPA to require additional remediation if a review of the remedy reveals that it is no longer protective of public health.

Since these statutory provisions contemplate that PRPs may need to perform work beyond that specified in the ROD for reasons other than the discovery of unknown conditions, *i.e.*, because the chosen remedy did not ultimately protect public health and the environment, and therefore the Agency reasoned that an additional

²See EPA Memorandum, Revised Settlement Policy and Contribution Waiver Language Regarding Exempt De Micromis and Non-Exempt De Micromis Parties (Nov. 6, 2002) (revising EPA policy in light of the legislative changes to § 107(o)).

³See Model CERCLA Section 112(g)(4) Non-Exempt De Micromis Party Administrative Consent Order (Aug. 12, 2003); Model CERCLA Section 112(g)(4) Non-Exempt De Micromis Party Consent Decree (Aug. 12, 2003).

⁴See EPA Memorandum, Revised Settlement Policy and Contribution Waiver Language Regarding Exempt De Micromis and Non-Exempt De Micromis Parties (Nov. 6, 2002).

⁵EPA Memorandum, Revised Settlement Policy and Contribution Waiver Language Regarding Exempt De Micromis and Non-Exempt De Micromis Parties (Nov. 6, 2002).

⁶The Agency further reasons that zero dollar settlements are in the public interest because, in many cases, the administrative costs of reaching a settlement will likely equal or exceed the non-exempt *de micromis* party's proportional share of response costs at the site. EPA Memorandum, Revised Settlement Policy and Contribution Waiver Language Regarding Exempt De Micromis and Non-Exempt De Micromis Parties (Nov. 6, 2002).

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¹See Covenants-Not-To-Sue Under SARA, 52 Fed. Reg. 28038 (1987) (issued in the memorandum form July 10, 1987, and published in the Federal Register July 27, 1987).

reopener was needed. This reopener allows EPA to seek further relief from the settlers if new information leads EPA to conclude that the original remedy is no longer adequately protective. Therefore, although EPA provides a covenant-not-to-sue for the “work” required by the settlement, this protection is limited insofar as EPA also continues to include reopeners.²

To help reconcile the government’s reluctance to assume the risk that additional response costs will be incurred in the future with the PRPs’ interest in a final resolution of their liabilities, the government has recognized the concept of a “premium payment” as one factor which may constitute the “extraordinary circumstances” which allow for a full release under section 122(f)(6)(B). In return for a contribution towards cleanup costs in excess of a PRP’s allotted share, the government may agree to drop the covenant-not-to-sue reopeners mentioned above.³

§ 9:106 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—EPA’s post-SARA settlement policy—Stipulated penalties

The Agency’s “Guidance on the Use of Stipulated Penalties in Hazardous Waste Consent Decrees”¹ is primarily derived from general settlement considerations that are not specific to amended CERCLA. One of the major SARA-related issues faced in the guidance was the relationship between the requirement in section 121(e)(2) that stipulated penalties be a part of any RD/RA settlement and section 122(1)’s authorization of penalties for violations of settlement agreements. Realizing that the purpose of stipulated penalties was to deter violations through the knowledge of what precise penalties would flow from such violation, the Agency’s policy permits the waiver of section 122(1) sanctions where stipulated penalties are in effect.

§ 9:107 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—EPA’s post-SARA settlement policy—Mixed funding

The Agency’s mixed funding guidance¹ encourages the use of this settlement tool since it directly furthers EPA’s goal of enhancing private party cleanups.² Mixed funding is particularly attractive to the Agency in cases where the Superfund portion of the cleanup may be recovered from non-settling parties, or where EPA’s liability case against a PRP is problematic. EPA originally made a point of emphasizing that mixed funding is based at bottom on an assessment of litigation risk and will not automatically be used whenever there are bankrupt or recalcitrant PRPs, and that mixed funding will not be used to undercut the joint and several liability

²See, e.g., Interim Revisions to CERCLA Section 122(h) Past Cost Recovery and Peripheral Party Cashout Model Administrative Agreements to Clarify Contribution Rights and Protections under Section 113(f).

³See EPA Memorandum, Guidance on Premium Payments in CERCLA Settlements (OSWER Directive No. 9885.6) (Nov. 17, 1988). This guidance was subsequently supplemented by further guidance entitled Standardizing the De Minimis Premium (July 7, 1995).

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¹Memorandum issued September 21, 1987.

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¹EPA Memorandum, Evaluating Mixed Funding Settlements under CERCLA, Oct. 20, 1987, 53 Fed. Reg. 8279 (1988); EPA Final Report Superfund Administrative Improvements, June 23, 1993, at 14-16. See also *United States v. Bliss* (Syntex Corp.), Civ. 84-2086-C-1, 87-1558-C-1 (E.D. Mo. Dec. 31, 1990) (mixed funding case precedent).

²This consideration outweighs the downside of mixed funding—namely that in the event of remedy failure, EPA may only seek a certain percentage of additional costs from the original settling PRPs.

standard. At a later point, however, EPA decided to encourage more settlements by agreeing to assume the “orphan” share at CERCLA sites, *i.e.*, the portion of cleanup costs attributable to insolvent individuals or companies.³ EPA prefers to do this by waiving recovery of its own oversight costs and thus reducing the overall cost of the cleanup rather than actually contributing funds, but situations can and will vary.

§ 9:108 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—EPA’s post-SARA settlement policy—Special notice

EPA has also issued a policy statement on the use of section 122(e) special notice and negotiation procedures.¹ The policy encourages the use of formal negotiation periods before EPA will undertake RI/FS, RD/RA, and some removal actions. The key decision made in the guidance concerns when to schedule the RD/RA special notice. Although on the one hand it seems sensible to negotiate an RD/RA settlement once the remedy has been selected, to avoid delay EPA would like to begin the RD/RA negotiations when the RI/FS is issued and a *proposed* remedy is put out for public comment. The Agency apparently concluded that the risk of time being wasted by negotiating over a remedy that might undergo modification prompted by public comment is outweighed by the benefits of having a settlement almost completed by the time a ROD is issued.

§ 9:109 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—EPA’s post-SARA settlement policy—Prospective purchaser agreements

In an effort to promote the beneficial reuse of contaminated property, EPA has updated its guidance on settlements with parties who consider purchasing and redeveloping contaminated property.¹ Although the 2002 Brownfields Amendments provide innocent purchasers with statutory protection from CERCLA liability they would otherwise assume as an owner on acquiring title, EPA will grant the purchaser a covenant-not-to-sue in cases where doing so will impart a significant environmental benefit.

§ 9:110 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—EPA’s post-SARA settlement policy—Settlement with municipalities

One ongoing issue of concern in the Superfund settlement program relates to the treatment of municipalities who may have sent to a CERCLA site trash contaminated with small amounts of hazardous substances. The hazardous substances gen-

³See EPA Memorandum, Interim Guidance on Orphan Share Compensation for Settlers of Remedial Design/Remedial Action and Non-Time Critical Removals, (June 3, 1996). See also Model Language Relating to Orphan Share Compensation Through the Compromise of Future Oversight Costs (Sept. 28, 2000). Additional information can be found in EPA’s Orphan Share Reform Implementation Update No. 3 (Aug. 8, 2002).

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¹EPA Memorandum, Interim Guidance on Notice Letters, Negotiations and Information Exchange, Oct. 19, 1987 (OSWER Directive No. 9834.10); see also Sample Special Notice Letter (updated October 21, 2010).

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¹Guidance on Agreements with Prospective Purchasers of Contaminated Property, 60 Fed. Reg. 34792 (July 3, 1995), superseding a 1989 policy on prospective purchasers, 54 Fed. Reg. 34235 (Aug. 18, 1989). The most recent model agreement for such settlements was published November 27, 2006. It is consistent with the Bona Fide Prospective Purchasers and the New Amendments to CERCLA (May 31, 2002) (commonly referred to as the “BFPP Policy”).

erally result from the disposal practices of homeowners. EPA has developed a policy¹ which provides that municipal generators of solid waste will not be looked to as PRPs by EPA. However, EPA policy will allow municipal generators to seek settlement based on a unit-cost formula to gain contribution protection from third-party lawsuits. Also, a municipality may be held accountable if it owns the CERCLA site in question or if it is responsible for almost all of the waste found at the site.

§ 9:111 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—EPA’s post-SARA settlement policy—Model CERCLA RD/RA decree

To promote national consistency in CERCLA consent decrees and to expedite settlements, EPA developed boilerplate language to be used as the basis for fashioning settlement agreements addressing areas such as remedial design/remedial action (RD/RA) settlements with potentially responsible parties under §§ 106, 107, and 122 of CERCLA.¹ EPA anticipates that use of the Model Consent Decree will reduce the time and resources consumed during extensive RD/RA settlement discussions by limiting the number of issues the United States will negotiate with PRPs, as well as reducing the amount of time spent on internal government reviews of proposed settlements.

According to EPA, the Model Consent Decree reflects legal and procedural terms that have been found acceptable to both the Agency and the PRPs in a large number of situations. Accommodation has been made, however, for those provisions which will reflect site-specific considerations.² The models are updated to reflect new issues such as the Supreme Court’s *Aviall* and *Atlantic Research* decisions.³ However, the Model does not include those provisions that may be necessary to handle the wide-range of special situations which may arise in the context of structuring CERCLA settlements, such as the creation of a trust fund or other PRP funding mechanism in cases involving large numbers of PRPs.

Regional EPA offices retain flexibility to modify the Model in the context of negotiations with PRPs. Formerly, the Regions could not do so without consulting with

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¹Interim Municipal Settlement Policy, 54 Fed. Reg. 51071 (Dec. 12, 1989). EPA’s general approach to handling municipal waste was reaffirmed with EPA’s Policy for Municipality and Municipal Solid Waste, CERCLA Settlements at NPL Co-Disposal Sites, 63 Fed. Reg. 8197 (Feb. 5, 1998). The most recent model agreement for such settlements was issued April 4, 2000.

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¹Model Administrative Order on Consent for Remedial Design (Jan. 6, 2005), to be used as a companion to EPA’s Revised CERCLA Model RD/RA Consent Decree (Oct. 1, 2009), superseding prior versions including the June 15, 2001 Model Consent Decree. *See also* Revised Model Administrative Settlement Agreement and Order on Consent for Removal Actions (Jan. 30, 2007), superseding the prior Revised Model Administrative Order on Consent for Removal Actions (July 9, 2001). EPA has also developed models for cost-recovery settlements. *See* Revised Model CERCLA Section 122(h)(1) Agreement for Recovery of Past Response Costs (Feb. 6, 2003), and a model for agreements to perform Remedial Investigations/Feasibility Studies, Revised Model Administrative Order on Consent for Remedial Investigation/Feasibility Study (Jan. 21, 2004), revised by EPA’s interim Revisions to Remedial Investigation/Feasibility Study AOC Model to Clarify Contribution Rights and Protection under Section 113(f) (Aug. 3, 2005), as updated by Interim Revisions to CERCLA Judicial and Administrative Settlement Models to Clarify Contribution Rights and Protection from Claims Following the *Aviall* and *Atlantic Research Corporation* Decisions (March 16, 2009).

²Example provisions that must be modified on a case-by-case basis include the definition of the “Site” and the section detailing the work to be performed by the settling parties.

³*See, e.g.*, Interim Revisions to CERCLA Section 122(h) Past Cost Recovery and Peripheral Party Cashout Model Administrative Agreements to Clarify Contribution Rights and Protections under Section 113(f) (Sept. 21, 2006), as updated by Interim Revisions to CERCLA Judicial and Administrative Settlement Models to Clarify Contribution Rights and Protection from Claims Following the *Aviall* and *Atlantic Research Corporation* Decisions (March 16, 2009).

EPA Headquarters; this requirement has been dropped in an effort to expedite settlements. The Regions must, however, continue to consult with the Department of Justice throughout the process of negotiating an RD/RA decree.

§ 9:112 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—EPA’s post-SARA settlement policy—Policy on owners of residential property on Superfund sites

In the exercise of its enforcement discretion, EPA maintained an informal practice of not seeking to recover response costs or requiring response actions of certain types of residential property owners on Superfund sites. The “homeowner guidance”¹ issued in 1991 makes this practice a national policy, with three important caveats. First, if the homeowner’s actions lead to the release or threat of a release of a hazardous substance at the Superfund site, EPA may still take enforcement action against the homeowner. Second, the property cannot be used in a manner inconsistent with residential use. Third, the homeowner must cooperate with EPA response actions or the homeowner would be treated as having failed to meet the obligations under CERCLA. EPA hopes that this policy will bring greater certainty to homeowners with respect to their potential CERCLA liability and solve problems related to conveying the property or obtaining loans.²

§ 9:113 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—EPA’s post-SARA settlement policy—Unilateral administrative orders

EPA may seek both administrative and judicial injunctive relief pursuant to CERCLA § 106(a) where the Agency determines that there may be an imminent and substantial endangerment because of an actual or threatened release of a hazardous substance from a CERCLA facility. EPA may issue unilateral administrative orders (UAOs) to compel the full range of removal and remedial actions, including performance of the remedial investigation and feasibility study (RI/FS) and performance of the full remedial design and remedial action (RD/RA). In 1990 and 1993, EPA first issued guidance for issuance of § 106 orders.¹ That guidance was updated in 2001.²

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¹See Policy Towards Owners of Residential Property at Superfund Sites, issued in Memorandum form on July 3, 1991 (OSWER Directive No. 9834.6).

²EPA issued a related guidance addressing owners of property located above contaminated groundwater. Final Policy Toward Owners of Property Containing Contaminated Aquifers, 60 Fed. Reg. 34790 (July 3, 1995). This guidance states that in general, EPA will not take enforcement action against such property owners if the contamination was the result of subsurface migration of hazardous substances from off-site sources. Similarly, EPA will not prosecute either lenders who foreclose on contaminated property merely to protect their security interest therein or governmental entities that acquire such property through tax foreclosure or similar means. See Policy on Interpreting CERCLA Provisions Addressing Lenders and Involuntary Acquisitions by Government Entities, 62 Fed. Reg. 36424 (July 7, 1997), withdrawing the prior policy statement in EPA Memorandum, CERCLA Enforcement Against Lenders and Government Entities That Acquire Property Involuntarily, 60 Fed. Reg. 63517 (Dec. 11, 1995), and documents referenced therein.

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¹Strategy and Guidance for Issuance of CERCLA Section 106 UAOs (OSWER Directive No. 9833.0-1a), as well as a Model UAO for RD/RA (OSWER Directive No. 9833.0-2(b)) (Mar. 7, 1990). See also Model Unilateral Administrative Order for Removal Response Activities (OSWER Directive No. 9833.07) (Mar. 16, 1993). Memorandum from Steven A. Herman, Assistant Administrator, Interim Policy on Settlement of CERCLA Section 106(b)(1) Penalty Claims and Section 107(c)(3) Punitive Damage Claims for Noncompliance with Administrative Orders (Sept. 30, 1997), available at <http://es.epa.gov>

EPA may utilize specialized forms of UAOs as settlement incentives for cooperative PRPs and disincentives for nonsettlers. Generally, UAOs direct all PRPs to conduct the entire remedial action. However, EPA may settle with some PRPs and issue “carve-out” unilateral orders to recalcitrant parties directing them to conduct a discrete portion of site work. This is a form of mixed funding settlement. The Agency also may issue “parallel” UAOs to recalcitrants requiring them to coordinate and cooperate with the settling PRPs in conducting the response.

PRPs who fail to comply with a CERCLA § 106 UAO, without “sufficient cause,” are subject to civil penalties under § 106(b)(1) of up to \$37,500 per day.³ Noncomplying PRPs also are subject under CERCLA § 107(c)(3) to punitive damages equal to three times the costs incurred by the Fund to perform the response action required by the order.

§ 9:114 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—Settlement with Good Samaritans

EPA has implemented an agency-wide effort to reduce barriers to the cleanup of abandoned (“orphan”) sites by volunteers, known as the Good Samaritan Initiative.¹ A Good Samaritan is an entity willing to perform cleanup work under CERCLA at an orphan mine site, even though it does not own the property, intend to own the property, or have responsibility for the pollution at the property.² Potential Good Samaritans are often deterred by the possibility of incurring Clean Water Act and CERCLA liability. Accordingly, EPA developed administrative tools and guidance designed to lessen the potential for Good Samaritans to incur liability under federal programs and provide them with greater legal certainty.

Agency Good Samaritan guidance instructs Regions to work with states and encourages Good Samaritans to participate in state voluntary cleanup programs (VCPs), which are typically tailored to non-labile parties that volunteer to clean up sites that are not of federal interest.³ The benefit of performing a clean-up in compliance with a VCP, is that an entity will typically receive a covenant-not-to-sue from the relevant state. Also, the Good Samaritan may qualify for an “enforcement bar,” which blocks certain CERCLA enforcement actions at Brownfield sites that meet the definition of an “eligible response site” (as defined under CERCLA § 128(b)) and that are being addressed in compliance with a state response program.⁴

EPA has also developed a model Good Samaritan CERCLA Section 107(d)

[ov/oeqa/osre/9709302.html](http://www.epa.gov/oeqa/osre/9709302.html)); Memorandum from Barry Breen, Ensuring Potentially Responsible Party Compliance with CERCLA Obligations (Nov. 3, 1998, available at <http://es.epa.gov/oeqa/osre/981103-2.html>).

²See, e.g., Use of CERCLA § 106 to Address Endangerments That May Also Be Addressed Under Other Environmental Statutes (Jan. 18, 2001); EPA’s Revised Language for the Model RD/RA Unilateral Administrative Order (UAO) (Aug. 1, 2001); Revised Language for the Model Removal Unilateral Administrative Order (Aug. 1, 2001).

³See § 9:100.

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¹EPA Memorandum, Interim Guiding Principles for Good Samaritan Projects at Orphan Mine Sites and Transmittal of CERCLA Administrative Tools for Good Samaritans (June 6, 2007).

²According to EPA guidance, an entity who qualifies as a bona fide prospective purchaser pursuant to CERCLA § 101(40) would not be considered a Good Samaritan, but the entity would qualify for protection from CERCLA liability under § 107(r). See EPA Memorandum, Agreement and Order on Consent for Removal Action by Bona Fide Prospective Purchaser (Nov. 27, 2006).

³EPA Memorandum, Interim Guiding Principles for Good Samaritan Projects at Orphan Mine Sites and Transmittal of CERCLA Administrative Tools for Good Samaritans (June 6, 2007).

⁴EPA Memorandum, Regional Determinations Regarding Which Sites Are Not “Eligible Response Sites” under CERCLA Section 101(41)(c)(i) (March 6, 2003).

Comfort/Status Letter and Good Samaritan Settlement Agreement. The letter is intended to encourage Good Samaritans to perform NCP-compliant work at orphan mine sites without negotiating a formal settlement agreement with EPA. However, to assuage concerns Good Samaritans may have regarding contribution suits by third parties as a result of taking on the voluntary work, the model letter states that in those circumstances, EPA will consider entering into a Good Samaritan Settlement Agreement. A Good Samaritan Settlement Agreement provides federal CERCLA covenant-not-to-sue and contribution protection in exchange for the Good Samaritan's cleanup work. Parties may enter directly into a Good Samaritan Settlement Agreement with EPA if the proposed cleanup work is consistent with the NCP and technically complicated, and/or there is a significant possibility of third party litigation. Prior to issuing a Comfort/Status Letter to or entering into a settlement agreement with a Good Samaritan, Agency guidance instructs the Regions to weigh a variety of factors, including the availability of EPA resources and the complexity and scope of the cleanup.

§ 9:115 Settlements in particular programs—Settlement policy and practice as a centerpiece of the superfund program—Summary

A review of EPA's and the Department of Justice's approach to settling Superfund cases discloses several factors that shape the government's position at the negotiating table. First, the government is extremely reluctant to assume the entire risk that the settlement will not achieve its stated goals. Second, the government's approach to settlement is often influenced by practical, rather than legal or policy, considerations, for example, resource limitations, manageability of negotiations, and the need to expedite cleanup. Third, the government's policy appears to be based on the assumption that PRPs will not always act in good faith in implementing settlement agreements. These sorts of attitudinal factors are not surprising, given the level of congressional and public scrutiny which attends these settlements, but experience should show that reasoned flexibility to achieve innovative but fair settlements are in the interests of all concerned. With that experience, EPA policies can and will evolve. In the meantime, deviations from written policy or precedent will be possible, but, as a practical matter, only in cases where EPA has been supplied well-supported analysis to show how the innovative settlement provisions serve the objectives of the statute.

As is the case in the other EPA media programs, a party is best served by approaching the Agency as early as possible in the administrative process. Parties who are informed and forthcoming, particularly with key regional enforcement staff, will develop a better working relationship and create the possibility of receiving the benefit of the doubt on issues which are open to dispute.

§ 9:116 Frontier issues and new directions in environmental enforcement—Overview of issues and trends¹

The evolution of environmental enforcement in the United States over the past decade foreshadows future directions not only in this country but around the globe. First, a broad range of both enforcement and compliance tools has now evolved from the program. The United States Environmental Protection Agency (EPA) introduced compliance promotion in the form of compliance incentives and compliance assistance programs to what had been exclusively a deterrence based program. These incentives and technical assistance programs round out the repertoire of approaches so that it now includes both "carrots and sticks," in the form of incentives, assis-

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¹By Cheryl E. Wasserman

tance, and enforcement, to achieve desired changes in behavior for compliance with environmental requirements. The expanded focus described in § 9:116 includes, for example, compliance assistance programs and self-policing policies that reward self detection, disclosure, and prompt and permanent correction of the underlying violations in exchange for commitments to reduce or eliminate penalties under certain circumstances. These additions to the U.S. program make it more consistent with internationally accepted principles and frameworks for environmental compliance and enforcement,² ironically originating from academic literature and the experiences of the EPA and the fifty states.³ The new approaches, however, do raise new issues, particularly how to most effectively balance and integrate compliance promotion with deterrence so they may work together more effectively than either approach could in isolation. While it has been tempting for the U.S. and other nations to embrace incentive approaches as alternatives rather than complements to deterrence-based activities, experience and accepted principles keep returning to the importance of deterrence through strong enforcement responses to make these other approaches work effectively.⁴ Within the United States the commitment to strong enforcement was recently challenged by the introduction of voluntary and incentive programs. Developments such as ISO 14001 voluntary environmental management standards were decidedly viewed and promoted by some as a substitute rather than complement to vigorous enforcement. That diversion has been neutralized to some extent not only because of the actual program experiences cited above, but also due to concerted government efforts to address the issues head on, such as the statement of the Commission for Environmental Cooperation Environment Ministers, which emphasize and distinguish the continued responsibilities in regulatory enforcement and the independent enforcement role of governments versus the positive contribution of voluntary standards and programs to enhance environmental management.

²See U.S. Environmental Protection Agency, *Principles of Environmental Enforcement* (1991); *Proceedings of the Second International Conference on Environmental Enforcement*, Budapest, Hungary (Cheryl Wasserman & Jo Gerardu eds., Sept. 1992). See *United Nations Conference on Environment and Development, UNCED, Agenda 21*, ch. 8, § 8.21 (June 1992).

³See Cheryl Wasserman, "Building International Networks, Cooperation, and Capacity for Environmental Compliance and Enforcement: A Progress Report," 1 *Proceedings of the Fourth International Conference on Environmental Compliance and Enforcement* 97-132 (Chiang Mai, Thailand 1996); Cheryl Wasserman, "The Principles of Environmental Enforcement and Beyond: Building Institution Capacity," 1 *Proceedings of the Third International Conference on Environmental Compliance and Enforcement* 15-40 (Oaxaca, Mexico 1994).

⁴See Peter Krahn, "Enforcement Versus Voluntary Compliance: An Examination of the Strategic Enforcement Initiatives Implemented by the Pacific and Yukon Regional Office of Environment Canada 1983 to 1998," 1 *Proceedings of the Fifth International Conference on Environmental Compliance and Enforcement* 25-46 (Monterey, California 1998); J.M.J. Schoenmakers, "Enforcement and Encouragement: An Investigation in the Brick and Roofing tile Industry," 1 *Proceedings of the Fifth International Conference on Environmental Compliance and Enforcement* 307-312 (Monterey, California 1998); Nancy Bircher, "Making it Happen: The Evolution of Pulp and Paper Mill Compliance in British Columbia," 2 *Proceedings of the Fifth International Conference on Environmental Compliance and Enforcement* 73 (Monterey, California 1998); Henry P. Staats, "Dutch Industrial Target Group Approach: An Enforcement Study on the Voluntary Environmental Agreement with Petrol Stations," 1 *Proceedings of the Fourth International Conference on Environmental Compliance and Enforcement* 427 (Chiang Mai, Thailand 1996). See also Jon D. Silberman, *Does Environmental Deterrence Work? Evidence and Experience Say Yes, But We Need to Understand How and Why*, 30 *Envtl. L. Rep.* 10523-36 (July 2000); David Markell, *The Role of Deterrence Based Enforcement in a "Reinvented" State/Federal Relationship: The Divide Between Theory and Reality*, 24 *Halv. Env'tl. L. Rev.* 1 (2000); Cliff Rechtschaffen, *Deterrence vs. Cooperation and the Evolving Theory of Environmental Enforcement*, 71 *S. Cal. L. Rev.* 1182 (1998).

Within the United States, the commitment to strong enforcement was recently challenged by the introduction of voluntary and incentive programs. Developments such as ISO 14001 voluntary environmental management standards were decidedly viewed and promoted by some as a substitute for rather than a complement to vigorous enforcement.

Second, innovative enforcement settlement policies described in § 9:121 maximize opportunities for improved deterrence and environmental results from individual enforcement cases. These settlement policies include settlements with environmental audit provisions, soft landings for pollution prevention, and introduction of these and other supplemental environmental projects generally in exchange for reductions in or elimination of penalty assessments. These policies are likely to continue to be utilized even more extensively in the future given the program focus on preventing pollution and gaining the greatest performance benefits from its enforcement program.

Third, § 9:128 addresses the fact that greater public access to compliance, enforcement, and environmental performance information not only serves to meet demands for increased public accountability and even handed justice, but offers new ways for enforcement officials to harness public pressure to work for compliance. The movement to more aggressively engage the public is co-incident with the communications technology revolution that supports many of these programs. Now, Internet access to compliance status and performance information is the wave of the future not just in the United States but around the world. On a global level, the Aarhus Convention in Europe heralds a new era for Public Access to Information and Justice⁵ and the World Bank's Greening Industry report⁶ on research conducted in developing nations offers a new model for environmental governance that includes government, community, and markets as partners in the task of improved environmental compliance and performance. Among the serious issues raised by these actions are protection of confidential business information, and how to protect the rights of individual pollution sources when errors are made in reported performance, and the status of compliance and/or enforcement actions. Another issue concerns sharing and interpreting this kind of information across states within the United States and across nations given disparities in the stringency of controls required and the level of compliance and performance monitoring on which reporting is based. In other words, how we avoid unfair comparisons if the bar is different.

Fourth, § 9:132 expands on mechanisms introduced to enhance the efficiency of environmental enforcement to address the burgeoning caseload, particularly to face challenges of numerous small and medium sized sources and continued violations at large pollution sources as well. Tight budgets are forcing innovations to more efficiently manage the workload and approaches to conflict resolution (alternative dispute resolution) are taking place in ways that are producing greater results.

Fifth, § 9:137 describes the status and results of a long-term search for ways to properly measure and evaluate success so that the U.S. enforcement program is driven in the right direction. The development of measures of success, so important to the state/federal enforcement relationship, is bearing fruit, allowing a more results-oriented program to sell itself and galvanize public support.

Finally, § 9:138 explores international cooperation for capacity building in environmental enforcement as well as for fighting international environmental crime. The enforcement effort can no longer be carried out effectively in isolation. There is a major movement to more effectively cooperate internationally to both build capacity and stem the growing threats from international environmental crime.

⁵See the "UNECE Convention on Access to Information, Public Participation in Decisionmaking and Access to Justice in Environmental Matters," adopted on June 25, 1998 in the Danish city of Aarhus (hence references to the "Aarhus Convention") at the Fourth Ministerial Conference on the Environment for Europe process, signed by thirty-five countries and the European Community, and also open for accession by countries outside of the UNECE region.

⁶See World Bank Policy Research Report, Greening Industry: New Roles for Communities, Markets and Governments (October 1999).

§ 9:117 Frontier issues and new directions in environmental enforcement—Broad range of both enforcement and compliance tools

Since the reorganization of the Office of Enforcement and Compliance Assurance (OECA) in 1994, EPA has sought both to strengthen the deterrent value of its enforcement actions and to augment the environmental benefits flowing from those actions. OECA was created to consolidate all enforcement and compliance assurance activities in a single office at EPA Headquarters. The reorganization provided the opportunity to improve the effectiveness of traditional enforcement tools, develop new approaches to compliance incentives and compliance assistance, and improve the impact of the national program. OECA's reorganization was based on the principle that EPA needed to complement its enforcement program with innovative tools to better protect public health and the environment. The goal of the reorganization was to better target significant environmental risks by developing a full set of enforcement tools, incentives, and compliance assistance aimed at identifying and addressing those risks. For twenty-five years, EPA had relied on a strong, aggressive enforcement program as the centerpiece of its efforts to ensure compliance with national environmental laws. This approach worked well, and created a strong culture of environmental compliance which produced, among other things, a professional class of environmental managers within the regulated sector.¹ However, the Agency concluded that it could achieve additional gains in compliance by offering incentives to facilities to recognize and reward conscientious efforts to self-police environmental compliance. In 1996, OECA issued two policy statements that articulate the belief that a strong enforcement program is the foundation upon which the Agency's complementary compliance incentive and compliance assistance efforts depend. The first document, "Core EPA Enforcement and Compliance Assurance Functions,"² articulated the "core" federal functions that must be performed by EPA both to ensure the protection of public health and the environment and to keep polluters from gaining a competitive advantage over regulated entities that do not comply with the law. Later that year, OECA issued "Operating Principles for an Integrated Enforcement and Compliance Assurance Program,"³ this document describes the range of the Agency's enforcement and compliance tools and authorities and discusses opportunities for their most effective use. The tools include civil and criminal enforcement, compliance monitoring, compliance incentives, and compliance assistance.

§ 9:118 Frontier issues and new directions in environmental enforcement—Broad range of both enforcement and compliance tools—Compliance incentives—Encouraging self-policing, discovery, disclosure, correction and prevention of violations

In 1996, OECA issued two policies that provide incentives for businesses to conduct self-audits and establish environmental management systems to monitor, correct, and report violations. Under the first policy, *Incentives for Self-Policing:*

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¹Memorandum from Steven A. Herman, Assistant Administrator for Enforcement and Compliance Assurance, Operating Principles for an Integrated Enforcement and Compliance Assurance Program (Nov. 27, 1996).

²Issued on February 21, 1996.

³See Memorandum from Steven A. Herman, Assistant Administrator for Enforcement and Compliance Assurance, Operating Principles for an Integrated Enforcement and Compliance Assurance Program (Nov. 27, 1996).

*Discovery, Disclosure, Correction and Prevention of Violations*¹ (Self-Disclosure Policy), when companies voluntarily discover environmental violations and promptly disclose these violations to EPA and meet other specified conditions of the policy, EPA will waive or substantially reduce gravity-based civil penalties up to 75 percent, and in many cases, up to 100 percent. For those companies that meet the policy's conditions, EPA will not recommend the companies for criminal prosecution.

The EPA Self-Disclosure Policy reflects the combination of two government interests: encouraging comprehensive, systematic audits and ensuring disclosures and corrections of environmental violations. The policy also appeals to corporate interests by extending penalty mitigation or waiver and by decreasing potential corporate criminal prosecution. Use of the Self-Disclosure Policy has increased each year it has been in place. To date, more than 670 companies have disclosed violations at more than 2,700 facilities. Some of these companies are large multi-state corporations like GTE and American Airlines. The violations disclosed by American Airlines alone will eliminate nearly 700 tons of air pollutants annually. The GTE settlement, which involved 600 violations at over 300 facilities, led to ten other telecommunications companies voluntarily disclosing and correcting 1,300 environmental violations at more than 400 facilities.

§ 9:119 Frontier issues and new directions in environmental enforcement—Broad range of both enforcement and compliance tools—Compliance incentives—Small business compliance incentives

OECA in June of 1996 issued a second policy that provides incentives for businesses—in this case, small businesses—that make good faith efforts to voluntarily identify and seek technical assistance to correct violations. This document, the Policy on Compliance Incentives for Small Businesses (Small Business Policy), was issued on May 23, 1996. It builds upon the Enforcement Response Policy for Treatment of Information Obtained Through Clean Air Act Section 507 Small Business Assistance Programs (Section 507 Policy), which EPA issued on August 12, 1994.¹ Under the Small Business Policy, EPA will eliminate or reduce penalties for small businesses that voluntarily discover, promptly disclose, and correct violations in a timely manner. A small business is defined as a person, corporation, partnership, or other entity that employs 100 or fewer individuals across all facilities and operations owned by the entity. Entities can also include small governments and small organizations.

In 2000, after a two-year evaluation, OECA revised both the Self-Disclosure Policy and the Small Business Policy. The revisions to the Self-Disclosure Policy

[Section 9:118]

¹See Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations, 60 Fed. Reg. 66706 (Dec. 22, 1995). The policy was revised in 2000.

[Section 9:119]

¹The Section 507 policy provides states with two options for providing compliance assistance. Under the first option, Small Business Assistance Programs (SBAPs) can allow small businesses that receive compliance assistance up to ninety days (with the possibility of a ninety day extension) to correct any violations discovered under the SBAP program. Any violations remaining at the end of that period are subject to existing enforcement response policies. Under the second option, SBAPs may guarantee that information identifying specific small businesses that have violations detected through compliance assistance will be kept confidential, subject to two important limitations. First, confidential compliance assistance can only be offered through SBAPs that operate independently of the state's delegated regulatory enforcement program, and, secondly, the state's compliance authority must retain the ability to investigate and/or take enforcement action at any time for any violation discovered independently of the Section 507 program. If the violation is discovered by a state or federal enforcement program, it may be the object of any enforcement response. EPA's FY 1997 Enforcement and Compliance Assurance Priorities, 12 Nat'l Env'tl. Enforcement J. (Feb. 1997).

gave notifiers more time to disclose, clarified the availability of penalty mitigation for multi-facility disclosures, and provided that violations do not have to be systematically discovered in order to be eligible for the incentive of no recommendation for criminal prosecution. The revisions to the Small Business Policy make it easier for small businesses to benefit from disclosures by giving small businesses more time to disclose violations, and by eliminating the need to perform an audit or participate in a formal compliance assistance program in order to receive penalty mitigation for disclosed violations. From October 1996 through October 1999, eighty-eight small businesses disclosed violations under the Small Business Policy. All businesses qualifying under the policy received mitigation of their entire penalty.

Under the Small Business Policy, EPA will eliminate the entire civil penalty if a small business satisfies all four of the following criteria:

- The small business voluntarily discovers a violation. Violations could be discovered after attending training classes or seminars, receiving on-site compliance assistance, participating in mentoring programs, or using compliance guides or checklists downloaded from the Internet.
- The small business voluntarily discloses the violation within twenty one days. This disclosure must be sent in writing to the regulatory agency.
- The business corrects the violation and remedies any damage associated with the violation within 180 days of its discovery. However, if the correction will take longer than 90 days, a written schedule will be necessary. For small businesses that are correcting the violation by using pollution prevention technologies, they may have an additional period of 180 days (i.e., up to a period of 360 days).
- The following additional conditions are met:
 - a. The violation has not caused actual serious harm to public health, safety, or the environment;
 - b. The violation is not one that may present an imminent and substantial endangerment to public health or the environment;
 - c. The violation does not involve criminal conduct;
 - d. The facility has an appropriate compliance record. The small business has not used this Policy for a violation of the same or similar requirement within the past three years and has not been subject to two or more enforcement actions for any environmental violations in five years; and
 - e. The violation has not already been discovered by the agency through inspections or citations, or other methods. A legally required monitoring procedure was not violated.

§ 9:120 Frontier issues and new directions in environmental enforcement—Broad range of both enforcement and compliance tools—Compliance incentives—Compliance incentives for small community violations

On November 29, 1995, EPA issued a similar policy offering incentives to small municipalities, the *Policy on Flexible State Enforcement Responses to Small Community Violations*. This policy gives small communities new incentives to work with state compliance assistance programs in order to correct their environmental violations. The policy, which was developed in consultation with state and local governments and environmental organizations, gives states more flexibility to help small communities address their environmental problems on a “worst case first” basis. The policy defines a “small community” as generally having fewer than 2,500

residents. The community also must be a non-profit, incorporated or unincorporated entity that owns the facilities that supply municipal services.¹

Over the years, it had become apparent that some small communities that lack the technical resources needed to readily comply with environmental regulations were hesitant to seek help for fear of becoming caught up in the enforcement process. EPA wanted to help expand the effectiveness of state small community environmental compliance assistance programs (SCECAPs) by reassuring small communities that truly needed this assistance that they would not automatically be subject to sanctions or penalties if they sought support.

The principle behind the policy is straightforward. It applies only to small communities that are unable to satisfy applicable environmental mandates without a state's compliance assistance. It describes the circumstances under which EPA will generally defer to a state's efforts to return a small community to full compliance; by "full compliance" is meant that the small community must agree to work with the state to correct all of its environmental violations as expeditiously as possible. If states follow the procedures described in the policy and address small community environmental violations with compliance assistance that makes progress towards compliance, EPA generally will not pursue separate enforcement actions for penalties or additional injunctive relief.

§ 9:121 Frontier issues and new directions in environmental enforcement—Broad range of both enforcement and compliance tools—Compliance assistance

Compliance assistance is another tool, along with enforcement and compliance incentives, relied upon by EPA after the creation of OECA in the early 1990s. Compliance assistance consists of information or assistance to help the regulated community comply with legally mandated requirements. It includes basic information on these requirements as well as specialized advice on best technologies and pollution prevention opportunities.

EPA's compliance assistance efforts are based on two principles. First, the goals of compliance assistance are to "change the behavior" of the regulated community, improve compliance with the law and, ultimately, enhance environmental protection. Second, EPA views its role as primarily that of a "wholesaler" providing compliance assistance tools to front-line providers in government and the private sector who may be better positioned to maintain direct "contact" with, or have access to, the regulated entities.

EPA's compliance assistance activities encompass a variety of delivery mechanisms, including "plain English" compliance guides of environmental requirements (e.g., for the dry cleaning and ship scrapping industries, and for rural electric cooperatives), on-site visits, workshops, training, hotlines and websites designed to achieve, maintain, and enhance compliance. Some brief examples of major national and regional compliance assistance activities, along with their impact on compliance, follow.

In partnership with industry, environmental groups and other governmental agencies, OECA has established ten internet-based Compliance Assistance Centers, which deliver compliance and pollution prevention information targeted specifically to industry and governmental sectors. The Centers cover the auto services, paints and coatings, chemical manufacturing, printed wiring board manufacturing, printing, transportation, agriculture, and metal finishing sectors, in addition to local governments and federal

[Section 9:120]

¹EPA's FY 1995-96 Enforcement and Compliance Assurance Priorities, 10 Nat'l Env'tl. Enforcement J. (Aug. 1995).

facilities. The Centers help users understand which federal regulations apply to their operations, share pollution prevention tips and techniques, access relevant compliance tools, and learn about the latest regulatory developments.

EPA has looked at compliance rates in the automotive and repair shop sector to develop an objective assessment of the impact of the compliance assistance center. New survey statistics for that sector from the web-based Compliance Assistance Center (*GreenLink*) show that compliance improves when facilities are given assistance. In 1997, audits revealed that less than 25 percent of the industry was in substantial compliance (defined here at 81-100 percent compliance) with all their regulatory requirements. In 1999, after the establishment of *GreenLink*, the number of facilities in substantial compliance had jumped to 51 percent. *GreenLink* has also become an important compliance tool that many auto shops now rely on—the number of users has increased from 1,000 shops in 1997 to 21,000 shops in 1999.

Another major EPA compliance assistance tool is the internet-based Compliance Assistance Clearinghouse, which will link the compliance assistance websites of EPA, other federal agencies, state, local and tribal governments, and other compliance assistance providers. The Clearinghouse will be a continually expanding network of websites that will enable users to find, through a central source, a wide-range of compliance assistance information, to link up and exchange information with other users, find experts, and learn about new projects and products intended to improve environmental compliance.

As of November 2000, OECA had published thirty-two Sector Notebooks, which are virtually the only government publications containing crosscutting compliance, pollutant, and industrial process information about the key environmental issues associated with each industry in a single sector-specific document. Industry is using the Notebooks to develop “cheaper, smarter and cleaner,” compliance strategies. The notebooks also give the public greater access to information concerning the compliance history and emissions profile of industries within their communities.

EPA has also undertaken compliance assistance initiatives targeted to specific industrial sectors. EPA's New England office has made a priority of providing compliance assistance to the printing industry. The Region's *Fit To Print* compliance guide was sent to over 1400 printers throughout the Region. Of those who responded to an evaluation of the guide, 70 percent said that they had undertaken “improved environmental practices” such as equipment changes/modifications, material substitution, recycling, training, institution of environmental management policies or procedures, and improved disposal methods as a result of compliance assistance efforts. These facilities also said that they took action to apply for appropriate permits or identification numbers, or file reports as necessary to comply with federal, state, or local environmental regulations.

EPA, including several of its regional offices, has focused efforts on the dry cleaning industry, a sector in which a very large number of very small operations collectively emit significant multi-media chemical releases to the environment, making compliance a particular challenge. EPA's New York office, in coordination with New York State agencies, has focused compliance-assistance efforts on dry cleaners in New York and New Jersey. Their outreach efforts include on-site visits and the distribution of easy-to-understand guides to Clean Air Act requirements. In addition, the Region developed a web site for compliance assistance information and held eight seminars on equipment maintenance and new technologies for approximately 500 owners/operators. This effort has resulted in a reduction of 11.9 tons of perchloroethylene from urban air.

In 1995, EPA's New England Office began working with the Massachusetts Department of Environmental Protection and the Charles River Watershed Association on a combined enforcement and compliance assistance initiative for the Lower Charles River by Earth Day to restore it to a “fishable, swimmable” condition by 2005. The Region undertook outreach efforts to some 3,100 businesses and institutions located in the Lower Charles River watershed to educate them on stormwater permitting requirements and encourage those not subject to them to make voluntary efforts to lessen stormwater impacts, along with describing opportunities for compliance assistance which EPA had developed specifically for Charles River facilities. These included customized assistance materials for auto related facilities, creation of a “report-a-sheen” oil spill reporting hotline and development of an innovative stormwater technology trade show. Figures compiled in 2000 show that these efforts have borne fruit. As of August of 2000, the Charles River had met boating standards 94 percent of the time, compared to only 39 percent of the time during the same eight months in 1995, according to data col-

lected by the Charles River Watershed Association.¹ In addition, the river was safe for swimming 65 percent of the time in 2000, compared to only 19 percent in 1995.

§ 9:122 Frontier issues and new directions in environmental enforcement—Maximizing environmental results in individual enforcement actions

EPA has sought to increase the environmental benefits of its enforcement actions primarily by using three tools: (1) improved targeting to focus on significant environmental problems or areas with high rates of noncompliance; (2) the introduction of environmental auditing provisions-including Environmental Management Systems-into settlement agreements; and (3) increased emphasis on pollution prevention in enforcement case settlements to leverage environmental improvements that would not otherwise have occurred.

§ 9:123 Frontier issues and new directions in environmental enforcement—Maximizing environmental results in individual enforcement actions—Improved targeting

In order to identify compliance priorities, OECA uses data integration techniques that rely on indexes reflecting inspection coverage and pollutant emissions as well as significant noncompliance. Often OECA targets specific geographic areas or select industry sectors in order to leverage resources for the greatest environmental benefit. A good example is the settlement that EPA reached with seven major diesel engine manufacturers in October 1998. The settlement resolved claims that the manufacturers¹ installed defeat devices that disabled the vehicles' emission control systems. The settlement, which included a \$83.4 million penalty and other expenditures for a total of approximately \$1 billion, will prevent 75 million tons of nitrogen oxide emissions from entering the atmosphere by the year 2025. The companies also agree to introduce cleaner new engines, rebuild older engines to cleaner levels, recall pickup trucks that have defeat devices, and conduct new emissions testing. EPA estimates that the cost of those expenditures by themselves will total more than \$850 million.²

OECA continues to improve its capacity to target the most environmentally significant problems, for example, by broadening the information sources used by the Agency and by utilizing more sophisticated information-sharing technologies. One new contribution to improving the Agency's targeting capacity is the Online Targeting Information System (OTIS), the first phase of which was launched in October of 1999. This system, which as of November of 2000 was available only to EPA and the states, consolidates several targeting resources using the Integrated Data for Enforcement Analysis (IDEA) system and represents a significant breakthrough in making compliance and enforcement data easily available to a wide range of users. For example, OTIS allows users to search for facilities or permit numbers and select reports that provide hazardous waste, air and water inspection, violation, and enforcement history information. OTIS also contains updated versions of recent targeting reports, targeting network contacts, links to other sites, and project inventories. EPA plans to make OTIS available to the public in 2001.

[Section 9:121]

¹Press Release, U.S. EPA, EPA: Charles River Rowers Competing on a Much Cleaner River (Oct. 19, 2000).

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¹Caterpillar Inc.; Cummins Engine Company; Detroit Diesel Corporation; Mack Trucks, Inc.; Navistar International Transportation Corporation; Renault Vehicles Industrials, s.a.; and Volvo Truck Corporation.

²Press Release, U.S. EPA, DOJ, EPA Announce One Billion Dollar Settlement With Diesel Engine Industry for Clean Air Violations (Oct. 22, 1998).

§ 9:124 Frontier issues and new directions in environmental enforcement—Maximizing environmental results in individual enforcement actions—Auditing and EMS provisions in consent decrees and orders

Since at least the mid to late 1980s, EPA has sought to leverage its resources by incorporating innovative compliance strategies into the settlement of enforcement actions. By taking advantage of its position at the bargaining table, the Agency has persuaded numerous companies who were the subject of judicial or administrative enforcement actions to agree to conduct environmental compliance audits or to implement environmental management systems (EMSs).¹ Incorporating auditing or EMS provisions into administrative consent orders or judicial consent decrees provides the subject of the enforcement action the opportunity to adopt a more proactive stance towards the management of its environmental problems while guaranteeing that the Agency will have a role in ensuring that minimum requirements for these programs are achieved.

EPA's efforts in this area stem from increasing recognition that violations of environmental laws and regulations can often be attributed to systemic failures in how a company or organization manages its operations and environmental practices. Initially, the Agency's efforts to promote innovative compliance tools through settlement agreements were limited to provisions on compliance auditing. Such efforts were primarily viewed as a means of expanding the scope of any single enforcement action by requiring companies to conduct reviews of their programs to detect additional violations, impose measures to correct any problems, and take definitive action to prevent the violations from recurring. More recently, EPA has taken a broader view and has begun to promote settlement language calling for more comprehensive EMSs that not only detect and prevent violations but also enhance overall environmental performance through continuous improvement in both regulated and non-regulated areas through the "plan, do, check, act" model. Typically, such settlement language will require the company first to review its current environmental practices, then to develop a comprehensive and documented EMS, and then to conduct EMS audits to ensure that the EMS accomplishes its intended goals. In exchange for agreeing to implement such systems, companies can often expect a degree of penalty mitigation for its past violations, as well as assurances that the Agency will not routinely seek copies of audit reports or audit findings.

§ 9:125 Frontier issues and new directions in environmental enforcement—Maximizing environmental results in individual enforcement actions—Auditing and EMS provisions in consent decrees and orders—Compliance auditing

Environmental auditing is a way for companies and other organizations to conduct

[Section 9:124]

¹EPA's Policy Statement on Environmental Auditing, 51 Fed. Reg. 25004 (July 9, 1986) (Environmental Auditing Policy Statement). See §§ 8:37, 8:42; Memorandum from Thomas L Adams, Jr., Assistant Administrator, Enforcement and Compliance Monitoring, Final EPA Policy on the Inclusion of Environmental Auditing Provisions in Enforcement Settlements (Nov. 14, 1986) [hereinafter Adams Memorandum]; Memorandum from Terrell Hunt and John Seitz, Guidance on Inclusion of Environmental Auditing Provisions in Administrative Settlements (Jan. 27, 1987). See also U.S. EPA, Office of Enforcement, Enforcement in the 1990's (1991) (presenting a pattern of violation that can be attributed, at least in part, to the absence or poor functioning of an environmental management system; or where the type or nature of violations indicates that similar noncompliance problems may expect to occur elsewhere in the facility or at other facilities operated in the regulated entity).

It is most likely that the issue of environmental auditing will continue to arise primarily in these contexts given the interest of Agency attorneys in introducing complex terms only in settlement negotiations that promise to produce more comprehensive environmental results. Both EPA and the states, however, are expected increasingly to use this approach.

a methodical review of any or all of their programs and operations that may have an impact-positive or negative-on the environment. The term “environmental audit” is often defined as “a systemic, documented, periodic, and objective review by regulated entities of facility operations and practices related to meeting environmental requirements.”¹ The audit itself is a value-neutral process in which the thing being audited is compared to a defined set of criteria to determine whether the reality is consistent with what is stipulated on paper. The thing that is being audited and the evaluation criteria that are used will vary with the type of audit being conducted. For example, environmental compliance auditing involves an independent assessment of a company’s compliance with applicable statutory and regulatory requirements.² The party is required expeditiously to correct any violations discovered through the audit in a manner which will lead to continuing compliance.³ Other types of audits include EMS auditing (discussed below) and due diligence auditing-often conducted in the acquisitions context-in which a company evaluates the nature and extent of risks it faces from regulated and unregulated materials and practices.⁴

As a regulatory agency, EPA is a strong proponent of compliance auditing. The Policy on Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations promotes compliance auditing through providing incentives to regulated entities that voluntarily discover, promptly disclose, and expeditiously correct violations of environmental requirements.⁵ In addition to providing incentives to companies that voluntarily audit, EPA has also used settlement language to require companies who have a bad track record on compliance to conduct compliance auditing.

A compliance auditing program offers regulated entities the opportunity to identify and address compliance concerns before they become an issue for regulatory authorities. Companies that implement an effective compliance auditing program thus may stand to benefit from a reduced regulatory presence in the future, regardless of whether other incentives are available through the Audit Policy.

In the enforcement context, the Agency has promoted the use of compliance auditing by including auditing provisions in settlement agreements. Two principal models are available. In the first, the company agrees to report the results of its compliance audits to the Agency, perhaps paying stipulated penalties for any violations

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¹See Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations, 65 Fed. Reg. 19617, 19625 (April 11, 2000).

²See Memorandum from Thomas L Adams, Jr., Assistant Administrator, Enforcement and Compliance Monitoring, Final EPA Policy on the Inclusion of Environmental Auditing Provisions in Enforcement Settlements (Nov. 14, 1986); Memorandum from Terrell Hunt and John Seitz, Guidance on Inclusion of Environmental Auditing Provisions in Clean Air Act Settlements (Jan. 27, 1989). See also Enforcement in the 1990’s, Innovative Enforcement Project Report, Office of Enforcement (Sept. 1991).

³See Memorandum from Thomas L Adams, Jr., Assistant Administrator, Enforcement and Compliance Monitoring, Final EPA Policy on the Inclusion of Environmental Auditing Provisions in Enforcement Settlements, Attachment B (Nov. 14, 1986) (examples of cases requiring compliance audits). See also, e.g., In re Owens-Coming Fiberglass Corp., TSCA V-C-101 (TSCA/PCB); In re Union Carbide Corp., TSCA 85-H-06 (TSCA/PMN). In 1990, the Occidental Chemical Corporation paid a \$687,000 penalty and audited forty separate facilities to assure compliance with ACC vinyl chloride requirements in settlement of a CVV VOC case at one facility. Such a settlement would entail: (1) a compliance audit at all facilities; (2) correction of all violations identified by the audits; (3) payment of pre-negotiated “stipulated penalties” for violations uncovered by the audit; (4) maintenance of specified records and submission of required reports; and (5) development of a company-wide management system to assure future compliance.

⁴See William L. Thomas et al., Using Auditing, Pollution Prevention, and Management Systems to Craft Superior Environmental Enforcement Solutions, 30 Env’tl. L. Rep. 10299, 10300 (2000).

⁵65 Fed. Reg. 19617 (April 11, 2000).

uncovered. In a different “audit the audit” approach, the company agrees to perform compliance audits in accordance with a negotiated protocol but, in lieu of reporting the results to EPA or a state regulatory agency, the company contracts with a third-party auditing firm, who in turn audits the company’s auditing program to determine whether it conforms to the agreed-upon auditing criteria written into the settlement agreement. In this model, the independent auditor submits its own audit reports to EPA to identify any deficiencies in the company’s compliance auditing program but does not disclose instances of specific noncompliance.

In addition to deciding what model to use, other issues that the settlement parties must resolve include who should conduct the audits and when the audits should be completed. EPA has taken a neutral position as to whether an audit should be conducted by an internal audit team or by a third party, as long as the team is skilled, knowledgeable, and independent.⁶ However, in the settlement negotiations, EPA may disapprove of an audit plan that fails to provide for an independent third-party auditor not affiliated with the entity, where the compliance history, resource concerns, and seriousness of the violations call into question the capability of the violator to credibly self-audit.⁷ There are obvious cost implications for the firm in acquiring outside assistance to conduct an audit. However, some firms have used outside auditors to advantage, to provide a clean bill of health and a fresh start following well-publicized, compliance problems which can be “capitalized” on in financial and capital markets.

At one time, EPA sought compliance audits principally for the same type of violations that were the subject of the enforcement action. Such audits including those involving multiple facilities-were used primarily in the TSCA and mobile source air programs, but over time, they increasingly were used in connection with other media enforcement actions, including the Clean Air Act (stationary sources), EPCRA, RCRA, the Clean Water Act, and federal facilities enforcement programs. More recently, the Agency has begun requiring multimedia compliance audits that cover other types of violations than those for which the enforcement action was brought, as state and federal enforcers have recognized the need for a comprehensive presence to address numerous company problems. The purpose of EMS audits is to evaluate the effectiveness of the management system, thereby driving continuous improvement of the system and, in turn, of environmental performance.

§ 9:126 Frontier issues and new directions in environmental enforcement—Maximizing environmental results in individual enforcement actions—Auditing and EMS provisions in consent decrees and orders—Environmental management system provisions in settlement Agreements

As a natural outgrowth of its work in the area of compliance auditing, EPA has more recently begun to experiment with including provisions requiring comprehensive environmental management systems (EMSs) in settlement agreements. The Agency’s support for effective EMSs has arisen, in part, out of observations by EPA’s Denver-based National Enforcement Investigations Center (NEIC) and others that lapses in compliance can often be traced to flawed design or implementation of

⁶51 Fed. Reg. 25,006 (July 9, 1986).

⁷See Memorandum from Thomas L Adams, Jr., Assistant Administrator, Enforcement and Compliance Monitoring, Final EPA Policy on the Inclusion of Environmental Auditing Provisions in Enforcement Settlements (Nov. 14, 1986).

environmental management programs.¹ The solution in those cases is to ensure that companies develop and implement a system that will effectively implement and track measures to ensure compliance as well as enhanced overall environmental performance. To help companies achieve this goal, the NEIC has developed a set of key elements for a compliance-focused EMS (CFEMS) model,² which in turn has guided the design of several key settlement agreements.³ Under this model, companies are required to develop and implement a CFEMS manual that contains policies, procedures and standards for twelve “key elements” and must identify other, more detailed procedures and processes that may be located elsewhere at the facility.⁴ The twelve “key elements” enumerated in the CFEMS guidance are: (1) an environmental policy; (2) organization, personnel, and oversight of EMS; (3) accountability and responsibility; (4) environmental requirements; (5) assessment, prevention and control; (6) environmental incident and noncompliance investigations; (7) environmental training, awareness, and competence; (8) environmental planning and organizational decision-making; (9) maintenance of records and documentation; (10) pollution prevention program; (11) continuing program evaluation and improvement; and (12) public involvement/community outreach.⁵

EPA has begun using the CFEMS approach on a broad, corporate-wide basis, most notably in the ASARCO case, which involved a number of discrete enforcement actions combined into two settlement phases.⁶ In the Phase I settlement, ASARCO agreed to implement a comprehensive EMS affecting its corporate operations throughout the United States. The consent decrees for that first phase required the company, in settlement of alleged violations of RCRA and the CWA in EPA Regions 8 and 9, to pay \$6.38 million in penalties, \$52 million toward injunctive relief and approximately \$17-20 million in Supplemental Environmental Projects (SEPs) and establishment of the aforementioned EMS encompassing the company’s facilities in seven states.⁷ In addition to requiring corporate-wide implementation of an EMS blueprint patterned after ISO 14001, specific requirements for several CFEMS elements were laid out in the Phase I settlement including (1) environmental aspects/impacts review (assessment, prevention, and control); (2) environmental requirements identification, and (3) employee environmental awareness and training.⁸

Phase II of the ASARCO settlement involved violations of RCRA in EPA Regions 6 and 8, as well as CWA violations in Region 4. The settlement that EPA reached with ASARCO for Phase II included payment of \$5.5 million in penalties, expendi-

[Section 9:126]

¹William L. Thomas et al., *Using Auditing, Pollution Prevention, and Management Systems to Craft Superior Environmental Enforcement Solutions*, 30 *Envtl. L. Rep.* 10299, 10309 (2000).

²Steven W. Sisk, U.S. EPA, National Enforcement Investigations Center, *Compliance-Focused Environmental Management System—Enforcement Agreement Guidance* (August 1997; revised January 2000) (available at <http://www.epa.gov/oeca/ocft/neic/12elemnr.pdf>) [hereinafter *CFEMS Guidance*].

³William L. Thomas et al., *Using Auditing, Pollution Prevention, and Management Systems to Craft Superior Environmental Enforcement Solutions*, 30 *Envtl. L. Rep.* 10299, 10309 (2000).

⁴Steven W. Sisk, U.S. EPA, National Enforcement Investigations Center, *Compliance-Focused Environmental Management System—Enforcement Agreement Guidance*, 1–2 (August 1997; revised January 2000) (available at <http://www.epa.gov/oeca/ocft/neic/12elemnr.pdf>).

⁵Steven W. Sisk, U.S. EPA, National Enforcement Investigations Center, *Compliance-Focused Environmental Management System—Enforcement Agreement Guidance*, 3–7 (August 1997; revised January 2000) (available at <http://www.epa.gov/oeca/ocft/neic/12elemnr.pdf>).

⁶The consent decrees settling the first phase were *United States v. ASARCO Inc.* (D. Mont. May 5, 1998 and D. Ariz. June 2, 1998) (consent decrees). The consent decree settling the second phase was *United States v. Encycle/Texas, Inc., and ASARCO Inc.* (S.D. Tex. Oct. 6, 1999) (consent decree).

⁷*United States v. ASARCO Inc.* (D. Mont. May 5, 1998 and D. Ariz. June 2, 1998) (consent decrees). The applicable EMS provisions are included in the Montana consent decree.

⁸*United States v. ASARCO Inc.* (D. Mont. May 5, 1998) (consent decree).

ture of approximately \$8 million worth of SEPs and injunctive relief and a commitment by the company to fulfill certain EMS and compliance auditing requirements costing about \$6 million over five years.⁹ ASARCO also agreed to periodic conformance reviews of the environmental compliance audits of designated company facilities to be conducted by independent third-party auditors.¹⁰ These commitments are designed to ensure both that the compliance audits are conducted in conformance with previously agreed-upon protocols and that ASARCO's commitments under Phase I of the settlement agreement—to develop and implement a company-wide comprehensive EMS—are reviewed and verified by independent auditors and completed in a timely fashion. The auditing program, for both EMS and compliance purposes, was to last at least for the five years of the consent decree.

The development of NEIC's CFEMS guidance was influenced in part by voluntary standards developed by the International Organization for Standardization (ISO), such as ISO 14010, 14011, and 14012, which define, in general terms, what is meant by an environmental audit, specifically providing basic principles, procedures, and auditor qualifications.¹¹ It should be noted that these standards do not define the scope, specific audit type (such as compliance audit), or type of compliance-oriented management audits that are typically the subject of enforcement settlements.

§ 9:127 Frontier issues and new directions in environmental enforcement—Maximizing environmental results in individual enforcement actions—Auditing and EMS provisions in consent decrees and orders—Penalty mitigation

Prior to EPA's issuance of its Audit Policy in 1995,¹ media-specific penalty policies allowed for mitigation of penalties for EMS audits and pollution prevention audits, but specifically excluded environmental compliance audits, reflecting the then-current thinking that SEPs should not encompass what should be viewed as sound business practices. EPA's Audit Policy was a departure from this position, offering facilities the new incentive of a 100 percent reduction of gravity-based penalties for violations discovered through an environmental audit or a compliance management system audit, provided that all of the policy's conditions were met.

The Agency's Audit Policy has influenced enforcement settlements that, strictly speaking, are not negotiated under the policy. For example, in a case involving Morton International, Inc., EPA discovered violations at the company's Moss Point, Mississippi, facility, which was purchased by Rohn & Haas in 1999, and then launched a national investigation that found noncompliance at other Morton facilities. In settling the enforcement case that subsequently was brought against Morton, the Agency secured the company's agreement to (among other things) conduct a multi-media compliance audit at each of the twenty-three former Morton facilities in fourteen states.² These comprehensive audits are to be conducted by an independent, third-party at a cost of \$25,000 to \$50,000 per facility. Following the

⁹United States v. Encycle/Texas, Inc. and ASARCO Inc. (S.D. Tex. Oct. 6, 1999) (consent decree).

¹⁰United States v. Encycle/Texas, Inc. and ASARCO Inc. (S.D. Tex. Oct. 6, 1999) (consent decree).

¹¹See ISO 14010 (environmental audit general principles), ISO 14011 (procedures for audits of environmental management systems), and ISO 14012 (auditor qualifications) (September 1996). These guidelines define the general scope of, and minimum requirements for, performing any environmental audit.

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¹The Audit Policy on Self-Disclosure was originally issued on December 22, 1995, at 60 Fed. Reg. 66706. It was subsequently revised and re-issued on April 11, 2000, at 65 Fed. Reg. 19617.

²Press Release, U.S. EPA, U.S., Mississippi Reach Environmental Agreements With Morton; \$20 Million Penalty is Largest-Ever Civil Fine for Environmental Violations at One Facility (Oct. 26,

parameters of the Audit Policy's provisions for violations that are not systematically discovered, EPA agreed to reduce the gravity component of any penalty by 75 percent for violations discovered through the audits, provided there are no aggravating factors.³ Morton also agreed, as part of the settlement, to pay a civil penalty of \$20 million and spend another \$16 million on SEPs. This represents the largest third-party, multi-media audit ever undertaken as a result of an EPA enforcement action.

§ 9:128 Frontier issues and new directions in environmental enforcement—Maximizing environmental results in individual enforcement actions—Auditing and EMS provisions in consent decrees and orders—Access by regulators to audit reports and findings

The issue of access to corporate audit findings is a sensitive one and consists of two components: determining what reports EPA will request and delimiting the scope of EPA access to any audit report generated by the consent decree. The Agency may request the actual audit report in its entirety or a portion or summary thereof. Most compliance audit requirements at least require a high-level management certification—which, if false, creates a risk of criminal liability—and an implementation plan to address problems. In EMS audits, EPA often prudently declines to request formal corporate reports on proposed management changes in order to avoid court oversight of specific internal management practices.¹ In some cases, such as the ASARCO case discussed above, the parties may avoid these issues if the settling facility that is conducting a compliance audit agrees to hire an independent auditing firm to conduct conformance reviews at each of the company's facilities to determine if its compliance audits are being conducted in accordance with the agreed-upon protocol. The independent auditor then prepares audit reports for submission to EPA which identify areas of conformance and instances of nonconformance with the protocol, without identifying violations.

With regard to Agency access to audit reports, EPA has broad authority to gain access to documents and information necessary to determine whether a party is in compliance with the term of a settlement.² This broad authority may be circumscribed by claims of attorney-client privilege, the work product rule, the self-evaluative privilege, and applicable protection for confidential business information.³ EPA's Guidance on draft consent decree language directs EPA attorneys expressly to reserve this right to review audit-related documents that may be developed as part of settlement agreements. This has not, however, been done in practice, reflecting the reluctance of firms to provide EPA with a "blank check" on review of potentially self-incriminating information. State audit privilege laws, enacted by twenty-five states (as of November 2000), have raised questions about the principle

2000). The consent decree settling this action (1:00cv501BrR) was lodged in federal district court in Biloxi, Mississippi on October 26, 2000.

³Press Release, U.S. EPA, U.S., Mississippi Reach Environmental Agreements With Morton; \$20 Million Penalty is Largest-Ever Civil Fine for Environmental Violations at One Facility (Oct. 26, 2000).

[Section 9:128]

¹See § 9:117 (examples of cases with no reporting requirements).

²Memorandum from Thomas L Adams, Jr., Assistant Administrator, Enforcement and Compliance Monitoring, Final EPA Policy on the Inclusion of Environmental Auditing Provisions in Enforcement Settlements, 5 (Nov. 14, 1986). See also Government Institutes, *Federal Requirements to Report and Disclose Environmental Information* (1991).

³See Bleiweiss, et al., *Legal Considerations in Environmental Audit Decisions*, Chem. Engineering Process (Jan. 1987). See also Lynch, *Legal Issues*, in *Environmental Auditing* ch. III (L. Cahill 5th ed. 1987).

of openness and right to review that EPA has sought for audits in enforcement settlements, although many of those states have modified their privilege laws at EPA's request to meet the minimum federal requirements for approval or authorization of federal programs.

While, as noted above, EPA does not view environmental audits as confidential per se, it does recognize that some information contained within audit reports qualifies as confidential business information and must be treated accordingly. This issue can be discussed during settlement negotiations.⁴ The Agency also recognizes that EMS audits and compliance audits are primarily intended to promote system and compliance improvements, rather than to identify violations per se.

EPA's Audit Policy reiterates the Agency's long-standing policy of refraining from routine requests for audit reports.⁵ The Policy strikes a balance between the Agency's need for sufficient information to determine Policy applicability and a self-discloser's desire not to be bound by a blanket requirement to submit audit reports. In general, EPA will request audit reports only when the information is not readily available elsewhere.⁶

§ 9:129 Frontier issues and new directions in environmental enforcement—Harnessing public accountability and involvement in enforcement

There are three basic trends in public involvement in enforcement that are likely to continue to gain in importance over coming years both within and outside of the United States. The first of two of these, access to information and access to decision making in enforcement and justice, mirrored by the Aarhus Convention in Europe on public access to information, decision-making and justice, provide greater public accountability for compliance and environmental performance generally. History has shown that no matter what a country's laws and institutions, without public support, prospects for effective enforcement is greatly weakened. The third trend is the employment of public outreach and the media as a tool for gaining greater levels of compliance.

§ 9:130 Frontier issues and new directions in environmental enforcement—Harnessing public accountability and involvement in enforcement—Public access to compliance and performance information

An EPA priority during the last eight years has been to enhance the account-

⁴Note, however, that the Agency's rights and obligations under the Freedom of Information Act are not considered negotiable.

⁵65 Fed. Reg. 19617, 19625.

⁶The policy states, at Section E.9, that

the regulated entity must cooperate as required by EPA and provide the Agency with the information it needs to determine Policy applicability. The entity must not hide, destroy, or tamper with possible evidence following discovery of potential environmental violations. In order for the Agency to apply the Policy fairly, it must have sufficient information to determine whether its conditions are satisfied in each individual case. In general, EPA requests audit reports to determine the applicability of this Policy only where the information contained in the audit report is not readily available elsewhere and where EPA decides that the information is necessary to determine whether the terms and conditions of the Policy have been met. In the rare instance where an EPA Regional office seeks to obtain an audit report because it is otherwise unable to determine whether Policy conditions have been met, the Regional office will notify the Office of Regulatory Enforcement at EPA headquarters.

65 Fed. Reg. 19617, 19623.

Note many states have gone further than EPA to encourage the use of audit programs as a form of self policing, including not only considering an audit report as a privileged document but also granting immunity from prosecution if the resulting discovery of a violation is voluntary, corrected, and disclosed. See audit privilege and immunity laws discussion in Clifford Rechtschaffen & David Markell, *Reinventing Environmental Enforcement and the State/Federal Enforcement Relationship* 156-60 (Environmental Law Institute 2003).

ability of both EPA and industry by providing the public with systematic information concerning both the environmental performance of the regulated community and EPA's own enforcement and compliance efforts. Public access to data allows communities to monitor environmental conditions and compliance records of nearby facilities and provides additional incentives for businesses to comply with environmental laws. Complementing its "public right to know" programs, EPA also has developed tools to give the public a greater voice in environmental decisionmaking.

The Sector Facility Indexing Project (SFIP) was launched to the public in May 1998 via the Internet (<http://www.epa.gov/oeca/sfi>). SFIP integrates information that the facilities must provide under a number of federal environmental statutes and regulations and gives the public a wide range of environmental information on recent environmental histories and performance of about 650 facilities in five industrial sectors: automobile assembly, pulp manufacturing, petroleum refining, iron and steel, and nonferrous metals industries. SFIP contains easily accessible compliance-related data such as the history of past inspections, compliance with federal regulations, enforcement actions taken, and information on spills and annual releases of chemicals into the environment. It also contains background information on the location and production capacity of each facility, as well as some demographic information on nearby communities. A large portion of the data is provided to EPA by state governments.

SFIP has a number of potential uses for different types of stakeholders. Individual facilities can benchmark their data against those of similar facilities, or simply monitor their own environmental performance. This information can be used by the facility-individually or in concert with its industry trade association-to better understand its compliance problems in order to design effective self-auditing programs or Environmental Management Systems (EMS), or pollution prevention technologies to reduce chemical releases. Both the federal and state governments can use the data to track compliance records in individual sectors, a powerful tool for planning, implementing, and assessing the effectiveness of enforcement and compliance assurance strategies. Giving citizens access to information about the environmental performance of facilities in their communities will encourage greater accountability on the part of nearby facilities.

EPA plans to expand the Sector Facility Indexing Project to include additional industrial sectors and provide chemical releases for programs other than the Toxics Release Inventory. EPA also plans to add facility-level toxicity weights and relative risk to the database, as that information becomes available. EPA also announced in May 2000 that the SFIP will be expanded to include a subset of federal facilities (i.e., facilities that have one or more major permits in at least two of the CWA, CAA or RCRA data bases). The goal is to add the data on federal facilities by the end of 2000.

The 1996 amendments to the Safe Drinking Water Act (SDWA) contained several significant new public-right-to-know requirements to ensure that the American public is informed about the safety of their drinking water. In October 1999, Americans received the first annual "Consumer Confidence Report," on the quality of their local drinking water. Water systems are required to provide consumers with information on the source of their drinking water, contaminants detected, and actions taken when necessary. EPA estimated that 92 percent of the 54,000 community water systems across the country reported to their customers. EPA sent reminder letters or Notices of Violation (NOVs) to the non-reporters and subsequently issued more than 1,500 Administrative Orders to noncompliant systems. EPA, in collaboration with states and local water boards, also distributed public service announcements to alert Americans that they will receive reports about their drinking water quality every year.

The 1996 SDWA amendments contained a second major new “public right to know” requirement. Since 1998 EPA has published an annual report about compliance with drinking water rules, including information about water systems on Tribal lands. The first National Annual Public Water Systems Compliance Report analyzes data for 1996. The second report, issued in 1999, analyzed compliance data for 1997 and found that 92 percent of America’s community water systems, serving 88 percent of the population, reported no violations of health-based drinking water standards. Of the violations observed, 85 percent were violations of monitoring and reporting requirements-not health-based standards-and almost all of the reporting violations occurred at small systems serving under 3,000 people. The reports will help EPA develop targeted enforcement and compliance assistance strategies to ensure compliance by small water systems in the future. EPA also provides the public with information about drinking water at the state, local, and national level on the Internet (<http://www.epa.gov/safewater>).

§ 9:131 Frontier issues and new directions in environmental enforcement—Harnessing public accountability and involvement in enforcement—Public access to decisionmaking and justice

During the past eight years, EPA has taken a number of steps to involve community groups in the environmental decision-making process-especially those groups whose voices have tended to be absent or ignored in the past. EPA created its Office of Environmental Justice in 1992 with the goal of ensuring that minority and low income populations were not disproportionately and adversely impacted by pollution. In order to ensure that the Agency would receive significant input from affected stakeholders, Administrator Browner established the National Environmental Justice Advisory Council (NEJAC) in September 1993. Since the issuance of President Clinton’s February 11, 1994 Executive Order 12898, which directed all federal agencies to make environmental justice an integral part of their policies, programs, and activities, the Council has served as an advisory forum in which stakeholders (academia, community, non-governmental, environmental, industry, and state/local/tribal government groups) can hold substantive and meaningful discussions of how environmental justice can be integrated with EPA priorities and initiatives.

By the end of FY 2000, the NEJAC had seven active subcommittees: Enforcement, Indigenous Peoples; Waste and Facility Siting; Health and Research; International; Air and Water; and Puerto Rico. NEJAC has also been successful in getting other major EPA federal committees to add environmental justice representatives to their membership. The NEJAC has helped the Agency focus its environmental justice agenda through such activities as developing a public forum protocol used as the model for the first Interagency Public meeting on Environmental Justice (Atlanta, 1995) and the first NEJAC/EPA Enforcement Roundtable (San Antonio, 1997). The NEJAC also developed health and research projects to identify high risk communities, conducted public dialogues, and participated in site visits in some cities across the country concerning possible solutions to urban crises resulting from the loss of economic opportunities caused by pollution and the relocation of business.

Since 1994, EPA has awarded more than 530 Environmental Justice Small Grants to assist eligible community groups seeking solutions to local problems. Grants have been used by communities to enhance water and air quality, to develop strategies to combat lead and carbon monoxide poisoning, and to promote pollution prevention, the restoration and reuse of formally vacant lands, and environmental stewardship, among other types of projects. The “lessons learned” from these projects inform communities and show them how to implement similar projects and programs. In 1998, the State/Tribal Environmental Justice Grants pilot program was initiated to assist states and Tribes develop environmental justice programs.

§ 9:132 Frontier issues and new directions in environmental enforcement—Harnessing public accountability and involvement in enforcement—Public outreach and strategic use of the media

One further element of EPA's program to increase the deterrent impact of individual enforcement actions through the use of public outreach and publicity. On the one hand, EPA has expanded its community relations efforts to (1) provide a process for early consultation with all parties affected by a EPA decision or rule, (2) inform members of the regulated community of their responsibilities, and (3) tell well-meaning firms where they can turn (within the states or the Agency) to obtain compliance assistance in meeting their regulatory obligations.¹ EPA understands that reducing regulatory ambiguity and providing front-end consultation will enhance compliance.

Beyond this, however, the Agency seeks aggressively to utilize the public news media and specialized trade press to publicize significant enforcement cases, and important developments in enforcement policy.² EPA's enforcement program views effective publicity to be essential to its efforts to *promote* and focus affirmative private sector efforts to achieve compliance (e.g., environmental auditing), and to *deter* future violations. Outreach about enforcement cases is designed to convey the message that: (1) there is a reasonable expectation that violators will be *caught*; (2) enforcement will *promptly* follow detection of the violation; (3) the Agency will assess civil penalties sufficient to extract the *economic benefit* of noncompliance, and may impose additional punitive sanctions; (4) enforcement actions contribute to the *environmental goals* of the Agency; hence, all noncompliance must be *corrected* and full compliance *achieved* as a consequence of any action; and (5) *criminal* prosecution is possible where misconduct is willful or knowing.

Such conscious and targeted outreach efforts are an essential component of EPA's program to make the public aware that EPA and the states are serious about enforcement, and to make the regulated community aware that violations of the environmental laws yield consequences that are sure and severe.

§ 9:133 Frontier issues and new directions in environmental enforcement—Managing and streamlining enforcement casework¹

The increased number of cases, the long average life of a case,² and the complexity of issues and interests being litigated suggest the need to find ways to streamline the enforcement process. Some of the streamlining techniques discussed below serve simply to help EPA more efficiently run its enforcement programs. Others provide clear benefits for both EPA and the regulated community in the form of increased environmental protection, expedited case resolution, and lower transaction costs.

[Section 9:132]

¹Since the creation of a separate Office of Compliance during the 1994 reorganization of enforcement functions at EPA, compliance assistance efforts at EPA have taken on significantly greater prominence. For example, nationally, OECA has established nine compliance assistance centers to provide compliance assistance to the following sectors: dry cleaners, printers, auto service centers, agricultural, metal finishing, printed wiring boards, chemical industry, local governments, transportation, and paints and coatings. This has been supplemented by regional efforts such as training, workshops, written materials and Internet resources, most of which have been developed and presented on a multimedia, sector basis.

²See "Plan for OECM Communication Strategy Document Development," Memorandum by Thomas L. Adams, Jr., Assistant Administrator for Enforcement and Compliance Monitoring, Sept. 25, 1987, and "Press Release Policy," Memorandum from F. Henry Habicht, March 6, 1992.

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¹By **Peter D. Rosenberg**, updated by **Susan E. Bromm**

²For cases concluded between October 1, 1990 and September 1, 1998, the average time from referral to case conclusion was approximately 440 days.

§ 9:134 Frontier issues and new directions in environmental enforcement—Managing and streamlining enforcement casework—Multi-facility, multi-media settlements, and national enforcement initiatives

To broaden the scope and impact of the federal enforcement program, several techniques have been employed to better leverage individual cases. These techniques include: increased emphasis on multi-media settlement provisions and cases which address all violations at a facility or company at once, comprehensive multi-media compliance inspections at a single facility or other facilities owned and operated by a violating company in preparation for coordinated settlements, packaging similar enforcement actions for similar violations for maximum communication effect in national enforcement initiatives, nationally managed or coordinated settlements, or creative settlement provisions such as supplemental environmental projects which seek broader environmental and compliance goals through settlement provisions.

EPA continues to use national initiatives to address related violations in a particular industry. Recent examples include an FY 99 settlement with seven manufacturers of heavy duty diesel engines for Clean Air Act violations and litigation filed in November 1999 against seven electric utility companies (along with an administrative order against one federal agency) alleging Clean Air Act violations at twenty-four coal fired power plants.¹

An enforcement “initiative” seeks to expand the public visibility and the deterrent impact of individual cases by grouping similar cases together. In an initiative, EPA simultaneously files a number of cases involving the same law or regulation, reflecting a special enforcement emphasis upon a selected industry (electroplaters), regulated activity (pre-manufacture notification), geographic area (Puget Sound) or program area (municipal water treatment).² This approach enhances both the efficiency of managing a given case and its broader media coverage.³ If the company is forthcoming, it can also have a salutary impact on how the settlement is publicized. EPA will continue to seek opportunities for such initiatives. As a result, companies with several similarly-situated facilities may do well by offering a global settlement. As long as fundamental fairness is not offended, such approaches can save substantial transaction costs.

One particular form that more recent enforcement “initiatives” have taken is the so-called “Penalty Cap Programs—Lower Liability for Self-Correction with Deadlines.”⁴ Under these programs, targeted companies are invited to disclose and correct violations, while increasing the risk of enforcement for those not taking advantage of the opportunity to do so. These penalty cap programs share several common features.

[Section 9:134]

¹Press Release, U.S. DOJ, U.S. Sues Electric Utilities in Unprecedented Action to Enforce the CAA (Nov. 3, 1999).

²Firms are included in an initiative if they serve as good examples of the type of conduct EPA seeks to deter or punish. The stronger the case against it, and the poorer its general compliance history, the more likely a firm is to be included in an initiative. In the past, EPA has used initiatives to target violations involving pre-treatment, municipal water discharges, premanufacturing notification, hazardous waste non-notifiers, and Class V UIC wells. More recent initiatives have focused on CAA violations by diesel engine manufacturers and electric utility companies.

³By “batching” cases in this way, EPA can standardize litigation documents, review cases simultaneously, and commit specialized technical and legal staff to one area for a limited period. Enforcement initiatives are accompanied by well-designed “outreach efforts” to publicize the regulatory message with the general public and with specified audiences within the regulated community.

⁴See Eric Schaeffer, “Penalty Cap Programs,” 1 Proceedings of the Fifth International Conference on Environmental Compliance and Enforcement 459 (Monterey, California 1998). This section is drawn from that paper.

- A. The Agency notifies a group of regulated industry that they are, or may be, subject to specific environmental requirements. Usually this notice is personal, directed to the senior corporate manager with responsibility for compliance. It may also be accompanied by a concerted effort to help the companies targeted to understand the requirements and may advertise pollution prevention and other cost-effective options for compliance.
- B. Companies are given a time limited opportunity to disclose and correct violations, subject to a widely publicized and meaningful deadline.
- C. Participants that disclose violations within the deadline and commit to return to compliance receive a greatly reduced penalty. The penalty limits are advertised in advance, either through a fixed amount by reference to a known formula for recovering any economic benefit the violator may have gained from its noncompliance.
- D. Companies that do not take advantage of this time limited offer face a greater risk of future inspection and enforcement.

What lessons might be drawn from EPA's experience with these limited amnesty programs? At a minimum, they should eliminate any doubt about the powerful effect that even the threat of enforcement has in motivating companies to comply. When mini-mills were told they were being targeted for increased inspections but given a chance to disclose and correct first, at least half did so. Surprisingly, participation rates were even higher among family owned gravel-crushing operations. By way of comparison, no mini-mills had stepped forward to voluntarily disclose and correct under EPA's audit policy prior to being notified that they were possible targets for inspection. Even where a broader audience is targeted-such as the tens of thousands of companies responsible for reporting chemical hazard assessments-the response is striking. The 11,000 tests submitted under that initiative were greater than in the entire history of the program. The high level of participation in these efforts suggests that companies will respond rationally when given specific notice of requirements, a tangible limit on liability, and the pressure of a deadline for disclosure and correction.

These CAP initiatives reduce some of the practical impediments to deterrence-based enforcement. Businesses given specific notice of requirements are less able to argue that, "they just didn't understand." Companies that choose not to take advantage of a clear opportunity to self-correct are clearly in a less sympathetic position should their violations later be discovered through an enforcement action. The government obtains information about compliance at a much faster rate than could be obtained by relying on enforcement alone.

The benefits, of course, are not limited to the enforcement program, but extend to the regulated industry as well. Offering a limited opportunity to correct may provide a little breathing space for both government and regulated industries to better understand how a particular set of requirements applies to a specific sector. Companies that came forward under the mini-mill initiative were able to clarify that certain operations were not subject to potential "new source" permit standards, thereby avoiding wasting resources on unnecessary controls. And most significantly, companies can volunteer to comply without suffering the stigma of a hostile enforcement action.

The EPA faces new challenges as it considers expanding this approach. To be credible, the Agency must make good on its threat of follow-up inspections and enforcement. The actions taken against gravel crushing operations helped illustrate the cost of recalcitrance, and agencies must anticipate the time and resources needed for such efforts. Interestingly, industries that do participate in voluntary initiatives often demand that action be taken against recalcitrant parties to ensure that the latter do not win an economic advantage by avoiding compliance costs.

EPA's initiatives thus far have generally targeted requirements that do not require significant capital expenditures for compliance such as chemical use reporting. Whether the same level of response can be obtained for more expensive violations remains to be seen. The high cost of compliance with these programs might encourage some companies to resist making the necessary investments, forcing the Agency to litigate each case to conclusion. On the other hand, under EPA's penalty policies, the higher the cost to comply the higher the sanctions for avoiding these costs. CAP programs that make it more difficult to plead ignorance of the law and that include a credible threat of follow-up enforcement could make delay strategies much riskier.

Enforcement actions deter violations by increasing anxiety alone about the potential high cost of noncompliance. Incentive programs make constructive use of that concern by providing the opportunity to self-correct violations at a lower cost. Penalty cap programs that maintain a creative tension between anxiety and opportunity seem to have struck a responsive chord in the business community, and they may offer the most realistic incentives to comply. If so, these programs may offer the greatest hope for compliance with the laws that protect our environment.

§ 9:135 Frontier issues and new directions in environmental enforcement—Managing and streamlining enforcement casework—Using Alternative Dispute Resolution (ADR) techniques to foster enforcement settlements

Another approach which promises to help streamline casework is the use of alternative dispute resolution techniques, or ADR, to resolve enforcement actions. ADR employs neutral third parties to facilitate communications between parties, explore possible solutions, determine factual issues, or to ultimately resolve part or all of a case.¹

ADR has long been used in the private sector to resolve commercial and contractual disputes. EPA is working towards the goal of routinely considering the use of ADR whenever it might result in a more equitable or efficient resolution of an environmental dispute.² EPA believes that ADR will reduce the “transaction costs” to both government and industry of environmental litigation in appropriate cases.

[Section 9:135]

¹A neutral may perform any one of the following functions:

Mediation: the facilitation of negotiations by a neutral who has no power to decide the issue, but who fosters settlement by scheduling the structuring negotiations, acting as a catalyst between the parties, focusing the discussions, facilitating exchanges, and/or assessing-but not judging-the parties' positions;

Arbitration: facilitates resolution by employing a neutral to hear all or part of the factual, legal or policy issues in a case. Depending upon the agreement of the parties, arbitration can be binding or non-binding. Arbitration is less formal than court proceedings, using relaxed rules of evidence and other time-saving devices. EPA is evaluating what legal limitations may apply to its use of binding arbitration. Binding arbitration *is* authorized in small Superfund cost recovery cases.

Fact-Finding: an investigatory process which seeks to narrow factual issues by assigning matters to a neutral with subject matter expertise for determination. The process may be binding or nonbinding, but if the parties agree, the result may be admissible as an established fact in any subsequent proceeding.

Mini-Trials: permits parties to present their case (or agreed portions thereof) to principals who have authority to settle the dispute (*i.e.*, a company vice-president and a senior EPA official). Following the presentation, the principals reinstitute negotiations, possibly with the aid of a neutral referee. Mini-trials narrow factual issues and give parties a more realistic view of the strengths and weaknesses of their case.

²Memorandum by Lee M. Thomas, Final Guidance on the Use of Alternative Dispute Resolution in EPA Enforcement Cases, Aug. 14, 1987, sets procedures for selecting cases for ADR consideration, outlines detailed qualifications and ethical standards for the selection of neutrals, and provides for the payment of EPA's share of ADR costs. It also includes as appendices detailed guidance on the use of

The Agency has used ADR to facilitate settlements of both judicial and administrative actions under CERCLA, RCRA, FIFRA, TSCA, EPCRA, the CWA and CAA. It has also used ADR to support private party allocation disputes and to facilitate public participation and related decisions under CERCLA. It is beginning to bring ADR professionals into the development of brownfields and had also included ADR as the dispute resolution mechanism in consent decrees and agreements. In FY's 97 and 98, ADR use accelerated significantly over prior years. In FY 97, ADR use was initiated in 72 cases; in 98, 116 cases. This compares to a total of 43 cases for FYs 95 and 96 combined.³ Mediated cases have ranged from two party disputes to Superfund cases involving 1200 parties.⁴

ADR may breathe new life into a case which is stalled or otherwise at an impasse.⁵ Placing technically complex questions before a neutral with specialized technical expertise can foster resolution and avoid the risk that a nonspecialized judge may order an inappropriate, or unworkable remedy. At the other extreme, the simplicity of routine actions may motivate parties to pursue ADR. Where a neutral can foster resolution of a routine matter before the case is filed, both the EPA and the company benefit. The number of parties in a case may justify the use of a neutral to help organize multiple defendants or plaintiffs, facilitate agreement on the phasing and progress of the litigation, and identify severable questions for resolution. Case-management problems alone may motivate parties in large Superfund cases to seek outside assistance, particularly on questions relating to allocations.

In a case involving access to a public water supply, the residents of the surrounding community, federal, state and local officials all expressed great interest in participating in the resolution of the problem. Parties representing all of these interests entered into a mediation agreement and obtained the services of a professional mediator. EPA experts were enlisted to provide technical advice to all of the interest parties.

ADR is not appropriate for all types of environmental enforcement cases, for example enforcement cases which present precedential questions of law or policy. Also, EPA's willingness to consider ADR does *not* imply that the government would settle a case using ADR on terms which are less favorable, or less protective of the environment than it would accept through the familiar approach of litigation and negotiation.

EPA continues to utilize the principles of ADR (consensus-building, facilitation, mediation) to augment internal policymaking, as well as regulatory standard setting and decisionmaking. The Agency's leadership in utilizing neutral third parties to facilitate rulemaking is well documented.⁶ A number of regulatory issues have arisen in the implementation of various regulatory programs. These frequently present questions about whether certain common deviations from a strict perfor-

each ADR technique, and provides model ADR agreements for each technique. It calls upon each Regional Administrator to review his docket of developing and active cases and nominate cases for ADR consideration.

³Also of interest, while the use of ADR in CERCLA disputes has remained relatively steady in recent years, its use in regulatory enforcement cases has escalated sharply.

⁴The Alternative Dispute Resolution Fact Sheet, OECA, May 1995.

⁵Impasses arise from personality conflicts between counsel, poor communication between parties, inflexible negotiating postures, inability to design a remedy, unique equities which render standard settlement approaches inappropriate, the presence of multiple parties with opposing interests, or complex issues of public policy or political reality. An experienced neutral may stimulate and focus negotiations, or provide a creative vision which had evaded the parties.

⁶EPA's Regulatory Negotiations ("Reg Neg") Project reflects another important ADR initiative which is beyond the scope of this Section, but warrants close scrutiny.

mance standard should trigger an enforcement action.⁷ In addition to these policy issues, other Agency decisions, such as the permitting of an incinerator or the cleanup of an industrial disposal facility, may be enhanced by utilizing a neutral third party as convenors, facilitators, or mediators. A number of such actions may arise from EPA's current enforcement initiative on ADR, and these initiatives should be encouraged where possible as cost-effective alternatives to judicial enforcement.

§ 9:136 Frontier issues and new directions in environmental enforcement—Managing and streamlining enforcement casework—Field citations and other informal administrative actions

In its efforts to streamline administrative enforcement, EPA has identified three administrative techniques to minimize formality and delay. In certain matters, these may present efficient avenues for case resolution.¹ These are:

- *In-Field Notice of Violation (NOV)* is a notice of violation issued in the field by an inspector at the conclusion of his inspection. It notes violations, requires remedial action, but does not assess a penalty.
- *Field Citation* is a notice issued by an inspector in the field for minor violations noted in the inspection. An “environmental traffic ticket,” it assesses a penalty. Firms are required to remedy all violations *and* pay the assessed fine or timely request a formal administrative hearing. When the firm certifies that it has corrected the violation and pays the penalty, the case is resolved.
- *Short-Form Complaint with Settlement Conditions* is a standardized and abbreviated administrative complaint issued from EPA's offices shortly after an inspection. It proposes a penalty and presents EPA's bottom-line settlement proposal. If the firm accepts the offer (compliance and penalty), the case is resolved.

Because these techniques operate with minimal supervisory or legal review, they are applied only to minor or technical (not substantive) violations (1) resulting in no serious actual harm to health or the environment, (2) presenting no factual ambiguity or questions of proof, (3) which can be easily remedied by straightforward action by the violator, and (4) which warrant only small penalties.

These expedited procedures can increase the timeliness of the enforcement response to minor violations. They can expand EPA's regulatory presence in programs which operate at the “retail” level, covering large numbers of facilities (for example, nozzle-size standards which apply to all gas stations; pesticides use restrictions, PCB labelling requirements). They may be used effectively in new programs covering widespread but previously unregulated activities where a large number of minor violations are expected, or in mature programs where compliance has generally been achieved, but where a residual enforcement presence is needed.

⁷The open burning of non-hazardous waste by New England townships, or the in-stream treatment of discharges from mining operations, are recent examples of complicated compliance policy questions the resolution of which may be enhanced by broadly representative mediation.

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¹At the federal level, field citation programs have been formally established in the Mobile Source (Clean Air) and RCRA Underground Storage Tank Programs with pilot projects in pesticides and polychlorinated biphenyls enforcement. There is also a rulemaking under development to implement the legislative provision for field citation enforcement in the Clean Air Act Amendments, Title VII, subsection 113(d)(3). Procedures were proposed on May 3, 1994 (59 Fed. Reg. 22776), but have not to date been issued as final.

§ 9:137 Frontier issues and new directions in environmental enforcement—Managing and streamlining enforcement casework—Citizen awards program

Section 133(f) of the Clean Air Act authorizes EPA to pay awards of up to \$10,000 to individuals who furnish information or services that lead to a criminal conviction or payment of civil penalties.¹ In 1997, EPA initiated this program by paying out twenty such awards, ranging from \$300 to \$10,000, for information and services that led to concluded enforcement cases for violations of CFC and asbestos regulations.

§ 9:138 Frontier issues and new directions in environmental enforcement—Measuring performance of environmental enforcement and compliance assistance programs

The overview of issues and trends section above cites the addition of assistance and incentives to programs historically focused on deterrence through enforcement. The increasing use of a wider range of tools has been accompanied by trends in results-based management and greater accountability which has necessitated the need for more routine, and more meaningful, performance measurement.

The access to and employment of multiple enforcement and compliance tools is believed to yield greater environmental benefits. The access to a variety of tools allows regulators to choose the most appropriate and effective tool, or combination of tools, for a given environmental or noncompliance problem. However, without meaningful performance measures, the benefits achieved are unknown, and the relative effectiveness of the tools employed remains speculative. Thus, the use of multiple tools as well as the demand for greater accountability have necessitated the need for improved performance measures.

For many years, the standard enforcement measures used were “output measures” or simply counts of enforcement activity such as number of inspections or number of civil and criminal actions initiated and concluded. Counting activities may be an adequate reflection of how the regulatory program is addressing perceived problems, but falls short of demonstrating whether or not the problems are actually being addressed, to what degree, and by which tool(s). Such measures do not measure environmental results achieved or characterize the state of compliance in regulated populations.

The Government Performance and Results Act (GPRA) requires federal agencies to establish more results-oriented measures or “outcome measures.” Such measures focus on the results being achieved by various activities. These can reflect changes in behavior of regulated entities, improvements in compliance, or indicators of progress in addressing an environmental problem, risk, or threat—all occurring, at least in part, as a result of regulatory activity.

In 1997, OECA initiated the development of the National Performance Measures Strategy (NPMS), a strategy to identify, design, implement, and use an enhanced set of performance measures. Enhanced refers to the retention of enforcement outputs supplemented by outcome measures to create a complete profile of measures with which to measure program effectiveness. This profile, referred to as the “Performance Profile,” includes output and outcome measures for all enforcement and

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¹EPA proposed regulations for implementation of the program on May 3, 1994, 59 Fed. Reg. 22776.

compliance assurance tools, including assistance, incentives, enforcement, and various combinations of these tools.¹

Utilizing a profile of measures that includes output and outcome measures from nearly all available enforcement tools has several benefits. First, regulators will be able to evaluate the performance of programs based on the actual results rather than just the type and amount of enforcement activity. Second, regulators will be able to analyze fluctuations in, and relationships between, outputs (activities) and outcomes (results) including: linking activities (outputs) to results (outcomes); comparing and evaluating outcomes produced by various outputs; comparing outcomes from various tools or initiatives; tracking compliance levels for specific populations over time; analyzing the mix of outputs and outcomes that influence compliance levels; linking resources to outcomes, and estimating costs per unit of outcomes; and, analyzing output and outcome contributions to improvement in environmental indicators. Finally, by using a complete set of performance measures, there will be enhanced accountability to stakeholders who can have at once a complete picture of the enforcement and compliance assurance program activities and the results of these important programs.

Despite all of the attention that has been devoted to defining and using measures of environmental enforcement and compliance performance, this remains a frontier issue. How best to tell the enforcement and compliance story, hold responsible entities accountable, and guide strategic program direction presents both domestic and international challenges: domestic challenges to manage decentralized operations and oversee state enforcement in an even-handed manner and international challenges to assess whether obligations are being met under multilateral environmental agreements. Underlying all of this is the cost of collecting credible data and turning it into credible information.

§ 9:139 Frontier issues and new directions in environmental enforcement—International cooperation in environmental enforcement and international environmental crime

The past decade has seen enormous growth in international recognition of the importance of environmental compliance and enforcement and in levels of cooperation on a global, regional, and bilateral basis for peer networking, capacity building and enforcement cooperation. This is a trend that will only get stronger over coming years. The International Network for Environmental Compliance and Enforcement (INECE)¹ evolved from its early roots in 1984 and bilateral exchanges between the Dutch Ministry of Housing, Spatial Planning, and the Environment and the U.S.

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¹See Guide for Measuring Compliance Assistance Outcomes (OECA, EPA, 2002).

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¹INECE had its early roots in bilateral exchanges between the U.S. EPA and the Netherlands' Ministry of Housing, Spatial Planning, and the Environment (VROM) under a Memorandum of Understanding (1985). These exchanges were inspired by three widely circulated case studies commissioned by the OECD on the approaches employed in the United States, The Netherlands, and the United Kingdom. These case studies were commissioned in 1984 by the OECD Group of Economic Experts when they recognized that compliance monitoring and enforcement were important drivers for the "polluter pays principle" and that countries needed to find ways to improve the efficiency and effectiveness of these functions to achieve improvements in environmental performance, public health, and the environment. Following productive bilateral exchanges, U.S. EPA and VROM sponsored the first International Enforcement Workshop, which was held in 1990 in Utrecht, The Netherlands. The International Network for Environmental Compliance and Enforcement (INECE) name and mission were adopted in January 1997, in the Hague, The Netherlands, by an International Executive Planning Committee (EPC) preparing for a Fifth International Conference on Environmental Compliance and Enforcement. The establishment of the INECE was a result of the expanding partnership and a decade of accomplishments from a succession of four previous biennial international conferences. More

EPA to an international network for this purpose for over 130 countries and international organizations. A thirty-member Executive Planning Committee with broad regional representation including the United Nations Environment Program and World Bank lead the informal partnership with support of a Secretariat housed in an international NGO, currently the Institute for Governance and Sustainable Development and in past years, the Center for International Environmental Law, the Environmental Law Institute, and World Wildlife Fund.

The 1990 workshop in Utrecht, The Netherlands set the stage for INECE, leading to 1) a succession of follow-up conferences and exchanges with ever broader sponsorship and participation;² 2) an International agenda and mandate for environmental enforcement stemming from the United Nations Conference on Environment and Development (UNCED) in June of 1992 which took account of the workshop in Utrecht and adopted the mandate of effective environmental compliance and enforcement programs as a critical element of environmental management in Agenda 21;³ 3) collaborative International Principles, Frameworks, and Workshops;⁴ 4) regional networking;⁵ and 5) growing practitioner-based literature on lessons learned, state

importantly, it served to signal a shift in emphasis from exchange of experience to an ongoing effort to support practitioners worldwide and provide a unique and sustained focus on environmental compliance and enforcement, the performance end of environmental law. For information on INECE, see www.inece.org or contact the INECE Secretariat through the website.

²A first international workshop on environmental compliance and enforcement was held in Utrecht, The Netherlands in 1990; a second Conference was held in Budapest, Hungary in 1992; the Third International Conference was held in Oaxaca, Mexico in 1994; the Fourth International Conference was held in Chiang Mai, Thailand in 1996; the Fifth in Monterey, California, United States in 1998; the Sixth in San Jose, Costa Rica; and the Seventh in Marrakech, Morocco.

³A common set of principles, frameworks, and definitions, which respect differences that exist among States in national legal systems, cultures, and traditions, while reflecting shared program elements in the area of environmental enforcement and compliance, is articulated in Ch 9, of Agenda 21. They include the following:

- (1) Enforceable, effective laws, regulations, and standards based on sound economic, social, and environmental principles and appropriate risk assessment, incorporating sanctions designed to punish violations, obtain redress, and deter future violations;
- (2) Mechanisms for promoting compliance;
- (3) Institutional capacity for collecting compliance data, regularly reviewing compliance, detecting violations, establishing enforcement priorities, undertaking effective enforcement, and conducting periodic evaluations of the effectiveness of compliance and enforcement programs; and
- (4) Mechanisms for appropriate involvement of individuals and groups in the development and enforcement of laws and regulations on environment and development.

⁴Principles and frameworks for environmental enforcement presented and well received at the Utrecht Workshop, based on human behavior change and the need for a broad based range of actions and disciplines, including both “carrots and sticks,” were adopted as a basis for international exchange at the second conference in Budapest. At the request of Poland, following their participation in the Utrecht Workshop, Principles of Environmental Enforcement was developed as an international training course by U.S. EPA, collaborating with VROM, Poland, and other countries at Utrecht. The third conference launched UNEP workshops on “institution building for industrial compliance” and demonstrated that the Principles and institution building workshops were applicable to all areas of environmental law, to green and brown issues alike.

⁵The Utrecht Workshop inspired the creation of the first of many regional networks. The first regional network for environmental law implementation and enforcement for member states of the European Union (IMPEL) was created in 1991 at the initiative of the United Kingdom and the Netherlands. It was modeled in part after U.S. EPA’s State-Federal enforcement Steering Committee discussed in Utrecht. At the third conference in Oaxaca, the spontaneous initiative of participants from the Americas in their “Oaxaca Declaration” called for an informal hemispheric network to help develop, implement, and enforce environmental law. This, coupled with the success of the IMPEL network and similar networks in North America and Central America, sowed the seeds for the commitment from the 200 participants at the Fourth International Conference in Chiang Mai, Thailand, in 1996 to seek to create or build enforcement into existing regional and sub regional networks linked informally with the global network that was emerging from these conferences. At this writing, over

of the art practices, and capacity building reports on comparative experiences.⁶ The work programs are now moving into collaborative delivery of training and ongoing forums to support enforcers with implementation and training materials, contacts and sources of scientific, technical and legal information, assistance and expertise. At this writing there are nine active Forums for INECE practitioners including Forums on water, wildlife, hazardous waste, illegal logging, indicators, inspectors, ozone, pesticides, and public access to information.

The growth of INECE is only one of several developments that signal the growing importance accorded environmental compliance and enforcement. Interpol, the International Organization of Police, has established an environmental crimes unit, and this work has led to unprecedented levels of cooperation in addressing international environmental crime.⁷ The G-8 environment leaders meeting in May of 1997 in Miami, Florida included environmental enforcement on their agenda for the first time. This led to a strongly worded statement on the fundamental importance of compliance with domestic environmental laws to punish and deter environmental violations, to ensure fairness for those who pay the costs associated with environmental compliance, and to provide a basis and give incentives for voluntary efforts to improve environmental performance. They agreed to improve the integration of environmental enforcement with traditional law enforcement and to enhance support for emerging international cooperative efforts among their governments and international bodies. Specific note is made to collective efforts to thwart illegal trade under international environmental law, particularly noting concern about such illegal shipments that have adverse impacts on developing countries.

To support the growing interest in securing the effectiveness of international environmental agreements and laws, UNEP embarked on an effort to develop framework guidelines for multilateral agreements that articulate the elements of an effective national program that will form the basis of a more concerted effort to effect improvements in this next phase of development of environmental institutions, relationships, and capacities essential to realize the benefits anticipated from

eleven regional networks have been established and funded out of a potential of twenty-two such networks. *See also* "Guiding Principles to Reform the Environmental Enforcement Authorities in Transition Economies of Eastern Europe, Caucasus, and Central Asia," published by the OECD and adopted by the countries in the region as a basis for their regional network.

⁶*See* International Network for Environmental Compliance and Enforcement, Index of Conference Proceedings Papers-Discussions-Studies, Utrecht, The Netherlands, May 8-10, 1990; Budapest, Hungary, September 22-25; 1992 Oaxaca, Mexico, April 25-28, 1994; Chiang Mai, Thailand, April 22-26, 1996; Monterey, California, USA November 16-20, 1998 (Jo Gerardu and Cheryl Wasserman, eds.). *See also* San Jose, Costa Rica, April 15-19, 2001, and Marrakech, Morocco, April 9-15, 2005 (INECE Secretariat). The Utrecht conference began a tradition of publication and wide dissemination of conference proceedings with papers by practitioners sharing lessons learned. Each successive conference added to what has become a unique and growing literature. The introduction of special topic workshops captured state of the art practice, as did collaborative development of capacity building reports to enrich discussions and support activities following conferences by comparing implementation and identifying support materials. *See* Making Law Work, Volumes 1 and 2 (Durwood Zaelke, Donald Kaniaru and Eva Kruzikova eds., Cameron May Ltd., 2005) (a compilation of papers from INECE and its partners).

⁷S. Klem, "The Role of Interpol in Environmental Enforcement," 2 Second International Conference on Environmental Compliance and Enforcement 149-50 (Budapest, Hungary 1992); Earl Devaney & Michael J. Penders, "The G-8 Mandate for Expanded Cooperation to Combat International Environmental Crime, Recent Developments in the United States, and a Case Study: Project Exodus Asia" 1 Proceedings of the Fifth International Conference on Environmental Compliance and Enforcement 337-46 (Monterey, California 1998). *See also* Andrew Lauterback and William Clark, "Interpol's Emessage," 7th International Conference on Environmental Compliance and Enforcement, Marrakech, Morocco, 2005.

environmental law.⁸ The new proposed UNEP program on environmental law, Montevideo III, also gives implementation and enforcement top priority. Both the framework and environmental law work program for the next decade are still under development at this writing, but clearly build upon the frameworks and principles that are now well accepted. These frameworks will serve as the foundation for a major international push to ensure there are more effective laws, institutions, and capacity in all nations to fully implement and enforce environmental laws with the full range of tools to both encourage and compel compliance as well as mechanisms for global, regional, and bilateral cooperation.

§ 9:140 Frontier issues and new directions in environmental enforcement—International cooperation in environmental enforcement and international environmental crime—NAFTA’s investment protections and the division of authority for land use and environmental controls¹

The North American Free Trade Agreement (NAFTA)² contains various “investor protections,” including a provision requiring signatory governments to compensate property owners if the government either expropriates property or takes “measure[s] tantamount to . . . expropriation.”³ That provision, known as Chapter 11, recently was used to force Mexico to pay compensation to Metalclad, an American corporation that owned a hazardous waste facility in the municipality of Guadalupe, when local and provincial environmental and land use controls prevented the facility from opening.⁴ Similarly, the expropriation provisions of Chapter 11 are now the centerpiece of a \$1 billion claim by a Canadian corporation that California regulations requiring the phaseout of the gasoline additive MTBE effected a “regulatory taking” by reducing the Canadian company’s market for methanol, a substance used to produce MTBE.⁵

It is still too early to judge just how broadly the arbitral panels will interpret the expropriation provisions of Chapter 11, but *Metalclad* and pending NAFTA regulatory takings claims have the potential to upset many aspects of land use and environmental law. I’ve explored in another article the ways in which arbitral interpretations of NAFTA’s expropriation provisions may pressure Congress and state legislatures, as well as state and federal courts, to interpret the Fifth Amendment’s Takings Clause more favorably for property owners.⁶ Several scholars have noted the effect the provisions may have in chilling regulators from adopting environmental and land use measures.⁷ Another implication of the provisions is the potential they have to affect the allocation of authority for land use and

⁸See “UNEP Guidelines on Compliance with and Enforcement of Multilateral Environmental Agreements,” adopted in February of 2002.

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¹Vicki Been.

²Canada-Mexico-United States: North American Free Trade Agreement (Dec. 17, 1992), 32 I.L.M. 289 (1993) (Chs. 1-9), 32 I.L.M. 605 (1993) (Chs. 10-22) [hereinafter NAFTA].

³NAFTA, 32 I.L.M. 605, 641, Art. 1110. NAFTA’s Article 1110 is discussed later in this section. Its expropriation provision is roughly styled after the Fifth Amendment of the U.S. Constitution, which provides in relevant part: “[N]or shall private property be taken for public use, without just compensation.”

⁴See this section notes 84-116 and accompanying text.

⁵See this section notes 120-139 and accompanying text.

⁶Been, *The Global Fifth Amendment: NAFTA’s Investment Protections and the Misguided Quest for an International “Regulatory Takings” Doctrine* (manuscript 2002).

⁷See, e.g., Dhooge, *The North American Free Trade Agreement and the Environment: The Lessons of Metalclad Corporation v. United Mexican States*, 10 Minn. J. Global Trade 209 (2001); Gantz, *Reconciling Environmental Protection and Investor Rights under Chapter 11 of NAFTA*, 31 *Env’tl. L.*

environmental regulation among the federal, state and local governments, as well as their potential to shift the boundaries between environmental and land use law.

This discussion is a narrow one. It takes no stand on whether the “takings” provisions in NAFTA and other investor protection or free trade agreements are, on balance, wealth-maximizing or desirable from some other normative perspective.⁸ Nor does it take a position on whether the existing allocation of authority for land use and environmental regulation among federal, state, and local governments is optimal.⁹ Instead, the goal is simply to highlight the consequences investor protection provisions could have for that allocation, and thereby seek to ensure that those consequences are taken into account in discussions about the wisdom of including such protections in bilateral and multilateral free trade or investment agreements.

The discussion proceeds as follows: It provides a brief sketch of the content and reach of investor protection provisions and of the investor-state dispute mechanism by which the provisions can be enforced by private investors. It then reviews the arbitral awards already rendered under NAFTA and argues that they interpret the investor protection provisions more broadly than U.S. courts have interpreted the Fifth Amendment. It also previews pending claims that may expand the scope of the protections even further. The discussion then analyzes how the federal government might respond to awards by seeking to recoup damages from the state or local government responsible for the regulation held to violate NAFTA and by seeking to dissuade state and local governments from enacting regulations that might trigger NAFTA complaints. The discussion then describes the implications those federal responses might have for the division of responsibility for land use and environmental law among the federal, state, and local governments, and between land use and environmental regulators. Finally, the discussion addresses how those implications might be considered in current debates about new investor protection agreements.

Overview of investor protection provisions in bi- and multi-lateral trade agreements

NAFTA is just one component of a vast network of more than 1500 bilateral¹⁰

Rep. (Env'tl. L. Inst.) 10646 (June 2001); Greider, *The Right and US Trade Law: Invalidating the 20th Century*, *The Nation*, Oct. 15, 2001, available at: <http://www.thenation.com/doc.mhtml?i=20011015&s=greider>.

⁸*But see* Been, *The Global Fifth Amendment: NAFTA's Investment Protections and the Misguided Quest for an International "Regulatory Takings" Doctrine* (manuscript 2002).

⁹For a flavor of the debate, *see, e.g.*, Butler & Macey, *Externalities and the Matching Principle: The Case for Reallocating Environmental Regulatory Authority*, 14 *Yale L. & Pol'y Rev. & Yale J. on Reg. (Symposium Issue)* 23, 31 n.19, 42-45 (1996); Engel, *State Environmental Standard-Setting: Is There a "Race" and Is It "to the Bottom"?*, 48 *Hastings L.J.* 271 (1997); Esty, *Revitalizing Environmental Federalism*, 95 *Mich. L. Rev.* 570, 597-98 (1996); Krier, *On the Topology of Uniform Environmental Standards in a Federal System—And Why It Matters*, 54 *Md. L. Rev.* 1226, 1236-37 (1995); Revesz, *Federalism and Environmental Regulation: A Public Choice Analysis*, 115 *Harv. L. Rev.* 553 (2001); Revesz, *The Race to the Bottom and Federal Environmental Regulation: A Response to Critics*, 82 *Minn. L. Rev.* 535 (1997); Revesz, *Federalism and Interstate Environmental Externalities*, 144 *U. Pa. L. Rev.* 2341 (1996); Revesz, *Rehabilitating Interstate Competition: Rethinking the "Race to the Bottom" Rationale for Federal Environmental Regulation*, 67 *N.Y.U. L. Rev.* 1210, 1233-44 (1992); Sarnoff, *A Reply to Professor Revesz's Response in "The Race to the Bottom and Federal Environmental Legislation"*, 8 *Duke Env'tl. L. & Pol'y F.* 295 (1998); Sarnoff, *The Continuing Imperative (But Only from a National Perspective) for Federal Environmental Protection*, 7 *Duke Env'tl. L. & Pol'y F.* 225, 285-86 (1997); Stewart, *Environmental Regulation and International Competitiveness*, 102 *Yale L.J.* 2039, 2058-59 (1993); Stewart, *International Trade and Environment: Lessons from the Federal Experience*, 49 *Wash. & Lee L. Rev.* 1329, 1343-44 (1992); Swire, *The Race to Laxity and the Race to Undesirability: Explaining Failures in Competition Among Jurisdictions in Environmental Law*, 14 *Yale L. & Pol'y Rev. & Yale J. on Reg. (Symposium Issue)* 67, 101 (1996); Williams, *Panel IV: Culpability, Restitution, and the Environment: The Vitality of Common Law Rules*, 21 *Ecology L.Q.* 559, 560-61 (1994).

¹⁰Price, *The Management and Resolution of Cross Border Disputes as Canada/U.S. Enter the 21st Century: Chapter 11-Private Party vs. Government, Investor-State Dispute Settlement: Frankenstein*

(BITs) and multi-lateral agreements¹¹ that have come into force over the past few decades. More than 160 nations have entered into such agreements, including many transitional economies and developing countries.¹²

The expropriation provisions of NAFTA's Chapter 11¹³ require that:

[n]o Party may directly or indirectly nationalize or expropriate an investment of an investor of another Party in its territory or take a measure tantamount to nationalization or expropriation of such an investment ("expropriation"), except:

- a. for a public purpose;
- b. on a non-discriminatory basis;
- c. in accordance with due process of law and Article 1105(1) [providing for minimum international standards of treatment, including fair and equitable treatment]; and
- d. on payment of compensation in accordance with paragraphs 2 through 6 [which require compensation at fair market value, to be paid without delay, with interest].¹⁴

NAFTA mandates that all four requirements must be met; the fact that a measure is a legitimate and nondiscriminatory police power regulation does not exempt the government from the obligation to compensate investors for harm to their property interests.

The investor protection provisions of typical BITs contain several other elements that are important to understanding the limits NAFTA may impose on land use and environmental regulations. The following subsections explore those provisions.

The investor protections

The investor protections, called "disciplines," begin with two requirements akin to

or Safety Valve?, 26 Can.-U.S. L.J. 107, 108 (2000) ("[L]ooking from the vantage point of the year 2000, more than 1500 bilateral investment treaties have been signed. Most of them have provisions nearly identical to those found in NAFTA Chapter 11, including the feature of investor-state dispute settlement.").

¹¹In addition to NAFTA, *see, e.g.*, Energy Charter Treaty (Lisbon, Dec. 17, 1994), 34 I.L.M. 360 (1995).

¹²UNCTAD, Trends in International Investment Agreements: An Overview (United Nations 1999). *See also* Vandeveld, The Political Economy of a Bilateral Investment Treaty, 92 Am. J. Int'l L. 621 (1998) (1300 agreements).

¹³For discussions of how NAFTA's investor protection provisions compare with those of other bilateral and multilateral agreements, *see, e.g.*, Bergman, Bilateral Investment Protection Treaties: An Examination of the Evolution and Significance of the U.S. Prototype Treaty, 16 N.Y.U. J. Int'l Law & Pol'y 1 (1983); Dearden, Arbitration of Expropriation Disputes Between an Investor and the State under the North American Free Trade Agreement, J. World Trade, Feb. 1995, at 119-20 (considering the "tantamount to expropriation" language an expansion of traditional doctrine); Dolzer, Indirect Expropriation of Alien Property, 1 ICSID Rev. Foreign Investment L.J. 41 (1986); Price, The Management and Resolution of Cross Border Disputes as Canada/U.S. Enter the 21st Century: Chapter 11-Private Party vs. Government, Investor-State Dispute Settlement: Frankenstein or Safety Valve?, 26 Can.-U.S. L.J. 107, 108 (2000); Seidl-Hohevelde, Semantics of Wealth Deprivation and Their Legal Significance, in Foreign Investment in the Present and a New International Economic Order 218, 238 (D. Dicke ed., 1987); Waelde & Kolo, Renegotiating Previous Governments' Privatization Deals: The 1997 U.K. Windfall Tax on Utilities and International Law, N.W. J. Int'l L. & Bus. 420 (1999).

For the texts of various existing and proposed multi-lateral agreements, *see* Energy Charter Treaty (Lisbon, Dec. 17, 1994), 34 I.L.M. 360, 391 (1995); Free Trade Agreement of the Americas, § 3, Arts. 10.1, 13 (July 3, 2001), available at: http://www.ftaa-alca.org/ftaadraft/eng/ngin_e.doc; Multilateral Investment Agreement, Draft Consolidated Text (Apr. 1998), DAF/MAI(98)7/REV1, Section IV, 2.1 at 56, 143 (Apr. 22, 1998), available at: <http://www.oecd.org/daf/mai/pdf/ng/ng987r1e.pdf>. For texts of other bilateral treaties to which the United States is a party, *see* <http://www.state.gov/www/issues/economic/7treaty.html> (collecting BIT texts).

¹⁴NAFTA, 32 I.L.M. 605, 641-42.

the U.S. Constitution's Equal Protection and Privileges and Immunities Clauses. Article 1102, entitled "National Treatment," requires signatory governments to treat foreign investors "no less favorabl[y]" than they treat domestic investors "in like circumstances."¹⁵

Article 1103, entitled "Most-Favored-Nation Treatment," requires signatory governments to treat foreign investors no less favorably than they treat other foreign investors of either parties or nonparties in like circumstances.¹⁶ If one of the parties has entered into an agreement with another non-party country and has given that country's investors advantages over the investors of its NAFTA partners, for example, the investors of the NAFTA parties become entitled to those advantages as well. A party must accord foreign investors the better of national treatment and most-favored-nation treatment.¹⁷

NAFTA and many BITs also contain a form of due process guaranty. Article 1105 of NAFTA requires signatory parties to "accord to investments of investors of another Party treatment in accordance with international law, including fair and equitable treatment and full protection and security."¹⁸ The minimum standard of treatment requirement is not comparative: even if a state denies its own citizens and investors fair treatment, it may not deny such treatment to foreign investors. Finally, NAFTA Article 1106 prohibits conditioning a foreign investors' rights on performance requirements (such as mandates that the foreign investment have a certain percentage of domestic ownership or control, or that it incorporate a specified percentage of domestic goods or domestic labor in its production processes).¹⁹

¹⁵Article 1102 states:

1. Each Party shall accord to investors of another Party treatment no less favorable than that it accords, in like circumstances, to its own investors with respect to the establishment, acquisition, expansion, management, conduct, operation, and sale or other disposition of investments.
2. Each Party shall accord to investments of investors of another Party treatment no less favorable than that it accords, in like circumstances, to investments of its own investors with respect to the establishment, acquisition, expansion, management, conduct, operation, and sale or other disposition of investments.
3. The treatment accorded by a Party under paragraphs 1 and 2 means, with respect to a state or province, treatment no less favorable than the most favorable treatment accorded, in like circumstances, by that state or province to investors, and to investments of investors, of the Party of which it forms a part.

NAFTA 32 I.L.M. 605, 639, Art. 1102.

¹⁶Article 1103 states:

1. Each Party shall accord to investors of another Party treatment no less favorable than that it accords, in like circumstances, to investors of any other Party or of a non-Party with respect to the establishment, acquisition, expansion, management, conduct, operation, and sale or other disposition of investments.
2. Each Party shall accord to investments of investors of another Party treatment no less favorable than that it accords, in like circumstances, to investments of investors of any other Party or of a non-Party with respect to the establishment, acquisition, expansion, management, conduct, operation, and sale or other disposition of investments.

NAFTA, 32 I.L.M. 605, 639, Art. 1103.

¹⁷NAFTA, 32 I.L.M. 605, 639, Art. 1104.

¹⁸NAFTA, 32 I.L.M. 605, 639, Art. 1105.

¹⁹Article 1106, entitled "Performance Requirements," states:

1. No Party may impose or enforce any of the following requirements, or enforce any commitment or undertaking, in connection with the establishment, acquisition, expansion, management, conduct or operation of an investment of an investor of a Party or of a non-Party in its territory:
 - a. to export a given level or percentage of goods or services;
 - b. to achieve a given level or percentage of domestic content;
 - c. to purchase, use or accord a preference to goods produced or services provided in its territory, or to purchase goods or services from persons in its territory;

NAFTA, 32 I.L.M. 605, 640, Art. 1106.

The broad reach of the investor protections

NAFTA's investor protections apply to "measures adopted or maintained by a Party relating to . . . investors of another Party; [and] investments of investors of another Party in the territory of the Party."²⁰ "Measure" in turn is defined as including "any law, regulation, procedure, requirement or practice."²¹ Although some of the disciplines in Chapter 11 do not apply to nonconforming laws and regulations in effect when NAFTA went into force, the expropriation provisions apply even to preexisting measures.²²

"Investment" is very broadly defined to include any "real estate or other property, tangible or intangible, acquired in the expectation or used for the purpose of economic benefit or other business purposes."²³ It also includes any enterprise (defined as a corporation, trust, partnership, sole proprietorship, joint venture, or other association or entity organized under applicable law),²⁴ equity or debt security of an enterprise, loan to an enterprise, or interest in an enterprise that entitles the owner to a share in income or profits, or a share in the assets upon dissolution. Finally, it includes any "interests arising from the commitment of capital or other resources in the territory of a Party to economic activity in such territory" such as construction or concession contracts.²⁵ The definition contained in NAFTA is sufficiently capacious that "[i]t is foreseeable. . . that minimal foreign investments may found full challenges to environmental measures. For example, a foreign component might be strategically added to an otherwise domestic investment simply to have access to the extraordinary rights and remedies found in Chapter 11."²⁶

The investor—state dispute mechanism

Chapter 11 establishes an "investor-state dispute resolution mechanism" (ISDM) whereby individual investors may initiate claims against the host government without the acquiescence or participation of the investor's government.²⁷ Although investor-state mechanisms had been provided in some BITs, the scope of the investor-state mechanism in Chapter 11 is path-breaking for a regional or multi-

²⁰NAFTA, 32 I.L.M.605, 639, Art. 1101(1).

²¹NAFTA, 32 I.L.M. 289, 298, Art. 201.

²²Article 1108 provides that Articles 1102, 1103, 1106 and 1107 do not apply to:

- a. any existing non-conforming measure that is maintained by
 - i. a Party at the federal level, as set out in its Schedule to Annex I or III,
 - ii. a state or province, for two years after the date of entry into force of this Agreement, and thereafter as set out by a Party in its Schedule to Annex I in accordance with paragraph 2, or
 - iii. a local government.

NAFTA, 32 I.L.M. 605, 640, Art. 1108.

²³NAFTA, 32 I.L.M. 605, 647, Art. 1139.

²⁴NAFTA, 32 I.L.M. 289, 298, Art. 201(1).

²⁵NAFTA, 32 I.L.M. 605, 647, Art. 1139.

²⁶Mann & von Moltke, NAFTA's Chapter 11 and the Environment: Addressing the Impacts of the Investor-State Process on the Environment, at 24 (IISD Working Paper 1999), available at: <http://www.iisd.org/pdf/nafta.pdf>.

²⁷Article 2103(6) specifically subjects general measures of taxation to the provisions on expropriation but requires that complaints about tax measures be dismissed if the tax authorities of both countries decide within six months of the filing that the tax did not amount to an expropriation. NAFTA, art. 2103(6).

lateral trade or investment agreement.²⁸ Indeed, prior to NAFTA, “direct litigation between persons and States was a rarity.”²⁹

NAFTA’s ISDM provisions require that disputes be submitted to arbitration.³⁰ The arbitral tribunals are composed of three members, one chosen by the investor, one by the host state, and a third presiding member selected by agreement of the disputing parties³¹ or, if the parties are unable to agree, by the Secretary General of International Center for the Settlement of Investment Disputes.³²

To take advantage of the ISDM, an investor must consent to the arbitral panel’s jurisdiction and waive the right to pursue claims for money damages before any administrative tribunal or court of law.³³ Arbitral awards may be enforced under the ICSID Convention, the New York Convention, or the Inter-American Convention,³⁴ under which they are to be treated as equivalent to a final judgment in the court of the state party in which they are enforced. There is no appeal mechanism, unlike in domestic courts and other trade-related dispute resolution bodies such as the World Trade Organization.³⁵

²⁸Mann & von Moltke, NAFTA’s Chapter 11 and the Environment: Addressing the Impacts of the Investor-State Process on the Environment, at 12 (IISD Working Paper 1999).

²⁹Herman, Sovereignty Revisited: Settlement of International Trade Disputes—Challenges to Sovereignty—A Canadian Perspective, 24 Can.-U.S. L.J. 121, 132 (1998). Chapter 20 of NAFTA provides a state-to-state dispute settlement mechanism, but only one state-to-state arbitration has involved Chapter 11’s investment protections. See Arbitral Panel Established Pursuant to Chapter Twenty, In the Matter of Cross-Border Trucking Services, Final Report of the Panel, USA-Mex-98-2008-01 (Feb. 6, 2001), available at: <http://www.sice.oas.org/DISPUTE/nafta/english/U98081ae.asp>.

³⁰NAFTA Article 1120 (Submission of a Claim to Arbitration) requires that investors of a signatory government submit claims against another signatory government under one of three specified investor-state dispute mechanisms (ISDMs). NAFTA, 32 I.L.M. 605, 643, Art. 1120. The first, the International Center for the Settlement of Investment Disputes Convention (ICSID), is available only if the dispute is between a state that is a party to the Convention and a complaining investor that is a national of another party to the Convention. Convention on the Settlement of Investment Disputes Between States and Nationals of Other States, Art. 25(1), Mar. 18, 1965, 17 U.S.T. 1270, T.I.A.S. No. 6090, 575 U.N.T.S. 159. Although the United States is a party, Canada and Mexico currently are not, so NAFTA claims may not be brought under the Convention. See List of Contracting Parties, available at: <http://www.worldbank.org/icsid/constate/constate.htm>. For a discussion of ICSID, see Malcolm D. Rowat, Multilateral Approaches to Improving the Investment Climate of Developing Countries: The Cases of ICSID and MIGA, 33 Harv. Int’l L.J. 103 (1992).

The second, the ICSID Additional Facility, is available only if either the disputing party or the party of the investor, but not both, are parties to the ICSID Convention. ICSID, Additional Facility for the Administration of Conciliation, Arbitration, and Fact-Finding Proceedings, Art. 2, (1979), available at: <http://www.worldbank.org/icsid/facility/3.htm>.

The third is the United Nations Commission on International Trade Law (UNCITRAL). See UNCITRAL Arbitration Rules, G.A. Res. 31/98 (Dec. 15, 1976), available at: <http://www.uncitral.org/english/texts/arbitration/arb-rules.htm>.

³¹Article 1123, Number of Arbitrators and Method of Appointment. See NAFTA, 32 I.L.M. 605, 644, Art. 1123.

³²Article 1124, Constitution of a Tribunal When a Party Fails to Appoint an Arbitrator or the Disputing Parties Are Unable to Agree on a Presiding Arbitrator. See NAFTA, 32 I.L.M. 605, 644, Art. 1124.

³³Article 1121, Conditions Precedent to Submission of a Claim to Arbitration. See NAFTA, 32 I.L.M. 605, 643, Art. 1121. Investors may pursue injunction or declaratory relief, or extraordinary relief such as mandamus in parallel domestic proceedings.

³⁴Article 1136(6), Finality and Enforcement of an Award. See NAFTA, 32 I.L.M. 605, 646, Art. 1136(6).

³⁵See Horlick & DeBusk, Dispute Resolution under NAFTA: Building on the US-Canada FTA, GATT and ICSID, 10 J. Int’l Arb. 51 (1993). For the right to appeal WTO rulings, see General Agreement on Tariffs & Trade: Multilateral Trade Negotiations Final Act Embodying the Results of the Uruguay Round of Negotiations, Apr. 15, 1994, Annex 2—Understanding on Rules and Procedures Governing the Settlement of Disputes, 33 I.L.M. 1125, 1226 (1994); see also Hudec, The New WTO

Nor is there any requirement that the proceedings be open to the public.³⁶ Canada, the U.S., and Mexico recently agreed to make available to the public all documents submitted to, or issued by, a Chapter 11 tribunal, redacted to keep secret any confidential business information.³⁷ In addition, one of the arbitral panels recently ruled that non-governmental environmental organizations could file amicus briefs in Chapter 11 proceedings.³⁸ The right is discretionary with each individual tribunal, however, so NGOs are not guaranteed a right to participate.³⁹

Arbitral interpretations of “takings” protections

Four arbitral awards have been issued on the merits in NAFTA disputes in which investors claimed that Article 1110’s “takings” provisions required compensation.⁴⁰ At least fifteen other such claims are now pending before arbitral panels.⁴¹ Under NAFTA’s Article 1136, the decision of any arbitral panel “shall have no binding force except between the disputing parties and in respect of the particular case.”⁴² Nevertheless, the panels in the four decided claims have referred to each other’s holdings,⁴³ and in practice, arbitral awards are given deference, even if not legally binding effect, by later panels.⁴⁴ The following subsections briefly canvass the decisions and pending claims.

Dispute Settlement Procedure: An Overview of the First Three Years, 8 *Minn. J. Global Trade* 1, 2 (1999).

³⁶Mann, *Private Rights, Public Problems: A Guide to NAFTA’s Controversial Chapter on Investor Rights*, at 11 (IISD & WWF Working Paper, 2001), available at: http://www.iisd.org/pdf/trade_citizens_guide.pdf.

³⁷See NAFTA Free Trade Commission, *Notes of Interpretation of Certain Chapter 11 Provisions* (July 31, 2001), available at: <http://www.dfait-maeci.gc.ca/tna-nac/NAFTA-Interpr-e.asp>.

³⁸*Methanex Corp. v. United States*, Decision of the Tribunal on Petitions from Third Persons to Intervene as “Amicus Curiae” (Jan. 15, 2001), available at: <http://www.naftalaw.org/methanex/Methanex%20-%20Amicus%20Decision.pdf>.

³⁹Mann, *Private Rights, Public Problems: A Guide to NAFTA’s Controversial Chapter on Investor Rights*, at 45 (IISD & WWF Working Paper, 2001). *Cf.* *Canada v. S.D. Myers, Inc.* 2001 F.C.T. 317 (Fed. Ct. 2001), *aff’d*, 2002 F.C.A. 39, 2002 CarswellNat 227 (Fed. Ct. App. 2002) (Decision on Petition of the Council of Canadians, the Sierra Club of Canada and Greenpeace to Intervene) (denying leave for environmental groups to intervene in the proceedings involving S.D. Myers).

⁴⁰At least one claim filed under NAFTA’s Chapter 11, *Ethyl Corp. v. Canada*, June 24, 1998, 38 I.L.M. 708 (1999), was settled before the arbitral panel reached a decision on the merits. For discussions of *Ethyl*, see Soloway, *Environmental Trade Barriers Under NAFTA: The MMT Fuel Additives Controversy*, 8 *Minn. J. Global Trade* 55, 56 (1999); Wilson, *Trade Rules: Ethyl Corporation v. Canada* (NAFTA Chapter 11)—Part I: Claim and Award on Jurisdiction, 6 *NAFTA L. & Bus. Rev. Am.* 52 (2000); Wilson, *Trade Rules: Ethyl Corporation v. Canada* (NAFTA Chapter 11)—Part II: Are Fears Founded?, 6 *NAFTA L. & Bus. Rev. Am.* 205 (2000). For contrasting views about whether the settlement was driven by the investor protection provisions of NAFTA, see, e.g., Gaines, *Triangulating Sustainable Development: International Trade, Environmental Protection, and Development*, 32 *ELR* 10318 (Mar. 2002).

At least three other claims under Chapter 11 were filed and made public but either settled or abandoned. See *Ketcham Invs., Inc. & Tysa Invs., Inc. v. Canada*, Notice of Intent to Submit a Claim to Arbitration (Dec. 22, 2000), available at: <http://www.dfait-maeci.gc.ca/tna-nac/documents/K%26T-e.pdf>; *Sun Belt Inc. v. Canada*, Notice of Claim and Demand for Arbitration (Oct. 12, 1999), available at: http://www.cyberus.ca/~tweiler/sun_02.pdf; *Trammel Crow Co. v. Canada*, Notice of Intent to Submit a Claim to Arbitration (Sept. 7, 2001), available at: http://www.dfait-maeci.gc.ca/tna-nac/documents/TC_vs_GC.pdf.

⁴¹Because the arbitrations and the arbitral awards are not required to be public, there may be other awards or other pending cases. The most complete listing of both awards and pending arbitrations is maintained by Todd Weiler, and is available at: <http://www.naftaclaims.com>.

⁴²NAFTA, 32 I.L.M. 605, 646, Art. 1136.

⁴³See this section note 67 and accompanying text (decision in *S.D. Myers* citing decision in *Pope & Talbot*).

⁴⁴See *Waste Mgmt., Inc. v. United Mexican States*, ICSID Case No. ARB(AF)/98/2, 40 I.L.M. 56, 70 (May 8, 2000) (dissenting opinion) (explaining the need to write a separate dissent because the “precedential significance of this Award for future proceedings. . . cannot be underestimated”); see also

*Arbitral awards**Robert Azinian et al. (DESONA de C.V.) v. Mexico*

The first decision under NAFTA's Chapter 11, indeed the first decision in any investor-to-state dispute regarding the investor protections of a multi-lateral investment agreement,⁴⁵ rejected a claim that the City of Naucalpan had to pay compensation for cancelling a contract for the collection and treatment of the city's solid waste. The City approved a 15-year concession to DESONA for an "integrated solution" to the City's solid waste problems that called for, among other things, an investment of U.S. \$20 million and the construction of a 200 megawatt plant to convert gases from the decomposition of trash in a landfill to electricity. DESONA, a Mexican corporation whose shareholders were Americans, began operations, collecting trash with two reconditioned garbage trucks, rather than the 70 "state-of-the-art" vehicles called for under the concession contract. Concerned about DESONA's performance of the contract, the Naucalpan City Council sought legal advice, then asked DESONA to respond to the legal counsel's determination that there were 27 irregularities in the procurement and implementation of the contract. DESONA instead challenged that request in an action before Mexico's State Administrative Tribunal. The City then canceled the concession contract, asserting that the concession was either void due to misrepresentations or rescindable for failure of performance.

The Administrative Tribunal upheld the City's right to cancel the contract, and on appeal, the Superior Chamber of the Administrative Tribunal affirmed the decision, holding that the City had proved nine irregularities that were legal bases for annulling the concession. The Federal Circuit Court affirmed that decision.

DESONA's American shareholders then instituted arbitral proceedings under NAFTA, seeking up to U.S. \$19.2 million for the alleged expropriation of the value of the concession. In rejecting the claim, the arbitral panel noted, as a matter of "first principles," that:

It is a fact of life everywhere that individuals may be disappointed in their dealings with public authorities, and disappointed yet again when national courts reject their complaints. . . . NAFTA was not intended to provide foreign investors with blanket protection from this kind of disappointment, and nothing in its terms so provides.⁴⁶

The panel then emphasized that the City's determination that the contract was invalid had been upheld by the courts of Mexico and reasoned that a "governmental authority surely cannot be faulted for acting in a manner validated by its courts unless the courts themselves are disavowed at the international level," unless, in other words, the court decisions themselves violated NAFTA either by "a denial of justice, or a pretence of form to achieve an internationally unlawful end."⁴⁷ The investors had not complained about the decisions of the Mexican courts, and "if there is no complaint against a determination by a competent court that a contract governed by Mexican law was invalid under Mexican law, there is by definition no contract to be

Price, An Overview of the NAFTA Investment Chapter: Substantive Rules and Investor-State Dispute Settlement, 27 Int'l Law. 727, 735 (1993). See generally Bhala, The Myth about Stare Decisis and International Trade Law (Part One of a Trilogy), 14 Am. U. Int'l L. Rev. 845 (1999); Bhala, The Precedent Setters: De Facto Stare Decisis in WTO Adjudication (Part Two of a Trilogy), 9 J. Transnat'l L. & Pol'y 1 (1999); Helfer & Dinwoodie, Designing Non-National Systems: The Case of the Uniform Domain Name Dispute Resolution Policy, 43 Wm. & Mary L. Rev. 141 (2001).

⁴⁵Escobar, Introductory Note to *Azinian v. United Mexican States*, ICSID Case No. ARB(AF)/97/2, available at: http://www.worldbank.org/icsid/cases/robert_intronote.pdf.

⁴⁶*Azinian v. United Mexican States*, ICSID Case No. ARB(AF)/97/2, Award, 39 I.L.M. 537, 549 at ¶ 83 (Nov 1, 1999).

⁴⁷*Azinian v. United Mexican States*, ICSID Case No. ARB(AF)/97/2, Award, 39 I.L.M. 537, 551, 552, at ¶¶ 97, 99 (Nov. 1, 1999) (emphasis added).

expropriated.”⁴⁸ The panel opined, however, that claimant’s failure was not simply one of pleading and stated that it “views the evidence as sufficient to dispel any shadow over the bona fides of the Mexican judgments. Their findings cannot possibly be said to have been arbitrary, let alone malicious.”⁴⁹ Indeed, the Tribunal stated that the evidence “positively supports the conclusions of the Mexican courts.”⁵⁰

Pope & Talbot, Inc. v. Canada

In 1996, the United States and Canada entered into the Softwood Lumber Agreement (SLA), which required Canada to limit the quantity of softwood lumber exported from four of its provinces (including British Columbia) to the U.S. free of import duties. Canada allocated the quota imposed by that agreement among the four provinces, and within provinces, among individual producers. Pope & Talbot, Inc. is a U.S. corporation; its wholly owned subsidiary wholly owns a Canadian corporation, Pope & Talbot Ltd., which manufactures and sells softwood lumber from facilities in British Columbia. Pope & Talbot, Inc. complained that the share of the quota allocated to British Columbia disadvantaged that province relative to other provinces. Further, Pope and Talbot Ltd’s individual quota allocation declined by 6.3% over the first three years of the SLA.⁵¹

Pope & Talbot, Inc. therefore claimed that Canada’s allocation of the quota violated Article 1102’s national treatment requirements, Article 1103’s most favored nation treatment requirements, Article 1105’s minimum standards of treatment provisions, Article 1106’s prohibition against performance requirements, and Article 1110’s compensation requirements. Pope & Talbot’s statement of claim defined expropriation expansively as “the act by which governmental authority is used to deny some benefit of property to an investor”⁵² including “government action that harms or delays the effective enjoyment of an investment.”⁵³ It sought U.S. \$80 million for the expropriation, along with damages for violations of the other provisions of Chapter 11, legal fees, interest, and expenses incurred in opposing the effect of Canada’s implementation of the SLA.⁵⁴

The arbitral panel rejected Pope & Talbot’s Article 1110 claim in June 2000.⁵⁵ The Tribunal first agreed with Pope & Talbot that “access to the U.S. market” is a “property interest” subject to protection under NAFTA.⁵⁶ Pope & Talbot conceded, however, that the quota allocation measures did not constitute an interference with those property interests substantial enough to constitute an expropriation under customary international law.⁵⁷ Pope & Talbot’s Article 1110 claim thus rested on the argument that Article 1110’s inclusion of the phrase “measure tantamount to

⁴⁸Azinian v. The United Mexican States, ICSID Case No. ARB(AF)/97/2, Award, 39 I.L.M. 537, 552, at ¶ 100 (Nov. 1, 1999).

⁴⁹Azinian v. The United Mexican States, ICSID Case No. ARB(AF)/97/2, Award, 39 I.L.M. 537, 552-53, at ¶ 103 (Nov. 1, 1999) (emphasis added).

⁵⁰Azinian v. The United Mexican States, ICSID Case No. ARB(AF)/97/2, Award, 39 I.L.M. 537, 555, at ¶ 120 (Nov. 1, 1999).

⁵¹Pope & Talbot, Inc. v. Canada, Interim Award, 40 I.L.M. 258, at ¶ 2 (June 26, 2000), available at: <http://www.appletonlaw.com/cases/P&T-INTERIM%20AWARD.PDF>.

⁵²Pope & Talbot, Inc. v. Canada, Statement of Claim, at ¶ 89 (Mar. 25, 1999), available at: <http://www.appletonlaw.com/4b3P&T.htm>.

⁵³Pope & Talbot, Inc. v. Canada, Statement of Claim, at ¶ 90 (Mar. 25, 1999).

⁵⁴Pope & Talbot, Inc. v. Canada, Statement of Claim, at ¶ 29 (Mar. 25, 1999).

⁵⁵The Panel also rejected Pope & Talbot’s claim that Canada had imposed performance requirements in violation of Art.1106. Pope & Talbot, Inc. v. Canada, Interim Award, 40 I.L.M. 258, at ¶¶ 69-80 (June 26, 2000), available at: <http://www.appletonlaw.com/cases/P&T-INTERIM%20AWARD.PDF>.

⁵⁶Pope & Talbot, Inc. v. Canada, Interim Award, 40 I.L.M. 258, at ¶ 96 (June 26, 2000).

⁵⁷Pope & Talbot, Inc. v. Canada, Interim Award, 40 I.L.M. 258, at ¶¶ 94, 103 (June 26, 2000).

expropriation” expanded NAFTA’s protection beyond customary international law.⁵⁸ The Tribunal rejected that argument. “Tantamount” means “equivalent,” and “[s]omething that is equivalent to something else cannot logically encompass more.”⁵⁹

But the Tribunal also rejected Canada’s attempt to except all regulatory measures from the reach of Article 1110, stating that “a blanket exception for regulatory measures would create a gaping loophole in international protections against expropriation.”⁶⁰ In reaching its decision, the Tribunal relied heavily upon the *Third Restatement of the Foreign Relations Law of the U.S.* § 712, which makes a state responsible for expropriation when it “subjects alien property to taxation, *regulation*, or other action that is confiscatory, or that prevents, unreasonably interferes with, or unduly delays, effective enjoyment of an alien’s property”⁶¹ The Tribunal interpreted the *Restatement* as recognizing that whether a regulation effects an expropriation “may rest on the degree of interference with the property interest,”⁶² the degree to which the regulation “deprives the investor of effective control over the enterprise” and whether the regulation makes it “impossible for the firm to operate at a profit.”⁶³ Applying those tests, the Tribunal found that the interference with Pope & Talbot’s property interest was not sufficiently substantial to constitute expropriation under customary international law. The Tribunal especially noted that the investor retained control over its business, continued to export substantial quantities of softwood, and continued to make substantial profits on those exports.⁶⁴

In April 2001, the Tribunal rejected Pope & Talbot’s claim that it had not received the same treatment as domestic investors, in violation of Article 1102.⁶⁵ It did, however, accept one of Pope & Talbot’s claims that it had been denied fair and equitable treatment in violation of Article 1105.⁶⁶ In May, 2002, the arbitral panel awarded approximately \$400,000 in damages to Pope & Talbot, Inc. for its legal and accounting fees relating to the violation, but found no lost profits or other actual losses from the unfair treatment.⁶⁷

⁵⁸Pope & Talbot, Inc. v. Canada, Interim Award, 40 I.L.M. 258, at ¶ 96 (June 26, 2000).

⁵⁹Pope & Talbot, Inc. v. Canada, Interim Award, 40 I.L.M. 258, at ¶ 104 (June 26, 2000).

⁶⁰Pope & Talbot, Inc. v. Canada, Interim Award, 40 I.L.M. 258, at ¶ 99 (June 26, 2000).

⁶¹Pope & Talbot, Inc. v. Canada, Interim Award, 40 I.L.M. 258, at ¶ 99 & n.73 (June 26, 2000) (emphasis added by Tribunal).

⁶²Pope & Talbot, Inc. v. Canada, Interim Award, 40 I.L.M. 258, at n.73 (June 26, 2000).

⁶³Pope & Talbot, Inc. v. Canada, Interim Award, 40 I.L.M. 258, at n.81 (June 26, 2000) (quoting Third Restatement of the Foreign Relations Law of the U.S. § 712, comment (g)).

⁶⁴Pope & Talbot, Inc. v. Canada, Interim Award, 40 I.L.M. 258, at ¶¶ 100-01 (June 26, 2000).

⁶⁵Pope & Talbot, Inc. v. Canada, Award on the Merits of Phase 2, at ¶ 104 (Apr. 10, 2001), available at: <http://www.appletonlaw.com/4b3P&T.htm>.

⁶⁶The Tribunal focused intensive scrutiny on what it called the “verification review episode” by which Canada’s Softwood Lumber Division (SLD) reviewed Pope & Talbot’s claim that it had not received the quota allocation to which it was entitled, after the investor had filed notice of its intent to arbitrate under NAFTA. The Tribunal concluded that SLD’s “imperious insistence on having its own way” during the review, the “tenor and lack of forthrightness of its internal communications,” and the fact that “relations between the SLD and the Investment during 1999 were more like combat than cooperative regulation,” added up to a denial of the fair treatment required by NAFTA. Pope & Talbot, Inc. v. Canada, Award on the Merits of Phase 2, at ¶¶ 171-181 (Apr. 10, 2001).

⁶⁷Pope & Talbot, Inc. v. Canada, Award in Respect to Damages, at ¶¶ 81-88 (May 31, 2002), available at: http://www.appletonlaw.com/cases/Pope_%20Award%20Re%20Damages_May31-02.pdf. Pope & Talbot had claimed damages of U.S. \$80 million. Appleton & Associates, Backgrounder: NAFTA Award, Pope & Talbot, Inc. and Canada 2 (Apr. 10, 2001), available at: <http://www.appletonlaw.com/cases/P&T-Backgrounder.pdf>.

S.D. Myers v. Canada

S.D. Myers, a U.S. corporation, owned a polychlorinated biphenyl (PCB)⁶⁸ remediation facility in Tallmadge, Ohio, about 100 kilometers south of the U.S. and Canadian border. In 1980, the U.S. banned the import and export of PCB waste. In 1989, Canada signed the Basel Convention, which prohibits both the export and import of hazardous waste to and from states that are not a party to the Convention, unless pursuant to bilateral or other agreements with provisions at least as strict as those of the Basel Convention. The Basel Convention also requires signatory states to reduce the transboundary movement of hazardous waste to the minimum level consistent with environmentally sound and efficient management of waste. Accordingly, Canada adopted a policy of destroying PCBs within Canadian borders to the maximum extent possible—its PCB Waste Export Regulations of 1990 banned the export of PCB waste to any country other than the U.S.—and allowed export to the U.S. only with prior approval of the U.S. Environmental Protection Agency (EPA). In practice, the only exports to the U.S. prior to 1997 were of PCB waste owned by U.S. government agencies operating in Canada.

In the early 1990's, Myers decided to try to exploit the Canadian market for PCB remediation and accordingly incorporated a Canadian affiliate. Through that affiliate, Myers began to market its services to Canadian PCB holders. Because its Ohio facility was located much nearer to many of those sources than the facility of its Canadian competitor, Myers was able to offer remediation at a lower cost. Myers also began to lobby EPA, Environment Canada (Canada's federal environmental protection agency), and various politicians and public officials. In October 1995, Myers was successful in securing an "enforcement discretion" from EPA, which essentially promised not to enforce the ban on the import of PCBs from Canada against Myers and nine other U.S. companies until the end of 1997.⁶⁹

Canada reacted to EPA's action by issuing an Interim Order in November 1995 and a Final Order in February 1996, banning the export of PCBs. In 1997, however, Canada amended its regulations to open the border for PCB exports to the U.S. The border remained open for approximately five months but was closed again when U.S. courts overturned EPA's Import for Disposal Rule, which had replaced its enforcement discretion.⁷⁰

Myers claimed that Canada's Interim and Final Orders prohibiting export to the U.S. violated NAFTA Article 1102's national treatment obligations by discriminating against Myers; violated Article 1105's requirement of fair and equitable treatment; imposed performance requirements in violation of Article 1106 by effectively forcing it to dispose of PCB waste in Canada; and expropriated Myers' property without just compensation, in violation of Article 1110.⁷¹

The Tribunal began its analysis of the claims by exploring the intent behind Canada's Interim Order. It found that "there were legitimate concerns" raised by the government's deliberations over how to respond to EPA's enforcement discretion, including questions about whether EPA's action was legal; whether the exports to the U.S. would violate the Basel Convention because the U.S. was not a signatory party; whether the PCBs would be disposed of in the U.S. safely; and whether there was a viable Canadian PCB disposal industry in the event that U.S. disposal became

⁶⁸Polychlorinated biphenyl, a chemical used primarily in electrical equipment, is highly toxic and biodegrades in the environment very slowly. *S.D. Myers, Inc. v. Canada*, Partial Award, 40 I.L.M. 1408, 1415, at ¶ 94 (Nov. 13, 2000).

⁶⁹*S.D. Myers, Inc. v. Canada*, Partial Award, 40 I.L.M. 1408, 1418, at ¶¶ 118-19 (Nov. 13, 2000).

⁷⁰*Sierra Club v. EPA*, 118 F.3d 1324, 27 Env'tl. L. Rep. (Env'tl. L. Inst.) 21347 (9th Cir. 1997).

⁷¹*S.D. Myers, Inc. v. Canada*, Statement of Claim, at ¶¶ 10, 34-55 (Oct. 30, 1998), available at: <http://www.appletonlaw.com/cases/mclaim.pdf>.

unavailable.⁷² Nevertheless, the Tribunal found that Canada's policy "was shaped to a very great extent by the desire and intent to protect and promote the market share of enterprises that would carry out the destruction of PCBs in Canada and that were owned by Canadian nationals."⁷³ The Tribunal was convinced that the Canadian Minister of the Environment was primarily concerned that "PCB waste should be disposed of. . . in Canada by Canadians," as she told officers of Canadian hazardous waste facilities who met with her to lobby for an export ban, and as she announced in the House of Commons in 1995.⁷⁴ The Tribunal cited substantial evidence in the record that a wide range of officials in the Department of the Environment and the Department of Foreign Affairs and International Trade had recommended that the border be opened for export of PCBs and that an Interim Order closing the border would violate NAFTA.⁷⁵ The Minister's decision to forbid exports nevertheless was:

intended primarily to protect the Canadian PCB disposal industry from U.S. competition. . . . [T]here was no legitimate environmental reason for introducing the ban. Insofar as there was an indirect environmental objective—to keep the Canadian industry strong in order to assure a continued disposal capability—it could have been achieved by other measures.⁷⁶

The Tribunal then determined that the protectionist intent, coupled with the "adverse effect on the non-national complainant," constituted a violation of the national treatment obligations of Article 1102.⁷⁷ The majority of the Tribunal also found that "on the facts of this particular case the breach of Article 1102 essentially establishes a breach of Article 1105 as well."⁷⁸ The majority rejected Myers' claim that the Interim and Final Orders had effectively imposed performance requirements in violation of Article 1106.⁷⁹ Finally, the Tribunal rejected the expropriation claim.

The Tribunal first stated that international law does not generally treat regulations as expropriations, and accordingly, "regulatory conduct by public authorities is unlikely to be the subject of legitimate complaint under Article 1110. . . although the Tribunal does not rule out that possibility."⁸⁰ It explained that "[e]xpropriations tend to involve the deprivation of ownership rights; regulations a lesser interference" and that distinction "screens out most potential cases of complaints concerning economic intervention by a state and reduces the risk that governments will be

⁷²S.D. Myers, Inc. v. Canada, Partial Award, 40 I.L.M. 1408, 1418, at ¶ 121 (Nov. 13, 2000).

⁷³S.D. Myers, Inc. v. Canada, Partial Award, 40 I.L.M. 1408, 1424, at ¶ 162 (Nov. 13, 2000).

⁷⁴S.D. Myers, Inc. v. Canada, Partial Award, 40 I.L.M. 1408, 1425, at ¶¶ 169, 171 (Nov. 13, 2000).

⁷⁵S.D. Myers, Inc. v. Canada, Partial Award, 40 I.L.M. 1408, 1424-28, at ¶¶ 164-95 (Nov. 13, 2000).

⁷⁶S.D. Myers, Inc. v. Canada, Partial Award, 40 I.L.M. 1408, 1428, at ¶¶ 194-95 (Nov. 13, 2000).

⁷⁷S.D. Myers, Inc. v. Canada, Partial Award, 40 I.L.M. 1408, 1437, at ¶¶ 254-55 (Nov. 13, 2000).

⁷⁸S.D. Myers, Inc. v. Canada, Partial Award, 40 I.L.M. 1408, 1438, at ¶ 266 (Nov. 13, 2000). The arbitrator chosen by Canada disagreed with this ruling, believing that a violation of Article 1105 had to be based upon a failure to meet the requirements of international law, not on the violation of some other provision of NAFTA. *Id.* at ¶ 267.

⁷⁹S.D. Myers, Inc. v. Canada, Partial Award, 40 I.L.M. 1408, 1439, at ¶ 277 (Nov. 13, 2000). Professor Bryan Schwartz, the arbitrator chosen by Myers, disagreed, believing that the effect of the orders was to require Myers to dispose of PCB waste in Canada and therefore to consume goods and services in Canada, in violation of Article 1106. *See also* S.D. Myers, Inc. v. Government of Canada, Separate Opinion of Dr. Bryan Schwartz, at ¶¶ 188-201 (Nov. 12, 2000), available at: <http://www.appletonlaw.com/cases/Myers%20-%20Concurring%20Final%20Merits%20Award.pdf>.

⁸⁰S.D. Myers, Inc. v. Canada, Partial Award, 40 I.L.M. 1408, at ¶ 281 (Nov. 13, 2000), available at: <http://www.appletonlaw.com/cases/Myers%20-%20Final%20Merits%20Award.pdf>.

subject to claims as they go about their business of managing public affairs.”⁸¹ The Tribunal rejected Myers’ argument that the use of the phrase “tantamount to expropriation” was meant to expand Article 1110 beyond the customary meaning of expropriation under international law, agreeing with the *Pope & Talbot* Tribunal that “tantamount” simply means “equivalent.”⁸² After noting that Canada’s closure of the border was temporary, Canada had realized no benefit from the measure, and no property or benefit was transferred directly to others, the Tribunal held that the regulation was not an expropriation.⁸³ The panel left unclear whether a permanent closure of the border would have constituted an exception to its view that regulations generally will not constitute expropriations.

The Attorney General of Canada’s challenge to the Tribunal’s rulings is now pending in the Ontario Federal Court.⁸⁴

Metalclad Corp. v. Mexico

Metalclad was the first decision, and to date the only decision, to find a violation of NAFTA Article 1110’s expropriation provisions. COTERIN, a Mexican corporation, owned land about seventy kilometers from Guadalupe, Mexico, in the state of San Luis Potosí (SLP). In 1990, the federal government of Mexico granted a permit to COTERIN to construct and operate a hazardous waste transfer station on the site.⁸⁵ About 20,000 tons of waste were deposited at the site untreated, and in 1991, the federal government ordered the closure of the transfer station.⁸⁶ The same year, COTERIN applied for, and was denied, a municipal permit to construct a hazardous waste landfill.⁸⁷ In 1993, however, COTERIN secured permits to build a hazardous waste landfill from the federal National Ecological Institute (INE).⁸⁸ Shortly thereafter, Metalclad, a U.S. corporation, operating through wholly owned U.S. and Mexican subsidiaries, contracted for a six-month option to buy COTERIN and its permits.⁸⁹ The option agreement was subject the condition that COTERIN obtain either a municipal building permit or a definitive judgment from the Mexican courts that a building permit was not necessary.⁹⁰

SLP then issued a state land use permit to construct the landfill. Metalclad met with the governor of SLP and believed it had obtained his support for the project. Metalclad also secured assurances from the president of the INE and the general director of the Mexican Secretariat of Urban Development and Ecology that all the permits necessary for the landfill had been issued, except a federal permit for opera-

⁸¹S.D. Myers, Inc. v. Canada, Partial Award, 40 I.L.M. 1408, at ¶ 282 (Nov. 13, 2000).

⁸²S.D. Myers, Inc. v. Canada, Partial Award, 40 I.L.M. 1408, at ¶ 286 (Nov. 13, 2000).

⁸³S.D. Myers, Inc. v. Canada, Partial Award, 40 I.L.M. 1408, at ¶¶ 287-88 (Nov. 13, 2000).

⁸⁴Attorney Gen. of Canada v. S.D. Myers, Inc. (In the Matter of Sections 5 and 6 of the Commercial Arbitration Act, R.S.C. 1985 C.17 (2nd Supp.) and In the Matter of an Arbitration Under Chapter 11 of the North American Free Trade Agreement Between S.D. Myers and the Government of Canada), Notice of Application, Federal Court, Trial Division, Ottawa, Ontario, Court File T-255-01 (Feb. 8, 2001). In its challenge, the Attorney General asserts that (1) the Tribunal exceeded its jurisdiction in addressing issues not properly before it, (2) misinterpreted NAFTA by finding that S.D. Myers was an “investor” and that its subsidiary, S.D. Myers (Canada), was an “investment,” and (3) misapplied NAFTA’s Articles 1102 and 1105.

⁸⁵Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, 40 I.L.M. 36 (Aug. 30, 2000).

⁸⁶United Mexican States v. Metalclad Corp., 2001 BCSC 664, ¶ 5 (2001); *see also* United Mexican States v. Metalclad Corp., 2001 BCSC 1529 (2001) (supplemental reasons for judgment).

⁸⁷United Mexican States v. Metalclad Corp., 2001 BCSC 664, ¶ 6 (2001).

⁸⁸Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, 40 I.L.M. 36, 41, at ¶ 29 (Aug. 30, 2000).

⁸⁹Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, 40 I.L.M. 36, 41, at ¶ 30 (Aug. 30, 2000).

⁹⁰United Mexican States v. Metalclad Corp., 2001 BCSC 664, ¶ 8 (2001).

tion of the landfill, and that the federal government would obtain support for the project from Guadalcazar and SLP.⁹¹ The missing federal permit was then issued, and Metalclad exercised its option to purchase COTERIN, the landfill site, and the permits.⁹²

Shortly after the purchase, the governor of SLP began to denounce the landfill project. Metalclad then embarked upon negotiations with SLP and believing that it had secured SLP's support, began construction.⁹³ Approximately six months later, in October 1994, however, Guadalcazar issued a stop work order because Metalclad had not obtained a municipal building permit for the construction.⁹⁴ Metalclad complained to federal officials, who again assured Metalclad that it had all the necessary permits to construct and operate the landfill and that the municipality had no basis for denying a construction permit. The federal officials suggested, however, that Metalclad go through the motions of applying for the building permit in order to appease the municipality.⁹⁵ Metalclad did apply for the permit and resumed construction, completing the landfill in March 1995.⁹⁶

The landfill's opening was impeded by demonstrations staged by facility opponents. Further negotiations ensued, and in November 1995, Metalclad, the INE, and the Mexican Federal Attorney's Office for the Protection of the Environment entered into an agreement that allowed the operation of the landfill, in exchange for Metalclad's agreement to remediate the previous contamination within the first three years of the landfill's operation and various concessions by Metalclad (such as the designation of a buffer zone for the conservation of some species, and a municipal tipping fee).⁹⁷ In December 1995, however, Guadalcazar denied Metalclad's application for the building permit on four grounds: it had earlier denied CO TERIN's applications for such permits; Metalclad improperly began construction without a permit; the municipality had environmental concerns about the landfill; and Guadalcazar's residents opposed the grant of the permit.⁹⁸ Metalclad was given neither notice of, or provided an opportunity to participate in, the meeting at which that decision was made, and its application for reconsideration was denied.⁹⁹ After attempts to negotiate a solution to the impasse failed, Metalclad filed a claim under NAFTA Chapter 11. While the claim was pending and just before he was to leave office, the governor of SLP issued an ecological decree declaring a natural area for the protection of rare cacti that encompassed the landfill site, which had the effect of preventing operation of the landfill.¹⁰⁰

In its NAFTA claim, Metalclad alleged that Mexico, through its state and local

⁹¹Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, 40 I.L.M. 36, 41-42, 48, at ¶¶ 31-34, 80 (Aug. 30, 2000).

⁹²Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, 40 I.L.M. 36, 42, at ¶ 35 (Aug. 30, 2000).

⁹³Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, 40 I.L.M. 36, 42, at ¶¶ 37-39 (Aug. 30, 2000).

⁹⁴Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, 40 I.L.M. 36, 42, at ¶ 39 (Aug. 30, 2000).

⁹⁵Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, 40 I.L.M. 36, 42, 48-49, at ¶¶ 41, 87-89 (Aug. 30, 2000).

⁹⁶Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, 40 I.L.M. 36, 43, at ¶ 45 (Aug. 30, 2000).

⁹⁷Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, 40 I.L.M. 36, 43, at ¶¶ 45-48 (Aug. 30, 2000).

⁹⁸United Mexican States v. Metalclad Corp., 2001 BCSC 664, at ¶ 13 (2001).

⁹⁹Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, 40 I.L.M. 36, 44, Award, at ¶ 54 (Aug. 30, 2000).

¹⁰⁰Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, 40 I.L.M. 36, 44, 49, at ¶¶ 58-59, 96 (Aug. 30, 2000).

governments, violated NAFTA's Article 1105, which requires parties to treat investments "in accordance with international law, including fair and equitable treatment and full protection and security."¹⁰¹ It also alleged violations of the compensation requirements of Article 1110. Metalclad sought approximately U.S. \$90 million for the violations.¹⁰²

The Tribunal found that Mexico had violated Article 1105, which the Tribunal believed was intended to promote "transparency," or the idea "that all relevant legal requirements for the purpose of initiating, completing and successfully operating investments made, or intended to be made. . . should be capable of being readily known to all affected investors."¹⁰³ Further, the Tribunal held that if "the authorities of the central government of any Party. . . become aware of any scope for misunderstanding or confusion in this connection, it is their duty to ensure that the correct position is promptly determined and clearly stated so that investors can proceed with all appropriate expedition in the confident belief that they are acting in accordance with all relevant laws."¹⁰⁴

The Tribunal reasoned that Metalclad was entitled to rely upon the representations of the federal government that no local construction permit was necessary and that the municipality would have no legal basis for denying the permit. It held that even if a municipal permit was required under Mexican law, the municipality only had authority over matters related to physical construction or defects in the site.¹⁰⁵ The impropriety of the municipality's denial of the permit, coupled with Metalclad's reasonable reliance on the federal government's representations and the "absence of a clear rule as to the requirement or not of a municipal construction permit, as well as the absence of any established practice or procedure as to the manner of handling applications for a municipal construction permit," amounted to a failure to "ensure a transparent and predictable framework" for investment in violation of Article 1105(1).¹⁰⁶

The Tribunal also found that Mexico's actions violated the expropriation provision. That provision, the Tribunal stated, prohibits not only open, deliberate, and acknowledged takings of property, such as outright seizure or formal or obligatory transfer of title in favor of the host State, but also covert or incidental interference with the use of property which has the effect of depriving the owner, in whole or in significant part, of the use or reasonably-to-be-expected economic benefit of property even if not necessarily to the obvious benefit of the host state.¹⁰⁷ Because the municipality acted outside its limited authority concerning physical construction defects by denying the construction permit in part for environmental reasons, and Metalclad reasonably relied on the representations of the Mexican federal government, Mexico "must be held to have taken a measure tantamount to expropriation."¹⁰⁸

The Tribunal went on to find that the ecological decree issued by the governor of

¹⁰¹NAFTA, 32 I.L.M. 605, 639 Art. 1105.

¹⁰²Banks, NAFTA's Article 1110: Can Regulation Be Expropriation, 5 NAFTA L. & Bus. Rev. Am. 499, 501 (1999).

¹⁰³Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, 40 I.L.M. 36, 47, at ¶ 76 (Aug. 30, 2000).

¹⁰⁴Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, 40 I.L.M. 36, 47, at ¶ 76 (Aug. 30, 2000).

¹⁰⁵Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, 40 I.L.M. 36, 48, at ¶ 86 (Aug. 30, 2000).

¹⁰⁶Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, 40 I.L.M. 36, 49, 50, at ¶¶ 88, 99 (Aug. 30, 2000).

¹⁰⁷Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, 40 I.L.M. 36, 50, at ¶ 103 (Aug. 30, 2000).

¹⁰⁸Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, 40 I.L.M. 36, 50, at ¶¶ 104, 107 (Aug. 30, 2000). The Tribunal based its decision, in part, upon the ruling in *Biloune*,

SLP effectively “barr[ed] forever the operation of the landfill” and therefore constituted an act tantamount to expropriation.¹⁰⁹ It held that the compensation for the violation of Article 1105 and for the expropriation would be the same because both violations negated the possibility of any “meaningful” return on Metalclad’s investment.¹¹⁰ The Tribunal awarded Metalclad U.S. \$16.7 million, Metalclad’s investment in the project, plus interest, and transferred title to the site to Mexico.¹¹¹

Mexico challenged the award in the Supreme Court of British Columbia.¹¹² That court found that the Tribunal’s rulings as to Article 1105 had to be set aside because the Tribunal had “misstated the applicable law” to import a transparency obligation into Article 1105.¹¹³ The court found that the principle of transparency is implemented in NAFTA “through the provisions of Chapter 18, not Chapter 11” and that the Tribunal’s finding that Mexico had violated Article 1105 by failing to provide transparency therefore exceeded the scope of the matters submitted to it for arbitration.¹¹⁴ Because the Tribunal’s finding that the denial of the building permit had indirectly expropriated Metalclad’s property was “infected” by its erroneous view that Article 1105 included a transparency requirement, that finding also had to be set aside as beyond the scope of the submission to arbitration.¹¹⁵ The Tribunal’s finding that SLP’s ecological decree amounted to an expropriation, however, was not based upon the Tribunal’s erroneous view that Article 1105 included a transparency requirement, nor was the Tribunal’s finding patently unreasonable.¹¹⁶ Although the court viewed the Tribunal’s definition of expropriation as “extremely broad,” that definition was a question of law and therefore not reviewable by the court.¹¹⁷ The court accordingly upheld that portion of the Tribunal’s award finding the ecological decree to amount to an expropriation as within the scope of the submission to arbitration.¹¹⁸

Pending arbitrations

There are approximately one dozen NAFTA arbitrations currently pending¹¹⁹ that also may result in arbitral interpretations of Article 1110’s expropriation

et al. v. Ghana Inv. Centre, 95 I.L.R. 183, 207-10 (1993), which had found in similar circumstances an indirect expropriation when a building permit was not issued.

¹⁰⁹Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, 40 I.L.M. 36, 51, at ¶¶ 109 (Aug. 30, 2000). The Tribunal noted that its finding regarding the ecological decree was “not strictly necessary for its conclusion.” *Id.* at ¶ 109.

¹¹⁰Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, 40 I.L.M. 36, 51, at ¶ 113 (Aug. 30, 2000).

¹¹¹Metalclad Corp. v. United Mexican States, ICSID Case No. ARB(AF)/97/1, Award, 40 I.L.M. 36, 54, at ¶ 131 (Aug. 30, 2000).

¹¹²Because the parties had designated the place of arbitration to be Vancouver, B.C., the International Commercial Arbitration Act, R.S.B.C. 1996, allowed the Supreme Court of British Columbia to set aside the Tribunal’s award in limited circumstances, including situations in which the “arbitral award deals with a dispute not contemplated by or not falling within the terms of the submission to arbitration.” International Commercial Arbitration Act, Part 7, R.S.B.C. 1996, c. 233, s. 34(2) (iv).

¹¹³United Mexican States v. Metalclad Corp., 2001 BCSC 664, ¶ 70 (2001).

¹¹⁴United Mexican States v. Metalclad Corp., 2001 BCSC 664, ¶¶ 71-73, 76 (2001).

¹¹⁵United Mexican States v. Metalclad Corp., 2001 BCSC 664, ¶¶ 78-79 (2001).

¹¹⁶United Mexican States v. Metalclad Corp., 2001 BCSC 664, ¶¶ 94, 97, 99 (2001).

¹¹⁷United Mexican States v. Metalclad Corp., 2001 BCSC 664, ¶ 99 (2001).

¹¹⁸United Mexican States v. Metalclad Corp., 2001 BCSC 664, at ¶ 105 (2001).

¹¹⁹Arbitrations pending under BITs modeled after NAFTA also raise investor protection claims. *Technicas Medioambientales Tecmed, S.A. v. United Mexican States*, ICSID (Additional Facility) Case No. ARB(AF)00/02, filed in September 2000 by a Spanish investor under a Spain-Mexico BIT, for example, appears to closely track the claims in *Metalclad*. Mann, Private Rights, Public Problems: A Guide to NAFTA’s Controversial Chapter on Investor Rights, at 52, n.54 (IISD & WWF Working Paper, 2001), available at: http://www.iisd.org/pdf/trade_citizensguide.pdf.

provisions.¹²⁰ The most important pending claims, both in terms of their dollar value and in terms of how broadly they would expand the definition of expropriation if successful, are discussed below.¹²¹

Methanex Corp. v. United States

Methanex, a Canadian corporation, indirectly owns a Texas partnership, Methanex Methanol Co. (Methanex U.S.), which manufactures and sells methanol, a substance used to produce (among other things) methyl-tertiary-butyl ether (MTBE).¹²² MTBE is used in gasoline as a source of octane and as an oxygenate. It was introduced in the late 1970s, when various environmental and public health regulations required a substantial reduction in the use of lead in gasoline, and its use became even more widespread when the 1990 Amendments to the Clean Air Act required higher oxygenates to be added to gasoline sold in certain metropolitan areas in the U.S. with severe ozone or carbon monoxide levels, including southern California.¹²³ EPA has classified MTBE as a known animal carcinogen and a possible human carcinogen,¹²⁴ MTBE's pronounced taste and odor can render water undrinkable even at very low concentrations. Because of its chemical properties, it contaminates more groundwater, biodegrades more slowly, and is more difficult and expensive to clean up than other ingredients of gasoline.¹²⁵

California's use of MTBE accounts for approximately 6% of the worldwide demand for methanol.¹²⁶ In 1997, the California Senate funded a University of California (UC) study of the human health and environmental risks of MTBE.¹²⁷ The UC report concluded that there are significant risks and costs associated with MTBE

¹²⁰The text discusses only those pending arbitrations that raise expropriation claims. For disputes raising other provisions of Chapter 11, see, e.g., *ADF Group, Inc. v. United States*, ICSID Case No. ARB(AF)/00/1, available at: http://www.naftalaw.org/ADFGroupInc.andUSA-Notice_of_arbitration.pdf (challenge to a "Buy America" clause in a contract with Virginia for the construction of its highways); Mann, Private Rights, Public Problems: A Guide to NAFTA's Controversial Chapter on Investor Rights, at 108-09 (IISD & WWF Working Paper, 2001), available at: http://www.iisd.org/pdf/trade_citizensguide.pdf.

¹²¹In addition to the pending claims discussed in the text, notices of intent to arbitrate under NAFTA that allege violations of Article 1110 include *Marvin Roy Feldman Karpa (CEMSA) v. United Mexican States* (refusal to rebate cigarette excise tax to exporters on the same basis as manufacturers allegedly had the effect of closing Karpa's business and therefore constituted an expropriation) and *Waste Mgmt. v. United Mexican States* (alleged expropriation arising from dispute over cancellation of Waste Management's concession for street cleaning and other waste related). See also the claims discussed in this section note 150. For descriptions of some of these claims, see Mann, Private Rights, Public Problems: A Guide to NAFTA's Controversial Chapter on Investor Rights, at 91-92, 105-06 (IISD & WWF Working Paper, 2001), available at: http://www.iisd.org/pdf/trade_citizensguide.pdf. For copies of the documents filed in the disputes that have been made available to the public, see <http://www.naftalaw.org>.

¹²²*Methanex Corp. v. United States*, Draft Amended Claim, at 3-4 (Feb. 12, 2001), available at: http://www.methanex.com/investorcentre/mtbe/draft_amended_claim.pdf.

¹²³*Methanex Corp. v. United States*, Respondent's Statement of Defense, at ¶¶ 39-40 (Aug. 10, 2000); see also *Methanex Corp. v. United States*, Draft Amended Claim, at 5-6 (Feb. 12, 2001), available at: http://www.methanex.com/investorcentre/mtbe/draft_amended_claim.pdf.

¹²⁴*Methanex Corp. v. United States*, Respondent's Statement of Defense, at ¶ 51 (Aug. 10, 2000). But see *Methanex Corp. v. United States*, Draft Amendment Claim, at 6 (Feb. 12, 2001), asserting that "[m]ost authorities do not consider MTBE to be a carcinogen." See also Ferguson, California MTBE Contaminated Water: An Illustration of the Need for an Environmental Interpretative Note on Article 1110 of NAFTA, 11 *Colo. J. Int'l Env'tl. L. & Pol'y* 499, 509 (2000).

¹²⁵*Methanex Corp. v. United States*, Respondent's Statement of Defense, at ¶¶ 52-55 (Aug. 10, 2000).

¹²⁶*Methanex Corp. v. United States*, Draft Amended Claim, at 36 (Feb. 12, 2001), available at: http://www.methanex.com/investorcentre/mtbe/draft_amended_claim.pdf.

¹²⁷California S.B. 5231 (1997). The bill required the governor to consider the report, peer-reviews of the report, and testimony at public hearings to decide whether MTBE posed a significant health or environmental risk, and if so, to take "appropriate action." *Id.*

contamination and recommended that MTBE be phased out of use in gasoline.¹²⁸ In March 1999, after studying the report and responses from critics, the Governor Gray Davis (D.) concluded that “on balance, there is a significant risk to the environment” from MTBE. The governor accordingly issued an executive order that directed the California Energy Commission (CEC) to develop a timetable for removing MTBE from gasoline no later than December 31, 2002 and directed various state agencies to study the environmental and health risks of substituting ethanol for MTBE in gasoline.¹²⁹ The order also required the CEC to evaluate what steps, if any, should be taken to promote the development of ethanol in California if ethanol were found to be an appropriate substitute for MTBE.¹³⁰ The relevant agencies accordingly adopted regulations prohibiting the use of MTBE in gasoline after December 31, 2002.¹³¹

In July, 1999, after the issuance of the executive order but before the implementing regulations were scheduled to go into effect, Methanex served notice of its intent to arbitrate a claim under Article 1105 and 1110 of NAFTA.¹³² Methanex claimed that the order would have the effect of ending Methanex U.S.’s business of selling methanol for use in MTBE in California and therefore would expropriate its property. It also claimed that the manner in which the California Senate and Governor Davis implemented their bills and executive order violated Article 1105’s requirement of fair and equitable treatment. Methanex sought damages of U.S. \$970 million.

Methanex later amended its complaint to add an Article 1102 claim of discrimination.¹³³ That claim alleges that during his 1998 gubernatorial campaign, when the future of MTBE was under review, then-candidate, now-Governor Davis accepted some \$160,000 in campaign contributions from the principal U.S. producer of ethanol, the chief competitor of MTBE.¹³⁴ It further alleges that Governor Davis received another \$50,000 in contributions after he issued the executive order. Methanex asserts that “because of the U.S. ethanol industry’s improper influence, the California measures were arbitrary, unreasonable, . . . not in good faith. . . [and]

¹²⁸Health & Environmental Assessment of MTBE, Report to the Governor and Legislature of the State of California as Sponsored by SB 521, at 11-14 (Nov. 1998), available at: <http://www.tsrtpt.ucdavis.edu/mtberpt>.

¹²⁹Cal. Exec. Order No. D-5-99, at ¶ 4 (Mar. 26, 1999), available at: http://www.governor.ca.gov/state/govsite/gov_homepage.jsp; see also Ferguson, California Concerned about Contaminated Water: Canadian Corporation Files NAFTA Expropriation Claim Against U.S., 1999 Colo. J. Int’l Envtl. L. & Pol’y 65 (2000).

¹³⁰Cal. Exec. Order No. D-5-99, at ¶ 11 (Mar. 26, 1999). The Senate passed S.B. 989, which reinforced the Executive Order by requiring the CEC to develop a timetable for removing MTBE from gasoline as quickly as possible. California S.B. 989 (1999).

¹³¹Methanex Corp. v. United States, Respondents’ Statement of Defense, at ¶¶ 92-102 (Aug. 10, 2000).

¹³²Methanex Corp., Notice of Intent to Submit a Claim to Arbitration Under Article 1119, Section B, Chapter 11 of the North American Free Trade Agreement, available at: <http://www.methanex.com/investorcentre/mtbe/noticeofintent.pdf>. For other academic reviews of the Methanex challenge, see Ferguson, California Concerned about Contaminated Water: Canadian Corporation Files NAFTA Expropriation Claim Against U.S., F 1999 Colo. J. Int’l Envtl. L. & Pol’y 65 (2000); Waren, Paying to Regulate: A Guide to *Methanex v. United States* and NAFTA Investor Rights, 31 Envtl. L. Inst. (ELR) 10986 (Aug. 2001).

¹³³Methanex Corp. v. United States, Draft Amended Claim (Feb. 12, 2001), available at: http://www.methanex.com/investorcentre/mtbe/draft_amended_claim.pdf. For discussion of the politics behind the move to substitute ethanol for MTBE, see Alvarez & Barboza, Support Grows for Corn-Based Fuel Despite Critics, N.Y. Times, July 22, 2001, at A1.

¹³⁴Methanex Corp. v. United States, Draft Amended Claim, at 1-2 (Feb. 12, 2001), available at: http://www.methanex.com/investorcentre/mtbe/draft_amended_claim.pdf.

not the least trade-restrictive method of solving the water contamination problem.”¹³⁵ It cites as evidence for its claim the fact that “European regulatory authorities, who are not subject to any ethanol industry influence or pressure. . . have concluded that MTBE is not a danger to the environment, that it is not a carcinogen, and that there is no reason to ban its use.”¹³⁶ It alleges that California’s actions on MTBE are the result of a “baptist-bootlegger coalition” of the ethanol industry and environmentalists that has led to discrimination against foreign investors in the guise of environmental regulation.¹³⁷

The United States has contested the panel’s jurisdiction over the claims, arguing (among other things) that the alleged damages are too remote to provide a jurisdictional prerequisite and that neither a customer base nor a particular rate of profit is an “investment” that can be expropriated under Article 1110.¹³⁸ The parties last submitted documents regarding the jurisdictional issues in December 2001, and the panel is expected to rule on those issues in 2002. Meanwhile, in March 2002, Governor Davis found that it was impossible to meet the December 2002 deadline for phasing out MTBE without seriously disrupting the availability of gasoline in California and ordered that the prohibition be delayed for one year.¹³⁹

California is not alone in its concern about MTBE. In March 2000, U.S. EPA issued an advance notice of proposed rulemaking regarding its intent to adopt regulations to eliminate or reduce the use of MTBE.¹⁴⁰ Many states have likewise taken action or are considering proposals to restrict the use of MTBE.¹⁴¹ The Methanex complaint thus has considerable implications throughout the U.S., both by threatening many state regulations and by threatening to expand the notion of the “property” to which the Article 1110 obligations might apply.

Crompton Corp. v. Canada

In a claim quite similar to Methanex’s, Crompton, a Canadian subsidiary of a U.S. company, asserts that Canada’s ban on the use of lindane products to treat canola seeds violates Articles 1102, 1105, 1106, and 1110 of NAFTA.¹⁴² Like Methanex, Crompton claims that the ban was motivated not by scientific proof that

¹³⁵Methanex Corp. v. United States, Draft Amended Claim, at 3 (Feb. 12, 2001).

¹³⁶Methanex Corp. v. United States, Draft Amended Claim, at 3 (Feb. 12, 2001).

¹³⁷Methanex Corp. v. United States, Draft Amended Claim, at 39 (Feb. 12, 2001).

¹³⁸Methanex Corp. v. United States, Respondent’s Memorial on Jurisdiction and Admissibility, at 15-48 (Nov. 13, 2000), available at: <http://www.naftalaw.org/Methanex/Methanex%20-%20Memorial%20on%20Jurisdiction%20-%20USA.pdf>.

¹³⁹Cal. Exec. Order No. D-52-02 (Mar. 14, 2002), available at: http://www.governor.ca.gov/state/govsite/gov_homepage.jsp.

¹⁴⁰Advance Notice of Proposed Rulemaking, 65 Fed. Reg. 16094 (Mar. 24, 2000) (proposed Mar. 14, 2000). EPA has incorporated recommendations to substantially reduce MTBE use into a draft regulatory proposal, but the proposal has not yet reached the interagency review stage of approval and dissemination to the public and is unlikely to do so in the near future. Telephone Interview with Mike Shields, U.S. EPA Office of Transportation and Air Quality (June 13, 2002). See also Control of Methyl Tertiary Butyl Ether (MTBE), Unified Agenda, U.S. EPA, 66 Fed. Reg. 26148, 26169 (May 14, 2001); U.S. EPA, Achieving Clean Air and Clean Water: The Report of the Blue Ribbon Panel on Oxygenates in Gasoline (Sept. 15, 1999) (EPA 420-R-99-021), available at: <http://www.epa.gov/otaq/consumer/fuels/oxypanel/blueribb.htm>.

¹⁴¹Thus far, at least fourteen states have restricted or banned MTBE, and many others are considering such measures. See Impact of Renewable Fuels Standard/MTBE Provisions of S.517, 1, available at: [http://www.eia.doe.gov/oiaf/servicerpt/mtbe/pdf/sroiaf\(2002\)07.pdf](http://www.eia.doe.gov/oiaf/servicerpt/mtbe/pdf/sroiaf(2002)07.pdf); State MTBE Passed and/or Pending Legislation in 2000 (June 6, 2000), available at: <http://www.cstorecentral.com/register/resource/resource/mtbelaws.asp>.

¹⁴²Crompton Corp. v. Canada, Notice of Intent to Submit a Claim to Arbitration (Nov. 6, 2001), available at: <http://www.dfait-maeci.gc.ca/tna-nac/CROMPTON-CORP.pdf>.

lindane is harmful, but by a desire to benefit the domestic producers of substitute products. Crompton seeks damages of approximately \$100 million.¹⁴³

The Loewen Group v. United States

Loewen is a Canadian company, owned at least in part by Raymond Loewen, a Canadian citizen.¹⁴⁴ Through an American subsidiary, Loewen owns various funeral homes and funeral insurance industries. O’Keefe, a competitor, sued Loewen in a Mississippi state court alleging breach of contract, common law fraud, and violations of Mississippi antitrust laws.¹⁴⁵ During the trial, O’Keefe’s attorneys repeatedly referred to Loewen’s “foreign” status, as contrasted with O’Keefe’s local roots, and sought to portray Loewen as a racist.¹⁴⁶ O’Keefe sought only \$5 million in actual damages,¹⁴⁷ but the jury awarded it \$500 million, including \$400 million in punitive damages.¹⁴⁸ Loewen sought to appeal the award, but Mississippi law requires an appeal bond of 125% of the judgment. Although the trial court had discretion to reduce or eliminate the bond for “good cause,” it refused to do so, and the Mississippi Supreme Court affirmed that decision. As a result, Loewen alleges, it was forced to settle the case for \$175 million, even though the transactions at issue were worth less than \$5 million.¹⁴⁹

Loewen charges that by allowing O’Keefe’s counsel to make anti-Canadian and pro-American comments and by refusing to reduce the bond requirement, the trial court violated Article 1102’s national treatment requirement and Article 1105’s minimum fair treatment requirement.¹⁵⁰ Loewen asserts that those actions, when combined with the excessive verdict and “coerced” settlement, expropriated Loewen’s property, in violation of Article 1110.¹⁵¹ It seeks U.S. \$725 million in damages.¹⁵²

The United States contested the arbitral panel’s jurisdiction, arguing that judicial

¹⁴³Crompton Corp. v. Canada, Notice of Intent to Submit a Claim to Arbitration, at ¶¶ 28-29, 34, 38-39, 45, 49 (Nov. 6, 2001), available at: <http://www.dfait-maeci.gc.ca/tna-nac/CROMPTON-CORP.pdf>.

¹⁴⁴The Loewen Group v. United States, Notice of Claim, at ¶¶ 1, 15-16 (Oct. 30, 1998), available at: <http://www.state.gov/s/l/c3755.htm>.

¹⁴⁵The Loewen Group v. United States, Notice of Claim, at ¶¶ 2, 22-34 (Oct. 30, 1998).

¹⁴⁶The Loewen Group v. United States, Notice of Claim, at ¶¶ 4, 35-103 (Oct. 30, 1998).

¹⁴⁷The Loewen Group v. United States, Notice of Claim, at ¶ 33 (Oct. 30, 1998).

¹⁴⁸The Loewen Group v. United States, Notice of Claim, at ¶¶ 3, 104-119 (Oct. 30, 1998).

¹⁴⁹The Loewen Group v. United States, Notice of Claim, at ¶¶ 5-6, 120-127 (Oct. 30, 1998).

¹⁵⁰The Loewen Group v. United States, Notice of Claim, at ¶¶ 139-61 (Oct. 30, 1998). Loewen bolsters its claims with opinions by Sir Robert Jennings, former President of the International Court of Justice; Richard Neely, former Chief Justice of the West Virginia Supreme Court; Kirk Fordice, then-Governor of Mississippi; and Professor Andreas Lowenfeld of NYU School of Law, all of whom opine that the jury’s verdict was outrageous and was based, or possibly based, upon nationalistic or xenophobic discrimination.

¹⁵¹The Loewen Group v. United States, Notice of Claim, at ¶¶ 7, 162-67 (Oct. 30, 1998).

¹⁵²The Loewen Group v. United States, Notice of Claim, at ¶¶ 8-10 (Oct. 30, 1998). The claimant in *Adams v. United Mexican States* also alleges that judicial actions constitute an expropriation of property. Although only a notice of arbitration has been filed, and its presentation of facts is somewhat confusing, *Adams* appears to involve a claim by U.S. citizens who purchased lots and built vacation homes in a resort they believed belonged to the Mexican government, but which Mexican courts later determined was unlawfully expropriated and accordingly ordered returned to its original owners. The American investors have invoked NAFTA Articles 1102 and 1105, claiming that they were treated less favorably than Mexican investors in the litigation over the validity of the Mexican government’s expropriation of the land, and because the Mexican courts found in favor of the original Mexican landowners rather than the American investors. They also claim that the judicial decrees ordering that the land and improvements be returned to the original landowners expropriates their property in violation of Article 1110. *Adams v. United Mexican States*, Notice of Arbitration (Feb. 16, 2001), available at: <http://www.naftalaw.org>.

Similarly, the claimant in *Calmark Commercial Dev. v. United Mexican States* asserts that judicial actions expropriated property in violation of Article 1110. See *Calmark Commercial Dev. v.*

acts in litigation between private parties are not “measures” regulated by NAFTA. In January 2001, the panel rejected that argument, however, and deferred consideration of other jurisdictional arguments until hearing the merits of the controversy.¹⁵³ The hearing on the merits took place in the fall of 2001, but in March, 2002, the U.S. filed a new objection, arguing that Loewen had restructured itself as an American corporation, thereby destroying the Tribunal’s jurisdiction under NAFTA.¹⁵⁴ Those matters are currently under consideration by the panel.

The *Loewen* claim, if successful, would have the effect of allowing claimants dissatisfied with a domestic judicial decision to essentially “appeal” that decision to an arbitral panel through a NAFTA claim. If decided for the claimant, *Loewen* also would undoubtedly encourage interest groups such as those who have sought limits on punitive damage awards from state legislatures and Congress to use NAFTA to circumvent those legislative processes.

Federal responses to liability for state and local regulations found to violate investor protections

The federal government could respond to an arbitral panel’s decision that a state or local regulation expropriated an investment without full, fair, and adequate compensation, in violation of Chapter 11, in several different ways. First, it could attempt to force the state or locality responsible for the regulation to repay the federal government for the cost of the award. It could do so either by suing the state or local government for contribution toward the award or for indemnification for the federal government’s liability, or by seeking to recover its outlay for the award by deducting that amount from grants or other funds it would otherwise award to the state or locality.¹⁵⁵ The United States has not yet lost a NAFTA claim and therefore has not been forced to face the question of how or whether to recoup funds it expends to pay awards. After Mexico was ordered to pay \$16 million in the *Metalclad* dispute, however, the national government missed the deadline to make the payment because of disputes between the national and state governments about dividing the cost of the settlement.¹⁵⁶ The national government eventually paid the award, but it is currently exploring ways to recoup at least part of the funds from the state and local governments involved in the dispute.¹⁵⁷ In Canada, concerns about the national government’s ability to pass the costs of NAFTA awards through to state and local

United Mexican States, Notice of Intent to Commence Arbitration (Jan 11, 2002), available at: http://www.naftalaw.org/Calmark_Redacted_NOI.pdf.

Finally, the claimant in *Mondev Int’l v. United States* contends that rulings by the Massachusetts’ courts in a dispute arising out of *Mondev’s* attempt to exercise an alleged option to purchase certain property effected an expropriation. See Mann, *Private Rights, Public Problems: A Guide to NAFTA’s Controversial Chapter on Investor Rights*, at 105 (IISD and WWF Working Paper, 2001), available at: http://www.iisd.org/pdf/trade_citizensguide.pdf.

¹⁵³The *Loewen Group v. United States*, ICSID Case No. ARB(AF)/98/3, Decision on Hearing of Respondent’s Objection to Competence and Jurisdiction 22 (Jan. 9, 2001), available at: <http://www.state.gov/documents/organization/3921.pdf>.

¹⁵⁴The *Loewen Group v. United States*, Respondent’s Memorial on Matters of Jurisdiction and Competence Arising from the Restructuring of the *Loewen Group, Inc* (Mar. 1, 2002), available at: <http://www.state.gov/documents/organization/8744.pdf>.

¹⁵⁵The federal government could also pass a statute, similar to Title VI of the Civil Rights Act of 1964, 42 U.S.C.A. § 2000d, forbidding state and local governments from discriminating against foreign investors in the expenditure of federal funds, and defining discrimination to include any violation of NAFTA’s Chapter 11. That strategy would be quite cumbersome, however, because it likely would give the federal government only the blunt tool of cutting off all future federal funding to a state or local agency liable for a NAFTA violation. Otherwise, the strategy would raise the same issues as the more finely tuned hypothetical recoupment legislation explored in the text.

¹⁵⁶DePalma, *NAFTA Dispute Is in Court Once Again*, N.Y. Times, Oct. 19, 2001, at § W.

¹⁵⁷Interview with Hugo Perezcano, General Counsel for International Trade Negotiations, Secretariat of the Economy of Mexico, in New York, NY (Apr. 26, 2002).

governments have led the Federation of Canadian Municipalities to request that the national government “guarantee that it will never penalize municipalities for actions that are valid under domestic law but violate NAFTA or FTAA investment provisions.”¹⁵⁸

Second, if an award would require compensation in the future to the same or other investors if the regulation were left in place, or if the decision suggests that additional claimants will be able to establish that similar uncompensated regulations violate Chapter 11, the federal government could try to avoid future liability. It could, for example, seek to force the state or locality to change its regulations. More likely, it could tie future federal funding to the state or locality’s agreement to rescind or modify the regulation (at least with regard to foreign investors). Or, the federal government could preempt the state or locality’s offending regulation by passing its own regulation and expressly providing that the federal regulation occupies the field and preempts regulation by states or local governments.

Any of those tacks has the potential to rearrange the way in which authority for land use and environmental regulation is divided. The following subsections explore the viability of each option in greater detail.

Passing on the cost of awards

Arbitrations under NAFTA’s investor-state dispute resolution mechanism are against the signatory party—the national government. Awards are assessed against that party. In order to pass the cost of the award on to the state or local government responsible for the regulation, the federal government would have to be able to sue the state or locality for contribution or indemnification, deduct the amount of the award from federal monies that would otherwise be granted to the state or locality, or order the state or local government to pay the award directly to the successful claimant.

Nothing in the legislation passed to implement NAFTA clearly authorizes the federal government to sue a state or locality for contribution to recover damages imposed upon the federal government for a state or locality’s violation of NAFTA. But Congress could pass such legislation. The usual bars to suits against the states¹⁵⁹ would be unlikely to apply to such legislation.¹⁶⁰ First, the U.S. Supreme Court has made clear that the Eleventh Amendment’s protection of a state’s sovereign im-

¹⁵⁸Federation of Canadian Municipalities, *Municipal Questions Respecting Trade Agreements*, § II(F) (Nov. 5, 2001), available at: <http://www.fcm.ca/newfcm/java/worldtrade1.htm>.

¹⁵⁹Suits by the United States against one of the states fall within the original jurisdiction of the U.S. Supreme Court, so there would be no jurisdictional bar to a suit by the federal government to recover monies spent on NAFTA awards. *See United States v. Texas*, 143 U.S. 621, 646 (1892):

The submission to judicial solution of controversies arising between these two governments, “each sovereign, with respect to the objects committed to it, and neither sovereign with respect to the objects committed to the other,” (*McCulloch v. State of Maryland*, 4 Wheat. 316, 400, 410,) but both subject to the supreme law of the land, does no violence to the inherent nature of sovereignty. The states of the Union have agreed, in the constitution, that the judicial power of the United States shall extend to all cases arising under the constitution, laws, and treaties of the United States, without regard to the character of the parties, (excluding, of course, suits against a state by its own citizens or by citizens of other states, or by citizens or subjects of foreign states,) and equally to controversies to which the United States shall be a party, without regard to the subject of such controversies, and that this court may exercise original jurisdiction in all such cases “in which a state shall be party,” without excluding those in which the United States may be the opposite party. The exercise, therefore, by this court, of such original jurisdiction in a suit. . . brought by the United States against a state. . . so far from infringing in either case upon the sovereignty, is with the consent of the state sued. Such consent was given by [the State] . . . when [it was] admitted into the Union upon an equal footing in all respects with the other states.).

¹⁶⁰State or local governments might argue that the Due Process Clause should prevent the federal government from imposing liability for NAFTA awards on state and local governments, because those governments are not parties to the NAFTA arbitration and therefore may not defend themselves directly against the claim. Presumably, however, the national government could remedy that problem by inviting the state or local government that might bear the eventual liability to participate in the proceedings. Alternatively, due process concerns might be met by affording the state or local govern-

munity does not prevent the United States from suing a state.¹⁶¹ The Eleventh Amendment does protect a state from suit by a foreign nation,¹⁶² or by citizens of a foreign nation.¹⁶³ One commentator has argued that the Court would put “substance over form” to hold that an action by the United States to recover an award resulting from a NAFTA complaint filed by a foreign investor is equivalent to a suit against a state by that foreign investor.¹⁶⁴ But form matters in Eleventh Amendment jurisprudence. In holding that Congress could not abrogate a state’s Eleventh Amendment immunity by allowing Indian tribes to sue the state, for example, the Court noted in *Seminole Tribe of Florida v. Florida*¹⁶⁵ that there are “other methods of ensuring the States’ compliance with federal law: The Federal Government can bring suit in federal court against a State.”¹⁶⁶ In *Alden v. Maine*, the Court held that the Eleventh Amendment barred employees from suing a state to enforce provisions of the Fair Labor Standards Act but noted that the United States could sue on behalf of the employees:

This case at one level concerns the formal structure of federalism, but in a Constitution as resilient as ours form mirrors substance. . . . The difference between a suit by the United States on behalf of the employees and a suit by the employees implicates a rule that the National Government must itself deem the case of sufficient importance to take action against the State; and history, precedent, and the structure of the Constitution make clear that, under the plan of the Convention, the States have consented to suits of the first kind but not of the second.¹⁶⁷

Just as the United States can sue a state to enforce federal law, even though the beneficiaries of the suit include employees who could not themselves sue, the federal government should be able to sue a state to recover monies the federal government has been forced to pay because of the state’s violation of NAFTA, even though the rights ultimately at stake are those of foreign investors who could not themselves sue the state.

Nor would the Commerce Clause bar federal legislation authorizing the United States to recover damages it suffered as a result of state or local violations of

ment a judicial hearing regarding the validity of the arbitral award before passing the liability for the award back to that government.

¹⁶¹*United States v. Mississippi*, 380 U.S. 128, 140 (1965) (“The Eleventh Amendment in terms forbids suits against States only when ‘commenced or prosecuted. . . by Citizens of another State or by Citizens or Subjects of any Foreign State.’ While this has been read to bar a suit by a State’s own citizen as well, *Hans v. Louisiana*, 134 U.S. 1, 10 (1890), nothing in this or any other provision of the Constitution prevents or has ever been seriously supposed to prevent a State’s being sued by the United States.”). Although the issue in *Mississippi* was whether the United States could sue a state to enforce the constitutional rights of citizens, in other decisions the United States has been allowed to sue a state to settle disputes over whether the federal government or the state owned particular land. *See United States v. Texas*, 143 U.S. 621, 643 (1892); *United States v. North Carolina*, 136 U.S. 211 (1890) (allowing the U.S. to sue for payment on the interest of bonds issued by North Carolina); *United States v. Michigan*, 190 U.S. 379 (1903); *United States v. Minnesota*, 270 U.S. 181 (1926).

¹⁶²*Principality of Monaco v. State of Miss.*, 292 U.S. 313 (1934); *see also Breard v. Greene*, 523 U.S. 371 (1998).

¹⁶³*See Principality of Monaco v. State of Miss.*, 292 U.S. 313, 329 (1934).

¹⁶⁴Louthan, A Brave New *Lochner* Era? The Constitutionality of NAFTA Chapter 11, 34 *Vand. J. Transnat’l L.* 1443, 1443-44 (2001).

¹⁶⁵*Seminole Tribe of Fla. v. Florida*, 517 U.S. 44 (1996).

¹⁶⁶*Seminole Tribe of Fla. v. Florida*, 517 U.S. 44, 71 n.14 (1996). *See also Alden v. Maine*, 527 U.S. 706, 755 (1999) (“Sovereign immunity, moreover, does not bar all judicial review of state compliance with the Constitution and valid federal law. Rather, certain limits are implicit in the constitutional principle of state sovereign immunity. . . . The States have consented, moreover, to some suits pursuant to the plan of the Convention or to subsequent constitutional Amendments. In ratifying the Constitution, the States consented to suits brought by other States or by the Federal Government.” (citations omitted)).

¹⁶⁷*Alden v. Maine*, 527 U.S. 706, 758-60 (1999).

NAFTA. NAFTA and its implementing legislation were designed to further investment within the United States and trade between the states and foreign countries. Investment and trade are quintessential economic activities, both of which have a large impact on interstate commerce, and “[w]here economic activity substantially affects interstate commerce, legislation regulating that activity will be sustained.”¹⁶⁸ Further, allowing the federal government to pass NAFTA awards through to the states would undoubtedly be viewed as promoting trade by forcing the level of government responsible for interfering with free trade by violating NAFTA to bear the costs of doing so, and thereby deterring further violations.¹⁶⁹

Finally, the Tenth Amendment would not bar legislation allowing the federal government to sue states to recover costs it incurred as a result of state violations of NAFTA. The Tenth Amendment might bar federal legislation that “commandeered” state and local officials to pay compensation directly to private parties for regulations found to require compensation under Chapter 11, as discussed later in this section.¹⁷⁰ But as long as NAFTA and its implementing legislation are authorized by either the Commerce Clause or the Treaty Power, federal *courts* can require state and local governments to comply with those federal laws under the Supremacy Clause without running afoul of the Tenth Amendment’s prohibition on the “com-

¹⁶⁸United States v. Lopez, 514 U.S. 549, 560 (1995). See also Golove, Treaty-Making and the Nation: The Historical Foundations of the Nationalist Conception of the Treaty Power, 98 Mich. L. Rev. 1075, 1306 (2000) (“Given the subject matter with which [NAFTA] deal[s], no one to my knowledge has doubted that all of the provisions in the agreements fall within the subject matter scope of Congress’s commerce powers.”). See generally Merritt, Commerce!, 94 Mich. L. Rev. 674 (1995) (exploring the reach of the Commerce Clause after *Lopez*).

The hypothetical legislation might also be justified under the Treaty Power, U.S. Const. Art. II, § 2, cl. 2. Whether NAFTA and similar congressional-executive agreements should enjoy the status of treaties, however, is controversial. See, e.g., Ackerman & Golove, Is NAFTA Constitutional?, 108 Harv. L. Rev. 799, 814 n.47, 844-45, 902 n.464 (1995); Henkin, Foreign Affairs and the Constitution 41-42 (2d ed. 1996); Golove, Against Free-Form Formalism, 73 N.Y.U. L. Rev. 1791, 1890-91 (1998); Tribe, Taking Text and Structure Seriously: Reflections on Free-Form Method in Constitutional Interpretation, 108 Harv. L. Rev. 1221, 1260 (1995).

Similarly, whether the treaty powers are “an independent grant of power ‘delegated’ to the national government” or are just an “alternative mode of exercising the legislative powers granted to Congress in Article I of the Constitution” is hotly debated. Golove, Treaty-Making and the Nation: The Historical Foundations of the Nationalist Conception of the Treaty Power, 98 Mich. L. Rev., 1075, 1087-88 (2000). See also Bradley, The Treaty Power and American Federalism, Part II, 99 Mich. L. Rev. 98 (2000); Bradley, The Treaty Power and American Federalism, 97 Mich. L. Rev. 391 (1998).

¹⁶⁹Cost-internalization is one of the major rationales for requiring governments to compensate property owners when the government expropriates private property. See, e.g., Epstein, Takings (1985); Posner, Economic Analysis of Law 64 (5th ed. 1998); Fischel & Perry Shapiro, Takings, Insurance, and Michelman: Comments on Economic Interpretations of “Just Compensation” Law, 17 J. Legal Stud. 269-79 (1988); Fischel, The Political Economy of Just Compensation: Lessons from the Military Draft for the Takings Issue, 20 Harv. J. L. & Publ. Pol’y 23,30 (1996); Heller & Krier, Deterrence and Distribution in the Law of Takings, 112 Harv. L. Rev. 997 (1999); Merrill, *Dolan v. City of Tigard*: Constitutional Rights as Public Goods, 72 Denv. U. L. Rev. 859, 882-83 (1995); Miceli & Segerson, Regulatory Takings: When Should Compensation Be Paid?, 23 J. Legal Stud. 749, 758-59 (1993); Michelman, Property, Utility, and Fairness: Comments on the Ethical Foundations of “Just Compensation” Law, 80 Harv. L. Rev. 1165 (1967). For judicial endorsement of the theory, see, e.g., *Pennell v. City of San Jose*, 485 U.S. 1, 22 (1988) (Scalia J., concurring in part and dissenting in part).

The cost-internalization rationale is hardly free from criticism. See Been, The Global Fifth Amendment: NAFTA’s Investment Protections and the Misguided Quest for an International “Regulatory Takings” Doctrine, at 36-43 (manuscript 2002); Levinson, Making Government Pay: Markets, Politics, and the Allocation of Constitutional Costs, 67 U. Chi. L. Rev. 345 (2000). Nevertheless, it is certainly well enough accepted to justify the federal government’s assertion that passing the cost of NAFTA awards back to the state or local government that caused the violation would promote the free trade objectives of NAFTA.

¹⁷⁰See this section notes 173-185 and accompanying text.

mandeering” of state legislative or administrative processes.¹⁷¹ If the implementing legislation authorized the federal government to recover from states¹⁷² the damages it incurred when a state violated Chapter 11, federal courts imposing that remedy for state violations would seem no different from federal courts ordering states to pay damages to the United States under such federal laws as CERCLA.¹⁷³

Seeking to prevent state and local regulations that may violate Chapter 11

The federal government might prefer to try to prevent state and local governments from violating NAFTA *ex ante*, rather than resting on its right to recover its damages *ex post* for a state’s or locality’s violations. Suing a state to recover damages might be more visible and politically controversial than seeking to influence state regulation.¹⁷⁴ Further, the cost of an arbitral award against a nation includes not just the actual amount of the award and the national government’s expenses in defending against the claim, but also the public relations costs to the national government as it attempts to exert leverage on other countries to treat its investors in those countries well and to the country as a whole if the judgment dissuades foreign investment. Those “indirect” costs are unlikely to be easily quantified and are much less recoverable from the state or local government responsible for the violation. Finally, the “cost-internalization” achieved by asking state or local governments to pay a takings judgment may be incomplete,¹⁷⁵ so the federal government may prefer to exert direct pressure on regulatory decisions in order to supplement the deterrent value of potential liability.

The federal government cannot directly compel state or local governments to regulate in a manner that minimizes the threat of NAFTA complaints because *New York v. United States*¹⁷⁶ makes clear that Congress cannot “use the States as implements of regulation,” or “require the States to govern according to Congress’ instructions.”¹⁷⁷ Congress could, however, “encourage” the states to regulate in a way that minimizes the risk of NAFTA violations. *New York* identified several “methods, short of outright coercion, by which Congress may urge a State to adopt a legislative program consistent with federal interests.”¹⁷⁸

Congress could, for example, attach conditions to a state’s receipt of federal funds

¹⁷¹*New York v. United States*, 505 U.S. 144, 22 Env’tl. L. Rep. (Env’tl. L. Inst.) 21082 (1992).

¹⁷²Presumably, the implementing legislation also could authorize the federal government to seek a court order allowing the U.S. to deduct from federal funds it would otherwise pay to the state any damages the U.S. had suffered as a result of the state’s violation of NAFTA.

¹⁷³Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C.A. §§ 9601(21), 9607, Env’tl. L. Rep. (Env’tl. L. Inst.) Stat. CERCLA §§ 101(27), 107.

¹⁷⁴The extent to which the states are able to protect their interests in Congress is the subject of much debate. See, e.g., Kramer, Putting the Politics Back into the Political Safeguards of Federalism, 100 Colum. L. Rev. 215 (2000); Kramer, Understanding Federalism, 47 Vand. L. Rev. 1485 (1994); Vicki Jackson, Federalism and the Uses and Limits of Law: *Printz* and Principle?, 111 Harv. L. Rev. 2180 (1998). See also Zamora, Allocating Legislative Competence in the Americas: The Early Experience Under NAFTA and the Challenge of Hemispheric Integration, 19 Houston J. Int’l. Law 615, 638-39 n.107 (1997) (arguing that the states have become aware of the threat international law poses to their regulatory programs and have “negotiated an arrangement with the federal government to incorporate state viewpoints and interests both in the legislative process (to determine if states’ interests will be compromised by action at the international level), and in the [NAFTA] dispute settlement process (to the extent state laws are involved in a dispute)”). But surely the states have sufficient power to make any move by the federal government to recoup NAFTA awards controversial, especially given the public debates that already swirl around free trade agreements.

¹⁷⁵See this section note 166.

¹⁷⁶*New York v. United States*, 505 U.S. 144, 22 Env’tl. L. Rep. (Env’tl. L. Inst.) 21082 (1992).

¹⁷⁷*New York v. United States*, 505 U.S. 144, 161-62, 22 Env’tl. L. Rep. (Env’tl. L. Inst.) 21082, 21086 (1992).

¹⁷⁸*New York v. United States*, 505 U.S. 144, 166, 22 Env’tl. L. Rep. (Env’tl. L. Inst.) 21082, 21087 (1992).

that would encourage states to avoid regulations that might violate NAFTA.¹⁷⁹ There are four basic limitations on conditions on the spending power. First, they must be “in pursuit of ‘the general welfare.’”¹⁸⁰ Second, the conditions must be “unambiguously” stated.¹⁸¹ These two requirements should not be difficult to meet. Courts grant considerable deference to Congress’ judgment about what will promote the general welfare,¹⁸² and encouraging free trade and foreign investment and avoiding violations of international agreements easily promote the general welfare. Congress is certainly capable of making the conditions clear. Third, the condition imposed upon federal funds may not violate any independent constitutional bar—that is, spending may not be conditioned, for example, on a state’s agreement to take some action that would violate the Equal Protection Clause. Although it is possible that conditioning receipt of federal funds on agreements to avoid NAFTA violations might run afoul of other constitutional guarantees, the federal government could structure the conditions to avoid those problems.¹⁸³

The fourth requirement is the most challenging: conditions must relate to the “federal interest in particular national projects or programs.”¹⁸⁴ The Court has not specified the degree of relatedness required.¹⁸⁵ In *South Dakota v. Dole*,¹⁸⁶ the Court upheld a statute conditioning states’ receipt of federal highway funds on the adoption of a uniform drinking age, finding the relationship between the condition and the highway project sufficient because in states with low drinking ages, young people may drive drunk on federal highways. Similarly, to satisfy the relatedness requirement, the federal government could condition the receipt of, for example, funds to the state’s environmental protection agencies upon the state’s agreement to refrain from enacting environmental regulations that would violate NAFTA, asserting that NAFTA violations would jeopardize the federal government’s ability to fund state’s environmental programs and would create controversy over environmental regulations that would undermine the federal government’s funding program. As with the conditional spending upheld in *New York*, the Court would likely find that “both the conditions and the payments embody Congress’ efforts to address the

¹⁷⁹Congress could use similar conditional spending techniques to encourage states to agree to pay any damages the federal government incurs as a result of NAFTA awards, if it did not want to rely on suits for contribution or indemnification.

¹⁸⁰*South Dakota v. Dole*, 483 U.S. 203, 207 (1987) (quoting *Helvering v. Davis*, 301 U.S. 619, 640-41 (1937)).

¹⁸¹*South Dakota v. Dole*, 483 U.S. 203, 207 (1987) (quoting *Pennhurst State Sch. & Hosp. v. Halderman*, 452 U.S. 1, 17 (1981)).

¹⁸²*South Dakota v. Dole*, 483 U.S. 203, 207 & n.2 (1987). See also *Buckley v. Valeo*, 424 U.S. 1, 90-91 (1976).

¹⁸³The federal government could not condition the receipt of federal funds, for example, upon a state’s agreement to give foreign investors better treatment than domestic ones because doing so presumably would violate the Equal Protection Clause. Nor could a condition require the states to promote free trade even where doing so would result in a taking of the property rights of domestic property owners.

¹⁸⁴*South Dakota v. Dole*, 483 U.S. 203, 207 (1987) (quoting *Massachusetts v. United States*, 435 U.S. 444, 461 (1978)).

¹⁸⁵Since *Dole* was decided in 1987, the Court has shown considerable interest in examining the connection between conditions that local governments place on land-use permissions (exactions) and the “projected impact of the proposed development.” See *Dolan v. City of Tigard*, 512 U.S. 374, 386, 24 *Env’tl. L. Rep. (Env’tl. L. Inst.)* 21083 (1994); *Nollan v. California Coastal Comm’n*, 483 U.S. 825, 17 *Env’tl. L. Rep. (Env’tl. L. Inst.)* 20918 (1987). Determining whether such exactions are proportional and congruent to the problems they seek to address is analogous to the relatedness inquiry *Dole* mandates. Both the exaction analysis and the conditional spending analysis search for a nexus between the condition the government imposes and the purpose of its spending or regulatory program. *Dole* allows Congress much greater leeway on the nexus than *Nollan* or *Dolan* permitted state and local governments. *Nollan* and *Dolan* might be driven by the Court’s distrust of state and local governments’ land use powers, however, and therefore not be deemed relevant to federal conditional spending.

¹⁸⁶*South Dakota v. Dole*, 483 U.S. 203 (1987).

pressing problem” of how to achieve environmental protection in a cost-effective manner.¹⁸⁷

The second method Congress could use to “encourage” states and localities to avoid regulations that would trigger NAFTA’s compensation requirements would be conditional preemption. Congress may “offer States the choice of regulating [an] activity according to federal standards or having state law preempted by federal regulation.”¹⁸⁸ Congress undoubtedly has the power to regulate much that is now left to state and local environmental regulators, and even much that is now within the province of state and local land use agencies, because of the impact both environmental and land use decisions have on interstate commerce.¹⁸⁹ Although political, fiscal, and practical constraints limit Congress’ credibility in threatening to preempt much state and local environmental and land use regulation,¹⁹⁰ the threat will often nevertheless be sufficiently serious to encourage state and local governments to acquiesce in the federal regulatory scheme rather than risk losing all control over the field.

Potential implications of investor protection provisions for the allocation of authority for land use and environmental regulation

Even after the Court’s recent federalism decisions, therefore, the federal government retains considerable power to either pass back to state and local governments the cost of any awards for Chapter 11 violations or to seek to influence states and localities to tailor their regulations to avoid triggering Chapter 11 complaints. That power has several significant implications for the allocation of authority between state and federal regulators, state and local regulators, and land use and environmental regulators.

To the extent that passing the costs of Chapter 11 awards back or encouraging state and local regulators to avoid triggering Chapter 11 complaints, results in more cautious state and local regulation,¹⁹¹ NAFTA may allow the federal government to effectively decrease state and local governments’ traditional control over land use and the environment. If Congress were to pass legislation requiring state and local governments to compensate domestic property owners for any land use or environmental regulation that reduced the value of property (or reduced its value by some specified percentage), surely state and local governments would protest that the compensation requirement was a back-door attempt to severely limit their abil-

¹⁸⁷New York v. United States, 505 U.S. 144, 172, 22 Env’tl. L. Rep. (Env’tl. L. Inst.) 21082, 21087 (1992). See generally Baker, Conditional Federal Spending After *Lopez*, 95 Colum. L. Rev. 1911, 1954-88 (1995).

¹⁸⁸New York v. United States, 505 U.S. 144, 173-74, 22 Env’tl. L. Rep. (Env’tl. L. Inst.) 21082, 21087 (1992).

¹⁸⁹*But cf.* Solid Waste Agency of N. Cook County v Corps of Eng’rs, 531 U.S. 159, 174, 31 Env’tl. L. Rep. (Env’tl. L. Inst.) 20382, 20384 (2001) (holding that U.S. Army Corps of Engineers (Corps) rule extending definition of “navigable waters” under the Clean Water Act (CWA) to include intrastate waters used as habitat by migratory birds exceeded authority granted to the Corps under the CWA, in part to avoid the difficult constitutional question of whether regulation of such intrastate waters “would result in a significant impingement of the States’ traditional and primary power over land and water use”).

¹⁹⁰See Dorf & Sabel, A Constitution of Democratic Experimentalism, 98 Colum. L. Rev. 267, 425-26 (1998); Hills, Jr., The Political Economy of Cooperative Federalism: Why State Autonomy Makes Sense and “Dual Sovereignty” Doesn’t, 96 Mich. L. Rev. 813, 868 (1998); Vazquez, *Breard, Printz*, and the Treaty Power, 70 U. Colo. L. Rev. 1317, 1332-36 (1999).

¹⁹¹*Cf.* Levinson, Making Government Pay: Markets, Politics, and the Allocation of Constitutional Costs, 67 U. Chi. L. Rev. 345 (2000) (exploring reasons to doubt that the cost-internalization model works very well as applied to government regulators).

ity to regulate.¹⁹² NAFTA's Chapter 11 does essentially the same thing by potentially imposing compensation requirements that are broader than the U.S. Constitution imposes. Both the hypothetical domestic property rights protection and Chapter 11's foreign investor protections could reduce state and local regulation of the environment and land use considerably. They would not necessarily *increase* federal regulation because the federal government too might prefer to minimize its potential liability by avoiding regulation altogether. But by applying NAFTA to states and localities in the ways outlined in Section III, the federal government could substantially reduce the willingness and ability of state and local governments to regulate environmental and land use affairs. Similarly, because so much of the environmental regulation (and some land use regulation) in the United States is based upon a system of cooperative federalism, state governments are likely to assert federal mandates (rather than state law) as the basis for their refusal to permit development, in an attempt to minimize their risk of liability for NAFTA violations.

Chapter 11's investor protections also could shift the exercise of regulatory authority from local to state regulators. Generally speaking, local governments are less able than state governments to bear the cost of the pass-through of a NAFTA award,¹⁹³ or to bear the cost of defending against a NAFTA complaint (although the federal government is the party defending against an investor's complaint, the federal government's defense would inevitably impose costs upon the local officials involved in the regulation and upon local counsel). Local governments, therefore, would be more likely than states to settle any investor complaints that arose and more cautious in regulating when developers threaten Chapter 11 complaints. That caution will affect both the strength of local government's regulatory programs and the willingness of local governments to assume or retain regulatory authority over a problem. It also may result in strategic positioning; local governments might respond to the threat of liability by attempting to place their permitting processes last in the sequence of reviews, such that the state's regulators would bear the initial responsibility for limiting environmental damage and therefore bear the initial brunt of the threat of liability. Just as states might seek to insulate themselves by invoking federal mandates as the basis for permit denials, local governments may act strategically in citing state and federal mandates as requiring them to deny development rights.

Finally, investor protections may shift regulation away from land use regulators and toward environmental agencies. Because of the national and most favored nation treatment requirements, individual permitting decisions will be more susceptible to investor complaints than broader-brushed regulatory programs. The ad-hoc, highly discretionary nature of much of land use decisionmaking will leave planning and zoning agencies particularly vulnerable to claims of prejudice. A move from flexible, discretionary systems to more comprehensive command and control schemes may push the already eroding borders between land use and environmental law further toward environmental regulation.

Each of these potential implications—towards greater centralization and less localism, and towards more comprehensive and less discretionary regulatory regimes—carries both risks and benefits. There is enormous controversy about the benefits of more decentralized regimes, and about the tradeoff between flexibility

¹⁹²It is noteworthy that the several bills introduced in Congress in the last decade to strengthen property rights imposed stricter takings protections only on federal regulators or state regulators implementing federal statutes. *See, e.g.*, S 1412, Private Property Rights Act of 2001, 107th Cong., 1st Sess. (requiring federal agencies to conduct takings impact analyses); *see generally* Meltz, Property Rights Legislation: Analysis and Update, CA 24 ALI-ABA 17 (1996).

¹⁹³Local governments may also be less able to insure against liability for Chapter 11 violations than state governments because of their smaller size and budget and because they would have less of a track record for insurers to use in establishing experience groupings.

and comprehensiveness. The implications of NAFTA's investor protection provisions upon the distribution of authority between the federal, state, and local governments and between environmental and land use regulatory schemes, therefore, are not necessarily undesirable. The implications need to be considered and debated, however, in any assessment of the desirability of bilateral or multilateral investor protection agreements.

§ 9:141 Conclusion

Enforcement has become a central means of ensuring effective implementation of EPA programs to protect public health and the environment. Resolving cases more efficiently through administrative means and negotiations and gaining more results of individual enforcement actions are viewed by the Agency as critical management goals. Given the intense public scrutiny of enforcement cases, and the increasing number of program requirements subject to enforcement, negotiated resolution of enforcement cases is becoming a central feature of the environmental legal scene. As in many areas of environmental litigation, the means of achieving negotiated resolution implicate more than strict rules of law; they involve factors such as the Agency institutional culture, personal interaction, public pressures and the government enforcer's need to ensure consistency with precedent, written guidance and transcendent public interest factors. Sound but innovative approaches that address these institutional realities can enhance prospects for negotiated settlements that achieve greater deterrent and performance results. In all events, as the EPA programs and enforcement targets continue to expand, coming years promise to be dynamic ones in this area both within and outside of the United States.

Chapter 10

The National Environmental Policy Act*

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*Subd I by **Nicholas C. Yost** and **James W. Rubin**, updated by **Nicholas C. Yost**; Subd II by **Mark Sagoff**; subd III by **Mark S. Tawater**, updated by **Nicholas C. Yost**.

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I. ADMINISTRATIVE IMPLEMENTATION OF AND JUDICIAL REVIEW UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT*

§ 10:1 Overview—Introduction

The National Environmental Policy Act (NEPA) is the most pervasive of America's panoply of environmental laws. Other statutes seek to conserve specific media (such

*By **Nicholas C. Yost** and **James W. Rubin**, updated by **Nicholas C. Yost**.

as air, water, or land), to regulate specific endeavors (such as surface mining or introduction of new chemicals), or to protect specific places or flora or fauna (such as wilderness areas or endangered species). In contrast, NEPA involves all these areas, seeking to balance a broad range of environmental factors as well as “other essential considerations of national policy.”¹ An understanding of NEPA and its processes is a necessary predicate to the practice of environmental law.

Section 10:1 provides an overview of the legislation, examining Congress’ intent in passing it, its stated purposes, and the institutional actors responsible for its implementation. Section 10:9 analyzes NEPA’s administrative process, placing special emphasis on the stages leading to preparation of an environmental impact statement (EIS), NEPA’s most conspicuous requirement. Finally, § 10:34 examines the role of the courts in enforcing NEPA and reviewing agency decisions.

§ 10:2 Overview—NEPA’s purposes

NEPA is “our basic national charter for protection of the environment.”¹ Its purposes and policy, as declared in §§ 2 and 101,² are broadly worded, demonstrating the Act’s wide reach and intent.³ It is the “broadest and perhaps most important of the environmental statutes,”⁴ or, as another court put it, “[t]he centerpiece of environmental regulation in the United States.”⁵ The breadth of its stated goals sets NEPA apart from all other environmental statutes, which regulate specific aspects of our environment. NEPA encompasses all environmental values and forces the federal government and its permittees to bear those values in mind as they plan ahead. To accomplish this task, NEPA sets out two basic and related objectives: preventing environmental damage and ensuring that agency decisionmakers take environmental factors into account.

§ 10:3 Overview—NEPA’s purposes—The first objective: Preventing environmental damage

Section 2 of NEPA expressly declares a purpose of promoting efforts “which will prevent or eliminate damage to the environment” while encouraging productive and enjoyable harmony between people and their environment.¹ Section 101 pursues this objective, declaring it the national environmental policy that the federal govern-

[Section 10:1]

¹NEPA § 101(b), 42 U.S.C.A. § 4331(b).

[Section 10:2]

¹40 C.F.R. § 1500.1(a).

²42 U.S.C.A. §§ 4321, 4331.

³The Council on Environmental Quality’s (CEQ) NEPA regulations describe the Act’s purposes and organizational scheme:

The National Environmental Policy Act (NEPA) is our basic national charter for protection of the environment. It establishes policy, sets goals (§ 101), and provides means (§ 102) for carrying out the policy. Section 102(2) contains “action-forcing” provisions to make sure that federal agencies act according to the letter and spirit of the Act. The regulations that follow implement § 102(2). Their purpose is to tell federal agencies what they must do to comply with the procedures and achieve the goals of the Act. The President, the federal agencies, and the courts share responsibility for enforcing the Act so as to achieve the substantive requirements of § 101.

40 C.F.R. § 1500.1(a).

⁴Oregon Nat. Desert Ass’n. v. Bureau of Land Mgmt., 531 F.3d 1114, 1121 (9th Cir. 2008).

⁵New Mexico ex rel. Richardson v. Bureau of Land Management, 565 F.3d 683, 703 (10th Cir. 2009) (No. 06-2352).

[Section 10:3]

¹42 U.S.C.A. § 4321.

ment use all practicable means to “fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.”²

Federal agencies’ slighting of these responsibilities and overall lack of concern for environmental protection occasioned NEPA’s passage. Congress had seen accumulating “evidence of environmental mismanagement,”³ and it viewed increasing citizen indignation and protest over federal agency action or inaction as indicative of the “public’s growing concern” about this mismanagement. Congress responded by enacting what NEPA’s Senate author, the late Henry Jackson (D-Wash.), described as “the most important and far-reaching environmental and conservation measure ever enacted.”⁴ NEPA’s House author was no less eloquent in his description of the Act’s protective purpose. Congressman John Dingell (D-Mich.) spoke of man’s exploitation and free use of the resources provided by his natural environment, “secure in his belief that nature’s bounty would last forever, heedless of any consequences in his headlong push toward greater power and prosperity.”⁵ Dingell continued, “[w]e have not yet learned that we must consider the natural environment as a whole and assess its quality continuously if we really wish to make strides in improving and preserving it.”⁶ Congress determined that federal agencies would never again act without heed to the environment, declaring a “national policy to guide Federal activities which are involved with or related to the management of the environment or which have an impact on the quality of the environment.”⁷

To ensure that federal agencies followed this policy, Congress created in NEPA a statute regulating those agencies.⁸ Congress was aware that “if goals and principles are to be effective, they must be capable of being applied in action.”⁹ Hence, Congress incorporated “certain ‘action-forcing’ provisions and procedures . . . designed to as-

²42 U.S.C.A. § 4331.

³See S. Rep. No. 296, 91st Cong., 1st Sess. 8 (1969). The report listed numerous examples of mismanagement, including both federal activities and federally authorized private activities. S. Rep. No. 296, 91st Cong., 1st Sess. 8 (1969).

⁴115 Cong. Rec. 40416 (1969). Gordon Allott (R-Colo.), ranking House minority member and later Senator, stressed that it was “significant [that NEPA] enjoys the sponsorship of every single member of the Senate Interior Committee.” 115 Cong. Rec. 40422 (1969). President Nixon dramatized NEPA’s significance by signing it on January 1, 1970, as “my first official act of the decade.” Council on Environmental Quality, *Environmental Quality 1970*, at viii (1970); see Yost, *Streamlining NEPA—An Environmental Success Story*, 9 B.C. Env’tl. Aff. L. Rev. 507 (1981–1982).

⁵115 Cong. Rec. 26571 (1969).

⁶115 Cong. Rec. 26571 (1969).

⁷S. Rep. No. 296, 91st Cong., 1st Sess. 8 (1969). Senator Jackson explained the national policy to the Senate before its final passage of NEPA:

A statement of environmental policy is more than a statement of what we believe as a people and as a Nation. It establishes priorities and gives expression to our national goals and aspirations. It provides a statutory foundation to which administrators may refer . . . for guidance in making decisions which find environmental values in conflict with other values. What is involved is a congressional declaration that we do not intend, as a government or as a people, to initiate actions which endanger the continued existence or the health of mankind: That we will not intentionally initiate actions which will do irreparable damage to the air, land, and water which support life on earth. An environmental policy is for people. Its primary concern is with man and his future. The basic principle of the policy is that we must strive in all that we do, to achieve a standard of excellence in man’s relationships to his physical surroundings. If there are to be departures from this standard of excellence they should be exceptions to the rule and the policy. And as exceptions, they will have to be justified in the light of the public scrutiny as required by section 102.

115 Cong. Rec. 40416 (1969).

⁸In cases involving federal permitting, leasing, or finding, the law necessarily affects private or state or local government applicants to federal agencies, as well as the agencies themselves.

⁹S. Rep. No. 296, 91st Cong., 1st Sess. 9 (1969). Indeed, NEPA authorizes agencies to make decisions based on environmental factors not expressly identified in the agency’s underlying statute. *Village of Barrington, Ill. v. Surface Transp. Bd.*, 636 F.3d 650, 655 (D.C. Cir. 2011).

sure that all Federal agencies plan and work toward meeting the challenge of a better environment.”¹⁰ The most important of these “action-forcing” devices is the EIS.¹¹

§ 10:4 Overview—NEPA’s purposes—The second objective: Ensuring that agency decisionmakers take environmental factors into account

NEPA’s “action-forcing” provisions, particularly those requiring EIS preparation, express Congress’ second objective: ensuring that federal agency decisionmakers give environmental factors appropriate consideration and weight. Informed, environmentally responsible decisionmaking is an objective in itself, as well as the means by which Congress sought to achieve its other NEPA objective—environmental protection.¹ As the District of Columbia Circuit has observed, uninformed decisionmaking is itself a harm that NEPA was meant to address and for which relief may be granted:

The harm against which NEPA’s impact statement requirement was directed was not solely or even primarily adverse consequences to the environment; such consequences may ensue despite the fullest compliance. Rather NEPA was intended to ensure that decisions about federal actions would be made only after responsible decision-makers had fully adverted to the environmental consequences of the actions, and had decided that the public benefits flowing from the actions outweighed their environmental costs. Thus, the harm with which courts must be concerned in NEPA cases is not, strictly speaking, harm to the environment, but rather the failure of decision-makers to take environmental factors into account in the way that NEPA mandates. And, for purposes of deciding whether equitable relief is appropriate, we think that this harm matures simultaneously with NEPA’s requirements, i.e., at the time the agency is, under NEPA, obliged to file the impact statement and fails to do so.²

More recently the same court has accurately observed that “The idea behind

¹⁰S. Rep. No. 296, 91st Cong., 1st Sess. 9 (1969). As the final bill came out of conference, Senator Jackson explained that “to insure that the policies and goals defined in this act are infused into the ongoing programs and actions of the Federal Government, the Act . . . establishes some important ‘action-forcing’ procedures.” 115 Cong. Rec. 40416 (1969). According to the CEQ NEPA regulations, “section 102(2) contains ‘action-forcing’ provisions to make sure that federal agencies act according to the letter and spirit of the Act.” 40 C.F.R. § 1500.1(a). The “action-forcing” provisions of NEPA, particularly the EIS requirement, were part of the Senate bill, but not of the House bill; the legislative history of the EIS is found only in the Senate report. *See* S. Rep. No. 296, 91st Cong., 1st Sess. (1969); *see also* H.R. Conf. Rep. No. 765, 91st Cong., 1st Sess. (1969), *reprinted in* United States Code Congressional and Administrative News p 2767. *See generally* *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20743 (1989); *Andrus v. Sierra Club*, 442 U.S. 347, 350, 9 Env’tl. L. Rep. (Env’tl. L. Inst.) 20390, 20391 (1979); *Kleppe v. Sierra Club*, 427 U.S. 390, 409, 6 Env’tl. L. Rep. (Env’tl. L. Inst.) 20532, 20536-37 (1976).

¹¹According to CEQ’s NEPA regulations, “the primary purpose of an environmental impact statement is to serve as an action-forcing device to insure that the policies and goals defined in the Act are infused into the ongoing programs and actions of the Federal Government.” 40 C.F.R. § 1502.1. The regulations also state that “ultimately, of course, it is not better documents but better decisions that count. NEPA’s purpose is not to generate paperwork—even excellent paperwork—but to foster excellent action.” 40 C.F.R. § 1500.1(c).

[Section 10:4]

¹As the Supreme Court has stated in *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20743, 20746 (1989):

[B]y focusing the agency’s attention on the environmental consequences of a proposed project, NEPA ensures that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast.

See also *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20749 (1989).

²*Jones v. District of Columbia Redev. Land Agency*, 499 F.2d 502, 512, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20479, 20483 (D.C. Cir. 1974), cert. denied, 423 U.S. 937 (1975) (footnote omitted). Unlike the substantive policy of the Act, which is flexible and allows for responsible exercise of discretion, “the Act also contains very important ‘procedural’ provisions—provisions which are designed to see that all federal agencies do in fact exercise substantive discretion given them.” *Calvert Cliffs’ Coordinating*

NEPA is that if the agency's eyes are open to the environmental consequences of its actions and if it considers options that entail less environmental damage, it may be persuaded to alter what it proposed.³ Or, as articulated by another circuit, NEPA's purpose is realized not through substantive mandates but through procedures which are "almost certain to affect the agency's substantive decision[s]."⁴

In the Supreme Court's words, "NEPA does set forth significant substantive goals for the Nation, but its mandate to the agencies is essentially procedural."⁵

In crafting these "action-forcing procedures," Congress envisioned a scheme of agency self-regulation; it did not create a regulatory body to enforce compliance.⁶ This is why judicial enforcement of the Act is so important. The binding Council on Environmental Quality (CEQ) NEPA regulations clearly make all federal actors joint partners in implementing NEPA, stating that "[t]he President, the federal agencies, and the courts share responsibility for enforcing the Act."⁷

§ 10:5 Overview—Agency responsibilities under NEPA

NEPA and subsequent legislation establish different roles for different agencies.

Comm'n, Inc. v. United States Atomic Energy Comm'n, 449 F.2d 1109, 1112, 1 Env'tl. L. Rep. (Env'tl. L. Inst.) 20346, 20347 (D.C. Cir. 1971), cert. denied, 404 U.S. 942 (1972); see *Sierra Club v. Sigler*, 695 F.2d 957, 965-67, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20210, 20214 (5th Cir. 1983). These procedural provisions "are not highly flexible." *Calvert Cliffs' Coordinating Comm'n, Inc. v. United States Atomic Energy Comm'n*, 449 F.2d 1109, 1112, 1 Env'tl. L. Rep. (Env'tl. L. Inst.) 20346, 20347 (D.C. Cir. 1971), cert. denied, 404 U.S. 942 (1972). "Indeed, they establish a strict standard of compliance." *Calvert Cliffs' Coordinating Comm'n, Inc. v. United States Atomic Energy Comm'n*, 449 F.2d 1109, 1112, 1 Env'tl. L. Rep. (Env'tl. L. Inst.) 20346, 20347 (D.C. Cir. 1971), cert. denied, 404 U.S. 942 (1972). Specifically, the decision to prepare an EIS "is not committed to the agency's discretion." *Foundation for N. Am. Wild Sheep v. Department of Agric.*, 681 F.2d 1172, 1177 n.24, 12 Env'tl. L. Rep. (Env'tl. L. Inst.) 20968, 20969 n.24 (9th Cir. 1982). NEPA's importance lies not only in the aid it gives the agency's decisionmaking process, but also in the notice it gives the public of environmental issues, both those that the agency is aware of and those that it has missed. *Illinois Commerce Comm'n v. I.C.C.*, 848 F.2d 1246, 1260 (D.C. Cir. 1988), cert. denied, 488 U.S. 1004 (1989). In the Supreme Court's words, the EIS

ensures that the agency, in reaching its decision, will have available and will carefully consider detailed information concerning significant environmental impacts; it also guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision. . . . Publication of an EIS, both in draft and final form, also serves a larger informational role. It gives the public the assurance that the agency "has indeed considered environmental concerns in its decisionmaking process," and, perhaps more significantly, provides a springboard for public comment.

Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 349, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20743, 20746 (1989) (citation omitted); see *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 372-73, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20749, 20752 (1989).

³*Lemon v. Geren*, 514 F.3d 1312, 1315 (D.C. Cir. 2008).

⁴*Oregon Natural Desert Ass'n. v. Bureau of Land Management*, 531 F.3d 1114, 1121 (9th Cir. 2008).

⁵*Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519, 558, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20288, 20297 (1978). The Supreme Court stated that administrative decisions should be set aside "only for substantial procedural or substantive reasons as mandated by statute." *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519, 558, 8 Env'tl. L. Rep. (Env'tl. L. Inst.) 20288, 20297 (1978). See *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 20743, 20747 (1989).

⁶The CEQ does have NEPA oversight responsibilities, but, as a modestly sized agency within the Executive Office of the President (EOP), it does not have the resources to become involved in individual cases, except in the rare instance where, based on an EIS, an agency head believes that another agency's proposal is so environmentally harmful that EOP resolution of the issue is merited. The project is then referred to the CEQ, whose power depends largely on persuasion. 40 C.F.R. pt. 1504. See *Clean Air Act* § 309, 42 U.S.C.A. § 7609. See also § 10:31.

⁷40 C.F.R. § 1500.1(a); see 40 C.F.R. § 1500.6. Despite the mandate on all federal participants, "the substantive backbone of NEPA ultimately is dependent upon the courts' willingness to order agencies to change their plans or to abandon some pursuits." W. Rodgers, *Handbook on Environmental Law* 805 (1977).

The Act created one agency, the CEQ.¹ However, since NEPA is directed at “all agencies of the Federal Government,”² every federal agency plays a role in its implementation. One such agency occupies a special dual position: the Environmental Protection Agency (EPA) is both an entity regulated under NEPA and a co-participant with the CEQ in the process of overseeing NEPA compliance by other federal agencies.

§ 10:6 Overview—Agency responsibilities under NEPA—Council on Environmental Quality

NEPA’s House sponsors considered creation of the CEQ the landmark achievement of the new legislation.¹ Congress modeled the new agency on the Council of Economic Advisers (CEA), an organization within the Executive Office of the President (EOP) that gives the President general advice on economic issues. Congress intended that the CEQ provide the same sort of pervasive advice concerning the environment.² The “only precedent and parallel to what is proposed,” said Senator Jackson, was the Full Employment Act of 1946 which declared the national economic policy and established the CEA.³

President Nixon originally charged the CEQ with various environmental oversight responsibilities, including adoption of “guidelines” for all agencies’ implementation of NEPA’s EIS requirement.⁴ President Carter strengthened the CEQ’s role and authority. The CEQ “guidelines” became mandatory regulations, and their scope was broadened beyond EISs to include all “the procedural provisions of the Act.”⁵ The regulations, which in large part codified existing case law, became effective in 1979.⁶ The Supreme Court subsequently described the new measures as a “single set of uniform, mandatory regulations” adopted through a “detailed and comprehen-

[Section 10:5]

¹NEPA § 201, 42 U.S.C.A. § 4341.

²NEPA § 102(2), 42 U.S.C.A. § 4332(2).

[Section 10:6]

¹Senate sponsors, on the other hand, viewed as the critical accomplishment of the new Act the linkage between the congressional statement of policy and the “action-forcing” procedures devised to achieve that policy. *Compare* 115 Cong. Rec. 26571–91 (1969) (remarks of Rep. Dingell) and H.R. Rep. No. 378, 91st Cong., 1st Sess. (1969), *reprinted in* United States Code Congressional and Administrative News p 2751, *with* 115 Cong. Rec. 40416 (1969) (remarks of Sen. Jackson).

²*See* S. Rep. No. 296, 91st Cong., 1st Sess. 10 (1969); H.R. Rep. No. 378, 91st Cong., 1st Sess. 8 (1969), *reprinted in* United States Code Congressional and Administrative News pp 2751, 2759. *See also* Pacific Legal Found. v. CEQ, 636 F.2d 1259, 1263-64, 10 Env’tl. L. Rep. (Env’tl. L. Inst.) 20919, 20920 (D.C. Cir. 1980).

³115 Cong. Rec. 40416 (1969) (remarks of Sen. Jackson).

⁴Exec. Order No. 11514 § 3(h), 3 C.F.R. § 904 (1970).

⁵Exec. Order No. 11991 §§ 2(g), 3(h), 3 C.F.R. §§ 124 to 125 (1977).

⁶40 C.F.R. §§ 1500 to 1508. The regulatory history of the CEQ NEPA regulations appears largely in the Preamble that accompanied their publication in the *Federal Register*. 43 Fed. Reg. 55978 (Nov. 29, 1978). CEQ published its official explanations of the meaning of certain provisions in *Forty Most Asked Questions Concerning CEQ’s NEPA Regulations*, 46 Fed. Reg. 18026 (Mar. 23, 1981); *see* 51 Fed. Reg. 15618 (Apr. 25, 1986) (Question 20 withdrawn). CEQ has since issued further similar guidance. *See* 48 Fed. Reg. 34263 (July 28, 1983). The most recent appendices to the regulations are Appendix I—List of Federal and Federal-State Agency National Environmental Policy Act (NEPA) Contacts; Appendix II—Federal and Federal-State Agencies with Jurisdiction By Law or Special Expertise On Environmental Quality Issues; and Appendix III—Federal and Federal-State Agency Offices for Receiving and Commenting on Other Agencies’ Environmental Documents. 49 Fed. Reg. 49750 to 49782 (Dec. 21, 1984); for updated lists of agency NEPA liaisons and regulations citations, *see* Council on Environmental Quality, *Environmental Quality 1991*, at 359–72 (1992); *see also* Hearings on Implementation of the National Environmental Policy Act by the Council on Environmental Quality, Subcomm. on Toxic Substances and Env’tl. Oversight, Senate Comm. on Env’t and Pub. Works, 97th Cong., 2d Sess. 77–83 (1983); Hearings on Council on Environmental Quality Reauthorization and

sive process, ordered by the President, of transforming advisory guidelines into mandatory regulations applicable to all Federal agencies.”⁷

The CEQ is an organization of modest size within the EOP,⁸ and its limited resources preclude extensive involvement in individual NEPA problems. Thus, its participation in the NEPA process is largely generic. The CEQ adopts regulations applicable to all agencies and oversees adoption of individual agency implementing procedures.⁹ It gets directly involved with individual issues only on rare occasions, such as when it receives “referrals” from EPA under section 309 of the Clean Air Act or from other agencies under part 1504 of the CEQ regulations.¹⁰ The CEQ will also involve itself in an occasional project or program visible enough to warrant a diversion of its limited resources.¹¹

§ 10:7 Overview—Agency responsibilities under NEPA—Environmental Protection Agency

EPA occupies a position somewhere between the CEQ and other federal agencies. Like the CEQ, EPA is a participant in the process of overseeing other agencies’ preparation of EISs. Yet EPA is also a federal agency regulated under NEPA, so it must prepare EISs for certain of its own environmentally protective actions.¹ According to statistics maintained by CEQ, EPA has ranged from fifth among all agencies in number of EISs prepared (1986) to eleventh (1994).²

EPA came to play this unique role partly as a result of a statutory attempt to

Oversight, Subcomm. on Fisheries and Wildlife Conservation and the Env’t, Comm. on Merchant Marine and Fisheries, 98th Cong., 2d Sess. 40–42 (1984); Yost, Streamlining NEPA—An Environmental Success Story, 9 B.C. Env’t. Aff. L. Rev. 507 (1981–1982).

⁷*Andrus v. Sierra Club*, 442 U.S. 347, 357–58, 9 Env’t. L. Rep. (Env’t. L. Inst.) 20390, 20393 (1979); see *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 19 Env’t. L. Rep. (Env’t. L. Inst.) 20743, 20746–48 (1989). The Supreme Court also said that “CEQ’s interpretation of NEPA is entitled to substantial deference.” *Andrus v. Sierra Club*, 442 U.S. 347, 358, 9 Env’t. L. Rep. (Env’t. L. Inst.) 20390, 20393 (1979); see also *Robertson v. Methow Valley Citizens Council*, 490 U.S. 350, 355–56, 19 Env’t. L. Rep. (Env’t. L. Inst.) 20743, 20748 (1989); *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 377, 19 Env’t. L. Rep. (Env’t. L. Inst.) 20749, 20753 (1989). See *Piedmont Environmental Council v. FERC*, 558 F.3d 304, 2009 WL 388237, at *12–13 (4th Cir. 2009) (an agency’s procedures revised without consulting CEQ are invalid); *Michigan Gambling Opposition v. Kempthorne*, 525 F.3d 23, 28–29 (D.C. Cir. 2008) (agency not bound to follow its “checklist” which was not part of its CEQ-approved procedures). It is important to emphasize that in interpreting NEPA it is to the CEQ that deference is due, not to the agency undertaking the action. The CEQ is charged with overseeing the Act’s implementation. The actions of other agencies are what is regulated by NEPA. Those agencies, whose conduct NEPA was enacted to redirect, are hardly those to whose interpretations of this Act (unlike statutes which they administer) deference is appropriate. Such agencies, in the context of litigation, universally attempt to justify noncompliance.

⁸See discussion of the CEQ in §§ 10:65 to 10:71.

⁹40 C.F.R. § 1507.3. The Ninth Circuit has said of the CEQ provisions: “The regulations have been enacted in such a way as to remove from the ambit of judicial review any agency decision which meets the requirements of the regulations.” *Seattle Community Council Fed’n v. Federal Aviation Admin.*, 961 F.2d 829, 832 (9th Cir. 1992).

¹⁰42 U.S.C.A. § 7609; 40 C.F.R. pt. 1504; see § 10:31.

¹¹For example, the CEQ has been involved in the U.S. Army’s decisionmaking process regarding disposal of chemical weapons stockpiles. See Council on Environmental Quality, *Environmental Quality 1985*, at 149–58 (1986). For a discussion of the range of the CEQ’s responsibilities, see generally *Hearings on Council on Environmental Quality Reauthorization and Oversight*, Subcomm. on Fisheries and Wildlife Conservation and the Env’t, Comm. on Merchant Marine and Fisheries, 98th Cong., 2d Sess. 34–36 (1984).

[Section 10:7]

¹See § 10:20.

²Council on Environmental Quality, *Environmental Quality 1986*, at 245–47 tbl.B-6 (1988); Council on Environmental Quality, *Environmental Quality 1994–95*, at 534 (1996). Many EPA impact statements are occasioned by sewage treatment plant construction or issuance of national pollutant

bridge two approaches to environmental legislation. Under Senator Jackson's environmental charter approach, embodied in NEPA, Congress gave an all-embracing directive and left administrators to fill in the details. Under Senator Muskie's approach, embodied in the Clean Air Act, a wary Congress gave far more detailed directives and left considerably less scope for agency discretion. In the Clean Air Act, passed one year after NEPA, Congress expressly made EPA the environmental evaluator of all agencies' actions by requiring it to review and comment on the environmental impact of other agencies' projects subject to the EIS requirement.³ Under this authority, EPA not only comments generally on the impact of other agencies' proposals, but publicly rates the quality of their EISs.⁴ EPA also coordinates EIS public notice and distribution procedures by publishing notices of all EISs when they are filed with it.⁵ EPA must refer other agencies' actions to the CEQ if it finds them environmentally unsound.⁶

§ 10:8 Overview—Agency responsibilities under NEPA—Other federal agencies

NEPA makes “all agencies of the Federal Government” participants in pursuing the goal of environmental protection.¹ Only Congress,² the judiciary, and the President are excluded from this broad mandate.³ Section 102 of NEPA requires that agencies “to the fullest extent possible” administer their laws in accordance with the national environmental policy and implement the action-forcing provisions of the Act.⁴ According to the conference committee report on NEPA, this phrase means that agencies are expected to comply with the Act to the fullest extent possible

discharge elimination system (NPDES) permits under the Federal Water Pollution Control Act (FWPCA). Other EPA actions have been either statutorily exempted from NEPA or found by courts to be exempt because they provide “functional equivalents” of NEPA procedures. *See* § 10:45 notes 2–4 and accompanying text.

³Ground Zero Center for Non-Violent Action v. United States Dep't of Navy, 383 F.3d 1082, 1088 (9th Cir. 2005) (NEPA's procedures do not apply to the President.). Clean Air Act § 309, 42 U.S.C.A. § 7609. Section 309 provides:

Policy Review. (a) The Administrator shall review and comment in writing on the environmental impact of any matter relating to duties and responsibilities granted pursuant to this chapter or other provisions of the authority of the Administrator, contained in any (1) legislation proposed by any federal department or agency, (2) newly authorized federal projects for construction and any major federal agency action (other than a project for construction) to which section 4332(2)(C) of this title applies, and (3) proposed regulations published by any department or agency of the Federal Government. Such written comment shall be made public at the conclusion of any such review.

(b) In the event the Administrator determines that any such legislation, action, or regulation is unsatisfactory from the standpoint of public health or welfare or environmental quality, he shall publish his determination and the matter shall be referred to the Council on Environmental Quality.

For discussion of Senator Muskie's intentions regarding this important section, see F. Anderson, NEPA in the Courts, 230–31 (1973); F. Anderson, Federal Environmental Law 268–69 (1974) [hereinafter Federal Environmental Law].

⁴*See, e.g.*, 49 Fed. Reg. 41108 (Oct. 19, 1984).

⁵40 C.F.R. §§ 1506.9 to 1506.10.

⁶Clean Air Act § 309(b), 42 U.S.C.A. § 7609(b); *see* § 10:31.

[Section 10:8]

¹NEPA § 102(2), 42 U.S.C.A. § 4332(2).

²In some situations, a proposal to Congress by the executive branch or an independent regulatory agency requires an EIS. NEPA § 102(2)(C), 42 U.S.C.A. § 4332(2)(C); 40 C.F.R. §§ 1506.8, 1508.17.

³Performance of staff functions for the President in the EOP is also excluded. 40 C.F.R. § 1508.12. For NEPA purposes a “federal agency” may include a state or local government or an Indian tribe that assumes NEPA responsibilities as a condition of receiving funds under § 104(h) of the Housing and Community Development Act of 1974, 42 U.S.C.A. § 5304(a). 40 C.F.R. § 1508.12.

⁴The Supreme Court has interpreted the term “fullest extent possible” as furthering NEPA's environmental mandate. *See* Flint Ridge Dev. Co. v. Scenic Rivers Ass'n, 426 U.S. 776, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20528 (1976).

under their statutory authorizations. They are not to interpret the words so as to avoid compliance, nor are they to construe their statutory authorizations excessively narrowly.⁵ Indeed, the Act states that its policies and goals are supplementary to those in agencies' existing statutory authorizations.⁶ NEPA thus makes environmental protection the mandate of every federal agency.⁷ Each agency must adopt its own NEPA procedures consistent with and to assist in implementing the CEQ NEPA Regulations.⁸

§ 10:9 The administrative process under NEPA

NEPA's administrative process is most easily understood if it is examined chronologically. Because the EIS is the most conspicuous part of the process,¹ the following discussion is organized chronologically by reference to the EIS. The discussion first covers prestatement procedures—early planning, followed by the decision on whether and when an EIS is required. It then proceeds through preparation of the statement, and finally describes post-statement procedures. This approach parallels the bulk of the CEQ regulations, which trace the NEPA administrative process chronologically from agency planning² through EIS preparation³ to commenting⁴ and referrals of environmentally unsatisfactory projects to the CEQ,⁵ and finally to agency decisions and their implementation.⁶

Other procedural requirements are also summarized throughout the discussion, for while litigation has concentrated largely on the EIS requirement and on the requirement of considering alternatives in less detail in environmental assessments (EAs),⁷ the administrative process shaping all federal agency activity in light of environmental considerations is pervasive. CEQ's NEPA regulations encapsulate the various procedural requirements, in large part codifying case law and the administrative experience of NEPA's early years. Those regulations discuss NEPA's purposes,⁸ provide uniform terminology,⁹ make clear what agencies must do to en-

⁵H.R. Conf. Rep. No. 765, 91st Cong., 1st Sess. 3 (1969), *reprinted in* United States Code Congressional and Administrative News pp 2767, 2770.

⁶NEPA § 105, 42 U.S.C.A. § 4335. A more ambiguous provision, NEPA § 105, 42 U.S.C.A. § 4334, was intended to harmonize NEPA and the pollution abatement legislation simultaneously being considered by Congress. The somewhat uneasy result is discussed in § 10:34.

⁷*Calvert Cliffs' Coordinating Comm'n, Inc. v. United States Atomic Energy Comm'n*, 449 F.2d 1109, 1112, 1 *Envtl. L. Rep. (Envtl. L. Inst.)* 20346, 20347 (D.C. Cir. 1971). For examples of judicial approval of agencies, use of NEPA to expand their mandates, *see, e.g.*, *Detroit Edison Co. v. NRC*, 630 F.2d 540, 10 *Envtl. L. Rep. (Envtl. L. Inst.)* 20879 (6th Cir. 1980); *Gulf Oil Corp. v. Morton*, 493 F.2d 141, 4 *Envtl. L. Rep. (Envtl. L. Inst.)* 20086 (9th Cir. 1973); *Zabel v. Tabb*, 430 F.2d 199, 1 *Envtl. L. Rep. (Envtl. L. Inst.)* 20023 (5th Cir. 1970), *cert. denied*, 401 U.S. 910 (1971).

⁸40 C.F.R. § 1507.3. Each agency has its own NEPA liaison, the most recent listing of whom appears at 55 Fed. Reg. 36683 (Sept. 6, 1990).

[Section 10:9]

¹NEPA § 102(2)(C), 42 U.S.C.A. § 4332(2)(C). While NEPA § 102(2)(E), 42 U.S.C.A. § 4332(2)(E), also requires agencies to consider alternatives, independent of the requirement that they prepare EISs, it is the EIS process that has occasioned the bulk of the litigation under NEPA.

²40 C.F.R. pt. 1501.

³40 C.F.R. pt. 1502.

⁴*See* NEPA § 1029(1), 42 U.S.C.A. § 4332(1) ("the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this Act, . . .").

⁵40 C.F.R. pt. 1504.

⁶40 C.F.R. pt. 1505.

⁷40 C.F.R. § 1508.9.

⁸40 C.F.R. pt. 1500.

able themselves to comply with NEPA,¹⁰ and summarize various other NEPA requirements.¹¹ Throughout the analysis of NEPA's administrative process, it is important to remember that all of NEPA's procedural requirements must be strictly observed.¹²

It is also useful to remember that those procedural requirements are to be interpreted in light of NEPA's purposes.¹³ The procedures of § 102 are, after all, merely means of carrying out the policies of § 101.¹⁴ Ultimately, the regulations caution that "it is not better documents but better decisions that count."¹⁵ NEPA's purpose is "not to generate paperwork—even excellent paperwork—but to foster excellent action."¹⁶

Above all, it should be stressed that although the Act forces decisionmakers to pay heed to environmental factors, the CEQ NEPA regulations are also designed to reduce paperwork¹⁷ and delay.¹⁸ Implementation of NEPA's administrative procedures must be sensitive to these two goals.¹⁹

§ 10:10 The administrative process under NEPA—Prestatement procedures

The NEPA process begins with agency planning¹ and requires that environmental considerations be integrated into that planning.² The CEQ regulations give agencies detailed guidance on how to accomplish this integration.³ They also provide direction for situations in which an applicant, rather than a federal agency, is developing a proposal.⁴

Once an agency begins to plan an action, it must determine whether it must complete an EIS on the proposed action. This threshold determination is governed by NEPA, the CEQ regulations, and the agency's own procedures. Agency actions can be divided into three categories. First, agency procedures may provide for "categorical exclusions"⁵ of categories of actions that individually or cumulatively do

⁹40 C.F.R. pt. 1508.

¹⁰40 C.F.R. pt. 1507.

¹¹40 C.F.R. pt. 1506.

¹²*Calvert Cliffs' Coordinating Comm'n, Inc. v. United States Atomic Energy Comm'n*, 449 F.2d 1109, 1112, 1 Env'tl. L. Rep. (Env'tl. L. Inst.) 20346, 20347 (D.C. Cir. 1971). The NEPA regulations do caution that "trivial violations" are not intended to give rise to independent causes of action. 40 C.F.R. § 1500.3.

¹³*See generally* 40 C.F.R. pt. 1500.

¹⁴*See* NEPA § 1029(1), 42 U.S.C.A. § 4332(1) ("the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this Act, . . ."). 40 C.F.R. § 1500.1. The CEQ regulations stress that the President, federal agencies, and the courts share responsibility for enforcing the Act so as to achieve the substantive requirements of § 101. 40 C.F.R. § 1500.1(a).

¹⁵40 C.F.R. § 1500.1(c).

¹⁶40 C.F.R. § 1500.1(c).

¹⁷40 C.F.R. § 1500.4.

¹⁸40 C.F.R. § 1500.5.

¹⁹*See* Exec. Order No. 11991, 3 C.F.R. § 123 (1977).

[Section 10:10]

¹40 C.F.R. pt. 1501.

²40 C.F.R. § 1501.1(a).

³40 C.F.R. § 1501.2.

⁴40 C.F.R. § 1501.2(d).

⁵40 C.F.R. § 1507.3(b)(2)(ii); *see* CEQ, Memorandum for Heads of Federal Departments and Agencies, "Establishing, Applying, and Revising Categorical Exclusions Under the National Environmental

not have significant effects on the environment.⁶ Since actions in these categories do not require EISs, the agency may simply proceed with them.⁷ Second, agency procedures may specify cases that normally do require EISs; in such cases, the agency undertakes the process leading to EIS preparation.⁸ Third, an agency may not have decided in advance whether a given type of action requires an EIS. In such a situation—the occasion for both disputes and litigation—the agency is to prepare an EA before proceeding.⁹

While the CEQ regulations set out the minimum requirements for considering environmental impacts, NEPA always permits agencies to do more if they choose. Thus, if a situation is categorically excluded, an agency could decide to prepare an EA or EIS anyway. Similarly, if an EA would initially suffice, the agency could nonetheless undertake an EIS directly without first preparing an EA. Agencies may do this when they want to avoid controversy, or when they genuinely desire the additional environmental analysis that more complete documentation would provide.

§ 10:11 The administrative process under NEPA—Prestatement procedures—The environmental assessment

The EA is a concise public document designed to provide sufficient evidence and analysis for an agency to determine whether to prepare an EIS or a finding of no significant impact (FONSI).¹ An EA may also help an agency comply with NEPA when no EIS is needed,² and may facilitate preparation of an EIS when one is needed.³ An EA must include brief discussions of the need for the proposed action, the alternatives required under NEPA § 102(2)(E), and the environmental impacts of both the proposed action and the alternatives. The EA must also list the agencies and persons consulted during its preparation.⁴

Policy Act,” Nov. 23, 2010 (available at NEPA.gov); *U.S. v. Coalition for Buzzards Bay*, 644 F.3d 26 (1st Cir. 2011); *Wong v. Bush*, 542 F.3d 732, 737 (9th Cir. 2008) (if categorically excluded, EIS requirements inapplicable); *Sierra Club v. Bosworth*, 510 F.3d 1016, 1027 (9th Cir. 2007) (allowing challenge to categorical exclusion).

⁶40 C.F.R. § 1508.4. The regulation provides that even when there is an applicable categorical exclusion, if there are “extraordinary circumstances” present, the agency procedures must provide for the preparation of an environmental assessment or an environmental impact statement. 40 C.F.R. §§ 1507.3, 1508.4; *Town of Marshfield v. Federal Aviation Administration*, 552 F.3d 1, 3 (1st Cir. 2008); see *Rhodes v. Johnson*, 153 F.3d 785 (7th Cir. 1998).

⁷40 C.F.R. § 1501.4(a)(2); A categorical exclusion must, however, be sufficiently documented such that the reviewing court can determine whether the agency considered its applicability. *Wilderness Watch and Public Employees for Env'tl. Responsibility v. Mainella*, 375 F.3d 1085 (11th Cir. 2004). While deference is due to an agency’s construction of its own categorical exclusion (*City of Alexandria, Va. v. Federal Highway Admin.*, 756 F.2d 1014, 1020-21 (4th Cir. 1985)), a court may review and invalidate the agency’s reliance on a categorical exclusion (*West v. Secretary of Dep’t of Transp.*, 206 F.3d 920 (9th Cir. 2000)).

⁸40 C.F.R. § 1507.3(b)(2)(i); 40 C.F.R. § 1501.3(a), 40 C.F.R. § 1501.4(a)(1).

⁹40 C.F.R. §§ 1501.4(b), 1508.9. By way of illustration, see *Anacostia Watershed Soc’y v. Babbitt*, 871 F. Supp. 475, 25 Env’tl. L. Rep. (Env’tl. L. Inst.) 20745 (D.D.C. 1994).

[Section 10:11]

¹40 C.F.R. § 1508.9(a)(1).

²40 C.F.R. § 1508.9(a)(2).

³40 C.F.R. § 1508.9(a)(3).

⁴40 C.F.R. § 1508.9(b). The First Circuit has accurately characterized the law and regulations as not requiring public circulation of every EA (*Alliance to Protect Nantucket Sound, Inc. v. United States Dep’t of Army*, 398 F.3d 105 (1st Cir. 2005)), although many high visibility EAs are as a matter of practice so circulated. The Ninth Circuit has now come into line with the other circuits in holding that EAs need not be circulated to the public in all instances. *Bering Straits Citizens for Responsible Resource Development v. U.S. Army Corps of Engineers*, 511 F.3d 1011, 1026 (9th Cir. 2008), opinion amended and superseded on denial of reh’g by 524 F.3d 938 (9th Cir. 2008) (“An agency, when prepar-

§ 10:12 The administrative process under NEPA—Prestatement procedures—Finding of no significant impact

Preparation of an EA can lead to one of two results. If the agency finds, based on the EA, that its proposal will have no significant impact on the environment, it prepares a Finding of No Significant Impact or FONSI, and no EIS is required.¹ A FONSI is a document briefly explaining why the proposal will have no such impact. A FONSI must include the EA or a summary of it and must note any other environmental documents related to the EA.²

If, on the other hand, the agency determines in its EA that there may or will be a significant environmental impact, it takes the first steps toward preparing an EIS.³

§ 10:13 The administrative process under NEPA—Prestatement procedures—Definitions of terms regarding when an EIS is required: Proposals for major federal actions significantly affecting the quality of the human environment

NEPA never actually uses the phrase “environmental impact statement.” Rather, it requires a “detailed statement” that includes discussions of various environmental impacts.¹ This statement is to be included by all agencies in “every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment.”² The CEQ regulations elaborate on every word or phrase in this, the most litigated language in NEPA.

§ 10:14 The administrative process under NEPA—Prestatement procedures—Definitions of terms regarding when an EIS is required: Proposals for major federal actions significantly affecting the quality of the human environment—“Proposal”

The regulations define the term “proposal” largely in terms of timing. A “proposal” exists when an agency has a goal and is actively preparing to make a decision on one or more means of accomplishing it, and the effects of that decision can be meaningfully evaluated.¹ This definition essentially steers a line between two sets of concerns. First, the Supreme Court has held that EISs are not required until

ing an EA, must provide the public with sufficient environmental information, considered in the totality of circumstances, to permit members of the public to weigh in with their views and thus inform the agency decision-making process.”)

[Section 10:12]

¹40 C.F.R. § 1501.4(e). CEQ has issued guidance on when mitigation may be sufficient to reduce the action’s impacts below the threshold of significance, thereby obviating the need for an EIS—the so-called “mitigated FONSI” situation. Memoranda for Head of Federal Departments and Agencies, “Appropriate Use of Mitigation and Monitoring and Clarifying the Use of Mitigated Findings of No Significant Impact,” Jan. 14, 2011 (available at NEPA.gov).

²40 C.F.R. § 1508.13. A FONSI that includes an EA need not repeat the discussion in the EA but may incorporate it by reference. A FONSI must be supported by convincing reasons. *Alaska Wilderness League v. Kempthorne*, 548 F.3d 815, 824 (9th Cir. 2008), opinion withdrawn and vacated by 559 F.3d 916 (9th Cir. 2008) and opinion superseded, 2009 WL 1856025 (9th Cir. 2009).

³40 C.F.R. §§ 1501.4(d), 1508.3, 1508.11.

[Section 10:13]

¹NEPA § 102(2)(C), 42 U.S.C.A. § 4332(2)(C); *see* 40 C.F.R. § 1508.11.

²NEPA § 102(2)(C), 42 U.S.C.A. § 4332(2)(C); 40 C.F.R. § 1502.3.

[Section 10:14]

¹40 C.F.R. § 1508.23.

prospective proposals are more concrete than mere contemplation.² Second, administrators and applicants are concerned that EIS preparation not be put off so as to delay underlying actions. The regulations require that an EIS be timed so that it will be complete and ready to be included in the agency's report or recommendation on the proposal.³

Proposals for legislation differ from other agency proposals for action in that the agency has no control over the action that is the subject of the EIS—the legislation. Rather, that control lies with a congressional committee. The CEQ regulations reflect this difference by providing a modified set of administrative procedures for legislative proposals, integrating the NEPA process with the legislative process.⁴ On a related matter, the Supreme Court has upheld the CEQ's determination that NEPA's legislative EIS requirement does not extend to requests for appropriations.⁵

§ 10:15 The administrative process under NEPA—Prestatement procedures—Definitions of terms regarding when an EIS is required: Proposals for major federal actions significantly affecting the quality of the human environment—"Other major federal actions"

In contrast to the modified requirements for proposals for legislation, the NEPA procedures for proposals for "other major Federal actions"¹ are more commonly used, since these actions occasion the preparation of most EISs. "Other major Federal actions" are defined broadly to include "projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by federal agencies; new or revised agency rules, regulations, plans, policies, or procedures; and legislative proposals."² Federal activities that may occasion EISs thus fall into four categories, sometimes known as the "four P's"—policies, plans, programs, and projects.³

The NEPA regulations further define the term to include actions potentially subject to federal control and responsibility.⁴ The regulations also state that "major"

²Kleppe v. Sierra Club, 427 U.S. 390, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20532 (1976); *see also* Montana Ecosystems Defense Council v. Espy, 15 F.3d 1087, 24 Env'tl. L. Rep. (Env'tl. L. Inst.) 20501 (9th Cir. 1994).

³40 C.F.R. § 1508.23.

⁴40 C.F.R. §§ 1506.8, 1508.17, 1508.18(a). Only a limited number of EISs are prepared on proposals for legislation. *See* A Primer, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 10060, 10067–68 (Feb. 1989) (discussing inattention to legislative EISs).

⁵*See* Andrus v. Sierra Club, 442 U.S. 347, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20390 (1979); 40 C.F.R. § 1508.17.

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¹NEPA § 102(2)(C), 42 U.S.C.A. § 4332(2)(C); 40 C.F.R. § 1508.18.

²40 C.F.R. § 1508.18(a).

³40 C.F.R. § 1508.18(b); Norton v. Southern Utah Wilderness Alliance, 542 U.S. 55, 124 S. Ct. 2373, 2384, 159 L. Ed. 2d 137 (2004) (approval of a plan is a major federal action potentially requiring an EIS).

⁴40 C.F.R. § 1508.18. For a discussion of what is "federal," *see* W. Rodgers, Handbook on Environmental Law 761 (1977); Ellis & Smith, The Limits of Federal Environmental Responsibility and Control Under the National Environmental Policy Act, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 10055 (Feb. 1988). By way of examples where federal involvement was held to be so minimal as not to constitute major federal action, *see* Macht v. Skinner, 916 F.2d 13, 21 Env'tl. L. Rep. (Env'tl. L. Inst.) 20004 (D.C. Cir. 1990) (UMTA funding of preliminary studies does not rise to the level of major federal action); Maryland Conservation Council v. Gilchrist, 408 F.2d 1039, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20499 (4th Cir. 1986); Sabine River Auth. v. United States Dep't of the Interior, 951 F.2d 669, 22 Env'tl. L. Rep. (Env'tl. L. Inst.) 20239 (5th Cir. 1992); Village of Los Ranchos de Albuquerque v. Barnhart, 906 F.2d 1477, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 21433 (10th Cir. 1990) (though eligible for federal funding, did not seek it; federal location study funds minuscule proportion of total); United

reinforces but has no meaning independent of “significantly.”⁵ This CEQ determination follows a well-reasoned line of cases,⁶ and was quoted with apparent approval by the Supreme Court in *Andrus v. Sierra Club*.⁷ Finally, the regulations provide that in certain circumstances, a failure to act can also be an “action.”⁸

§ 10:16 The administrative process under NEPA—Prestatement procedures—Definitions of terms regarding when an EIS is required: Proposals for major federal actions significantly affecting the quality of the human environment—“Significantly”

The term “significantly” presents the threshold for the EIS requirement, and no other term in NEPA has been the subject of more attention. Although there has been much litigation on the meaning of the word, the cases have been very fact-specific.¹ As a result, rather than formulating a universal interpretation, the CEQ regulations distill generalized direction from case law, and present this direction as a nonexclusive checklist.²

The regulations define “significantly” in terms of both “context”³ and “intensity.”⁴ The former term recognizes that significance varies with the setting of the proposed action and also indicates that an action should be viewed from several different perspectives (*e.g.*, local, regional, and national).⁵ The latter term refers to severity of impact and is to be evaluated according to various listed factors, including beneficial as well as adverse impacts;⁶ effects on public health or safety;⁷ unique characteristics

States v. 0.95 Acres of Land, 994 F.2d 696, 23 *Envtl. L. Rep.* (Envtl. L. Inst.) 20997 (9th Cir. 1993) (filing of condemnation proceeding not a major federal action); *Citizen Advocacy Ctr. v. Dupage Airport Auth.*, 141 F.3d 713, 28 *Envtl. L. Rep.* (Envtl. L. Inst.) 21105 (7th Cir. 1998) (when no federal funds or permit needed for a runway expansion, not a major federal action); *Rattlesnake v. U.S. EPA*, 509 F.3d 1095, 1101 (9th Cir. 2007) (looks to extent of federal funding and involvement).

⁵40 C.F.R. § 1508.18.

⁶*See, e.g.*, *Minnesota Pub. Interest Research Group v. Butz*, 498 F.2d 1314, 4 *Envtl. L. Rep.* (Envtl. L. Inst.) 20700 (8th Cir. 1974) (*en banc*), permanent injunction issued, 401 F. Supp. 1276, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20133 (D. Minn.), injunction dissolved, 541 F.2d 1292, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20736 (8th Cir. 1975). In following this line of cases, the CEQ rejected another. *See, e.g.*, *NAACP v. Wilmington Medical Ctr., Inc.*, 584 F.2d 619, 8 *Envtl. L. Rep.* (Envtl. L. Inst.) 20699 (3d Cir. 1978).

⁷*Andrus v. Sierra Club*, 442 U.S. 347, 361 n. 20, 9 *Envtl. L. Rep.* (Envtl. L. Inst.) 20390, 20394 (1979). For the legislative history of the CEQ regulations, *see* Preamble, 43 *Fed. Reg.* 56978, 55989 (Nov. 29, 1978).

⁸40 C.F.R. § 1508.18. At the same time mere continuation of the status quo is not a federal “action.” *Fund for Animals v. Thomas*, 127 F.3d 80, 29 *Envtl. L. Rep.* (Envtl. L. Inst.) 20196 (D.C. Cir. 1997).

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¹For summaries of some of these cases, see W. Rodgers, *Handbook on Environmental Law* 750–61 (1977). To this the Supreme Court has, departing from the statutory test of significance, has added its own test of usefulness. *Department of Transp. v. Public Citizen*, 541 U.S. 752, 124 S. Ct. 2204, 159 L. Ed. 2d 60 (2004).

²40 C.F.R. § 1508.27. *See also* *North Carolina v. FAA*, 957 F.2d 1125 (4th Cir. 1992). Courts defer to agencies in technical and scientific matters in determining significance. *Sierra Club v. Wagner*, 555 F.3d 21 (1st Cir. 2009).

³40 C.F.R. § 1508.27(a).

⁴40 C.F.R. § 1508.27(b).

⁵40 C.F.R. § 1508.27(a).

⁶40 C.F.R. § 1508.27(b)(1).

⁷40 C.F.R. § 1508.27(b)(2).

of a geographic area;⁸ whether the effects are highly controversial;⁹ whether there are highly uncertain effects or unique or unknown risks;¹⁰ whether the action may establish a precedent;¹¹ whether the action is related to other actions with individually insignificant but cumulatively significant effects;¹² whether historic, cultural, or scientific resources are affected;¹³ whether endangered or threatened species are involved;¹⁴ and whether the action threatens to violate federal, state, or local requirements protecting the environment.¹⁵ In NEPA litigation, factual showings are likely to revolve around one or more of these factors.

§ 10:17 The administrative process under NEPA—Prestatement procedures—Definitions of terms regarding when an EIS is required: Proposals for major federal actions significantly affecting the quality of the human environment—“Affecting”

The regulations define “affecting” to mean “will or may have an effect on.”¹ The rationale for this definition lies in the phraseology of NEPA itself, and is supported by case law.² If there will be no significant environmental impact, no EIS is required. An EIS is required, however, both when a significant impact is certain and when it is not known whether there will be such an impact.³

The regulations define “effects” to include both “direct effects,” those that are caused by the action and occur at the same time and place,⁴ and “indirect effects,” those that are caused by the action and occur later or farther away but are still reasonably foreseeable.⁵ Indirect effects may include growth-inducing effects and other

⁸40 C.F.R. § 1508.27(b)(3). These unique characteristics include proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

⁹40 C.F.R. § 1508.27(b)(4). *See Greenpeace Action v. Franklin*, 982 F.2d 1342, 23 *Envtl. L. Rep. (Envtl. L. Inst.)* 20639 (9th Cir. 1992), opinion amended and superseded on denial of reh'g, 14 F.3d 1324 (9th Cir. 1992).

¹⁰40 C.F.R. § 1508.27(b)(5).

¹¹40 C.F.R. § 1508.27(b)(6).

¹²40 C.F.R. § 1508.27(b)(7). Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts. *See also* 40 C.F.R. § 1508.7.

¹³40 C.F.R. § 1508.27(b)(8).

¹⁴40 C.F.R. § 1508.27(b)(9).

¹⁵40 C.F.R. § 1508.27(b)(10).

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¹40 C.F.R. § 1508.3. The Supreme Court has said that NEPA requires a reasonably close causal relationship between the environmental effect and the alleged cause. *Department of Transp. v. Public Citizen*, 541 U.S. 752, 124 S. Ct. 2204, 159 L. Ed. 2d 60 (2004).

²*See, e.g., Save Our Ten Acres v. Kreger*, 472 F.2d 463, 3 *Envtl. L. Rep. (Envtl. L. Inst.)* 20041 (5th Cir. 1973); *Lockhart v. Kenops*, 927 F.2d 1028, 1033, 21 *Envtl. L. Rep. (Envtl. L. Inst.)* 20994, 20996 (8th Cir. 1991).

³*See Louisiana v. Lee*, 758 F.2d 1081, 1084-85, 15 *Envtl. L. Rep. (Envtl. L. Inst.)* 20609, 20610-11 (5th Cir. 1985), cert. denied sub nom. *Dravo Basic Materials Co. v. Louisiana*, 475 U.S. 1044 (1986); *see also Sierra Club v. Marsh*, 769 F.2d 868, 871, 15 *Envtl. L. Rep. (Envtl. L. Inst.)* 20911, 20912 (1st Cir. 1985); *Foundation for N. Am. Wild Sheep v. Department of Agric.*, 681 F.2d 1172, 1178, 12 *Envtl. L. Rep. (Envtl. L. Inst.)* 20968, 20969 (9th Cir. 1982); *Minnesota Pub. Interest Research Group v. Butz*, 498 F.2d 1314, 1320, 4 *Envtl. L. Rep. (Envtl. L. Inst.)* 20700, 20702-03 (8th Cir. 1974); *Hanly v. Kleindienst*, 471 F.2d 823, 831, 2 *Envtl. L. Rep. (Envtl. L. Inst.)* 20717, 20720-21 (2d Cir. 1972), cert. denied, 412 U.S. 908 (1973); *see also W. Rodgers, Handbook on Environmental Law 754-55* (1977).

⁴40 C.F.R. § 1508.8(a).

⁵40 C.F.R. § 1508.8(b); *Ground Zero Center for Non-Violent Action v. United States Dep't of Navy*, 383 F.3d 1083, 1090 (9th Cir. 2004). By way of example of a court dealing with the reach of required analysis of impacts under NEPA, *see Lockhart v. Kenops*, 927 F.2d 1028, 21 *Envtl. L. Rep. (Envtl. L. Inst.)* 20994 (8th Cir. 1991) (when exchanging land with a private party the agency must ex-

effects of induced changes in land use patterns.⁶ Environmental “effects” are generally synonymous with environmental “impacts” and encompass a broad range—ecological, aesthetic, historic, cultural, economic, social, and health effects.⁷ Socio-economic impacts may only be considered, however, if they accompany physical impacts.⁸ “Effects” include both the beneficial and the detrimental effects of an action, even if an agency considers the overall impact beneficial.⁹

§ 10:18 The administrative process under NEPA—Prestatement procedures—Definitions of terms regarding when an EIS is required: Proposals for major federal actions significantly affecting the quality of the human environment—“The quality of the human environment”

The final term in § 102(2)(C)’s description of when an EIS is required is “the quality of the human environment.” The regulations interpret this term comprehensively “to include the natural and physical environment and the relationship of people with that environment.”¹ Economic and social effects by themselves do not require preparation of an EIS, but when an EIS is prepared and economic or social and natural or physical environmental effects are interrelated, the EIS must discuss all of them.²

§ 10:19 The administrative process under NEPA—Prestatement procedures—Scoping

Once an agency determines through an EA or otherwise that a proposal may significantly affect the environment, it must prepare an EIS. The next step is “scoping,” defined by the regulations as “an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a

amine the impacts of that party’s use of the land acquired from the government, but, absent sham, need not look at potential uses by subsequent purchasers).

⁶40 C.F.R. § 1508.8(b); *Ground Zero Center for Non-Violent Action v. United States Dep’t of Navy*, 383 F.3d 1083, 1090 (9th Cir. 2004). These indirect effects were sometimes called “secondary impacts” prior to adoption of the CEQ NEPA regulations. The regulations opted for the direct-indirect distinction rather than the primary-secondary one because the latter sometimes led to the not necessarily accurate conclusion that secondary meant less important.

⁷40 C.F.R. § 1508.8(b); *Ground Zero Center for Non-Violent Action v. United States Dep’t of Navy*, 383 F.3d 1083, 1090 (9th Cir. 2004).

⁸40 C.F.R. § 1508.14. *See Douglas County v. Babbitt*, 48 F.3d 1495, 25 *Env’tl. L. Rep.* (Env’tl. L. Inst.) 20631 (9th Cir. 1995).

⁹40 C.F.R. § 1508.8(b); *Ground Zero Center for Non-Violent Action v. United States Dep’t of Navy*, 383 F.3d 1083, 1090 (9th Cir. 2004).

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¹40 C.F.R. § 1508.14.

²40 C.F.R. § 1508.14. In February 1994, President Clinton issued an executive order relating to environmental justice. Exec. Order No. 12898, 59 *Fed. Reg.* 7629 (Feb. 11, 1994). Although the executive order is silent as to NEPA, in a memorandum of the same date the President said that when feasible NEPA documents should address the effects of federal actions on minority and low-income communities. White House, *Memorandum for All Heads of All Departments and Agencies Regarding Executive Order on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (Feb. 11, 1994).

proposed action.”¹ The initiative will have been taken by the lead agency,² assisted by other agencies with jurisdiction or expertise, called cooperating agencies.³

One purpose of scoping is to notify and involve all agencies and individuals concerned about the proposed action. Another is to identify issues that should be analyzed in-depth and eliminate from study those that are not significant.⁴ To help achieve these purposes, the regulations encourage, but do not require, agencies to hold scoping meetings.⁵ Finally, scoping is the appropriate occasion for an agency to set time limits for the entire NEPA process.⁶ The agency may do this on its own, and “shall” do it if an applicant so requests.⁷

§ 10:20 The administrative process under NEPA—Preparation of the statement

The next step in the NEPA process is preparation of the EIS itself.¹ At the outset, it is important to stress several aspects of the EIS. First and foremost, the EIS is not an end in itself, but rather a tool to promote environmentally sensitive decisionmaking.² Second, the document is to be analytic rather than encyclopedic.³ It is to be concise—no longer than absolutely necessary to meet the law’s requirements.⁴ The regulations, in fact, impose a page limit of 150 pages, although they allow up to 300 pages for proposals of unusual scope or complexity.⁵ Third, the statement should indicate how the proposal will achieve the policies of NEPA.⁶ Above all, the EIS should be used to assess environmental impacts, not to justify decisions already made.⁷

With these considerations in mind, we now review the actual process of preparing an EIS, first determining who prepares the statement and then analyzing the chronological sequence of preparation.

§ 10:21 The administrative process under NEPA—Preparation of the statement—Who prepares the EIS?

It is important to emphasize that NEPA requires federal agencies to be the entities preparing EISs, but, as will appear below, others may prepare supporting

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¹40 C.F.R. §§ 1501.7, 1508.25. *See generally* Memorandum from CEQ to General Counsel, NEPA Liaisons, and Participants in Scoping, Scoping Guidance (Apr. 30, 1981). No scoping is required for EISs on legislative proposals. 40 C.F.R. § 1506.8.

²40 C.F.R. § 1501.5.

³40 C.F.R. §§ 1501.6, 1508.5; *see* North Buckhead Civic Ass’n v. Skinner, 903 F.2d 1533, 20 Env’tl. L. Rep. (Env’tl. L. Inst.) 21061 (11th Cir. 1990).

⁴40 C.F.R. § 1501.7. *See* Northwest Coalition for Alternatives to Pesticides v. Lyng, 844 F.2d 588, 594-95, 18 Env’tl. L. Rep. (Env’tl. L. Inst.) 20738, 20741-42 (9th Cir. 1988) (agency violated spirit and letter of CEQ scoping regulations by failing to invite environmental organizations that had previously enjoined agency’s proposal).

⁵40 C.F.R. § 1501.7(b)(4).

⁶40 C.F.R. §§ 1501.7(b)(2), 1501.8.

⁷40 C.F.R. § 1501.8(a).

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¹40 C.F.R. pt. 1502.

²40 C.F.R. §§ 1501.1, 1502.1.

³40 C.F.R. § 1502.2(a).

⁴40 C.F.R. § 1502.2(c).

⁵40 C.F.R. § 1502.7.

⁶40 C.F.R. § 1502.2(d).

⁷40 C.F.R. § 1502.2(g).

documents. When applicants are involved, two desirable goals conflict—eliminating duplication between the work done by the agency and that done by the applicants or their consultants, and ensuring that the agency exercises independent judgment by doing its own work either directly or through its consultant. The applicable regulation tracks case law on this issue¹ but gives deference to both considerations.²

The regulation provides different treatment for information, for EAs, and for EISs. An applicant may submit³ information to an agency either on its own or at the agency's request.⁴ If an agency requests information, however, it must evaluate that information independently and is responsible for its accuracy. It is the regulation's intent that agencies verify, but not redo, acceptable work.⁵

An agency may permit an applicant to prepare an EA. However, the agency must make its own evaluation of the environmental issues and take responsibility for the document's scope and content.⁶

Finally, an applicant cannot prepare an EIS; that document is solely the responsibility of the agency.⁷ Thus, the EIS may only be prepared directly by the agency or by a contractor “solely” selected by an agency.⁸ The process is designed to avoid the potential conflict of interest arising from an applicant's selection of a consultant whose analysis could serve the applicant's own interests. A contractor selected by an agency must execute a disclosure statement specifying that it has no financial or other interest in the outcome of the project.⁹ Further, the agency must furnish guidance to the contractor and must independently evaluate and take responsibility for the document.¹⁰

It is important to discuss the roles agencies play when more than one is expected to be heavily involved in the EIS process. In this situation, the NEPA regulations provide for a “lead agency”¹¹ to take “primary responsibility”¹² for preparation of the EIS and to supervise the process.¹³ This simplifies EIS preparation and avoids duplication.

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¹See, e.g., *Greene County Planning Bd. v. FPC*, 455 F.2d 412, 2 *Envtl. L. Rep.* (Envtl. L. Inst.) 20017 (2d Cir. 1972), cert. denied, 490 U.S. 849 (1972), stay granted, 490 F.2d 256, 4 *Envtl. L. Rep.* (Envtl. L. Inst.) 20080 (2d Cir. 1973).

²40 C.F.R. § 1506.5.

³40 C.F.R. § 1506.5(a), (c).

⁴40 C.F.R. § 1506.5(a).

⁵40 C.F.R. § 1506.5(a). See *People ex rel. Van de Kamp v. Marsh*, 687 F. Supp. 495, 499, 19 *Envtl. L. Rep.* (Envtl. L. Inst.) 20165, 20166 (N.D. Cal. 1988).

⁶40 C.F.R. § 1506.5(b); *Anderson v. Evans*, 371 F.3d 475, 488-89 (9th Cir. 2004) (agency may rely on applicant prepared EA and applicant provided information as long as it objectively evaluates it).

⁷40 C.F.R. § 1506.5(c).

⁸40 C.F.R. § 1506.5(c). In *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 21 *Envtl. L. Rep.* (Envtl. L. Inst.) 21142 (D.C. Cir. 1991), the court found that the FAA had violated this section, chastising the agency but declining to reverse on that ground. In *Village of Barrington*, 636 F.3d at 673, the same court, having found no error compromising the objectivity of the NEPA process, explicitly did not consider the claim that the agency improperly selected or supervised its contractors.

⁹40 C.F.R. § 1506.5(c).

¹⁰40 C.F.R. § 1506.5(c). A provision exists for an agency to select a contractor whom the applicant then pays. *Forty Most Asked Questions Concerning CEQ's NEPA Regulations*, 46 *Fed. Reg.* 18026, 18031 (Mar. 23, 1981). In some cases this procedure, known as a “third party contract,” will expedite the processing of the application.

¹¹40 C.F.R. §§ 1501.5, 1508.16. When there is a dispute over which agency is to be the lead agency, the regulations provide criteria for resolution, 40 C.F.R. § 1501.5(c), and, if necessary, a mechanism for an independent and final determination by the CEQ. 40 C.F.R. § 1501.5(c) to (f).

¹²40 C.F.R. § 1508.16.

¹³40 C.F.R. § 1501.5.

The regulations further allow the lead agency to designate as “cooperating agencies” other agencies that have jurisdiction by law over a project.¹⁴ The lead agency may also so designate other agencies with special expertise on any environmental issues that the EIS should discuss.¹⁵ This mechanism is designed to promote agency cooperation early in the NEPA process, hopefully ensuring that all agencies’ concerns are addressed and averting subsequent squabbles.

§ 10:22 The administrative process under NEPA—Preparation of the statement—The Environmental Impact Statement—Determining the scope of the EIS

Although the lead agency should already have considered the scope of the EIS during the scoping process,¹ the regulations require that it further define that scope as it prepares the EIS.² Questions of scope cannot be manipulated so as to avoid the EIS process; for example, an agency may not segment an environmentally significant project into less significant portions that do not require EISs.³ On the other hand, proposals or parts of proposals that are so closely related as to be, in effect, a single course of action may be treated as such in a single EIS.⁴ EISs may also be prepared for broad proposals. Such statements may, for example, evaluate similar actions generically, or consider all actions that occur within given geographic areas.⁵

§ 10:23 The administrative process under NEPA—Preparation of the statement—The Environmental Impact Statement—Tiering

In some instances, the regulations suggest that agencies employ “tiering” to help them focus on those issues ripe for decision.¹ Tiering is appropriate when different stages of development—such as a nationwide program and a specific project under that program—are the subjects of separate EISs. Tiering is a method of gearing each EIS to the appropriate stage of development, incorporating by reference what

¹⁴40 C.F.R. §§ 1501.6, 1508.5. Other agencies may opt out of the cooperating agency role based on other program commitments. 40 C.F.R. § 1501.6(c). The provision empowering lead agencies to appoint cooperating agencies is designed, however, to stimulate agencies with jurisdiction to cooperate with the lead agency from the beginning, rather than holding their fire until they see a draft EIS and then taking pot shots at it.

¹⁵40 C.F.R. § 1501.6. A state or local agency or Indian tribe possessing jurisdiction by law or special expertise may also, by agreement with the lead agency, become a cooperating agency. 40 C.F.R. § 1508.5.

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¹40 C.F.R. §§ 1502.4, 1508.25.

²40 C.F.R. § 1506.5(c).

³Named Individual Members of the San Antonio Conservation Soc’y v. Texas Highway Dep’t, 446 F.2d 1013, 1 Env’tl. L. Rep. (Env’tl. L. Inst.) 20379 (5th Cir. 1971), cert. denied, 406 U.S. 933 (1972) (segmentation of major highway project into less significant portions does not allow agency to avoid EIS process); *see also* Taxpayers Watchdog, Inc. v. Stanley, 819 F.2d 294, 299, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 20905, 20906-07 (D.C. Cir. 1987); Conservation Law Found. v. Federal Highway Admin., 24 F.3d 1465, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 21196 (1st Cir. 1994).

⁴40 C.F.R. § 1502.4(a); *see* Western Radio Servs. Co. v. Glickman, 123 F.3d 1189, 28 Env’tl. L. Rep. (Env’tl. L. Inst.) 20137 (9th Cir. 1997) (telecommunications tower and road not “connected actions”).

⁵40 C.F.R. § 1502.4(b), (c). As examples of broad programs, the regulations cite adoption of new agency programs or regulations. 40 C.F.R. § 1502.4(b), (c); *see* 40 C.F.R. § 1508.18.

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¹40 C.F.R. §§ 1502.4(d), 1502.20, 1508.28.

has gone before. Each EIS therefore avoids addressing issues that are premature or that have already been analyzed.²

§ 10:24 The administrative process under NEPA—Preparation of the statement—The Environmental Impact Statement—Timing, interdisciplinary approach, and plain language

The NEPA regulations provide, as a general rule, that EISs are to be prepared earlier rather than later to eliminate subsequent delay and to integrate environmental considerations most effectively into the decisionmaking process.¹ The timing of a statement, while usually obvious, can present difficult issues. The regulations address these specifically, providing different rules for federally undertaken projects,² applications to agencies,³ adjudication,⁴ and rulemaking.⁵

EISs are to be prepared using an interdisciplinary approach, integrating where appropriate the natural and social sciences and the environmental design arts.⁶ The statements are to be prepared in language that can be readily understood.⁷

§ 10:25 The administrative process under NEPA—Preparation of the statement—The Environmental Impact Statement—Stages and format of the EIS

EISs are almost always prepared in two stages, draft and final.¹ The one exception to this rule is for EISs for legislative proposals, which need only be prepared as draft statements.² For a nonlegislative proposal, the lead agency, in conjunction with any cooperating agencies, prepares a draft EIS and circulates it for comment.³ After receiving comments, the lead agency prepares a final EIS, indicating its responses to any issues raised by the comments and discussing any responsible opposing views that were not adequately discussed in the draft.⁴ An EIS may be supplemented,⁵ and must be if the agency makes “substantial changes in the proposed action” that are relevant to environmental concerns, or if there are “signif-

²40 C.F.R. §§ 1502.4(d), 1502.20, 1508.28.

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¹40 C.F.R. § 1502.5. An agency’s delay in undertaking the NEPA process until 90 percent of the action was complete was held to be arbitrary and capricious. *Citizens Awareness Network v. United States Nuclear Regulatory Comm’n*, 59 F.3d 284, 25 Env’tl. L. Rep. (Env’tl. L. Inst.) 21564 (1st Cir. 1995).

²40 C.F.R. § 1502.5(a).

³40 C.F.R. § 1502.5(b).

⁴40 C.F.R. § 1502.5(c). By adjudication, the regulations primarily mean actions undertaken by independent regulatory agencies.

⁵40 C.F.R. § 1502.5(d).

⁶40 C.F.R. § 1502.6. NEPA specifically mentions these professional disciplines. NEPA § 102(2)(A), 42 U.S.C.A. § 4332(2)(A).

⁷40 C.F.R. § 1502.8. *See Oregon Env’tl. Council v. Kunzman*, 817 F.2d 484, 493-94, 17 Env’tl. L. Rep. (Env’tl. L. Inst.) 20756, 20759-60 (9th Cir. 1987).

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¹40 C.F.R. §§ 1502.9, 1506.8. Concerning supplemental EISs, *see Coker v. Skidmore*, 941 F.2d 1306, 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 21481 (5th Cir. 1991).

²40 C.F.R. § 1502.9. This exception is itself subject to four exceptions requiring preparation of both draft and final statements. 40 C.F.R. § 1502.9.

³40 C.F.R. § 1502.9(a), pt. 1503.

⁴40 C.F.R. § 1502.9(b).

⁵40 C.F.R. § 1502.9(c).

icant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.”⁶

The NEPA regulations recommend that statements follow a format⁷ consisting of a cover sheet;⁸ a summary not to exceed fifteen pages;⁹ a brief specification of the purpose of and need for the proposed action;¹⁰ analyses of the alternatives;¹¹ the affected environment that exists before the action,¹² and the environmental consequences;¹³ a list of preparers;¹⁴ and an optional appendix.¹⁵

§ 10:26 The administrative process under NEPA—Preparation of the statement—The Environmental Impact Statement—Environmental consequences and alternatives

The discussions of the environmental consequences of and the alternatives to a proposal are the most critical sections of the EIS.¹ The environmental consequences

⁶40 C.F.R. § 1502.9(c)(1). Preparation of a supplemental statement “is at times necessary to satisfy the Act’s ‘action-forcing’ purpose.” *Marsh v. Oregon Natural Resource Council*, 490 U.S. 360, 371, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20749, 20752 (1989). In the Supreme Court’s words:

It would be incongruous with [NEPA’s] approach to environmental protection, and with the Act’s manifest concern with preventing uninformed action, for the blinders to adverse environmental effects, once unequivocally removed, to be restored prior to the completion of agency action simply because the relevant proposal has received initial approval.

40 C.F.R. § 1502.9(c)(1); *see also* *Sierra Club v. Van Antwerp*, 526 F.3d 1353, 1360 (11th Cir. 2008) (changes which minimize impacts are apt to be encompassed within the original EIS and do not require supplementation); *Upper Snake River Chapter of Trout Unlimited v. Hodel*, 921 F.2d 232, 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 20347 (9th Cir. 1990) (periodic adjustment of flow of water from dam does not require EIS); *Coker v. Skidmore*, 744 F. Supp. 121, 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 20657 (S.D. Miss. 1990), order vacated, 941 F.2d 1306 (5th Cir. 1991) (an EIS can become outdated and no longer provide a basis for tiering). *But see* *Town of Winthrop v. Federal Aviation Administration*, 535 F.3d 1 (1st Cir. 2008) (mere passage of time does not render an analysis invalid).

⁷40 C.F.R. § 1502.10.

⁸40 C.F.R. § 1502.11.

⁹40 C.F.R. § 1502.12.

¹⁰40 C.F.R. § 1502.13. The regulations as originally proposed limited this section to one page under normal circumstances, 43 Fed. Reg. 25230, 25237 (June 9, 1978), but the final regulations removed this limitation, 43 Fed. Reg. 55978, 55996 (Nov. 29, 1978), on the ground that in “some cases” more than one page would be needed, 43 Fed. Reg. 55978, 55983 (Nov. 29, 1978). For a case that goes extraordinarily far in allowing the applicant to delineate the “purpose and need” and thereby confine the alternatives essentially to the applicant’s proposal, *see* *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 21142 (D.C. Cir. 1991). *See also* *City of Grapevine v. Department of Transp.*, 17 F.3d 1502, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20828 (D.C. Cir. 1994). The Seventh Circuit reached a contrary conclusion in *Simmons v. United States Army Corps of Eng’rs*, 120 F.3d 664, 666, 27 Env’tl. L. Rep. (Env’tl. L. Inst.) 21204 (7th Cir. 1997). The court explicitly noted the *Burlington* decision as “contra” and quoted approvingly from the dissent. The court also smartly rapped the Corps for describing “a purpose so slender as to define competing ‘reasonable alternatives’ out of consideration (and even out of existence).” *Simmons v. United States Army Corps of Eng’rs*, 120 F.3d 664, 666, 27 Env’tl. L. Rep. (Env’tl. L. Inst.) 21204 (7th Cir. 1997). *See also* *City of Carmel-by-the-Sea v. Department of Transp.*, 123 F.3d 1142, 27 Env’tl. L. Rep. (Env’tl. L. Inst.) 21428 (9th Cir. 1997), *aff’g* in part & *rev’g* in part, 95 F.3d 892, 27 Env’tl. L. Rep. (Env’tl. L. Inst.) 20047 (9th Cir. 1997); *Friends of Southeast’s Future v. Morrison*, 153 F.3d 1059 (9th Cir. 1998).

¹¹40 C.F.R. § 1502.14.

¹²40 C.F.R. § 1502.15.

¹³40 C.F.R. § 1502.16. This section represents the principal analytic discussion. The regulations require the section to include discussions of eight factors. 40 C.F.R. § 1502.16(a) to (h); *see* § 10:26.

¹⁴40 C.F.R. § 1502.17.

¹⁵40 C.F.R. § 1502.18.

[Section 10:26]

¹The description of the “affected environment” is consciously downgraded. The notorious “dandelion counts,” overly descriptive discussions that accounted for much of the unneeded bulk of

section is intended to form “the scientific and analytic basis for the comparisons” in the alternatives section,² and to incorporate the discussions required by various subparagraphs of NEPA § 102(2)(C). Hence, the regulations require the environmental consequences section to discuss: the direct³ and indirect effects⁴ of the proposal and alternatives;⁵ possible conflicts with land use plans;⁶ energy requirements and conservation potential;⁷ natural or depletable resources requirements and conservation potential;⁸ effects on the urban, historic, and built environment and reuse and conservation potential;⁹ and means of mitigating adverse environmental effects.¹⁰ The discussion of cumulative impacts is often a vital part of the EIS.¹¹

The alternatives section is based on the information and analysis in the environmental consequences section, but should not duplicate that section.¹² Described as the “heart of the environmental impact statement,” the alternatives section is to “present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmakers and the public.”¹³ The discussion is to “[r]igorously explore and objectively evaluate all reasonable alternatives,” giving “substantial treatment” to each alternative that is considered in detail.¹⁴ The agency is required to consider alternatives not within the jurisdiction of the lead

many early EISs, are discouraged. In the regulation’s own words, “[v]erbose descriptions of the affected environment are themselves no measure of the adequacy of an environmental impact statement.” 40 C.F.R. § 1502.15. As a generality, if the affected environment description in an EIS is longer than the two analytic sections (40 C.F.R. §§ 1502.14, 1502.16) one may justifiably look askance at undue padding of the former at the expense of the latter.

²40 C.F.R. § 1502.16. Quantified, detailed information is needed for the agency to take the requisite “hard look.” *Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372, 28 *Envtl. L. Rep. (Envtl. L. Inst.)* 21073 (9th Cir. 1998).

³40 C.F.R. § 1502.16(a).

⁴40 C.F.R. § 1502.16(b). Indirect effects include off-site impacts. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 339, 350, 19 *Envtl. L. Rep. (Envtl. L. Inst.)* 20743, 20744, 20747 (1989).

⁵40 C.F.R. § 1502.16(d).

⁶40 C.F.R. § 1502.16(c).

⁷40 C.F.R. § 1502.16(e). *See All Indian Pueblo Council v. United States*, 975 F.2d 1437, 23 *Envtl. L. Rep. (Envtl. L. Inst.)* 20473 (10th Cir. 1992).

⁸40 C.F.R. § 1502.16(f).

⁹40 C.F.R. § 1502.16(g).

¹⁰40 C.F.R. § 1502.16(h). NEPA § 102(2)(C)(ii), 42 U.S.C.A. § 4332(2)(C), specifically requires discussion of adverse impacts that “cannot be avoided should the proposal be implemented.” In the Supreme Court’s words, “one important ingredient of an EIS is the discussion of steps that can be taken to mitigate adverse environmental consequences.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 351, 19 *Envtl. L. Rep. (Envtl. L. Inst.)* 20743, 20747 (1989) (footnote omitted). Indeed, “omission of a reasonably complete discussion of possible mitigation measures would undermine the ‘action-forcing’ function of NEPA.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 351, 19 *Envtl. L. Rep. (Envtl. L. Inst.)* 20743, 20747 (1989). While *Robertson* holds that a full mitigation plan need not be adopted, such a plan is enforceable once it is adopted by the agency in its Record of Decision. 40 C.F.R. §§ 1505.2(c), 1505.3; *Tyler v. Cisneros*, 136 F.3d 603 (9th Cir. 1998).

¹¹40 C.F.R. §§ 1508.7, 1508.25. *See Resources Ltd. v. Robertson*, 8 F.3d 1394, 1400, 24 *Envtl. L. Rep. (Envtl. L. Inst.)* 20026, 20028 (9th Cir. 1993) (requiring consideration of cumulative impacts not under federal control).

¹²40 C.F.R. § 1502.14.

¹³40 C.F.R. § 1502.14; *In re Operation of Missouri River Sys. Litig.*, 418 F.3d 915 (8th Cir. 2005) (allowing comparison of alternatives in chart form); *see Friends of Yosemite Valley v. Kempthorne*, 520 F.3d 1024, 1038–39 (9th Cir. 2008) (alternatives with essentially identical components invalid).

¹⁴40 C.F.R. § 1502.14(d). “Substantial treatment,” rather than equal treatment, is required, as the treatment must necessarily vary with the degree of impact. By way of case law construing what alternatives must be considered as “reasonable alternatives,” *see City of Tenakee Springs v. Clough*, 915 F.2d 1308, 21 *Envtl. L. Rep. (Envtl. L. Inst.)* 20001 (9th Cir. 1990) (that a contract between the agency and the applicant constrained consideration of certain alternatives did not prevent such

agency¹⁵ and must always consider the no action alternative.¹⁶ The agency is to identify its “preferred alternative,” if it has one, at the draft stage, and must identify that alternative when it prepares the final statement.¹⁷ Mitigation must be discussed in this section if it has not been discussed elsewhere.¹⁸

§ 10:27 The administrative process under NEPA—Preparation of the statement—The Environmental Impact Statement—Incomplete or unavailable information

One provision of the regulations, while only occasionally applied, has excited considerable controversy—the section on “incomplete or unavailable information.”¹⁹ According to the CEQ, “incomplete information” is that which cannot be obtained

alternatives from being reasonable ones that had to be considered). For a contrasting case where the court upheld an agency’s finding that only one alternative was reasonable because the others were infeasible, see *Tongass Conservation Soc’y v. Cheney*, 924 F.2d 1137, 21 *Envtl. L. Rep. (Envtl. L. Inst.)* 20558 (D.C. Cir. 1991). See also § 10:25. For an excellent discussion of the requirement to explore alternatives rigorously, see *Dubois v. United States Dep’t. of Agriculture*, 102 F.3d 1273, 27 *Envtl. L. Rep. (Envtl. L. Inst.)* 20622 (1st Cir. 1996) (emphasizing that there must be a reasoned analysis of the alternatives and the alternative selected must be within the spectrum of those examined).

¹⁵40 C.F.R. § 1502.14(c). Similarly an agency may not ignore an otherwise reasonable alternative because of a contractual bar since the contract may be amended. *City of Tenakee Springs v. Clough*, 915 F.2d 1308, 21 *Envtl. L. Rep. (Envtl. L. Inst.)* 20001 (9th Cir. 1990); see also *Tongass Conservation Soc’y v. Cheney*, 924 F.2d 1137, 21 *Envtl. L. Rep. (Envtl. L. Inst.)* 20558 (D.C. Cir. 1991); *Idaho Conservation League v. Mumma*, 956 F.2d 1508 22 *Envtl. L. Rep. (Envtl. L. Inst.)* 20569 (9th Cir. 1992).

¹⁶40 C.F.R. § 1502.14(d). See *Southeast Alaska Conservation Council v. Federal Highway Admin.*, 649 F.3d 1050 at *8 (9th Cir. 2011) (discussion of “no action” alternative held not to meet the “substantial treatment” requirement of the regulations).

¹⁷40 C.F.R. § 1502.14(e). An exception is made for situations in which other laws may prohibit expression of such a preference at this stage. This exception was designed to cover independent regulatory agencies, where staff may prepare a draft and final EIS, but only the commissioners may express an agency preference, and they may not do so until after the final EIS is prepared.

¹⁸40 C.F.R. § 1502.14(e). For a case discussing the importance of mitigation to the NEPA process, see *C.A.R.E. NOW, Inc. v. FAA*, 844 F.2d 1569 18 *Envtl. L. Rep. (Envtl. L. Inst.)* 21081 (11th Cir. 1988). While mitigation must be fully discussed in the EIS, there is no requirement that it actually be imposed. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 19 *Envtl. L. Rep. (Envtl. L. Inst.)* 20743 (1989). However, agencies must in their EISs discuss mitigation. A perfunctory description of mitigation is inconsistent with the “hard look” agencies are obligated to take. A mere listing of mitigation measures is not enough. *Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372, 28 *Envtl. L. Rep. (Envtl. L. Inst.)* 21073 (9th Cir. 1998); *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 28 *Envtl. L. Rep. (Envtl. L. Inst.)* 21044 (9th Cir. 1998). Finally, once an agency commits to mitigation, it becomes an enforceable obligation. *Tyler v. Cisneros*, 136 F.3d 603, 608, 28 *Envtl. L. Rep. (Envtl. L. Inst.)* 20540, 20543 (9th Cir. 1998). For CEQ guidance on mitigation, see § 10:12, n.1, *supra*.

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¹⁹40 C.F.R. § 1502.22. See generally *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 19 *Envtl. L. Rep. (Envtl. L. Inst.)* 20743 (1989). See also *Masterman, Worst Case Analysis: The Final Chapter?*, 19 *Envtl. L. Rep. (Envtl. L. Inst.)* 10026 (Jan. 1989); *Yost, Don’t Gut Worst Case Analysis*, 13 *Envtl. L. Rep. (Envtl. L. Inst.)* 10394 (Dec. 1983); *Friends of Endangered Species v. Jantzen*, 760 F.2d 976, 15 *Envtl. L. Rep. (Envtl. L. Inst.)* 20455 (9th Cir. 1985); *Save Our Ecosystems v. Clark*, 747 F.2d 1240, 15 *Envtl. L. Rep. (Envtl. L. Inst.)* 20035 (9th Cir. 1984); *Southern Oregon Citizens Against Toxic Sprays, Inc. v. Clark*, 720 F.2d 1475, 14 *Envtl. L. Rep. (Envtl. L. Inst.)* 20061 (9th Cir. 1983), cert. denied, 469 U.S. 1028 (1984); *City of New York v. Department of Transp.*, 715 F.2d 732, 13 *Envtl. L. Rep. (Envtl. L. Inst.)* 20823 (2d Cir. 1983), cert. denied, 465 U.S. 1055 (1984); *Sierra Club v. Sigler*, 695 F.2d 957, 13 *Envtl. L. Rep. (Envtl. L. Inst.)* 20210 (5th Cir. 1983); *Oregon Env’tl. Council v. Kunzman*, 614 F. Supp. 657, 15 *Envtl. L. Rep. (Envtl. L. Inst.)* 20499 (D. Or. 1985), injunction dissolved, 636 F. Supp. 632, 16 *Envtl. L. Rep. (Envtl. L. Inst.)* 20658 (D. Or. 1986), aff’d, 817 F.2d 484, 17 *Envtl. L. Rep. (Envtl. L. Inst.)* 20756 (9th Cir. 1987).

because the overall costs of obtaining it are exorbitant.² “Unavailable information” is that which cannot be obtained because the means of obtaining it are not known.³

The CEQ regulations provide that when information on reasonably foreseeable adverse impacts evaluated in an EIS is essential to making a reasoned choice and the costs of obtaining it are not exorbitant, the agency must secure it.⁴ However, if this information is incomplete or unavailable—that is, if the costs of obtaining it are exorbitant or the means of obtaining it are beyond the state of the art—the agency must “make clear that such information is lacking.”⁵ The agency must follow four prescribed steps.⁶ First, it must state that the information is incomplete or unavailable.⁷ Second, it must state the relevance of the missing information.⁸ Third, it must summarize the existing credible scientific evidence relevant to its evaluation

²51 Fed. Reg. 15618, 15621 (Apr. 25, 1986).

³51 Fed. Reg. 15618, 15621 (Apr. 25, 1986).

⁴40 C.F.R. § 1502.22(a). *Oceans Advocates v. United States Army Corps of Eng’rs*, 361 F.3d 1108, 1129-30 (9th Cir. 2004) (even under new rules lack of knowledge does not excuse preparation of an EIS but requires the agency to undertake the necessary work to obtain it), opinion amended & superseded on denial of reh’g, 402 F.3d 846 (9th Cir. 2005).

⁵40 C.F.R. § 1502.22. *See Scientists’ Inst. for Pub. Info. v. AEC*, 481 F.2d 1079, 1091-92, 3 *Envtl. L. Rep.* (Envtl. L. Inst.) 20525, 20531-32 (D.C. Cir. 1973). In that case, the court stated:

It must be remembered that the basic thrust of an agency’s responsibilities under NEPA is to predict the environmental effects of a proposed action *before* the action is taken and those effects fully known. *Reasonable forecasting and speculation is thus implicit in NEPA* and we must reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects a “crystal ball inquiry.”

Scientists’ Inst. for Pub. Info. v. AEC, 481 F.2d 1079, 1092, 3 *Envtl. L. Rep.* (Envtl. L. Inst.) 20525, 20531-32 (D.C. Cir. 1973) (emphasis added). Indeed, in case of uncertainty concerning impacts or conflicting data, an EA must be prepared. *American Bird Conservancy v. Federal Communications Commission*, 516 F.3d 1027, 1032–33 (D.C. Cir. 2008). *See also* *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n. 21, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20532, 20537 n.21 (1976); *Massachusetts v. Andrus*, 594 F.2d 872, 892, 9 *Envtl. L. Rep.* (Envtl. L. Inst.) 20162, 20173 (1st Cir. 1979); *Alaska v. Andrus*, 580 F.2d 465, 473-74, 8 *Envtl. L. Rep.* (Envtl. L. Inst.) 20237, 20242 (D.C. Cir. 1978), vacated on other grounds sub nom. *Western Oil & Gas Ass’n v. Alaska*, 439 U.S. 922 (1978); *Ethyl Corp. v. EPA*, 541 F.2d 1, 18, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20267, 20279 (D.C. Cir. 1976) (en banc), cert. denied, 426 U.S. 941 (1976); *I-291 Why? Ass’n v. Burns*, 517 F.2d 1077, 1081, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) 20430, 20432 (2d Cir. 1975) (per curiam).

⁶40 C.F.R. § 1502.22. This is the only regulation that the CEQ has amended since it promulgated the NEPA regulations. The regulation as amended in 1986 shares certain goals with the prior regulation: disclosure that information is missing, acquisition of that information, and evaluation of impacts in the absence of all information. *See* 51 Fed. Reg. 15618, 15619, 15620 to 15621 (Apr. 25, 1986).

The amendment does, however, make one significant change in the method by which agencies consider incomplete or unavailable information. The earlier regulation provided that when cost or lack of appropriate methodology precluded acquisition of relevant information, the agency had to weigh the need for the action against the risk and severity of possible adverse impacts were the action to proceed in the face of uncertainty. Before proceeding, an agency had to perform a “worst case analysis,” indicating both the probability and the improbability of the occurrence of that worst case. Application of worst case analysis, particularly by the Ninth Circuit in *Save Our Ecosystems v. Clark*, 747 F.2d 1240, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20035 (9th Cir. 1984), and *Southern Oregon Citizens Against Toxic Sprays Inc. v. Clark*, 720 F.2d 1475, 14 *Envtl. L. Rep.* (Envtl. L. Inst.) 20061 (9th Cir. 1983), engendered a certain unhappiness among some government agencies that thought they had to go beyond reasonable limits to develop a “worst case scenario.”

The CEQ amended the regulation to delete the worst case analysis requirement. The amendment was to apply to all EISs for which a notice of intent was published in the *Federal Register* on or after May 27, 1986. For EISs in progress before then, the agency may choose to comply with either the original or the amended regulation. 40 C.F.R. § 1502.22(c). The Supreme Court has upheld the new regulation as within the deference to be accorded to the CEQ (while suggesting that the former regulation was also within that deference). *See Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 19 *Envtl. L. Rep.* (Envtl. L. Inst.) 20743 (1989); *see also* *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 19 *Envtl. L. Rep.* (Envtl. L. Inst.) 20749 (1989).

⁷40 C.F.R. § 1502.22(b)(1).

of reasonably foreseeable impacts.⁹ Fourth, it must analyze those impacts based on theoretical approaches or scientific methods generally accepted in the scientific community.¹⁰ The regulation clearly states that agencies must consider impacts with low probability but catastrophic consequences as long as the analysis “is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.”¹¹

Risk analysis of improbable but highly significant impacts is not a new concept.¹² As articulated by the First Circuit in *Massachusetts v. Andrus*:

If it were 100% certain that particular precautions would obviate all danger, the task would be simple; but there is a large element of the unknown created by gaps in science, by possible human errors, and by freak weather conditions. Thus, the Secretary must engage in an uneasy calculus akin to that described by Judge Learned Hand, weighing “the possibility” of accident, “the gravity of the resulting injury” and “the burden of adequate precautions.”¹³

The District of Columbia Circuit made the same point in *Ethyl Corp. v. EPA*:

Danger . . . is not set by a fixed probability of harm, but rather is composed of reciprocal elements of risk and harm, or probability and severity That is to say, the public health may properly be found endangered both by a lesser risk of a greater harm, and by a greater risk of a lesser harm.¹⁴

NEPA essentially requires analysis of both the lesser risks of greater harms and the greater risks of lesser harms before actions are taken to bring about the risks. As courts recognize, such “[r]easonable forecasting and speculation is thus implicit in NEPA.”¹⁵

⁸40 C.F.R. § 1502.22(b)(2).

⁹40 C.F.R. § 1502.22(b)(3).

¹⁰40 C.F.R. § 1502.22(b)(4). The CEQ intends for evaluations of reasonably foreseeable significant impacts to be carefully conducted and based upon credible scientific evidence. All scientific evidence must be disclosed, including responsible opposing views supported by generally accepted theoretical approaches or scientific methods. 51 Fed. Reg. 15618, 15621 (Apr. 25, 1986).

¹¹This portion of the amended regulation is specifically intended to substitute for worst case analysis.

¹²Both the prior regulation and the amended regulation incorporate this concept. Moreover, a pre-amendment Supreme Court case recognized the difference between considering the impacts of improbable but possible occurrences should they actually occur and considering the more speculative impacts generated by apprehension of those occurrences. In *Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20515 (1983), the Court declined to apply NEPA to the psychological fears generated by the “risk” of a nuclear accident at Three Mile Island but acknowledged the need to consider improbable but possible accidents, stating:

We emphasize that in this case we are considering effects caused by the risk of an accident. The situation where an agency is asked to consider effects that will occur if a risk is realized, for example, if an accident occurs at TMI-1, is an entirely different case. The NRC considered, in the original EIS and in the most recent EIA for TMI-1, the possible adverse effects of a number of accidents that might occur at TMI-1.

Metropolitan Edison Co. v. People Against Nuclear Energy, 460 U.S. 766, 775 n.9, 13 Env'tl. L. Rep. (Env'tl. L. Inst.) 20515, 20518 n.9 (1983).

¹³*Massachusetts v. Andrus*, 594 F.2d 872, 892, 9 Env'tl. L. Rep. (Env'tl. L. Inst.) 20162, 20173 (1st Cir. 1979). Evaluation of uncertainties has always been a part of the legal process. “Certainty,” in Justice Holmes’ famous phrase, “generally is illusion.” Oliver Wendell Holmes, *Collected Legal Papers* 181 (1920). Nevertheless, in the absence of certainty we do the best we can. As lucidly put by Justice Cardozo: “The law is not an exact science, we are told, and there the matter ends, if we are willing there to end it. . . . Exactness may be impossible, but that is not enough to cause the mind to acquiesce in a predestined incoherence.” B. Cardozo, *The Paradoxes of Legal Science* 2–3 (1928).

¹⁴*Ethyl Corp. v. EPA*, 541 F.2d 1, 18, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20267, 20279 (D.C. Cir. 1976).

¹⁵*Scientists’ Inst. for Pub. Info. v. AEC*, 481 F.2d 1079, 1092, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20525, 20532 (D.C. Cir. 1973). See also *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n. 21, 6 Env'tl. L. Rep. (Env'tl. L. Inst.) 20532, 20537 (1976); *Alaska v. Andrus*, 580 F.2d 465, 473–74, 8 Env'tl. L. Rep. (Env'tl.

§ 10:28 The administrative process under NEPA—Preparation of the statement—The Environmental Impact Statement—Streamlining

As noted above, the NEPA regulations set out as goals the reduction of both paperwork¹ and delay in the NEPA process.² The procedures accordingly contain certain streamlining provisions designed to simplify NEPA's implementation and to mesh its application with that of other laws. For example, one section permits EISs to incorporate certain material by reference when this will cut down on their bulk.³ However, the incorporated information must be cited, briefly described, and made publicly available so as not to impede review by other agencies and the public.⁴ Another provision allows an agency to “adopt” in whole or in part another EIS prepared by the same or a different federal agency, thus eliminating unnecessary duplication of work.⁵

Similarly, the regulations seek to eliminate duplication with state environmental procedures,⁶ specifically directing federal agencies to prepare joint statements in cooperation with states that themselves have EIS requirements.⁷ Indeed, the regulations allow an EIS to be combined with any other environmental document to reduce paperwork and duplication.⁸ When streamlining is appropriate, agencies must nevertheless ensure the professional and scientific integrity of environmental analyses.⁹

§ 10:29 The administrative process under NEPA—Preparation of the statement—Commenting

Once the draft EIS is prepared, it is to be circulated for comment to all relevant federal, state, and local agencies, to applicants, if any, and to members of the public who request it.¹ Both the Act² and the regulations³ mandate that lead agencies “obtain” comments from federal agencies with jurisdiction by law over a project or

L. Inst.) 20237, 20242 (D.C. Cir. 1978), vacated in part, 439 U.S. 922, 99 S. Ct. 303, 58 L. Ed. 2d 315 (1978); I-291 Why? Ass'n v. Burns, 517 F.2d 1077, 1081, 5 Env'tl. L. Rep. (Env'tl. L. Inst.) 20430, 20432 (2d Cir. 1975).

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¹40 C.F.R. § 1500.4.

²40 C.F.R. § 1500.5.

³40 C.F.R. § 1500.21. If material is to be relied upon in the EIS or ROD, it must be incorporated by reference, because otherwise it disregards NEPA's public notice requirements. Recent Past Preservation Network v. Latschar, 701 F.Supp. 2d 49, 59 (D.D.C. 2010).

⁴40 C.F.R. § 1500.21. Material based on proprietary data that is itself not available for public review cannot be incorporated by reference.

⁵40 C.F.R. § 1506.3. This section requires that the adopted EIS meet the standards of an adequate EIS, and specifically describes the kind of circulation necessary for an adopted statement.

⁶40 C.F.R. § 1506.2(b).

⁷40 C.F.R. § 1506.2(c). For a discussion of state mini-NEPAs, see § 7:11.

⁸40 C.F.R. § 1506.4. Environmental statements are to be integrated to the fullest extent possible with other environmental analyses required by the Fish and Wildlife Coordination Act, the National Historic Preservation Act, and the Endangered Species Act, as well as other environmental review laws. 40 C.F.R. § 1502.25(a). The draft EIS must also list all other federal permits that will be required. 40 C.F.R. § 1502.25(b).

⁹40 C.F.R. § 1502.24. In performing its analyses an agency may employ a model that was considered an appropriate methodology at the time. Theodore Roosevelt Conservation Partnership v. Salazar, 616 F.3d 497, 511-512 (D.C. Cir. 2010). The CEQ NEPA regulations do not require cost-benefit analyses, but give specific guidance as to the contents of such analyses if they are included. 40 C.F.R. § 1502.23.

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¹40 C.F.R. § 1502.19. Section 1506.6 is the provision governing public involvement throughout the NEPA process. This involvement is extensive.

with special expertise. Lead agencies generally need only “request” comments from other federal agencies, state and local agencies, affected Indian tribes, applicants, and the public.⁴ Agency comments are to be as specific as possible, and agencies making critical comments must specify what they believe should be done to address the problems they identify.⁵ The usual comment period on a draft EIS is not less than forty-five days,⁶ although provisions exist for both reducing and extending that period.⁷

§ 10:30 The administrative process under NEPA—Preparation of the statement—Response to comments and the final EIS

Consistent with NEPA’s goal of public-private cooperation in environmental protection,¹ the regulations impose a requirement unique among environmental and, perhaps, all governmental obligations: in the final EIS, the lead agency must explain its position in writing to any member of the public who chooses to comment. When preparing its final EIS, the agency “shall respond” to comments by adding to or modifying its analyses, by making factual corrections, or by explaining why the comments do not warrant these actions, citing “the sources, authorities, or reasons” supporting its position.²

After responding to comments, the agency must circulate its final EIS in much the same manner as it did its draft EIS.³ Although agencies do not usually request additional comments on final EISs, they may do so and anyone can still comment on a final statement before the agency makes its final decision.⁴ The regulations require that the agency make no decision until thirty days after the final EIS is filed. This allows time for comment and ensures that the agency has adequate time to consider the statement.⁵

§ 10:31 The administrative process under NEPA—Post-statement procedures—CEQ referrals

After an EIS is complete but before a decision is made on the proposal, an

²NEPA § 102(2)(C), 42 U.S.C.A. § 4332(2)(C).

³40 C.F.R. §§ 1503.1(a)(1), 1503.2.

⁴40 C.F.R. § 1503.1(a)(2).

⁵40 C.F.R. § 1503.3.

⁶40 C.F.R. § 1506.10(c).

⁷40 C.F.R. § 1506.10(d).

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¹NEPA § 101(a), 42 U.S.C.A. § 4331(a).

²40 C.F.R. § 1503.4. It is, however, up to the lead agency to determine the value of another agency’s comments. *Missouri Coalition for the Environment v. FERC*, 544 F.3d 955, 959 (8th Cir. 2008).

³40 C.F.R. § 1502.19.

⁴40 C.F.R. § 1503.1(b). On the rare occasion when a draft EIS is “so inadequate as to preclude meaningful analysis,” the agency is required to recirculate a revised draft. 40 C.F.R. § 1502.9(a).

⁵40 C.F.R. § 1506.10(b)(2). The decision must also be made at least 90 days after the draft EIS. 40 C.F.R. § 1506.10(b)(1). All dates are measured from the date an EIS is filed with EPA in Washington, D.C. 40 C.F.R. §§ 1506.9, 1506.10. That filing date is not the actual date of receipt, but the date of public notice by EPA in the *Federal Register* of the statements received during the preceding week. 40 C.F.R. § 1506.10(a). The applicable regulation has specific provisions governing special timing situations, such as agency rulemaking and decisions subject to internal appeal, in which the normal time limits may be adjusted. 40 C.F.R. § 1506.10(b). If the final EIS is filed within 90 days after the draft EIS is filed, the minimum 30-day and minimum 90-day periods may run concurrently, although agencies cannot allow less than 45 days for comments on the draft statement. 40 C.F.R. § 1506.10(c). Lead agencies may also extend prescribed periods; EPA may, upon a showing of need by the lead agency, reduce them. 40 C.F.R. § 1506.10(d).

infrequent but important procedure may intervene: referral to the CEQ of environmentally unsatisfactory federal actions.¹ Under section 309 of the Clean Air Act,² EPA may refer any proposed federal agency action to the CEQ if EPA determines that the action is environmentally unsatisfactory.³ Under NEPA, other agencies may refer allegedly unsatisfactory proposed actions to the CEQ as well.⁴ Only a small number of visible and significant agency proposals are referred to the CEQ.⁵ As of 1987, the CEQ had received twenty-three referrals.⁶

A 1986 report concluded that the referral process causes agencies to consider the environmental impacts of their proposals more fully, and facilitates interagency communication and dispute resolution. The report concluded that the effectiveness of the process depends substantially on, and varies with, the CEQ's perceived competence, objectivity, and White House backing. Earlier CEQ involvement in potential disputes and increased monitoring of CEQ recommendations on referrals, the report continued, could enhance that effectiveness further.⁷

§ 10:32 The administrative process under NEPA—Post-statement procedures—Agency decisionmaking and the record of decision

The NEPA process is to be thoroughly integrated into agency decisionmaking, and the CEQ regulations are designed to ensure this integration. For example, the regulations require each agency to adopt procedures ensuring that its decisions accord with the policies and processes of NEPA.¹ In addition, the regulations require agencies to prepare a document, second in importance only to the EIS, which is designed to ensure that agency decisionmakers respect the environment: the “record of decision” (ROD).² An agency must prepare a concise and public ROD whenever it makes a decision following preparation of a final EIS.³ The ROD must state the decision⁴ and identify all alternatives. It must specify the alternative or alternatives “considered to be environmentally preferable,”⁵ and may specify alternatives considered to be preferable from the point of view of other “essential considerations

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¹40 C.F.R. pt. 1504.

²42 U.S.C.A. § 7609.

³40 C.F.R. § 1504.1(b).

⁴40 C.F.R. §§ 1504.1 to 1504.2.

⁵The CEQ referral process is not discussed in detail because it is used so infrequently. Any agency or person affected, however, should become closely familiar with the regulations. 40 C.F.R. §§ 1504.2 to 1504.3.

⁶Environmental Law Institute, *Environmental Referrals and the Council on Environmental Quality* (1986), reprinted in Council on Environmental Quality, *Environmental Quality*, 1986 at 252. One reason for the paucity of referrals may be that lead agencies seek to avoid them by working more closely with other involved agencies at earlier stages. The very existence of the referral process may thus increase interagency cooperation, even if the process is not actually used much. Council on Environmental Quality, *Environmental Quality*, 1986 at 253.

⁷Council on Environmental Quality, *Environmental Quality* 1986, at 252. The possibility that CEQ will publish findings that do not support an agency's position and that can be used in litigation also serves as an impetus to agencies to pay heed to environmental factors.

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¹40 C.F.R. § 1505.1.

²40 C.F.R. § 1505.2.

³40 C.F.R. § 1505.2.

⁴40 C.F.R. § 1505.2(a).

⁵40 C.F.R. § 1505.2(b).

of national policy.”⁶ The agency is to discuss these considerations in explaining how it reached its decision. The ROD must also state “whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted and if not, why they were not.”⁷ Finally, a ROD must adopt and summarize a monitoring and enforcement program, if applicable, for any mitigation.⁸

§ 10:33 The administrative process under NEPA—Post-statement procedures—Agency actions during the pendency of an EIS

As a general rule, agencies may not take any action concerning a proposal while an EIS is pending. The NEPA regulations address this important issue with specificity,¹ tracking both case law² and administrative practice. When, as is usually the case, a proposal is not part of an overall program, the applicable regulation prohibits taking any action on the proposal before issuance of a ROD, if the action would have an adverse environmental impact or limit the choice of reasonable alternatives.³ An individual action that is part of a larger program⁴ cannot proceed while the program’s EIS is pending unless the action meets three criteria: (1) it is justified independently of the program; (2) it is itself accompanied by an adequate EIS; and (3) it will not prejudice the ultimate decision on the program.⁵ The regulation also specifically addresses situations involving applications to agencies, both in general⁶ and when applicants are developing plans or designs or are performing other work necessary to support their applications.⁷

§ 10:34 Judicial review—Introduction—The importance of courts in the NEPA process

It is judicial review that has given NEPA its significance. The Act places regulatory obligations on agencies without apparent means of oversight. By the conscious choice of its drafters, NEPA internalizes each agency’s environmental obligations and is thus essentially self-regulatory in nature. Rather than relying on an outside agency for environmental analysis, each agency is to consider the environmental impacts of its own actions. While NEPA supplies a pervasive impetus for environmentally responsible decisionmaking throughout the government, the absence of institutional enforcement invites administrative inattention and

⁶NEPA § 101(b), 42 U.S.C.A. § 4331(b); 40 C.F.R. § 1505.2(b).

⁷40 C.F.R. § 1505.2(c).

⁸40 C.F.R. § 1505.2(c). The regulations provide specific guidance for implementation of mitigation and post-decision monitoring. 40 C.F.R. § 1505.2(c).

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¹40 C.F.R. § 1506.1.

²The most important case in this regard is *Kleppe v. Sierra Club*, 427 U.S. 390, 6 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20532 (1976).

³40 C.F.R. § 1506.1(a).

⁴40 C.F.R. § 1506.1(c) refers to a program for which an EIS is “required” in order to ensure that individual actions are not held up when an agency voluntarily (without being required to do so, but in furtherance of good environmental practice) undertakes preparation of a program EIS.

⁵40 C.F.R. § 1506.1(c). “Prejudice to the ultimate decision on the program” is defined as a tendency to determine subsequent development or to limit alternatives.

⁶40 C.F.R. § 1506.1(b). If an agency considering an application becomes aware that an applicant is about to take an action that may adversely impact the environment or limit the choice of reasonable alternatives, the agency must promptly notify the applicant that it will “take appropriate action to insure that the objectives and procedures of NEPA are achieved.”

⁷40 C.F.R. § 1506.1(d). Such actions are not precluded.

noncompliance.¹ The CEQ, as a White House agency, is too small to get involved in numerous individual projects. EPA's leverage under § 309 of the Clean Air Act is murky at best, and the Agency is no disinterested party, given its conflicting role as a principal preparer of EISs on its own actions. Clearly, successful implementation of NEPA must depend on some other institution removed from the administrative process.

NEPA's enforcement ultimately depends on the courts. Fortunately, the action-forcing provisions of the Act neatly lend themselves to judicial enforcement. The importance of the role these provisions have played in fostering judicial acceptance of the Act cannot be overemphasized. Judges may, and usually should, reasonably question their competence to second-guess the scientific determinations of administrative agencies. Judges may also lack understanding of or sympathy for claimants' environmental goals. But all judges understand procedure. The requirement that an EIS must be filed as a condition precedent to an action is just the sort of requirement that taps familiar judicial strains. Implementation of the procedural provisions of NEPA is judicially comfortable. It has also ensured the success of the Act.

§ 10:35 Judicial review—Introduction—NEPA litigation in the courts

NEPA litigation, while not extensive, constitutes a significant proportion of the environmental litigation against the government. In 1980, for example, the United States was a party to 63,628 actions commenced in federal district court.¹ 26,835 of these actions were brought under statutes;² of these, the United States was plaintiff in 8,600 cases and defendant in 18,235;³ 457 of the statutory cases involved environmental causes of action, and the United States was defendant in 201 of those cases.⁴ In that same year, the CEQ reported that 140 cases were brought challenging federal actions under NEPA.⁵ Therefore, litigation under NEPA is not statistically significant relative to litigation generally involving the government, but

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¹Senator Muskie was somewhat leery of NEPA's self-scrutiny approach. As part of the negotiation between Senators Jackson and Muskie, the requirements of a "detailed statement"—the NEPA term for what has become popularly known as the EIS—was substituted for a requirement of "findings," because Senator Muskie believed that such findings would too strongly reflect self-serving agencies' mission-oriented priorities. 115 Cong. Rec. 29053 (1969).

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¹Annual Report of the Director of the Administrative Office of the United States Courts, 1980 at 376 tbl.C3 (1981).

²The nonstatutory cases were overwhelmingly actions under contracts, while the balance primarily involved torts and real property. Annual Report of the Director of the Administrative Office of the United States Courts, 1980 at 376 tbl.C3 (1981).

³Annual Report of the Director of the Administrative Office of the United States Courts, 1980 at 374 tbl.C2 (1981).

⁴Annual Report of the Director of the Administrative Office of the United States Courts, 1980 at 374 tbl.C2 (1981). Less than 1 percent (0.716 percent) of the cases to which the United States was a party were environmental in nature. Of the statutory actions in which the United States was a defendant, 1.102 percent were environmental.

⁵Council on Environmental Quality, *Environmental Quality 1981*, at 183 (1982). The total includes lawsuits with causes of action in addition to those under NEPA. The CEQ maintains and annually reports statistics concerning all NEPA actions—the number of cases, the nature of the causes of action, the nature of relief, and the institutional identity (environmentalists, states, businesses, and so on) of the plaintiffs. These figures have remained generally consistent. Statistics for current NEPA litigation are available at <http://www.nepa.gov>.

it does comprise a substantial portion (approximately 70 percent in 1980) of the environmental litigation against the United States.⁶

§ 10:36 Judicial review—Overview of the judicial process in NEPA cases— The complaint

A typical NEPA case begins with a plaintiff filing a complaint in federal court seeking both declaratory and injunctive relief.¹ Typically, the complaint is filed in federal district court, but there are agencies—such as the Federal Aviation Administration, the Federal Energy Regulatory Commission, and the Nuclear Regulatory Commission—whose organic statutes require challenges to their actions to be filed in a circuit of court of appeals. The complaint will typically name as defendants the various federal agency officials in the chain of command responsible for the proposed action that is alleged to violate NEPA. A complaint should also name state officials if their agencies are involved in joint lead capacities.² Private applicants need not be named as defendants since an injunction barring issuance of a permit will necessarily prevent the private action. Should a plaintiff be concerned that a private party might proceed with a plan in spite of injunctive relief against the agency, the plaintiff can name the private party as a co-defendant; this does not preclude the plaintiff from seeking an injunction against the private party in a separate proceeding.³ In any event, as a practical matter, a private applicant will probably seek to intervene in an action against an agency.⁴

§ 10:37 Judicial review—Overview of the judicial process in NEPA cases— Venue

A limited measure of forum shopping is available under NEPA, in that naming a particular official as a defendant may establish venue in a desirable locale. Venue in NEPA cases is determined under the general venue statute for suits against the federal government.¹ That statute is permissive and allows the plaintiff wide leeway in the initial choice of forum. As in other suits against the government, that choice is subject to a motion to change venue for the convenience of the parties and in the interests of justice.²

⁶In 2004, according to CEQ data, of the 150 NEPA actions filed by plaintiffs, almost equal numbers challenged the adequacy of the EISs and EAs/FONSIIs, with a small number alleging the need for supplemental NEPA documentation. <http://ceq.eh.doe.gov/nepa/nepanet.htm>.

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¹For what may constitute “final agency action” under NEPA for purposes of making litigation ripe, see *Association of Citizens to Protect and Preserve the Environment v. Federal Aviation Administration*, 2008 WL 2751300 (11th Cir. 2008) (not published); *City of Dania Beach, Fla. v. Federal Aviation Administration*, 485 F.3d 1181, 1188 (D.C. Cir. 2007); *Oregon Natural Desert Ass’n v. Bureau of Land Management*, 531 F.3d 1114, 1139–40 (9th Cir. 2008).

²State officials might also be involved in highway construction projects under NEPA § 102(2)(D), 42 U.S.C.A. § 4332(2)(D).

³See Fed. R. Civ. P. 65(d); see also *Foundation on Economic Trends v. Heckler*, 756 F.2d 143, 155, 15 Env’tl. L. Rep. (Env’tl. L. Inst.) 20248, 20254 (D.C. Cir. 1985).

⁴An applicant will usually find it important to intervene, since its interests and the agency’s may not coincide. A plaintiff generally will not resist such intervention.

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¹28 U.S.C.A. § 1391(e). This provision allows a plaintiff to bring suit: (1) where a defendant resides; (2) where the cause of action arose; (3) where the real property involved in the action is situated; or (4) where the plaintiff resides if real property is not involved. 28 U.S.C.A. § 1391 also provides for nationwide service of process.

²28 U.S.C.A. § 1404(a).

§ 10:38 Judicial review—Overview of the judicial process in NEPA cases—Discovery

Discovery is somewhat more limited in environmental litigation than in litigation generally because judicial review is ordinarily confined to the administrative record.¹ However, it is sometimes necessary to look outside the record in order to properly evaluate what information was not considered.² The limitations on what may be added to the record will determine what information the government will seek or divulge during discovery. In some cases, the government may also assert a deliberative process privilege. In any event, the plaintiff should still press its discovery program if it is critical or useful to the case. Defendants typically have less to gain from discovery, except that discovery may bolster defenses such as standing, and, if plaintiffs have succeeded in introducing further evidence, discovery may enable defendants to examine that evidence or its presenting witnesses.

§ 10:39 Judicial review—Overview of the judicial process in NEPA cases—The course of litigation

In a NEPA case, either the U.S. Department of Justice or the local U.S. Attorney represents the federal agency, although the agency itself may answer the complaint and proceed through discovery to trial.¹ As with discovery, the usual course of NEPA litigation is more abbreviated than that of general litigation because of the time pressures that typify projects reviewed under NEPA. A plaintiff may take several steps to expedite the litigation. For example, the plaintiff may move for a preliminary injunction. As a practical matter, the case may end if the plaintiff loses at this stage and the project proceeds in the interim between the ruling and trial. Alternatively, the plaintiff can seek to have the hearing on the preliminary injunction consolidated with an advanced trial on the merits.² Often the plaintiff will move for summary judgment based on the administrative record, since that record was generated by the agency and purportedly contains undisputed facts. The defendant agency or intervening applicant will probably file a motion or crossmotion for summary judgment or dismissal. At any rate, most NEPA actions are resolved on motion.

§ 10:40 Judicial review—Overview of the judicial process in NEPA cases—Remedies

“When a court has found that a party is in violation of NEPA,” the Fifth Circuit has said, “the remedy should be shaped so as to fulfill the objectives of the statute

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¹*Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402, 1 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20110 (1971). Of course, the alert participant in the NEPA process places all he or she wishes into the administrative record when the structure of the proceeding so permits. When an EIS is prepared, the commenting process provides the usual occasion to place such information in the record. *See generally* McMillan & Peterson, *The Permissible Scope of Hearings, Discovery, and Additional Factfinding During Judicial Review of Informal Agency Action*, 1982 *Duke L.J.* 333 (1982).

²*County of Suffolk v. Secretary of the Interior*, 562 F.2d 1368, 1384, 7 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20637, 20644 (2d Cir. 1977). *See* *Animal Defense Council v. Hodel*, 840 F.2d 1432, 1436-37, 18 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20497, 20499-500 (9th Cir. 1988); *Friends of the Payette v. Horseshoe Bend Hydroelectric Co.*, 988 F.2d 989, 997, 23 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20530, 20534 (9th Cir. 1993); *National Audubon Soc’y v. United States Forest Serv.*, 4 F.3d 832, 841-42, 23 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21520, 21525 (9th Cir. 1993); *Greenpeace v. Evans*, 688 F. Supp. 579, 584-85, 17 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 21207, 21209 (W.D. Wash. 1987).

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¹Note that when U.S. officers are parties in a NEPA case, the government has sixty days to file its answer. Fed. R. Civ. P. 12(a).

²Fed. R. Civ. P. 65(a)(2).

as closely as possible, consistent with the broader public interest.”¹ As stated at the outset of this article, those objectives are to prevent or eliminate damage to the environment and to ensure environmentally responsible decisionmaking by agencies. In order to achieve these objectives, plaintiff may ask for, and courts may grant, preliminary or permanent injunctive relief.

§ 10:41 Judicial review—Overview of the judicial process in NEPA cases—Remedies—Preliminary relief

In order to receive preliminary injunctive relief, plaintiffs ordinarily must show: (1) a substantial likelihood of success on the merits; (2) a substantial threat of irreparable injury absent an injunction; (3) that this threatened injury outweighs the harm to defendants of granting the injunction; and (4) that an injunction would be in the public interest.¹ These standards impose a greater burden on a plaintiff than do those for permanent relief once a violation of NEPA is found. Of course, the general judicial policy of shaping injunctions to implement NEPA’s objectives, rather than thwart them, will prevail.²

§ 10:42 Judicial review—Overview of the judicial process in NEPA cases—Remedies—Permanent relief

Once a violation of NEPA has been established, a plaintiff faces a somewhat lesser burden in seeking permanent injunctive relief, particularly since it need no longer show a probability of success on the merits. Nevertheless, both preliminary and permanent injunctions are equitable in nature and the considerations for whether they should issue have much in common.¹

When a NEPA violation has been found, the court typically shapes the injunction to remedy it. For example, if a court determines that an EIS should have been prepared, it will order the agency to prepare one.² Courts do differ, though, on when they consider permanent injunctive relief appropriate. Some courts hold that injunctive relief is appropriate to encourage rapid and thorough compliance with NEPA,

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¹The 9th Circuit in an en banc decision recently set aside earlier precedent and held that affected private parties may intervene as a matter of right in NEPA cases. *Wilderness Soc. v. U.S. Forest Service*, 630 F.3d 1173, 1180 (9th Cir. 2011); *Environmental Defense Fund, Inc. v. Marsh*, 651 F.2d 983, 1005, 11 *Envtl. L. Rep. (Envtl. L. Inst.)* 21012, 21022 (5th Cir. 1981).

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¹*National Wildlife Fed’n v. Marsh*, 721 F.2d 767, 770 n.3, 14 *Envtl. L. Rep. (Envtl. L. Inst.)* 20172, 20173 n.3 (11th Cir. 1983); *see* *Foundation on Economic Trends v. Heckler*, 756 F.2d 143, 157, 15 *Envtl. L. Rep. (Envtl. L. Inst.)* 20248, 20255 (D.C. Cir. 1985); *Piedmont Heights Civic Club, Inc. v. Moreland*, 637 F.2d 430, 435, 11 *Envtl. L. Rep. (Envtl. L. Inst.)* 20257, 20259 (5th Cir. 1981); *Canal Auth. of Fla. v. Callaway*, 489 F.2d 567, 577-78, 4 *Envtl. L. Rep. (Envtl. L. Inst.)* 20164, 20169 (5th Cir. 1974); *Latham v. Volpe*, 455 F.2d 1111, 1116-17, 1 *Envtl. L. Rep. (Envtl. L. Inst.)* 20602, 20603 (9th Cir. 1971).

²*See* *Foundation on Economic Trends v. Heckler*, 756 F.2d 143, 157, 15 *Envtl. L. Rep. (Envtl. L. Inst.)* 20248, 20255 (D.C. Cir. 1985); *Winter v. Natural Resources Defense Council*, 129 S.Ct. 365 (2008) (holding that alleged injury to whales from the Navy’s testing of sonar was outweighed by the public interest in training sailors); *see also* *Monsanto Co. v. Geertson Seed Farm*, 138 S.Ct. 2743, 2761-62 (2010) (scope of injunctive relief found to be overbroad); *Alliance for the Wild Rockies v. Cottrell*, 632 F.3d 1127, 1131 et seq. (9th Cir. 2011) (9th Circuit’s “serious question” and “sliding scale” held to survive *Winter*).

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¹*See* Wright, Miller & Cooper, *Federal Practice and Procedure* § 2942.

²*See, e.g.,* *Environmental Defense Fund, Inc. v. Marsh*, 651 F.2d 983, 1005-06, 11 *Envtl. L. Rep. (Envtl. L. Inst.)* 21012, 21022 (5th Cir. 1981); *Lemon v. Geren*, 514 F.3d 1312, 1315-16 (D.C. Cir. 2008) (if unraveling a transfer is necessary, it is in the court’s power to do so).

but that principles of general equity may limit that relief.³ Other courts appear more willing to grant injunctions. One court has held that a NEPA violation in itself constitutes irreparable harm, entitling a plaintiff “to blanket injunctive relief.”⁴ Some courts have created a rebuttable presumption that a NEPA violation causes irreparable injury warranting injunctive relief.⁵ Still other courts presume irreparable harm and award injunctive relief if there has been either a failure to evaluate properly the environmental impact of a major federal action⁶ or a continuing denial of plaintiffs’ rights.⁷

Courts that have held that a NEPA violation raises a presumption of injunctive relief have done so in order to ensure the integrity of the NEPA process. In Judge Wilkey’s words, “[o]rdinarily where an action is being undertaken in violation of NEPA, there is a presumption that injunctive relief should be granted until the agency brings itself into compliance.”⁸ Judge Wilkey explained that a NEPA analysis might reveal substantial environmental consequences critical to further consideration of the propriety of the action. Further, an injunction is justified on an ongoing project because the decisionmakers are entitled to all the information relevant to a determination whether to abandon or alter the project.⁹ Injunctive relief also preserves the widest freedom of choice for the agency when it reconsiders its action after preparing an EIS. “This rationale,” continued Judge Wilkey, “often requires an injunction against all the activities of a project, even activities that themselves have no effect on the environment.”¹⁰ Accordingly, courts “*should not prejudge*” the outcome of reconsideration “once the full environmental consequences . . . have been determined.”¹¹

In sum, the “presumption is that an action proceeding in violation of NEPA

³*See, e.g.*, *Environmental Defense Fund, Inc. v. Marsh*, 651 F.2d 983, 1005-06, 11 *Envtl. L. Rep. (Envtl. L. Inst.)* 21012, 21022 (5th Cir. 1981); *see also* *Northern Cheyenne Tribe v. Hodel*, 851 F.2d 1152, 1158, 18 *Envtl. L. Rep. (Envtl. L. Inst.)* 20865, 20867 (9th Cir. 1988); *Save the Yaak Comm. v. Block*, 840 F.2d 714, 722, 18 *Envtl. L. Rep. (Envtl. L. Inst.)* 20869, 20873 (9th Cir. 1988); *Richland Park Homeowners Ass’n v. Pierce*, 671 F.2d 935, 942, 12 *Envtl. L. Rep. (Envtl. L. Inst.)* 20717, 20719 (5th Cir. 1982).

⁴*Environmental Defense Fund, Inc. v. Froehle*, 477 F.2d 1033, 1037, 3 *Envtl. L. Rep. (Envtl. L. Inst.)* 20383, 20384 (8th Cir. 1973).

⁵*American Motorcyclist Ass’n v. Watt*, 714 F.2d 962, 966 (9th Cir. 1983); *Alpine Lakes Protection Soc’y v. Schlapfer*, 518 F.2d 1089, 1090, 5 *Envtl. L. Rep. (Envtl. L. Inst.)* 20322 (9th Cir. 1975).

⁶*Thomas v. Peterson*, 753 F.2d 754, 764, 15 *Envtl. L. Rep. (Envtl. L. Inst.)* 20225, 20230 (9th Cir. 1985); *Save Our Ecosystems v. Clark*, 747 F.2d 1240, 1250, 15 *Envtl. L. Rep. (Envtl. L. Inst.)* 20035, 20040 (9th Cir. 1984); *see also* *Foundation on Economic Trends v. Heckler*, 756 F.2d 143, 157, 15 *Envtl. L. Rep. (Envtl. L. Inst.)* 20248, 20255 (D.C. Cir. 1985).

⁷*Environmental Defense Fund, Inc. v. Tennessee Valley Auth.*, 468 F.2d 1164, 1184, 2 *Envtl. L. Rep. (Envtl. L. Inst.)* 20726, 20734-35 (6th Cir. 1972). It is worth noting that in some cases, judicial insistence upon NEPA compliance prior to issuance of a permit bars the activity sought to be permitted without the need for an injunction. *See, e.g.*, *Sierra Club v. Sigler*, 695 F.2d 957, 13 *Envtl. L. Rep. (Envtl. L. Inst.)* 20210 (5th Cir. 1983) (no action on project was undertaken during pendency of litigation or after Corps of Engineers was ordered to correct deficiencies in EIS).

⁸*Realty Income Trust v. Eckerd*, 564 F.2d 447, 456, 7 *Envtl. L. Rep. (Envtl. L. Inst.)* 20541, 20545 (D.C. Cir. 1977).

⁹*Realty Income Trust v. Eckerd*, 564 F.2d 447, 456, 7 *Envtl. L. Rep. (Envtl. L. Inst.)* 20541, 20545 (D.C. Cir. 1977).

¹⁰*Realty Income Trust v. Eckerd*, 564 F.2d 447, 456, 7 *Envtl. L. Rep. (Envtl. L. Inst.)* 20541, 20545 (D.C. Cir. 1977). The reason underlying this analysis is well explained in *Jones v. District of Columbia Redev. Land Agency*, 499 F.2d 502, 511-13, 4 *Envtl. L. Rep. (Envtl. L. Inst.)* 20479, 20483 (D.C. Cir. 1974). In brief, the harm to be remedied by the EIS is of two kinds—the actual degradation of the environment, and the failure of federal agency officials to take the environment into account in the manner prescribed by NEPA.

¹¹*Realty Income Trust v. Eckerd*, 564 F.2d 447, 456-57, 7 *Envtl. L. Rep. (Envtl. L. Inst.)* 20541, 2054 (D.C. Cir. 1977) (emphasis in original).

should be enjoined.”¹² Such an injunction has been appropriately termed “the vehicle through which the congressional policy behind NEPA can be effectuated.”¹³ Otherwise stated, the policies underlying NEPA “weigh the scales in favor of those seeking the suspension of all action until the Act’s requirements are met.”¹⁴ Without injunctive relief, “application of a ‘rule of reason’ would convert an EIS into a mere rubber stamp for *post hoc* rationalization of decisions already made.”¹⁵ Injunctive relief in a NEPA case, of course, is designed to maintain the status quo until the appropriate EIS has been prepared.¹⁶

Two Supreme Court cases have given some indication that the Court prefers appellate courts to defer to trial courts’ traditional balancing of equitable factors rather than to apply presumptions necessitating injunctive relief. Those cases, *Weinberger v. Romero-Barcelo*¹⁷ and *Amoco Production Co. v. Village of Gambell*,¹⁸ held that violations of federal environmental statutes do not necessarily compel injunctions or raise presumptions of irreparable harm. While neither case explicitly

¹²*Realty Income Trust v. Eckerd*, 564 F.2d 447, 457, 7 *Envtl. L. Rep.* (Envtl. L. Inst.) 20541, 20546 (D.C. Cir. 1977).

¹³*Environmental Defense Fund, Inc. v. Froehke*, 477 F.2d 1033, 1037, 3 *Envtl. L. Rep.* (Envtl. L. Inst.) 20541, 20384 (8th Cir. 1973).

¹⁴*Save Our Ecosystems v. Clark*, 747 F.2d 1240, 1250, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20035, 20040 (9th Cir. 1984) (quoting *Alpine Lakes Protection Soc’y v. Schlapfer*, 518 F.2d 1089, 1090, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) 20322 (9th Cir. 1975)).

¹⁵*Natural Resources Defense Council, Inc. v. Callaway*, 524 F.2d 79, 95, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) 20640, 20648 (2d Cir. 1975). Injunctive relief in a NEPA case runs both against the federal agency and, where private activity is permitted, against the company. See *Fed. R. Civ. P.* 65(d); *Foundation on Economic Trends v. Heckler*, 756 F.2d 143, 155, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20035, 20254 (D.C. Cir. 1985); *Biderman v. Morton*, 497 F.2d 1141, 1147, 4 *Envtl. L. Rep.* (Envtl. L. Inst.) 20487, 20490 (2d Cir. 1974); *Silva v. Romney*, 473 F.2d 287, 289-90, 3 *Envtl. L. Rep.* (Envtl. L. Inst.) 20082, 20083-84 (1st Cir. 1973).

¹⁶See *Environmental Defense Fund, Inc. v. Marsh*, 651 F.2d 983, 1005-06, 11 *Envtl. L. Rep.* (Envtl. L. Inst.) 21012, 21022 (5th Cir. 1981); *Natural Resources Defense Council, Inc. v. Callaway*, 524 F.2d 79, 95, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) 20640, 20648 (2d Cir. 1975); *Jones v. District of Columbia Redev. Land Agency*, 499 F.2d 502, 512-13, 4 *Envtl. L. Rep.* (Envtl. L. Inst.) 20479, 20483 (D.C. Cir. 1974). Relicensing is more akin to an irreversible and irretrievable commitment of resources than a mere continuation of the status quo. See *Confederated Tribes & Bands of the Yakima Indian Nation v. FERC*, 746 F.2d 466, 475-76, 14 *Envtl. L. Rep.* (Envtl. L. Inst.) 20593, 20597-98 (9th Cir. 1984) cert. denied, 471 U.S. 1116 (1985). For examples of the numerous cases granting injunctive relief to bar or severely limit an action pending completion of an adequate EIS, see *Save Our Ecosystems v. Clark*, 747 F.2d 1240, 1250, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20035, 20040 (9th Cir. 1984); *Sierra Club v. United States Army Corps of Eng’rs*, 701 F.2d 1011, 1034, 13 *Envtl. L. Rep.* (Envtl. L. Inst.) 20326, 20337-38 (2d Cir. 1983); *Environmental Defense Fund, Inc. v. Marsh*, 651 F.2d 983, 1005-06, 11 *Envtl. L. Rep.* (Envtl. L. Inst.) 21012, 21022 (5th Cir. 1981); *Natural Resources Defense Council, Inc. v. Callaway*, 524 F.2d 79, 94-95, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) 20640, 20647-48 (2d Cir. 1975); *Manatee County v. Gorsuch*, 554 F. Supp. 778, 794, 13 *Envtl. L. Rep.* (Envtl. L. Inst.) 20180, 20187-88 (M.D. Fla. 1982); *Montgomery v. Ellis*, 364 F. Supp. 517, 535, 3 *Envtl. L. Rep.* (Envtl. L. Inst.) 20845, 20852-53 (N.D. Ala. 1973).

¹⁷*Weinberger v. Romero-Barcelo*, 456 U.S. 305, 12 *Envtl. L. Rep.* (Envtl. L. Inst.) 20538 (1982). In *Romero-Barcelo*, the Court held that federal courts are not compelled to issue injunctions against violators of section 402 of the FWPCA because the Act provided for alternative means of enforcement.

¹⁸*Amoco Prod. Co. v. Village of Gambell*, 480 U.S. 531, 17 *Envtl. L. Rep.* (Envtl. L. Inst.) 20574 (1987). In *Gambell*, the Court held that the Ninth Circuit erroneously applied a presumption of irreparable injury to the question of whether injunctive relief was appropriate for a violation of section 810 of the Alaska National Interest Lands Conservation Act (ANILCA). Section 810(a) of ANILCA requires an evaluation of any decision relating to the use or disposition of public lands before that decision is made of the impact on Alaskan native subsistence uses and needs. If the evaluation indicates that the proposed use would significantly restrict subsistence uses, the proposal may not be implemented until certain notice and mitigation requirements are met. 16 U.S.C.A. § 3120(a) (1985). Concluding that the environment can be protected without a presumption of irreparable harm, the Court questioned the Ninth Circuit’s adherence to the principle that “[i]rreparable damage is presumed when an agency fails to evaluate thoroughly the environmental impact of a proposed action.” *Amoco Prod. Co. v. Village of Gambell*, 480 U.S. 531, 544-45, 17 *Envtl. L. Rep.* (Envtl. L. Inst.) 20574, 20577 (1987).

addressed injunctive relief under NEPA, they have led some lower courts to question whether Congress intended NEPA to limit their traditional equitable discretion in enforcing the statute.¹⁹

§ 10:43 Judicial review—Overview of the judicial process in NEPA cases—Defenses

Before plaintiffs can obtain temporary or permanent injunctive relief, they may have to overcome defenses typically raised by defendants or interveners in NEPA cases. These defenses are lack of standing, inapplicability of NEPA, and certain procedural defenses not specifically related to the Act.

§ 10:44 Judicial review—Overview of the judicial process in NEPA cases—Defenses—Standing

During most of the 1970s and 1980s it could fairly be said that provided that the facts were suitable and the complaint was properly plead, a standing defense should not present a significant hurdle to plaintiff.¹ That is probably no longer an accurate statement, particularly in certain of the circuits. In NEPA's early years one could look to the leading case on standing in environmental litigation, *Sierra Club v. Morton*,² which made clear that environmental as well as economic interests allow a plaintiff to meet this threshold requirement as long as injury to those interests is particularized to the plaintiff. Thus, it is insufficient for a plaintiff to assert a general interest in protecting the environment. Rather, the complaint must state that the plaintiff in fact uses and enjoys the environmental amenity alleged to be threatened. If the plaintiff is an organization, it must allege that some of its members use and enjoy that amenity. In *Morton*, for example, it was not enough for the plaintiffs to allege that they were interested in protecting the Mineral King Valley in California. Instead, they had to allege that they used and enjoyed the valley.³

As another early NEPA case, *United States v. Students Challenging Regulatory Agency Procedures (SCRAP # 1)*,⁴ made clear, the Supreme Court's broad view of standing is not diminished by the pervasiveness of the alleged environmental injury. In *SCRAP*, the Court found that plaintiffs had standing to challenge nationwide

¹⁹See *Northern Cheyenne Tribe v. Hodel*, 851 F.2d 1152, 1158 (9th Cir. 1988); *Save the Yaak Comm. v. Block*, 840 F.2d 714, 722, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20869, 20873 (9th Cir. 1988); see also *Town of Huntington v. Marsh*, 19 Env'tl. L. Rep. (Env'tl. L. Inst.) 21350 (2d Cir. 1989); *Sierra Club v. United States Forest Serv.*, 843 F.2d 1190, 1195, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 20749, 20752 (9th Cir. 1988).

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¹See generally F. Anderson, *NEPA in the Courts* 283 (1973); W. Rodgers, *Handbook on Environmental Law* 23–30 (1977).

²*Sierra Club v. Morton*, 405 U.S. 727, 2 Env'tl. L. Rep. (Env'tl. L. Inst.) 20192 (1972). See *Defenders of Wildlife v. Hodel*, 851 F.2d 1035, 1039-40, 18 Env'tl. L. Rep. (Env'tl. L. Inst.) 21343, 21345-46 (8th Cir. 1988). The injury may be threatened or contingent. *Sierra Club v. Morton*, 405 U.S. 727, 2 Env'tl. L. Rep. (Env'tl. L. Inst.) 20192 (1972).

³The Supreme Court held that the *Sierra Club's* allegation of interest in environmental protection was insufficient for standing, but noted in a footnote that actual use would suffice. *Sierra Club v. Morton*, 405 U.S. 727, 735 n. 8, 2 Env'tl. L. Rep. (Env'tl. L. Inst.) 20192, 20194 n. 8 (1972). On remand, the appropriate allegations of use were made and standing was achieved. *Sierra Club v. Morton*, 348 F. Supp. 219, 2 Env'tl. L. Rep. (Env'tl. L. Inst.) 20576 (N.D. Cal. 1972). See also *Sierra Club v. SCM Corp.*, 747 F.2d 99, 14 Env'tl. L. Rep. (Env'tl. L. Inst.) 20890 (2d Cir. 1984).

⁴*United States v. Students Challenging Regulatory Agency Procedures (SCRAP #1)*, 412 U.S. 669, 3 Env'tl. L. Rep. (Env'tl. L. Inst.) 20536 (1973). See also *Oregon Env'tl. Council v. Kunzman*, 817 F.2d 484, 491-92, 17 Env'tl. L. Rep. (Env'tl. L. Inst.) 20756, 20758 (9th Cir. 1987) (plaintiffs have standing to challenge nationwide spraying program because they live in state that is part of program, and thus have "geographical nexus"). *But see Lujan v. National Wildlife Fed'n*, 497 U.S. 871, 20 Env'tl. L. Rep. (Env'tl. L. Inst.) 20962 (1990), discussed in this section.

freight rates for recycled goods. The environmental injury alleged—damage to plaintiffs’ recreational use and enjoyment of forests, streams, mountains, and other resources in the Washington, D.C., metropolitan region—was widely shared, but still gave plaintiff standing to sue.⁵

However, the Supreme Court has been shifting its view on standing. In an opinion dealing with NEPA, *Lujan v. National Wildlife Federation*,⁶ the Court took a more constrained view of standing. The Court held that plaintiffs, through their limited affidavits, lacked standing to challenge as a nationwide program what in reality the Court found to be many hundreds of separate actions.

Given these and subsequent cases, plaintiffs who are individuals affected by a proposed action, organizations whose members include such individuals, or state or local governments⁷ whose citizens are so affected should not have difficulty establishing standing if the required injury in fact exists and it is set out with sufficient particularity. The Supreme Court has made very clear its insistence upon the fact of injury and the connection of the plaintiff to it.⁸ Some business plaintiffs, however, may have difficulty establishing that their interests are within the zone of interests protected by NEPA, a prerequisite to standing under the Act,⁹ or that the injuries suffered are sufficient to confer standing.¹⁰ Business plaintiffs are a significant

⁵See *Resources Ltd. v. Robertson*, 8 F.3d 1394, 24 *Envtl. L. Rep.* (Envtl. L. Inst.) 20026 (9th Cir. 1993).

⁶*Lujan v. National Wildlife Fed’n*, 497 U.S. 871, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 20962 (1990).

⁷A significant proportion of NEPA litigation typically includes state or local government plaintiffs. The proportion has ranged from 28 percent of the cases filed in 1978, Council on Environmental Quality, *Environmental Quality* 1979, at 589 (1979); to 14 percent of those filed in 1982, Council on Environmental Quality, *Environmental Quality* 1983, at 266 tbl.7-2 (1984); to 30 percent of those filed in 1985, Council on Environmental Quality 1986, at 243 tbl.B-4 (1988); to 6 percent in 1989, Council on Environmental Quality, *Environmental Quality* 1990, at 235 tbl.5-4 (1991); to 8 percent in 1991, Council on Environmental Quality, *Environmental Quality* 1992, at 167 (1993); to 16 percent in 1992, Council on Environmental Quality, *Environmental Quality* 1993, at 371 (1994); to 14 percent in 1993 and 10 percent in 1994, Council on Environmental Quality, *Environmental Quality* 1994–95, at 544–45 (1996).

These percentages were computed by comparing the number of plaintiffs by category to the total number of suits filed. See *City of Davis v. Coleman*, 521 F.2d 661, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) 20633 (9th Cir. 1975); see also *Michigan v. United States*, 994 F.2d 1197, 23 *Envtl. L. Rep.* (Envtl. L. Inst.) 21003 (6th Cir. 1993); *Louisiana v. Lee*, 596 F. Supp. 645, 649, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20141, 20142 (E.D. La. 1984), order vacated, 758 F.2d 1081 (5th Cir. 1985).

⁸*Lujan v. National Wildlife Fed’n*, 497 U.S. 871, 20 *Envtl. L. Rep.* (Envtl. L. Inst.) 20962 (1990); *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 22 *Envtl. L. Rep.* (Envtl. L. Inst.) 20913 (1992). But see *Resources Ltd. v. Robertson*, 8 F.3d 1394, 24 *Envtl. L. Rep.* (Envtl. L. Inst.) 20026 (9th Cir. 1993). For an exceptionally restricted view of standing, see *Florida Audubon Soc’y v. Bentsen*, 94 F.3d 658 (D.C. Cir. 1996). For more traditional holdings allowing citizen standing, see *Committee to Save the Rio Hondo v. Lucero*, 102 F.3d 455, 27 *Envtl. L. Rep.* (Envtl. L. Inst.) 20576 (10th Cir. 1996), and *Dubois v. United States Dept. of Agriculture*, 102 F.3d 1273, 27 *Envtl. L. Rep.* (Envtl. L. Inst.) 20622 (1st Cir. 1996); *Lemon v. Geren*, 514 F.3d 1312, 1315 (D.C. Cir. 2008) (an agency’s failure to follow NEPA’s procedures creates a procedural injury which in turn creates standing); and *Heartwood, Inc. v. Agpaoa*, 628 F.3d 261 (6th Cir. 2010) (standing allegations must be site-specific).

⁹See, e.g., *Lone Pine Steering Comm. v. EPA*, 600 F. Supp. 1487, 1499 n.2, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20109, 20116 n.2 (D.N.J.), aff’d, 777 F.2d 882, 888 n.4, 16 *Envtl. L. Rep.* (Envtl. L. Inst.) 20009, 20012 n.4 (3d Cir. 1985), cert. denied, 476 U.S. 1115 (1986). It is worth observing, however, that both the district court and the court of appeals noted plaintiffs’ failure to plead or to demonstrate their interest in general environmental concern. See also *Nevada Land Action Ass’n v. United States Forest Serv.*, 8 F.3d 713, 24 *Envtl. L. Rep.* (Envtl. L. Inst.) 20100 (9th Cir. 1993).

¹⁰*Region 8 Forest Serv. Timber Purchasers Council v. Alcock*, 993 F.2d 800, 23 *Envtl. L. Rep.* (Envtl. L. Inst.) 21051 (11th Cir. 1993); *Nevada Land Action Ass’n v. United States Forest Serv.*, 8 F.3d 713, 24 *Envtl. L. Rep.* (Envtl. L. Inst.) 20100 (9th Cir. 1993). For contrasting views on standing with respect to those with economic interests, compare *Ashley Creek Phosphate Co. v. Norton*, 420 F.3d 934, 941-45 (9th Cir. 2005), with *Friends of Boundary Water Wilderness v. Dombeck*, 164 F.3d 1115, 1126-27 (8th Cir. 1999). However, a plaintiff which has both environmental and economic

proportion of the parties filing NEPA cases,¹¹ though, and in some of these cases environmental and business interests coincide, so that the two types of organizations join as plaintiffs.¹²

§ 10:45 Judicial review—Overview of the judicial process in NEPA cases—Defenses—Inapplicability of NEPA

Defendants and intervenors have attempted to escape judicial enforcement of NEPA by arguing that their proposals lie outside the coverage of the Act. Again, such arguments may be easily overcome and have met with little success. This is due largely to NEPA's broad mandate as affirmed by the Supreme Court; the Act applies to all agency actions, absent clear conflicts of statutory authority.¹ Only one significant exception has been carved into NEPA's reach, partly by Congress² and partly by the courts:³ certain limited regulatory activities conducted for purposes of environmental protection are said to constitute the "functional equivalents" of EISs.

One important question regarding NEPA's applicability is the extent to which the statute covers toxic waste cleanups under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as Superfund. This promises to be a major issue in coming years.⁴

interests may have NEPA standing. *National Ass'n of Homebuilders v. United States Army Corps of Eng'rs*, 417 F.3d 1272, 1287 (D.C. Cir. 2005).

¹¹Business and industry plaintiffs were involved in 19 percent of the NEPA cases filed in 1978, Council on Environmental Quality, *Environmental Quality* 1979, at 589 (1979); in 12 percent in 1983, Council on Environmental Quality, *Environmental Quality* 1983, at 523 tbl.12-2 (1984); in 7.4 percent in 1985, Council on Environmental Quality, *Environmental Quality* 1985, at 243 tbl.B-4 (1988); in 4.4 percent in 1991, Council on Environmental Quality, *Environmental Quality* 1979, at 167 (1992); in 12 percent in 1991, Council on Environmental Quality, *Environmental Quality* 1979, at 371 (1992); and in 9 percent in 1993 and 12 percent in 1994, Council on Environmental Quality, *Environmental Quality* 1979, at 544-45 (1994).

¹²For example, NEPA litigation challenging construction of locks and dams that facilitate barge traffic on rivers may be brought both by environmental groups and by railroads, whose interests can be assumed to be at least partly competitive. *See Environmental Defense Fund, Inc. v. Marsh*, 651 F.2d 983, 11 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 21012 (5th Cir. 1981) (EDF joined with Louisville & Nashville R.R. Co. in litigation over Tennessee-Tombigbee Waterway); *Izaak Walton League v. Marsh*, 655 F.2d 346, 11 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 20707 (D.C. Cir. 1981) (environmental organization joined with Acheson, Topeka & Santa Fe Ry. in suit concerning locks on Mississippi River), cert. denied, 454 U.S. 1092 (1981).

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¹*Flint Ridge Dev. Co.*, 426 U.S. 776, 777-78, 6 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 20528, 20529 (1976); *see also Village of Barrington*, *supra*, 636 F.3d at 662 (300- or 180-day statutory deadlines do not implicitly repeal NEPA's conditioning authority); *Concerned About Trident v. Rumsfeld*, 555 F.2d 817, 823, 6 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 20787, 20789-90 (D.C. Cir. 1977); *Douglas County v. Babbitt*, 48 F.3d 1495, 25 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 20631 (9th Cir. 1995); *cf. Ellis & Smith, The Limits of Federal Environmental Responsibility and Control Under the National Environmental Policy Act*, 18 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 10055 (1988) (analyzing scope of "federal action" subject to NEPA).

²All of EPA's actions under the Clean Air Act, and some of those under the FWPCA, are exempted. 15 U.S.C.A. § 793(c)(1) (no action taken under Clean Air Act is "major Federal action" within meaning of NEPA); FWPCA § 511, 33 U.S.C.A. § 1371(c)(1) (only construction of publicly owned treatment works under 33 U.S.C.A. § 1281 and issuance of new pollution source permits under 33 U.S.C.A. §§ 1316, 1342 not exempted).

³*See Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 3 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 20642 (D.C. Cir. 1973), cert. denied, 417 U.S. 921 (1974); *Alabama v. EPA*, 911 F.2d 499, 21 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 20107 (11th Cir. 1990); *see also W. Rodgers, Handbook on Environmental Law* 764 (1977).

⁴The issue was raised but not decided in *Lone Pine Steering Comm. v. EPA*, 600 F. Supp. 1487, 1488, 15 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 20109, 20110 (D.N.J. 1985). A state court in California has applied the state's NEPA equivalent to a Superfund cleanup. *See County of Kern v. State Dep't of Health*

§ 10:46 Judicial review—Overview of the judicial process in NEPA cases—Defenses—Procedural defenses

NEPA defendants and intervenors may raise general procedural defenses not directly related to NEPA, such as ripeness, exhaustion, laches, and mootness.¹ These defenses, like those discussed above, have rarely been successful. Ripeness is covered by CEQ regulations; the other procedural defenses have been addressed by the courts.

Two NEPA regulations bear directly on the procedural aspects of judicial relief. Both were adopted to assuage apprehensions that the new regulations—designed in part to relieve delay in the NEPA process— could, paradoxically, have the opposite effect. Fears were expressed that because the regulations had a greater number of explicit commands, there would be more provisions to violate, and would therefore be earlier and more frequent litigation that could undermine the delay-reducing purpose of the regulations. The CEQ responded by adding the two provisions on judicial relief. The first directly addresses the issue of ripeness and provides that it is the

Council's intention that judicial review of agency compliance with these regulations not occur before any agency has filed the final environmental impact statement or has made a final finding of no significant impact (when such a finding will result in action affecting the environment), or takes action that will result in irreparable injury.²

The second provision asserts the CEQ's intention that a "trivial violation" of the regulation "not give rise to any independent cause of action."³ Litigation prior to an agency's final decision and litigation on minor technical flaws in the agency's procedure under NEPA are thus discouraged.

The doctrine of exhaustion of administrative remedies raises the question of the degree to which objectors must make their environmental reservations known to an agency as a condition of later asserting them in court. There is a certain tension between an agency's NEPA obligations and this more traditional doctrine of administrative law. NEPA obligates an agency to gather information itself to protect the public, rather than to act as an umpire between opposing parties, but a basic tenet of administrative law demands that one who has information bring it to that agency's attention before seeking judicial review.⁴ Given NEPA's mandate that agencies consider all pertinent environmental impacts, courts have favored demanding more from agencies than from plaintiffs and have quite properly been reluctant

Servs., No. 190784 (Cal. Super. Ct., 1985). The legislative history of Superfund makes clear the intent that NEPA apply in some, but not all, situations. *See generally* S. Rep. No. 96-948, at 61 (1980).

[Section 10:46]

¹Ohio Forestry Ass'n, Inc. v. Sierra Club, 523 U.S. 726, 737 (1998) (can sue when NEPA's procedures violated because "the claim can never get riper").

²40 C.F.R. § 1500.3. A case is not ripe when the local agency's conditional approval depends upon the approvals of other agencies which have not acted. *City of Fall River, Mass. v. FERC*, 507 F.3d 1, 7 (1st Cir. 2007).

³40 C.F.R. § 1500.3. *See* 43 Fed. Reg. 55978, 55981 (Nov. 29, 1978). Of course the converse is also the case—significant violations of the regulations do provide grounds for judicial relief. This is precisely how NEPA and its regulations are enforced.

The question of ripeness overlaps with that of when a "proposal" exists that may require an EIS. This issue is discussed at § 10:14. *See also* F. Anderson, NEPA in the Courts 46–47 (1973).

⁴*See* *Greene County Planning Bd. v. FPC*, 455 F.2d 412, 419, 2 Env'tl. L. Rep. (Env'tl. L. Inst.) 20018, 20019-20 (2d Cir. 1992); F. Anderson, NEPA in the Courts 45–46 (1973). In adopting its "scoping" regulation, *see* § 10:19, the CEQ clearly intended to make sure that interested persons or groups are alerted to pending federal proposals before NEPA studies are undertaken. In this way, the concerns of these parties can be known and addressed. However, other implications also follow. The opportunity to comment makes it more difficult for a person or group who is given notice but does not participate to come to court later and complain.

to penalize plaintiffs for tardily bringing to an agency's attention what the agency itself should have known from its own studies.⁵

§ 10:47 Judicial review—Standards of review of NEPA cases

As a general rule, the courts have devised a NEPA-specific shorthand rule for reviewing agency action; the courts insure that the agency took a “hard look” at the environmental impacts of the action.¹ As noted above, the majority of NEPA cases filed allege that an EIS should have been prepared but was not, or that an EIS that was prepared was inadequate.² Hence, most substantive review of NEPA cases involves these issues. A considerably smaller number of cases allege inadequate EAs or other violations of the Act.³ The following discussion briefly analyzes the standards of review employed by courts examining these various claims.

§ 10:48 Judicial review—Standards of review of NEPA cases—Failure to prepare an EIS

Since NEPA's enactment, courts have applied various standards in reviewing complaints alleging that EISs should have been prepared. Until the late 1980s, the majority employed a “reasonableness” standard, applying searching scrutiny to an agency's determination that no EIS was required.¹ A minority employed the “arbitrary and capricious” standard, a standard typically applied in the field of administrative law.² A few courts took middle positions.³

The Supreme Court, while stating that it was only deciding the “narrow question”

⁵See *Park County Resource Council v. United States Dep't of Agric.*, 817 F.2d 609, 619, 17 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20851, 20854 (10th Cir. 1987). Anderson quite appropriately suggests a greater obligation to exhaust remedies when “extensive administrative proceedings” precede the agency's action. F. Anderson, *NEPA in the Courts* 46 (1973).

Courts have been as reluctant to apply the doctrine of laches to preclude NEPA claims as they have been to dismiss for failure to exhaust administrative remedies. See *e.g.*, *Park County Resource Council*, 817 F.2d 609, 617–19, 17 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20851, 20854 (10th Cir. 1987); *Headwaters, Inc. v. BLM, Medford Dist.*, 665 F. Supp. 873, 876, 18 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 21370, 21371 (D. Or. 1987). *But see National Parks & Conservation Ass'n v. Hodel*, 679 F. Supp. 49, 54 (D.D.C. 1987) (laches bars action).

Courts may also be reluctant to declare a NEPA complaint moot when an agency has produced an inadequate EIS, but indicates it will not implement the decision it made based on that statement, if the agency's NEPA violation is capable of repetition but evading review. See *Oregon Env'tl. Council v. Kunzman*, 817 F.2d 484, 492, 17 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20756, 20758 (9th Cir. 1987); *Apache Survival Coalition v. United States*, 21 F.3d 895, 24 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20854 (9th Cir. 1994).

[Section 10:47]

¹*Department of Transp. v. Public Citizen*, 541 U.S. 752, 124 S. Ct. 2204, 159 L. Ed. 2d 60 (2004).

²See § 10:35.

³*Council on Environmental Quality, Environmental Quality 1990*, at 235 tbl.5-3 (1991); *Council on Environmental Quality, Environmental Quality 1993*, at 371 (1994).

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¹See *Hoskins, Judicial Review of an Agency's Decision Not to Prepare an Environmental Impact Statement*, 18 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 10331, 10339–45 (1988) (analyzing cases applying reasonableness standard).

²*Hoskins, Judicial Review of an Agency's Decision Not to Prepare an Environmental Impact Statement*, 18 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 10331, 10336–39 (1988) (analyzing cases applying arbitrary and capricious standard).

³Several courts have questioned whether there is any difference between the standards. See *Sierra Club v. Marsh*, 769 F.2d 868, 871, 15 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20911, 20912 (1st Cir. 1985); *River Road Alliance v. Corps of Eng'rs*, 764 F.2d 445, 449, 15 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20518, 20519 (7th Cir. 1985); *Quinonez-Lopez v. Coco Lagoon Dev. Corp.*, 733 F.2d 1, 3, 14 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 20445, 20446 (1st Cir. 1984); *Lower Alloways Creek Twp. v. Public Serv. Elec. & Gas Co.*, 687 F.2d 732, 742, 12 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 21029, 21033–34 (3d Cir. 1982); *Boles v.*

of what standard of review governed failure to supplement an EIS, appeared to have come down on the side of the arbitrary and capricious standard.⁴ In doing so, however, the Court stressed that a “searching and careful” inquiry must be made⁵ and observed that the difference between the two standards “is not of great pragmatic consequence.”⁶ “Accordingly,” the Court continued, “our decision today will not require a substantial reworking of long-established NEPA law.”⁷

After the Supreme Court applied the arbitrary and capricious standard of review to supplementation decisions, several courts abandoned the reasonableness standard for review of an agency’s threshold decision on whether to prepare an EIS in favor of the more deferential arbitrary and capricious standard.⁸ Finally, in 2004, the Supreme Court made explicit its reliance on the arbitrary and capricious standard.⁹

The rationale for a searching and careful review of such decisions remains valid, however. That rationale was clearly articulated by the Fifth Circuit in *Save Our Ten Acres v. Kreger*:¹⁰

NEPA was intended not only to insure that the appropriate responsible official considered the environmental effects of the project, but also provided Congress (and others receiving such recommendation or proposal) with a sound basis for evaluating the environmental aspects of the particular project or program. The spirit of the Act would die aborning if a facile, *ex parte* decision that the project was minor or did not significantly affect the environment were too well shielded from impartial review. Every such decision perverts all consideration of that which Congress has directed be considered “to the fullest extent possible.” The primary decision to give or bypass the consideration required by the Act must be subject to inspection under a more searching standard.¹¹

This guidance retains its wisdom. The threshold determination of whether to

Onton Dock, Inc., 659 F.2d 74, 75, 11 Env’tl. L. Rep. (Env’tl. L. Inst.) 20986, 20987 (6th Cir. 1981); *see also* Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 377 n.23, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20749, 20753 n.23 (1989); City of Alexandria v. Federal Highway Admin., 756 F.2d 1014, 1017 (4th Cir. 1985); Committee for Auto Responsibility v. Solomon, 603 F.2d 992, 9 Env’tl. L. Rep. (Env’tl. L. Inst.) 20575 (D.C. Cir. 1973); Peshlakai v. Duncan, 476 F. Supp. 1247, 1252, 9 Env’tl. L. Rep. (Env’tl. L. Inst.) 20690, 20692 (D.D.C. 1979), cert. denied, 445 U.S. 915 (1980).

⁴Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 376, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20749, 20754-55 (1989); *see also* Alaska Wilderness Recreation and Tourism Ass’n v. Morrison, 67 F.3d 723, 26 Env’tl. L. Rep. (Env’tl. L. Inst.) 20065 (9th Cir. 1995).

⁵Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 378, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20749, 20754-55 (1989). The Court also emphasized that the ultimate standard of review was a narrow one.

⁶Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 377 n.23, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20749, 20753 n.23 (1989). *But see* National Audubon Soc’y v. United States Forest Serv., 4 F.3d 832, 840, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 21520, 21524 (9th Cir. 1993).

⁷Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 377 n.23, 19 Env’tl. L. Rep. (Env’tl. L. Inst.) 20749, 20753 n.23 (1989).

⁸*See, e.g.,* Greenpeace Action v. Franklin, 982 F.2d 1342, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 20639 (9th Cir. 1992); Friends of the Payette v. Horseshoe Bend Hydroelectric Co., 988 F.2d 989, 23 Env’tl. L. Rep. (Env’tl. L. Inst.) 20530 (9th Cir. 1993). *See also* Sabine River Auth. v. United States Dep’t of Interior, 951 F.2d 669, 22 Env’tl. L. Rep. (Env’tl. L. Inst.) 20633 (5th Cir. 1992); Village of Los Ranchos de Albuquerque v. Marsh, 956 F.2d 970, 22 Env’tl. L. Rep. (Env’tl. L. Inst.) 21033 (10th Cir. 1992); Lockhart v. Kenops, 927 F.2d 1028, 21 Env’tl. L. Rep. (Env’tl. L. Inst.) 20994 (8th Cir. 1991); Committee to Preserve Boomer Lake Park v. United States Dept. of Transp., 4 F.3d 1543, 24 Env’tl. L. Rep. (Env’tl. L. Inst.) 20142, 20146 (10th Cir. 1993). Each of these cases involved review of an agency’s decision not to prepare an initial EIS after the agency had first performed an EA that resulted in FONSI.

⁹Department of Transp. v. Public Citizen, 541 U.S. 752, 124 S. Ct. 2204, 159 L. Ed. 2d 60 (2004).

¹⁰Save Our Ten Acres v. Kreger, 472 F.2d 463, 3 Env’tl. L. Rep. (Env’tl. L. Inst.) 20041 (5th Cir. 1973).

¹¹Save Our Ten Acres v. Kreger, 472 F.2d 463, 466 3 Env’tl. L. Rep. (Env’tl. L. Inst.) 20041, 20042 (5th Cir. 1973).

prepare an EIS is not the informed exercise of agency discretion, which should properly receive considerable deference. Rather, that determination is the agency's decision whether or not to inform its discretion by preparing an EIS that will provide the information it needs to evaluate the environmental consequences of a project. Judicial solicitude for agency discretion is proper when, based on whatever record the law requires, the agency exercises *informed* discretion. An agency's decision not to prepare an EIS, however, is a decision not to inform its discretion and therefore invites more exacting judicial scrutiny. An agency should not be enabled to bypass the entire EIS requirement with a cursory assessment to which a court gives an equally cursory review.

§ 10:49 Judicial review—Standards of review of NEPA cases—Inadequacy of an EIS or EA

Cases challenging the adequacy of EISs or EAs are reviewed under a less disputed standard than decisions on whether to prepare EISs.¹ This is primarily due to the fact that such cases present factual rather than legal issues, and courts traditionally afford substantial deference to agency determinations of fact. While NEPA does not specifically provide for judicial review of EISs, these documents are usually reviewed under the Administrative Procedure Act² standard for review of agency actions: an agency action is to be set aside if found to be “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law,”³ or “without observance of procedure as required by law.”⁴ EAs are also judicially reviewable under this standard,⁵ and allegations of EA inadequacy form a significant portion of NEPA litigation.⁶

§ 10:50 Judicial review—Standards of review of NEPA cases—Other nontrivial violations of NEPA

While the CEQ does not intend for trivial violations of its regulations to give rise to independent actions,¹ nontrivial violations of the law or regulations may do so. These violations constitute the third most frequent group of allegations made in NEPA suits.² Where agency decisionmaking is alleged to violate NEPA regulations,

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¹Indeed, the standard of judicial review in this area has been accurately described as “relatively stable.” Mandelker, *NEPA Law and Litigation* § 10:13; see F. Anderson, *Federal Environmental Law* 375 (1974).

²5 U.S.C.A. § 706.

³5 U.S.C.A. § 706(2)(A); see *Oregon Envtl. Council v. Kunzman*, 817 F.2d 484, 492, 17 *Envtl. L. Rep.* (Envtl. L. Inst.) 20756, 20759 (9th Cir. 1987); *Sierra Club v. United States Army Corps of Engrs.*, 772 F.2d 1043, 1050, 15 *Envtl. L. Rep.* (Envtl. L. Inst.) 20998, 21001 (2d Cir. 1985).

⁴5 U.S.C.A. § 706(2)(D); *Oregon Envtl. Council v. Kunzman*, 817 F.2d 484, 492, 17 *Envtl. L. Rep.* (Envtl. L. Inst.) 20756, 20759 (9th Cir. 1987); *Natural Resources Defense Council v. SEC*, 606 F.2d 1031, 9 *Envtl. L. Rep.* (Envtl. L. Inst.) 20367 (D.C. Cir. 1979); see also 5 U.S.C.A. § 706(2)(C) (“in excess of statutory jurisdiction, authority, or limitation”).

⁵*Hanly v. Kleindienst*, 471 F.2d 823, 2 *Envtl. L. Rep.* (Envtl. L. Inst.) 20717 (2d Cir. 1972), cert. denied, 412 U.S. 908 (1973).

⁶Of the 77 NEPA suits filed in 1992, 21 percent alleged this ground while 13 percent alleged that an EA should have been prepared but was not. Council on Environmental Quality, *Environmental Quality 1993*, at 371 (1994).

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¹40 C.F.R. § 1500.3.

²In 1992, 6 of 112 causes of action brought under NEPA were filed on bases other than those mentioned above. An additional five concerned the filing of supplemental EISs. Council on Environmental Quality, *Environmental Quality 1993*, at 371 (1994).

the same standard applies as in cases alleging inadequate EISs—the arbitrary and capricious standard.³

§ 10:51 Judicial review—Substantive review of NEPA actions

One final issue concerning judicial review merits attention—the degree to which a court can reverse an agency decision made in compliance with NEPA procedures. NEPA and its procedures seek to ensure environmentally responsible decisionmaking, but an agency may quite possibly comply with the Act and still fail to choose the action most consistent with the national environmental policy stated in §§ 101 and 102(1) of the Act. Early in NEPA’s development, there were considerable indications that the judiciary would go beyond procedure and show a greater willingness to conduct substantive review of final agency decisions.¹ The Supreme Court has limited, but has not completely foreclosed, such developments. In *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*,² the Court said that NEPA sets forth “significant substantive goals” for the nation, but that its mandate to the agencies is “essentially procedural.”³ That remains an accurate statement.⁴ Even acknowledging the deference properly due to agencies in their decisionmaking, the CEQ has certainly taken the view that their actions can be so violative of NEPA’s “substantive requirements”⁵ as to merit review under the arbitrary and capricious standard.⁶

§ 10:52 Conclusion

The congressional framers of NEPA sought to change the way the federal government operates. After two decades of experience, it may fairly be concluded that they succeeded. Federal officials know that they must consider the environment in all that they do. Those who care about the environment are armed with NEPA’s action-forcing provisions. Those less environmentally inclined are brought into line by this

³See § 10:49.

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¹See W. Rodgers, *Handbook on Environmental Law* 738–50 (1977); see also Council on Environmental Quality, *Environmental Quality* 1978, at 403–05 (1979) (summarizing cases).

²*Vermont Yankee Nuclear Power Corp. v. NRDC, Inc.*, 435 U.S. 519, 8 *Envtl. L. Rep.* (Envtl. L. Inst.) 20288 (1978).

³*Vermont Yankee Nuclear Power Corp. v. NRDC, Inc.*, 435 U.S. 519, 558 8 *Envtl. L. Rep.* (Envtl. L. Inst.) 20288, 20297 (1978). See *Baltimore Gas & Elec. Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 13 *Envtl. L. Rep.* (Envtl. L. Inst.) 20544 (1983); *Strycker’s Bay Neighborhood Council v. Karlen*, 444 U.S. 223, 10 *Envtl. L. Rep.* (Envtl. L. Inst.) 20079 (1980); Weinstein, *Substantive Review under NEPA after Vermont Yankee IV*, 36 *Syracuse L. Rev.* 837 (1985). The Court has defined the judicial role as that of ensuring that agencies take a “hard look” at environmental consequences in their actions under NEPA. *Kleppe v. Sierra Club*, 427 U.S. 390, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20532 (1976); *Seattle Community Council Fed’n v. FAA*, 961 F.2d 829 (9th Cir. 1992). This means that a reviewing court must make a pragmatic judgment as to whether the form, content, and preparation of the EIS foster “both informed decisionmaking and informed public participation.” *Northwest Coalition for Alternatives to Pesticides v. Lyng*, 844 F.2d 588, 590-91, 18 *Envtl. L. Rep.* (Envtl. L. Inst.) 20738, 20739 (9th Cir. 1988).

⁴*Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 19 *L. Rep.* (Envtl. L. Inst.) 20743 (1989).

⁵40 C.F.R. § 1500.1(a); see *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 19 *Envtl. L. Rep.* (Envtl. L. Inst.) 20743 (1989).

⁶See F. Anderson, *Federal Environmental Law* 266–67 (1974); W. Rodgers, *Handbook on Environmental Law* § 7.5 (1977); Weinstein, *Substantive Review under NEPA after Vermont Yankee IV*, 36 *Syracuse L. Rev.* 837 (1985). See also 40 C.F.R. §§ 1500.1, 1502.2(d), 1505.1(a), 1505.2(b). The most recent Supreme Court discussion of this issue, however, further narrows the opportunity for review beyond the essentially procedural. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 19 *Envtl. L. Rep.* (Envtl. L. Inst.) 20743 (1989). For a criticism of the Supreme Court’s increasingly narrow reading of NEPA, see Yost, *NEPA’s Promise—Partially Fulfilled*, 20 *Envtl. L.* 533 (1990).

congressional enactment, buttressed by the ever-present prospect of litigation. In short, NEPA works.

II. NEPA: ETHICS, ECONOMICS, AND SCIENCE IN ENVIRONMENTAL LAW*

§ 10:53 Introduction

What is striking about the National Environmental Policy Act of 1969 (NEPA) is its insistence on substantive values¹—ethical, cultural, historical, and aesthetic—and its reliance on procedural methods for achieving them.² “The most important feature of the Act,” according to Senator Henry Jackson, its principal author, “is that it establishes new decision-making procedures for all agencies of the federal government.”³

Congress instituted these procedures, however, as part of a broad national policy to encourage a “productive and enjoyable harmony between man and his environment; to . . . prevent or eliminate damage to the environment . . . ; [and] to enrich the understanding of ecological systems and natural resources important to the Nation.”⁴ This chapter discusses the nature and extent of these legislative purposes; it analyzes the substantive values which underlie NEPA and which may provide a basis for interpreting subsequent environmental legislation.

NEPA is not primarily an operational statute: it states goals but does not set standards; it calls on federal agencies to undertake environmental planning, but it does not empower them to promulgate environmental regulations.⁵ NEPA does not prohibit development in environmentally sensitive areas, except that it requires federal agencies to consider environmental values and to prepare environmental impact statements; NEPA does not amend other legislation.⁶ NEPA was intended

*By Mark Sagoff

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¹42 U.S.C.A. §§ 4321 to 4370. This section is concerned primarily with the provisions of Title I of NEPA. 42 U.S.C.A. §§ 4331 to 4335. Title II of NEPA establishes a Council on Environmental Quality. 42 U.S.C.A. §§ 4341 to 4347.

²Courts have recognized from the outset the substantive policy implications of NEPA. *See, e.g.*, *Environmental Defense Fund v. Corps of Eng’rs*, 470 F.2d 289, 2 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20740 (8th Cir. 1972):

The language of NEPA, as well as its legislative history, make it clear that the Act is more than an environmental full-disclosure law. NEPA was intended to effect substantive changes in decision making. Section 101(b) of the Act states that agencies have an obligation “to use all practical means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs and resources” to preserve and enhance the environment. To this end, § 101 sets out specific environmental goals to serve as a set of policies to guide agency action affecting the environment. . . .

Environmental Defense Fund v. Corps of Eng’rs, 470 F.2d 289, 297, 2 *Envtl. L. Rep.* (*Envtl. L. Inst.*) 20740, 20743 (8th Cir. 1972).

³Jackson, *Environmental Quality, the Courts, and Congress*, 68 *Mich. L. Rev.* 1079 (1970).

⁴NEPA § 2, 42 U.S.C.A. § 4321.

⁵*See* Goldsmith & Banks, “Environmental Values: Institutional Responsibility and the Supreme Court,” 7 *Harv. Envtl. L. Rev.* 1, 2 (1983). “Whereas NEPA required the federal government to function as an environmental planner, the Clean Air Act and OSHA required the federal government to function as an environmental regulator.” Goldsmith & Banks, “Environmental Values: Institutional Responsibility and the Supreme Court,” 7 *Harv. Envtl. L. Rev.* 1, 2 (1983) (footnotes omitted).

⁶NEPA § 104, 42 U.S.C.A. § 4334, states that nothing in the previous sections “shall in any way affect the specific statutory obligations of any Federal agency” to comply with criteria, standards, and other requirements set by legislation. This “non-derogation clause” was added as part of a compromise between Senator Jackson (the chief sponsor of NEPA in the Senate) and Senator Muskie (chairman of the relevant subcommittee) when the version of NEPA passed by the House was referred back to the Senate on its way to the Conference Committee. Senator Muskie wished to ensure that NEPA would not modify pollution control legislation his committee had approved or would approve. For an account

primarily as a statement of national purpose and policy; subsequent legislation, which did set standards and state prohibitions, would make that policy operational.⁷

The single major operational requirement of the Act, included as a result of a last-minute compromise,⁸ stipulates that all agencies of the federal government should prepare “a detailed statement by the responsible official” describing the environmental impact of every action “significantly affecting the quality of the human environment.”⁹ This requirement has engendered a vast NEPA jurisprudence,¹⁰ which is adequately analyzed in casebooks,¹¹ treatises,¹² and articles,¹³ and need not be reviewed here. Our present interest is to consider the statute not as a catalyst

of these events, *see* R. Liroff, *A National Policy for the Environment: NEPA and its Aftermath* 18–20 (1976). For an analysis of the extent to which the non-derogation clause applies to agencies specifically concerned with environmental protection, such as the Environmental Protection Agency, *see* Mandelker, *NEPA Law and Litigation* §§ 2:15, 2:17, 2:18; F. Anderson, *NEPA in the Courts: A Legal Analysis of the National Environmental Policy Act* 108–22 (1973).

⁷For discussion of this point, *see* Mandelker, *NEPA Law and Litigation* §§ 1:2, 1:3. *See also* Senate Comm. on Interior and Insular Affairs, *Congress and the Nation’s Environment*, 92d Cong., 1st Sess. xv (1971):

By proclaiming the responsibility of the Federal Government to promote the restoration and maintenance of the human environment, the Act provides a framework for the formulation of specific legislative measures to deal with a wide variety of environmental problems. On the action level, it requires all U.S. agencies to submit detailed environmental impact reports, available to the public at large, on any proposed project or legislation “significantly affecting the quality of the human environment.”

Senate Comm. on Interior and Insular Affairs, *Congress and the Nation’s Environment*, 92d Cong., 1st Sess. xv (1971).

Commentators have criticized NEPA for being more aspirational than regulatory; this criticism, however, ignores the intention that NEPA serve as a framework for subsequent legislative measures dealing with a variety of specific environmental problems. Liroff, for example, argues “that Congress did not really enact a national environmental policy when it passed NEPA. Rather, it enacted only a statement of national environmental policy.” R. Liroff, *A National Policy for the Environment: NEPA and its Aftermath* 6 (1976). Lowi, however, misunderstands the role of NEPA. He writes:

The act states a whole lot of lofty sentiments. . . . But there is no law to be found anywhere in the act. Sentiments only—with a bit of staff and eventually a bit of money thrown in. But no law. No criteria identifying precisely what behavior is thought to be harmful and therefore unlawful. There is not even a small step in this direction.

⁸Senator Jackson believed that the policy statement in NEPA would suffice to direct mission-oriented public works agencies to consider environmental “findings,” but Senator Muskie insisted on a stronger mandate involving a “detailed statement” of environmental impact. For the relevant textual changes in the statute, *see* 115 Cong. Rec. 29051 (1969). For a discussion of the legislative history of the impact statement requirement, *see* R. Liroff, *A National Policy for the Environment: NEPA and its Aftermath* 6, 15–20 (1976).

⁹NEPA § 102(1)(C), 42 U.S.C.A. § 4332(1)(C).

¹⁰NEPA does not contain any provision for judicial review and it is clear that few, if any, legislators contemplated the extent to which the judiciary would enforce NEPA requirements. The only mention of possible judicial consequences to be found in the legislative history occurs in the “Statement of the Managers on the Part of the House” examining a provision, later deleted, concerning environmental rights. *See* 115 Cong. Rec. 39702 (1969). Apparently, even Representative Aspinall, a major opponent of the statute, failed to foresee the possibility of judicial activism. According to Liroff, “judicial review of environmental impact statements, which ultimately proved to be the most important role for the courts, was never discussed.” R. Liroff, *A National Policy for the Environment: NEPA and its Aftermath* 6, 31 (1976).

¹¹*See, e.g.*, J. Battle, *Environmental Decisionmaking and NEPA* (1985); J. Bonine & T. McGarity, *The Law of Environmental Protection* 1–234 (1984); N. Orloff & G. Brooks, *The National Environmental Policy Act: Cases and Materials* (1980).

¹²*See, e.g.*, F. Anderson, *NEPA in the Courts: A Legal Analysis of the National Environmental Policy Act* 108 (1973); R. Liroff, *A National Policy for the Environment: NEPA and its Aftermath* 6 (1976); Mandelker, *NEPA Law and Litigation*.

¹³*See* Worsham, *The National Environmental Policy Act and Related Materials: A Selected Bibliography* (Vance Bibliographies, Pub. Admin. Ser. # P. 43) (listing approximately 200 articles on NEPA published in the 1970s).

for the development of a NEPA common law,¹⁴ but as a statement of national values, purposes, and policies for the natural and human environment. These values, principles, and policies will be examined to find out what they are and how conflicts among them may be resolved.

Section 101 of NEPA declares six specific policy goals which are supposed to implement the overall objective of establishing a productive, enjoyable harmony between man and his environment. These sweeping policy goals include trusteeship of the environment for future generations; assurance of safe, healthful, productive, and aesthetically and culturally pleasing surroundings for all Americans; and preservation of important historical, cultural, and natural aspects of the national heritage.¹⁵

These policy goals are explicitly ethical: They arise from a conception of the good society¹⁶ and the harmonious relation it seeks to maintain with its environment.¹⁷ These goals reflect social virtues: justice between generations, respect for nature, and reverence for life.¹⁸ Yet NEPA also recognizes the importance of economic interests, and it acknowledges the possibility that these interests may conflict with attempts to protect the environment.

The statutory language, the legislative history, and the subsequent judicial interpretation of NEPA suggest three possible approaches to understanding, if not resolving, the conflict between environmental values and economic growth. First, those who emphasize the ethical and aspirational aspects of the statute look upon environmental deterioration with alarm and disgust and call for a fundamental change of conscience in America.¹⁹ They may argue that NEPA establishes an “environmental bill of rights”; they insist, at any rate, that it gives environmental

¹⁴See *Kleppe v. Sierra Club*, 427 U.S. 390, 421, 6 *Envtl. L. Rep.* (Envtl. L. Inst.) 20532, 20539 (1976) (Marshall, J., and Brennan, J., dissenting in part) (“In fact, this vaguely worded statute seems designed to serve as no more than a catalyst for development of a ‘common law’ of NEPA.”).

¹⁵NEPA § 101(b), 42 U.S.C.A. § 4331(b).

¹⁶Ethical as distinct from economic goals are usually thought to characterize a good or “great” society. Thus President Lyndon Johnson remarked in 1965:

We have increased the wealth of our National and the prosperity of our people. Yet we do not do this simply to swell our bank deposits, or to raise our gross national product. The purpose of this nation cannot be listed in the ledgers of accountants. It is to enrich the quality of people’s life—to produce great men and women which are the measure of a Great Society.

White House Conf. on Natural Beauty, Report to the President and the President’s Response 41 (1965).

¹⁷“[T]he cornerstone of environmental policy is ethical. . . . The sacrifice of a plant or animal species, for example, or of a unique ecosystem ought not to be permitted for reasons of short-run economy, convenience or expediency. The philosophy of reverence for life would be an appropriate guiding ethic for a policy that must at times lead to a decision as to which of two forms of life must give way to a larger purpose.” L. Caldwell, *A National Policy For The Environment* (1968) (A Special Report to the Committee on Interior and Insular Affairs, U.S. Senate), *reprinted in* *Hearings Before the Comm. on Interior and Insular Affairs, U.S. Senate and the Comm. on Sci. & Astronautics, 90th Cong., 2d Sess.* 87, 109 (1968). For current assessments of NEPA along these lines, see Goldsmith & Banks, “Environmental Values: Institutional Responsibility and the Supreme Court,” 7 *Harv. Env’tl. L. Rev.* 1, 2 (1983), and Pollack, *Reimagining NEPA: Choices for Environmentalists*, 9 *Harv. Env’tl. L. Rev.* 359 (1985).

¹⁸See note 2. Politicians during the 1960s frequently contrasted economic goals, such as welfare and efficiency, with ethical concerns, particularly with respect to the environment. President Johnson’s statement is typical:

Our conservation must not be just the classic conservation of protecting and development, but a creative conservation of restoration and innovation. Its concern is not with nature alone, but with the total relation between man and the world around him. Its object is not just man’s welfare but the dignity of his spirit.

Cooley, *Introduction: Politics, Technology and the Environment*, in *Congress and the Environment* xiii (R. Cooley & G. Wandesforde-Smith eds. (1979) (quoting *The White House Message on Natural Beauty to the Congress of the United States* (Feb. 8, 1965)).

¹⁹In this respect, the environmental movement can be understood by analogy to the civil rights movement which preceded it by a few years. Civil rights activists viewed segregation with moral revul-

values priority over ordinary economic and commercial interests in agency decisionmaking.²⁰ From this moral or principled point of view “the growth-versus-environment contest is in one sense a mismatch: economic growth is a means, an instrumental goal, while environmental quality is an end in itself, an important component of the quality of existence.”²¹

There are passages in NEPA which imply, indeed, that environmental protection should not be weakened in order to accommodate economic development.²² In other passages, however, the statute introduces “weasel” words, such as “practicable”²³ and “to the fullest extent possible,”²⁴ which can be interpreted as tempering its environmental mandate. NEPA refrains from creating a “right” to a healthful environment. The statute may do more to state than to solve the problem of giving environmental values “appropriate consideration in decisionmaking along with economic and technical considerations.”²⁵

Those who approach NEPA from an economic point of view, in contrast, may interpret the statute as a call on agencies to allocate natural resources more efficiently and to prevent wasteful exploitation. In this view, “the role of NEPA is narrow: ensuring that agencies conduct proper scientific and economic analysis.”²⁶ Those who take this approach argue that NEPA neither gives moral priority to environmental values nor suggests that these values should “trump” economic interests. The law requires, on this reading, only that values be weighed equitably along with other wants and preferences, the aggregate satisfaction of which will promote individual welfare and maximize social wealth.²⁷

On this view, there is no logical difference between a moral commitment to “clean

sion and sought to change attitudes by changing behavior through law. They used legislation to change attitudes and preferences concerning race. Environmentalists similarly wished to mobilize the force of law in the service of consciousness-raising, not necessarily to satisfy extant preferences and tastes, but to improve and reform behavior with respect to natural resources and the environment.

²⁰For this view, *see, e.g.*, Hanks & Hanks, *An Environmental Bill of Rights: The Citizen Suit and the National Environment Policy Act of 1969*, 21 *Rutgers L. Rev.* 230 (1970).

²¹Heller, *Coming to Terms with Growth and the Environment*, in *Energy, Economic Growth, and the Environment* 3 (S. Schurr ed. 1972).

²²In one such passage, NEPA calls on the nation to “[a]ttain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable or unintended consequences.” NEPA § 101(b)(3), 42 U.S.C.A. § 4331(b)(3). This statement might be read as a non-degradation requirement, but the courts, in generally backing away from substantive NEPA review of agency decisions, have not given it this effect. *See generally* Mandelker, *NEPA Law & Litigation*, § 10:8.

²³NEPA § 101(b), 42 U.S.C.A. § 4331(b).

²⁴NEPA § 102, 42 U.S.C.A. § 4332. In the version of the Muskie-Jackson bill that went to conference, the words “to the fullest extent possible” modified “policies, regulations and public laws,” and *not* the responsibilities of the federal agencies. Congressman Aspinall insisted on the revision so that, in his view, agencies would have to comply with NEPA only to the extent permitted under existing legal authority. This would have the same effect, he thought, as the vitiating amendment he had placed in the House version. In exchange for this revision, therefore, he permitted his amendment to be deleted from the final bill.

Senator Jackson created some legislative history, however, to abort Aspinall’s interpretation of this passage. In a “Statement of the Managers on the Part of the House,” Jackson’s staff, in cooperation with Dingell, stipulated that agencies were to comply with NEPA directives unless explicitly prohibited from doing so by authorizing legislation. 115 *Cong. Rec.* 39702 (1969). (Aspinall, of course, refused to sign this statement.) When it is said that Congressman Aspinall was outmaneuvered in conference, this is what it means. *See* R. Liroff, *A National Policy for the Environment: NEPA and its Aftermath* 29–30 (1976).

²⁵NEPA § 102(2)(B), 42 U.S.C.A. § 4332(2)(B).

²⁶Pollack, *Reimagining NEPA: Choices for Environmentalists*, 9 *Harv. Envtl. L. Rev.* 372 (1985).

²⁷An early leading NEPA case, *Calvert Cliffs’ Coordinating Comm., Inc. v. United States Atomic Energy Comm’n*, 449 F.2d 1109, 1 *Envtl. L. Rep.* (Envtl. L. Inst.) 20346 (D.C. Cir. 1971), interprets NEPA as entering environmental values into a general cost-benefit balancing on which a decision may

up America,” for example, and any other preference or desire. Moral and aesthetic “benefits” are simply harder to quantify—and even harder to price—and therefore more difficult to enter into the utilitarian calculus upon which social decisions are to be based.²⁸

Finally, many politicians during the 1960s and 1970s argued that the nation did not have to choose between economic growth and environmental protection but that, by forcing science and technology to develop in appropriate ways, it could have its environmental cake and eat it too. To quote the Republican Presidential nominee in 1968: “We are faced with nothing less than the task of preserving the American environment and at the same time preserving our high standard of living.”²⁹ During the 1960s, many Americans believed that environmental quality and economic growth were not enemies, but that a wiser use of science and technology could solve—just as a careless use had caused—the environmental crisis. Much of the debate in Congress was concerned with diagnosing the reasons for environmental problems and developing the expertise to solve them.³⁰ One may argue that NEPA avoids rather than confronts many of the “hard choices” that sustain an enforceable environmental policy.

This section considers NEPA as a response to the pervasive conflict between economic growth and environmental protection or, in the language of the time, between our standard of living and our quality of life.³¹ The legislative and subsequent history of NEPA will be examined to understand how the statute responds to this

be legitimately based. “In some instances environmental costs may outweigh economic and technical benefits and in other instances they may not. But NEPA mandates a rather finely tuned and ‘systematic’ balancing analysis in each instance.” *Calvert Cliffs’ Coordinating Comm., Inc. v. United States Atomic Energy Comm’n*, 449 F.2d 1109, 1113, 1 *Envtl. L. Rep.* (Envtl. L. Inst.) 20346, 20348 (D.C. Cir. 1971). In spite of this statement, courts have generally not taken either *Calvert Cliffs* or NEPA § 102(2)(B) to require a cost-benefit test or cost-benefit analysis in environmental impact statements. *See, e.g., Trout Unlimited v. Morton*, 509 F.2d 1276, 5 *Envtl. L. Rep.* (Envtl. L. Inst.) 20151 (9th Cir. 1974).

²⁸For citations to and criticism of this literature, *see* Kennedy, *Cost-Benefit Analysis of Entitlement Problems: A Critique*, 33 *Stanford L. Rev.* 387 (1981).

²⁹*See* Radio Address of Richard M. Nixon, Republican Presidential Nominee, CBS Radio, October 18, 1968, *reprinted in* U.S. Senate, Comm. on Interior and Insular Affairs, *National Env’tl. Policy*, 91st Cong., 1st Sess. 101 (1969) [hereinafter cited as Nixon Radio Address]. This radio address represents an exception to Nixon’s general antipathy to the environmental movement. According to R.N.L. Andrews, “NEPA was a political threat to the Nixon Administration and not an initiative of it. NEPA was a congressional initiative and one whose enactment Nixon had initially opposed; he had not shared in the development of it, nor had he demonstrated any previous commitment to the policy it declared.” R. Andrews, *Environmental Policy and Administrative Change* 22 (1976). Andrews fully documents Nixon’s indifference to and rejection of environmental programs between 1971 and 1974. R. Andrews, *Environmental Policy and Administrative Change* 21-27 (1976). For a somewhat more sympathetic view of Nixon’s environmental policy, *see* J. Whitaker, *Striking A Balance: Environment and Natural Resources Policy in the Nixon-Ford years* (1976); J. Quarles, *Cleaning Up America* (1976).

³⁰*See* F. Anderson, *NEPA in the Courts: A Legal Analysis of the National Environmental Policy Act 1-2* (1973). There, Anderson states that the largest portion of NEPA’s legislative history is taken up with establishing the dynamics of environmental systems, diagnosing the extent of environmental harm insofar as it is known (and calling for the study and measurement of what is not yet known), identifying the federal institutional shortcomings which contribute to environmental deterioration, and endorsing the need for comprehensive federal planning, coordination, and decisionmaking under a unified national policy. The subject of enforcement of such a policy on the working level in the federal agencies did not command Congress’ full attention at any point. F. Anderson, *NEPA in the Courts: A Legal Analysis of the National Environmental Policy Act 1-2* (1973).

³¹*See* Radio Address of Richard M. Nixon, Republican Presidential Nominee, CBS Radio, October 18, 1968, *reprinted in* U.S. Senate, Comm. on Interior and Insular Affairs, *National Env’tl. Policy*, 91st Cong., 1st Sess. 101 (1969). *See also* *Reconciling Progress with the Quality of Life*, in *The Environment: A National Mission For The Seventies* 7 (Editors of Fortune ed. 1970).

conflict and how it seeks to reconcile technological progress with “a standard of excellence in man’s relationship to his physical surroundings.”³²

This section is divided into four subsections. The first subsection, which looks into the legislative history of NEPA, suggests that Congress did not itself strike a balance between economic growth and environmental protection. Rather, Congress intended what it achieved, namely, “to have created a new, complex political process which can be and has been used very effectively to improve the social and environmental sensitivity of government decisionmakers.”³³

In the second subsection, the ethical or the “ecological” understanding of NEPA is examined. Michael McCloskey, who headed the Sierra Club when NEPA was enacted,³⁴ expressed this attitude. He declared that a “revolution is truly needed—in our values, outlook and economic organization. For the crisis of our environment stems from a legacy of economic and technical premises which have been pursued in the absence of ecological knowledge.”³⁵

The third subsection takes up the economic interpretation of NEPA’s substantive mandate. Roughly speaking, those who take this approach consider environmental regulation to be appropriate only when it can be construed as correcting a market failure.³⁶ NEPA does not respond to a new “ecological” ethic, on this view, but rests on the conventional utilitarianism of the conservationist movement.³⁷ NEPA addresses the problem Pinchot summarized a generation earlier: “the one great central problem of the use of the earth for the good of man.”³⁸

The final subsection turns to the idea that science and technology, if developed and applied appropriately, can help to minimize or even to eliminate the conflict between economic development and environmental protection in specific contexts. As science and technology have led us into the environmental crisis, according to this “hair of the dog” argument, so they might also lead us out of it.³⁹ This seems to have been Senator Jackson’s position:

³²115 Cong. Rec. 40416 (1969) (remarks of Sen. Jackson, urging passage of the bill coming out of conference committee, as modified by the Jackson-Muskie compromise).

³³Friesema & Culhane, *Social Impacts, Politics, and the Environmental Impact Statement Process*, 16 *Nat. Resources J.* 339, 340 (1976).

³⁴David Brower was Executive Director of the Sierra Club from 1952 to 1969, when he left to become president of Friends of the Earth. Michael McCloskey succeeded Brower.

³⁵McCloskey, *Foreword to Ecotactics: The Sierra Club Handbook For Environmental Activists* 11,11 (1970). Both technocrats and moralists appeal to science and especially to ecology as a basis for their positions—but they have very different conceptions of ecology in mind. For discussion of this point, see Murdoch & Connell, *The Ecologist’s Role and the Nonsolution of Technology*, in *Ecocide—And Thoughts Toward Survival* 47 (C. Fadiman & J. White eds. 1971). “Ecologists function at low conceptual levels. The first level is directly concerned with their day-to-day research, and the second constitutes a way of viewing the world.” Murdoch & Connell, *The Ecologist’s Role and the Nonsolution of Technology*, in *Ecocide—And Thoughts Toward Survival* 47 (C. Fadiman & J. White eds. 1971).

³⁶For a statement of this position, see W. Baxter, *People or Penguins? The Case for Optimal Pollution* (1974). “To assert there is a pollution problem or an environmental problem is to assert, at least implicitly, that one or more resources is not being used so as to maximize human satisfactions. In this respect at least environmental problems are economic problems, and better insight can be gained by application of economic analysis.” W. Baxter, *People or Penguins? The Case for Optimal Pollution* 17 (1974).

³⁷The difference between the conservation and the “ecology” movements is widely recognized. See, e.g., Krieger, *What’s Wrong With Plastic Trees?*, 179 *Sci.* 446, 446 (1973).

³⁸G. Pinchot, *Breaking New Ground* 322 (1947).

³⁹The conventional argument that nothing could, or should, stop technological or economic progress began to be turned against the despoiling of the natural environment. Why could not technical ingenuity be employed to abate air and water pollution, to salvage or disintegrate waste products, or to bury electric power transmission lines? As it became increasingly evident that technology could remedy many forms of environmental degradation, the questioning turned more and more to matters of economic price. As Americans began to believe that ugly or unhealthy environments were not

For now and in the future we must rely heavily on [scientific and engineering] talent to solve major environmental problems—to provide clean energy, to devise pollution-free manufacturing processes and transportation systems and to develop new techniques for recycling and reusing our resources. The solution to these problems is not to halt economic growth or the development of science and technology, but rather it is to develop responsible programs and policies to guide their use.⁴⁰

§ 10:54 Legislative history¹

On February 18, 1969, Senator Jackson introduced in the Senate bill S. 1075, which, like the companion legislation Congressman Dingell introduced in the House a day earlier,² provided an incomplete and inchoate version of NEPA.³ Both bills would have supported ecological research and created a Council on Environmental Quality, but neither contained any action-forcing provisions. Students of NEPA conclude that, while Senator Jackson and Congressman Dingell both favored much stronger legislation, they wrote the initial bills narrowly to avoid jurisdictional conflicts. They wished “to ensure that the bills, once introduced, would be referred to their respective committees, where they could then be accordingly altered.”⁴

In presenting S. 1075 to the Senate that day in February,⁵ Senator Jackson noted that the exploitation of resources and the conquest of nature were once important national priorities. He then observed: “Our national goals have, however, changed a great deal in recent years.”⁶ He continued:

[T]he concept of man’s total environment has emerged in the last few years as a new focus for public policy. Not long ago the ideal of a governmental responsibility for the health of the individual, for the state of the economy, for consumer protection and for housing were considered revolutionary. Today, we have come to take these responsibilities for granted. We must now proceed to make the concept of a governmental

technologically inevitable, the issue of environmental quality became clearly a matter of policy, economics, and administration. L. Caldwell, *A National Policy For The Environment* 24 (1968) (A Special Report to the Committee on Interior and Insular Affairs, U.S. Senate).

⁴⁰Jackson, *Environmental Policy and the Congress*, 11 *Nat. Resources J.* 403, 415 (1971).

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¹The legislative history of NEPA has been described many times and is only briefly sketched here. For fuller accounts of the legislative history, F. Anderson, *NEPA in the Courts: A Legal Analysis of the National Environmental Policy Act 1–14* (1973); R. Andrews, *Environmental Policy and Administrative Change* Ch 1 22 (1976); T. Finn, *Conflict and Compromise: Congress Makes a Law, The Passage of The National Environmental Policy Act* (1972); R. Liroff, *A National Policy for the Environment: NEPA and its Aftermath* ch. 2 (1976); and Dreyus & Ingram, *The National Environmental Policy Act: A View of Intent and Practice*, 16 *Nat. Resources J.* 243 (1976).

²H.R. 6750, 91st Cong., 1st Sess. (1969).

³NEPA had several forebears and antecedents in both the Senate and the House during the 1960s. For a thorough and detailed history of environmental legislation during this period, see R. Shelton, *The Environmental Era: A Chronological Guide To Policy And Concepts, 1962–1972* (Dissertation, Dep’t of Gov’t, Cornell University, Ithaca, N.Y. 1973).

⁴F. Anderson, *NEPA in the Courts: A Legal Analysis of the National Environmental Policy Act 5* (1973). If Senator Jackson had referred to a national policy for the environment in the original bill, it might have been sent to Senator Edmund Muskie’s Subcommittee on Air and Water Pollution of the Committee on Public Works, which had apparent jurisdiction over environmental legislation. The two Senators were competing politically at the time as environmental leaders in Congress. Congressman Dingell, ironically, had to keep the House bill away from Congressman Aspinall’s Committee on Interior and Insular Affairs, the complement in the House to Senator Jackson’s committee. Congressman Dingell succeeded in doing this primarily by limiting environmental impacts to fish and wildlife, a limitation later removed by amendment under pressure from Congressman Aspinall.

⁵S. 1075, 91st Cong., 1st Sess. (1969).

⁶Hearings on S. 1075, S. 237, and S. 1752, *National Env’tl. Policy*, Senate Comm. on Interior and Insular Affairs, 91st Cong., 1st. Sess. 24–25 (1969).

responsibility for the quality of our surroundings an accepted tenet of our political philosophy.⁷

Those who heard Jackson's remarks must have found them familiar. Congress had for ten years been lobbied by a growing grassroots environmental movement.⁸ Congressional concern with environmental issues culminated early in 1968, when Congressman Daddario's Subcommittee on Science, Research, and Development completed extensive hearings on environmental quality.⁹ Later that year, the House and Senate joined in an unusual colloquium to discuss a national policy for the environment. In June, 1968, Daddario's subcommittee issued a report attributing many of the nation's environmental problems to the fragmented, mission-oriented structure of the federal agencies.¹⁰ The report echoed a point economists had frequently stressed:

The point is that the agencies planning highways or dams are compelled to adopt a single-purpose approach, generally ignoring other considerations except when they are forced upon them by an aroused public. For the agency to do otherwise—for example, to admit the economic and aesthetic loss that results from the destruction of wilderness—is to weaken the case for the agency's projects, to reduce the number of projects that can be undertaken by the agency.¹¹

Jackson presented similar arguments to Congress.¹² Federal agencies must be made responsive to a comprehensive environmental policy if they were to cease being part of the environmental problem and become part of its solution.¹³ NEPA was plainly intended to raise the environmental consciousness of public officials in mission-oriented agencies. As one commentator wrote: "The importance of NEPA lies in its role as an environmental overlay on the statutory responsibilities of federal agencies."¹⁴

Hearings on S. 1075 before Senator Jackson's Committee on Interior and Insular

⁷Hearings on S. 1075, S. 237, and S. 1752, National Env'tl. Policy, Senate Comm. on Interior and Insular Affairs, 91st Cong., 1st Sess. 27 (1969).

⁸In 1959, legislation had been introduced into the Senate, S. 2549, 86th Cong., 1st Sess. (1959) (Resources and Conservation Act), to declare a "unified statement of conservation, resource and environmental policy" and to create a "Council of Conservation, Resource, or Environmental Advisors." Similar legislation was introduced in 1966. S. 2282, 89th Cong., 2d Sess. (1966) (Ecological Research and Surveys Act).

⁹Hearings on Env'tl. Quality before the Subcomm. on Sci., Research, and Dev., House Comm. on Sci. & Astronautics, 90th Cong., 2d Sess. (1968).

¹⁰Subcomm. on Sci., Research, and Dev., House Comm. on Sci. & Astronautics, 90th Cong., 2d Sess. (1968) (Managing the Environment).

¹¹Address by Lawrence Hines, Professor of Economics, Dartmouth College, before the Tenth Biennial Wilderness Conference, Apr. 17, 1967, *quoted in* Hutchinson, *Bringing Resource Conservation into the Mainstream of American Thought*, 9 Nat. Resources J. 518, 521 (1969).

¹²Senator Jackson emphasized the interdisciplinary nature of an effective environmental policy:

There are about 80 major Federal agencies with programs under way which affect the quality of the human environment. If environmental policy is to become more than rhetoric, and if the studies and advice of any high-level, advisory group are to be translated into action, each of these agencies must be enabled and directed to participate in active and objective-oriented environmental management. Concern for environmental quality must be made part of every Federal action.

115 Cong. Rec. 29087 (1969) (remarks of Sen. Jackson).

¹³One commentator aptly described the situation:

Federal legislation was necessary because the creation of program, mission-oriented agencies has insured that these environmental considerations have been systematically under-represented in most short-and long-range decision making. Existing agencies were established to supervise the development of natural resources consistent with the ethic which has prevailed throughout this country's history and, thus, they tended to overstress the benefits of development and to explore damaging alternatives to current methods of meeting their programmed objectives.

Tarlock, *Balancing Environmental Considerations and Energy Demands: A Comment on Calvert Cliffs' Coordinating Committee, Inc. v. AEC*, 47 Ind. L.J. 645, (1972).

¹⁴Mandelker, *NEPA Law and Litigation* Ch 2.

Affairs began in April, 1969:¹⁵ In June, Jackson introduced, as an amendment to S. 1075, a complete revision of the bill, printed in an appendix to the committee hearings.¹⁶ The amended bill, while resembling the final statute, differed primarily in that it required “a finding by the responsible official” that the environmental impact of a proposed action had been studied and considered.¹⁷ It also declared that “each person has a fundamental and inalienable right to a healthful environment.”¹⁸

The version of NEPA which emerged from Jackson’s committee resulted, in part, from testimony, particularly by Dr. Lynton Caldwell, urging that strong “action-forcing” provisions be included in the bill. Caldwell, who had written for years on the need for the statute,¹⁹ had prepared a major report for the committee²⁰ and had acted as a consultant to Senator Jackson. Caldwell interpreted NEPA not as a merely procedural statute but as “a fundamental reconstruction of national priorities.”²¹ The following exchange between Dr. Caldwell and Senator Jackson provides a good indication of their agreement on that point:

Dr. Caldwell: I have already suggested, it seems to me, that the Congress indeed has a responsibility and could enunciate [a national environmental policy]. But beyond this, I would urge that in the shaping of such a policy, it have an action-forcing, operational aspect. When we speak of policy we ought to think of a statement which is so written that it is capable of implementation; that it is not merely a statement of things hoped for; . . . but that it is a statement which will compel or reinforce or assist all of these things, the executive agencies in particular, but going beyond this, the Nation as a whole, to take the kind of action which will protect and reinforce what I have called the life support system of this country. . . .

The Chairman [Senator Jackson]: . . . I agree with you that realistically what is needed in restructuring the governmental side of this problem is to legislatively create those situations that will bring about an action-forcing procedure the departments must comply with. Otherwise, these lofty declarations are nothing more than that. It is merely a finding and statement but there is no requirement as to implementation. I believe this is what you were getting at.

Dr. Caldwell: Yes, exactly so.²²

In June, 1969, the Senate Interior Committee unanimously reported out S. 1075, including the declaration of national environmental policy, the environmental “finding” requirement, and the statement recognizing the right of each individual to a healthful environment. In July, the Senate overwhelmingly passed the measure, almost without debate.

Congressman Dingell’s companion legislation endured rougher treatment in the House, where Congressman Aspinall, Chairman of the House Interior Committee, opposed it partly for jurisdictional reasons, partly because of its general scope and language, and partly because of its potential effect on the exploitation of natural resources. In exchange for a rule from the Rules Committee, Aspinall insisted on

¹⁵See Hearings on S. 1075, S. 237, and S. 1752, National Env’tl. Policy, Senate Comm. on Interior and Insular Affairs, 91st Cong., 1st Sess. 24–25 (1969).

¹⁶Hearings on S. 1075, S. 237, and S. 1752, National Env’tl. Policy, Senate Comm. on Interior and Insular Affairs, 91st Cong., 1st Sess. 205 (1969).

¹⁷Hearings on S. 1075, S. 237, and S. 1752, National Env’tl. Policy, Senate Comm. on Interior and Insular Affairs, 91st Cong., 1st Sess. 205 (1969).

¹⁸Hearings on S. 1075, S. 237, and S. 1752, National Env’tl. Policy, Senate Comm. on Interior and Insular Affairs, 91st Cong., 1st Sess. 207 (1969). *See also* S. Rep. No. 296, 91st Cong., 1st Sess. 2 (1969).

¹⁹Caldwell, *Environment: A New Focus for Public Policy*, 23 *Pub. Ad. Rev.* 138 (1963).

²⁰Hearings on S. 1075, S. 237, and S. 1752, National Env’tl. Policy, Senate Comm. on Interior and Insular Affairs, 91st Cong., 1st Sess. 205 (1969).

²¹L. Caldwell, *Man and His Environment: Policy and Administration* 80 (1975).

²²Hearings on S. 1075, S. 237, and S. 1752, National Env’tl. Policy, Senate Comm. on Interior and Insular Affairs, 91st Cong., 1st Sess. 116–117 (1969).

having a seat on the conference committee and on including in the House bill an amendment which emptied NEPA of its significance.²³ In September, 1969, the bill, thus amended, passed the House by lopsided vote.

Senator Jackson had his own jurisdictional battle to fight with Senator Muskie, chairman of the Air and Water Pollution Subcommittee of the Senate Committee on Public Works. Senator Muskie argued forcefully that the “finding” requirement would be inadequate to change agency behavior.²⁴ Senator Jackson agreed, in response, to amend the “finding” provision to require a “detailed statement” by the responsible official.²⁵ When Senator Jackson also included language giving pollution control agencies more presence in the environmental assessment process, Senator Muskie agreed to support the Interior Committee bill.

In conference, representatives from the House, with the exception of Aspinall, spoke in favor of the Senate bill, as amended by the Jackson-Muskie compromise.²⁶ Aspinall constituted a minority of one against a majority of votes controlled by Jackson and Dingell. Nevertheless, Aspinall won important changes in the statute, notably the deletion of the provision recognizing every citizen’s “right” to a healthful environment.²⁷ It is indicative of the spirit of the time, however, that the “environmental rights” provision survived as long as it did in the legislative process. “Though eventually stricken on the ground that its vagueness might invite endless litigation,” two students of NEPA write, “the provision is indicative of the sponsor’s policy objectives.”²⁸

The Senate passed NEPA in December, 1969, on a voice vote, after a short debate consisting largely of speeches by Senator Jackson and Muskie on the relation of NEPA to pollution-control agencies. The statute quickly passed the House, which was eager to adjourn for Christmas, with very little debate.²⁹ President Nixon, with much ceremony, signed the statute on January 1, 1970, as the National Environmental Policy Act of 1969.

The general legislative intent of NEPA is easy to summarize: (1) to declare a national policy for the environment; (2) to direct federal agencies to take this policy

²³The Aspinall amendment stated that “nothing in the Act shall increase, decrease or change any responsibility of any Federal official or agency.” Congressman Dingell managed to outmaneuver Aspinall in conference and have the amendment deleted. *See* § 10:53, note 24.

²⁴Senator Muskie stated:

The concept of self-policing by Federal agencies which pollute or license pollution is contrary to the philosophy and intent of existing environmental quality legislation. In hearing after hearing agencies of the Federal Government have argued that their primary authorization, whether it be maintenance of the navigable waters by the Corps of Engineers or licensing of nuclear power plants by the Atomic Energy Commission, takes precedence over water quality requirements.

I repeat, these agencies have always emphasized their primary responsibilities making environmental considerations secondary in their view.

115 Cong. Rec. 29053 (1969) (Remarks of Sen. Muskie).

²⁵Senator Jackson also included in section 102(2)(C) a directive to the responsible federal official to consult with relevant agencies. Senator Muskie wished to assure that pollution-control agencies, over which his subcommittee had jurisdiction would be consulted. “The requirements that established environmental agencies be consulted and that their comments accompany any such report would place the environmental control responsibility where it should be.” 115 Cong. Rec. 29053 (1969).

²⁶For a full account based on interviews with principal staffers, *see* R. Liroff, *A National Policy for the Environment: NEPA and its Aftermath* 18–20 (1976).

²⁷The conference committee was apparently persuaded that the original provision invited endless litigation. *See* 115 Cong. Rec. 39702 (1969) (“Statement of the Managers on the Part of the House.”).

²⁸Dreyfus & Ingram, *The National Environmental Policy Act: A View of Intent and Practice*, 16 *Nat. Resources J.* 56–7 (1976). (Dreyfus was Deputy Staff Director for Legislation, Senate Committee on Interior and Insular Affairs, at the time NEPA was enacted and into the 1970s.).

²⁹*See* 155 Cong. Rec. 40414–27 (1969) (Senate, December 20); 115 Cong. Rec. 40923–28 (1969) (House, December 23). For transcripts of the debates, *see* 115 Cong. Rec. S.17450–69 (daily ed. Dec. 20, 1969) (Senate); H. 13091–96 (daily ed. Dec. 23, 1969) (House).

seriously and to follow procedures to ensure that they do; and (3) to establish a Council on Environmental Quality (CEQ). Students of NEPA believe that the CEQ was intended as a counterweight to the Council of Economic Advisors, created by the Employment Act of 1946.³⁰ The entire statute might be understood, then, as the culmination of ten years of Congressional effort to give environmental concerns a legitimacy similar to that of economic concerns in policy formation at the agency level.

Events Congress had not anticipated—for example, the growth of public interest lawsuits, the expansion of traditional limits to legal standing, and the willingness of judges to interpret section 102 as requiring more than *pro forma* attention to the environment—helped NEPA to bring environmental values into the administrative process.³¹ While Congress may not have willed these means, it seems clearly to have intended the result. Congress wished mission-oriented federal agencies to change their role from that of satisfying interests to that of solving problems in order to reach general policy objectives.³²

Since the enactment of NEPA, federal agencies have struggled to determine how to assess environmental impacts and, having assessed them, how to evaluate them or take them into account. The aspirations expressed by NEPA must be translated by agency officials, in the course of carrying them out, into practical, testable, and enforceable terms. In implementing the aspirational policies of NEPA, agencies have found themselves forced to place an “increased emphasis on technical expertise, especially the language of economics, as the debate shifts from general environmental mandates to questions of ‘how’ and ‘at what cost.’”³³ The demands of “rational socialization” affect even the most ardent attempts to put NEPA into practice.³⁴

From a logical point of view, agencies may choose among at least three approaches

³⁰Senator Murray’s Resource and Conservation Act, proposed in 1959 (S.2549), would have set up a Council of Resources and Conservation Advisors, with the same status as the Council of Economic Advisors, established by the Employment Act of 1946, 15 U.S.C.A. §§ 1021 to 1025 (version in force in 1964). Caldwell similarly compares the Employment Act with NEPA. L. Caldwell, *Man and His Environment: Policy and Administration* 21 (1975).

³¹For a thorough survey of the effect of NEPA requirements on federal agencies, as perceived by agency personnel, see L. Caldwell, *A Study of Ways to Improve the Scientific Content and Methodology of Environmental Impact Analysis* ch. 4 (1982). Caldwell and his associates distributed 532 questionnaires to relevant personnel in the Army Corps of Engineers, the Forest Service, the Bureau of Land Management. They achieved a response rate of over 90 percent. The Caldwell survey describes the large extent to which federal agencies have reorganized after NEPA, for example, by creating “environmental exports units,” by recruiting environmentally-informed personnel, and by employing consultants. Caldwell concludes:

We found NEPA to be generally accepted by the officials directly responsible for its administration. This acceptance was not merely incidental to the mandatory features of the National Environmental Policy Act, but as a number of officials observed, public expectations now required the kind of assessment of the environmental significance of agency proposals that the Act required.

L. Caldwell, *A Study of Ways to Improve the Scientific Content and Methodology of Environmental Impact Analysis* 436 (1982).

For a positive review of the impact of NEPA, see Andrews, *NEPA in Practice: Environmental Policy or Administrative Reform*, 6 *Envtl. L. Rep. (Envtl. L. Inst.)* 50001 (1976). For a negative view, see Bardach & Pugliesi, *The Environmental Impact Statement vs. the Real World*, 49 *Pub. Interest* 22, 25 (1977).

³²For essays on this distinction, see *Area and Power* (A. Maass ed. 1959).

³³Environmental Movement Checks Its Pulse and Finds Obituaries are Premature, 39 *Cong. Q. Weekly Rec.* 211, 211 (1981).

³⁴See Langton, *The Future of the Environmental Movement*, in *Environmental Leadership: A Sourcebook for Staff and Volunteer Leaders of Environmental Organizations* 1 (S. Langton ed. 1984). Langton argues that environmentalism has been “transformed from a relatively charismatic movement to a more institutionalized movement. . . . This is not to suggest that there is . . . no need for passion, drama, and charisma, but the environmental movement must confront the demands of rational socialization.” Langton, *The Future of the Environmental Movement*, in *Environmental Leadership: A Sourcebook for Staff and Volunteer Leaders of Environmental Organizations* 4-5 (S. Langton ed. 1984).

to answering questions of “how” and “at what cost.” There are at least three ways, in other words, to “strike a balance” between legitimate economic and environmental concerns. We may call these the “moral,” the “market,” and the “mitigation” approaches to environmental policy formation. Each of these approaches to NEPA shall be addressed to determine which offers the most hopeful method for pursuing the statutory mandate within what academics refer to as “the real world.”

§ 10:55 The moral approach to NEPA

In a report prepared for Senator Jackson’s Interior Committee on July 11, 1968, Lynton Caldwell wrote that “the cornerstone of environmental policy is ethical.”¹ Caldwell continued: “Ethics, like justice, is not easily quantifiable, yet few would argue that society should not seek to establish justice because justice cannot be adequately defined or quantified. Environmental policy is a point at which scientific, humanistic, political, and economic considerations must be weighed, evaluated, and hopefully reconciled.”²

The analogy Caldwell draws between justice and environmental values is suggestive. Many political theorists have argued that in a just society the rights of individuals are taken seriously; rights to freedom of conscience, speech, and a fair trial, for example, are protected even when they conflict with the general welfare. “These rights will function as trump cards held by individuals”;³ by asserting these rights, individuals can resist even those policies which increase welfare or maximize social wealth.

During the 1960s and 1970s, legal scholars who took this approach sought to find in the private rights of citizens a common law basis for controlling pollution and compelling agencies to recognize environmental problems.⁴ Moreover, various states enacted their own Environmental Rights Acts.⁵ And a good deal of scholarly discussion centered on the possibility of a constitutionally-based right to a reasonably nonhazardous environment.⁶

Efforts to find in the rights of individuals a basis for environmental protection, however, have not been particularly successful. “Courts have been notably inhospitable, for example, to claims that a ‘natural’ environment is protected by the federal constitution.”⁷

In analogizing environmental values to justice, however, Caldwell did not neces-

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¹L. Caldwell, *A National Policy For The Environment* 109 (1968).

²L. Caldwell, *A National Policy For The Environment* 109 (1968).

³Dworkin, *Liberalism*, in *Public and Private Morality* 113, 135 (S. Hampshire ed. 1978). The norms of right and wrong implicit in the concept of justice, according to Charles Fried, override utilitarian considerations “because they establish our position as freely choosing entities.” C. Fried, *Right and Wrong* 8–9 (1978). These norms constitute what it is to be a person and thus “are absolute in respect to the ends we choose to pursue.” Dworkin, *Liberalism*, in *Public and Private Morality* 29 (S. Hampshire ed. 1978).

⁴*See, e.g.*, J. Sax, *Defending the Environment* (1971); Juergensmeyer, *Control of Air Pollution Through the Assertion of Private Rights*, 1967 *Duke L.J.* 1126; Bryden, *Environmental Rights in Theory and Practice*, 62 *Minn. L. Rev.* 163 (1978) (*see* additional sources cited therein).

⁵*E.g.*, The Minnesota Environmental Rights Act, Minn. Stat. §§ 116B.01 to .13 (1976). For a compilation and review of other such acts, *see* Dimento, *Citizen Environmental Litigation and the Administrative Process: Empirical Findings, Remaining Issues and a Direction for Future Research*, 1977 *Duke L.J.* 409, 411 n.4.

⁶*See* Klipsch, *Aspects of a Constitutional Right to a Habitable Environment: Towards an Environmental Due Process*, 49 *Ind. L. Rev.* 203 (1974).

⁷Tribe, *From Environmental Foundations to Constitutional Structures: Learning from Nature’s Future*, 84 *Yale. L.J.* 545, 546 n.9 (citing *Tanner v. Armco Steel Corp.*, 340 *F. Supp.* 532 (S.D. Tex. 1972)).

sarily affirm the existence of environmental rights. He may have meant rather that environmental values, like the rights secured by justice, are *lexically prior* to considerations of social wealth and economic development.⁸ A lexical or serial ordering of priorities “is an order which requires us to satisfy the first principle in the ordering before we can move on to the second, the second before we consider the third, and so on. A principle does not come into play until those previous to it are either met fully or do not apply.”⁹

The analogy between environmental values and justice, then, seems to be this: According to many political theorists, justice—because it defines the appropriate conditions of choice (the conditions of autonomy)—must take priority over considerations of utility, which concern only what people happen to choose.¹⁰ Rights constitute “side-constraints,” as it were, on policy decisions because they establish our identities as moral agents.¹¹ What we *are* is morally prior to what we *want*.¹²

Environmental values, according to an ethical reading of NEPA, need not be assimilated to rights; the statute declares only that each person should enjoy—not that he has a right to—a healthful environment.¹³ Nevertheless, environmental values and goals, like rights, arguably have a kind of lexical priority over the satisfaction of economic interests.

Those who construe NEPA in this way contend, therefore, that environmental values and goals should not be construed as “interests” or “preferences” to be quantified in cost-benefit decisions. Rather, these goals and values constitute side-constraints on those decisions. An ethical reading of NEPA suggests three reasons to give lexical priority to environmental concerns.

First, one may argue that environmental conditions tend to determine, and for that reason should not simply be included among, the social preferences and interests on which cost-benefit assessments are based. Second, although environmental values may not reach to our nature as moral agents, they are associated with our cultural identity as Americans. Third, we have a duty as a nation to preserve the magnificent aspects of our natural environment. This is the same sort of moral obligation, for example, that any civilized nation recognizes with respect to the good, the true, and the beautiful. This kind of obligation is founded in love, respect, and reverence, not in conceptions of utility or welfare. It is a good environment—not simply our own good—we desire. In our democracy, legislatures may legitimately respond to obligations of this kind, as long as policies are reasonable and do not violate constitutionally-guaranteed rights.

⁸For discussion of lexical orderings and their relation to utility theory, namely, that lexical orderings violate the assumption of continuity, see Pearce, *A Contribution To Demand Analysis* 22 (1946); A. Sen, *Collective Choice and Social Welfare* 34 (1970). For relevant discussion of the hierarchy of wants in utility theory, see Georgescu-Roegen, *Choice, Expectations, and Measurability*, 68 *Q.J. Econ.* 510 (1954).

⁹J. Rawls, *A Theory of Justice* 43 (1971). “A serial ordering avoids, then, having to balance principles at all; those earlier in the ordering have an absolute weight, so to speak, with respect to later ones, and hold without exception.” J. Rawls, *A Theory of Justice* 43 (1971).

¹⁰For a critical discussion of this point, see M. Sandel, *Liberalism And The Limits of Justice* (1982); for a reply, see Rawls, *Justice as Fairness: Political not Metaphysical*, 14 *Phil. & Pub. Aff.* 223 (1985).

¹¹For an analysis of moral “side constraints” on policy, see R. Nozick, *Anarchy, State, and Utopia* 28–35 (1974).

¹²John Rawls has persuasively argued that conceptions of utility which are not founded on prior conditions of justice and autonomy have no value. See J. Rawls, *A Theory of Justice* 31 (1971). He observed that:

Each person possesses an inviolability founded on justice that even the welfare of society as a whole cannot override. . . . Therefore in a just society the liberties of equal citizenship are taken as settled; the rights secured by justice are not subject to political bargaining or to the calculus of social interests.

J. Rawls, *A Theory of Justice* 3-4 (1971).

¹³NEPA § 101(c), 42 U.S.C.A. § 4331(c).

§ 10:56 The moral approach to NEPA—Environmental values tend to determine interests and preferences

The rhetoric which accompanied the passage of NEPA—like the language of the statute itself—emphasizes the ethical and social, as distinct from the economic, purposes of the law. The reason to restore and maintain the quality of the environment is not necessarily to improve the productivity and purchasing power of Americans, but to make prosperity compatible with environmental quality, to enhance the “development of man,”¹ and to support “diversity, and variety of individual choice.”²

Politicians eager to associate themselves with the statute stressed the distinction between a “high standard of living” and a “high quality of life” and, accordingly, the need for “not only more uses for our natural resources, but also better uses.”³ Strategies to conserve natural resources generally consider only in the long-run the balance of economic costs and benefits with respect to the production and consumption of goods and services.⁴ In a policy concerned with environmental quality, as NEPA is, “the total environmental needs of man—ethical, aesthetic, physical, and intellectual, as well as economic—must also be taken into account.”⁵

Social preferences adapt to and, in that sense are influenced by, the environment.⁶ In forming environmental policy, accordingly, public officials do not simply satisfy but also create wants and desires.

The government, in making environmental decisions, takes responsibility for the nature and quality of social preferences, within the constraints set by individual

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¹NEPA § 101(a), 42 U.S.C.A. § 4331(a).

²NEPA § 101(b)(4), 42 U.S.C.A. § 4331(b)(4).

³See Radio Address of Richard M. Nixon, Republican Presidential Nominee, CBS Radio, October 18, 1968, *reprinted in* U.S. Senate, Comm. on Interior and Insular Affairs, National Env'tl. Policy, 91st Cong., 1st Sess. 105 (1969). Then-candidate Nixon so brilliantly captured public opinion that it is useful to quote his speech further:

This is a time when technological advances have given us material benefits beyond the dreams of all other nations and civilizations, and yet we are confronted with a perplexing problem.

Obviously, we must make more use of our natural resources to maintain our high standard of living.

But the more inroads we make upon our land and water and air, the less we are able to enjoy life in America.

We need lumber to build our homes; but we also need untouched forests to refresh our spirit.

We need rivers for commerce and trade; but we also need clean rivers to fish in and sit by.

. . . .

Today, “Natural Resources” has a double meaning. It means not only those riches with which we have been so abundantly blessed for our economic and technological advantage, but also those same riches as they exist for our psychological and emotional and spiritual advantage.

We must conserve and use our natural resources because of the numerous things we can do with them.

We must also conserve and use them because of what they can do for us. . . .

We need a strategy of quality for the seventies to match the strategy of quantity of the past. . . .

Can we have the highest standard of living in the world and still have a land worth living in?

Will future generations say of us that we were the richest nation and the ugliest land in all history?

Are we doomed by some inexorable thing called progress to give to our children a land devoid of beauty, empty of scenes of natural grandeur, filled with gadgets and gimmicks, but lost forever to the wonder and inspiration of nature?

We are faced with nothing less than the task of *preserving the American environment and at the same time preserving our high standard of living.*

U.S. Senate, Comm. on Interior and Insular Affairs, National Env'tl. Policy, 91st Cong., 1st Sess. 105-06 (1969) (emphasis added).

⁴See S. Hays, *Conservation And The Gospel Of Efficiency: The Progressive Conservation Movement, 1890–1920* (1969).

⁵L. Caldwell, *A National Policy For The Environment* 108 (1968).

⁶For a discussion of environmentally “adaptive” preferences, see Elster, *Sour Grapes: Utilitarianism and the Genesis of Wants, in Utilitarianism And Beyond* (A. Sen & B. Williams eds. 1982).

rights, such as that of privacy. The legislature provides moral leadership in setting environmental objectives. It affirms a conception of the kind of society we are and the kind of people we shall be. The purpose of agencies, on this view, is not to balance interests so much as “to help define and realize social and economic norms in industrialized society.”⁷ This responsibility of government differs logically from and is morally prior to its responsibility to allocate resources efficiently or to satisfy “given” preferences and desires.

This approach to NEPA distinguishes the aspirational goals and values that citizens express through their legislative representatives from the wants and preferences those same citizens may reveal in their behavior in consumer markets.⁸ Environmental policy after NEPA, then, may serve not necessarily to satisfy “given” demands, even over the long run, but to enhance our aspirations and to bring us to a higher standard of excellence in our relationship with the environment. In any case, there is no avoiding this kind of self-paternalism with regard to future generations, since the environment we leave to our children determines to a large extent what they shall want and enjoy and what their values and preferences will be.⁹

NEPA calls on federal agencies to “[p]reserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice.”¹⁰ This provision, if read from a moral point of view, recognizes the obligation of the government to assure an environment which affords Americans a better quality of life, not simply a higher standard of living.¹¹

NEPA similarly directs agencies to “[f]ulfill the responsibilities of each generation as trustee of the environment for succeeding generations.”¹² This provision, on an ethical reading, does not require agencies to simply maximize the productivity of re-

⁷Stewart & Sunstein, *Public Programs and Private Rights*, 95 Harv. L. Rev. 1193, 1238 (1982). See also Michelman, *Political Markets and Community Self-Determination: Competing Judicial Models of Local Government Legitimacy*, 53 Ind. L. Rev. 145 (1977–78).

⁸Economists have long recognized the great differences between “consumer” and “citizen” preference-maps. R. A. Musgrave attributes this distinction to Gerhard Colm:

He [Colm] holds that the individual voter dealing with political issues has a frame of reference quite distinct from that which underlies his allocation of income as a consumer. In the latter situation the voter acts as a private individual determined by self-interest and deals with his personal wants; in the former, he acts as a political being guided by his image of a good society. The two, Colm holds, are different things.

R. Musgrave, *The Theory Of Public Finance* 87–88 (1959). Stephen Marlin agrees:

[T]he preferences that govern one’s unilateral market actions no longer govern his actions when the form of reference is shifted from the market to the political arena. The Economic Man and the Citizen are for all intents and purposes two different individuals. It is not a question, therefore, of rejecting individual . . . preference maps; it is, rather, that market and political preference maps are inconsistent.

Marglin, *The Social Rate of Discount and the Optimal Rate of Investment*, 77 Q. J. Econ. 95, 98 (1963).

⁹In economic terms, this is an example of Say’s Law that production increases demand. See also J. Galbraith, *The Affluent Society* ch. 11 (1968) (arguing that demand follows and does not lead markets since it depends on advertising and similar factors); *but see* F. Hayek, *The Non Sequitur Of The “Dependence Effect,”* in *Microeconomics* 7 (3d ed., E. Mansfield ed. 1979).

¹⁰NEPA § 101(b)(4), 42 U.S.C.A. § 4331(b)(4).

¹¹President Nixon often emphasized this distinction in his environmental speeches. Here is an example:

The major concern of our third century, I believe, will be the pursuit of happiness. In conducting this pursuit, we must remember that happiness is not measured in quantitative but in qualitative terms. It is not achieved merely by piling up objects.

. . . .

In recent years, many Americans—and particularly young Americans—have become increasingly aware of the part the environment plays in determining the quality of their lives. Perhaps no single goal will be more important in our future efforts to pursue the public happiness than that of improving our environment.

A Statement From President Nixon, in *The Environment: A National Mission For The Seventies* 12 (Editors of Fortune ed. 1970).

¹²NEPA § 101(b)(1), 42 U.S.C.A. § 4331(b)(1).

sources over the long run; rather, it directs them to maintain for future generations opportunities to form values and preferences consistent with respecting, maintaining, and enjoying the beauty and integrity of the natural and human environment.¹³

NEPA therefore reflects the “fairly established consensus that happiness depends more on spiritual resourcefulness, a joyous appreciation of the costless things of life, especially affection for one’s fellow creatures, than it does on material satisfaction.”¹⁴ The statute reminds one of Frank Knight’s dictum that “[t]he chief thing which the common-sense individual actually wants is not satisfactions for the wants which he has, but more and *better* wants.”¹⁵

§ 10:57 The moral approach to NEPA—Nature and the national ego

So far, environmental policy under NEPA has been considered as a sort of self-paternalism, a national effort to attain a standard of excellence and so to improve the expectations or preferences of present and future citizens. This would suggest that environmental goals under NEPA constitute a side-constraint on public policy and are not to be considered as “preferences” or “wants” to be aggregated in the general economic calculus upon which resource policy might otherwise be based.

There is a second reason for believing that environmental values—somewhat like rights¹—cannot be aggregated with, but must take priority over, ordinary consumer wants and preferences. Environmental policy, it may be argued, goes to our identity—not just to our interests—if not as moral agents, then at least as Americans.

The natural environment provides a common heritage ethnic immigrant groups share as Americans. Artists, writers, and historians have long emphasized the role of nature in shaping the American identity in opposition to the European past. The American, in this conventional literary view, takes his or her values and instincts from enviroing Nature;² “The plain old Adam,” as Emerson wrote, “the simple genuine self against the whole world.”³

Leo Marx, along with many other cultural historians, has shown that a pastoral impulse constitutes a notable fact about the literary and artistic imagination in

¹³For an interesting discussion along these lines, see Holland, *Judicial Review of Compliance with the National Environmental Policy Act: An Opportunity for the Rule of Reason*, 12 *Envtl. Aff.* 743 (1985) (analogizing the provisions of NEPA to the common law concept of a charitable trust).

¹⁴F. Knight, *The Ethics of Competition* 22 (1935).

¹⁵F. Knight, *The Ethics of Competition* 71 (1935). Many of the founders of welfare economics apparently agreed with Knight. Thus, Pigou wrote that consumption can be “debasement,” the satisfactions associated with literature and art are “ethically superior to those connected with the primary needs,” and a person “attuned to the beautiful in nature and art” is himself an important element in the ethical value of the world.” A. Pigou, *The Economics of Welfare* 13, 17–18 (1938).

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¹Rights, in other words, constitute the conditions under which interests can make a legitimate claim for societal recognition. Nothing is gained by satisfying preferences which are not autonomous, *i.e.*, not formed under the conditions of equal freedom, and therefore not expressive of the individual as a freely choosing agent. This is the reason that the rights secured by equal liberty are not to be assimilated to interests which may be “weighed” in a cost-benefit analysis. For the opposite view, however, see Weisbrod, *Income Redistribution Effects and Benefit-Cost Analysis*, in *Problems in Public Expenditure Analysis* 177 (S. Chase ed. 1968) (assuming that the equity effects of transactions can be “priced” in a grand-efficiency analysis).

²Shortly before the American Revolution, the Pennsylvania farmer Crèvecoeur wrote: “What then is the American, this new man? *He* is an American who, leaving behind him all his ancient prejudices and manners, receives new ones from the new mode of life he has embraced.” J. Crèvecoeur, *Letters From An American Farmer* 54 (1904).

³R. Emerson, *quoted in* R. Lewis, *The American Adam* vi (1955).

America.⁴ Writers like Cooper, Emerson, Thoreau, Melville, Whitman, and Twain allied the national consciousness to symbols, images, and values drawn from nature, as opposed to “progress” and “civilization.” “They took for granted a thorough and delicate interpenetration of consciousness and environment. In fact it now seems evident that these gifted writers had begun, more than a century ago, to measure the quality of American life against something like an ecological ideal.”⁵

In testimony before a joint House-Senate colloquium on the environment in 1968, Robert Weaver, Secretary of Housing and Urban Development, took up this theme. He observed that “Americans cling to memories of the past. We do invoke Walden Pond in moments of nostalgia. . . . This romantic nostalgia for the ‘good old days’ is constantly reinforced by the ever-present difficulties of our present urban environment.” Weaver juxtaposed the nostalgia for the “good old days” with the reality of the present day: “Herein lies the problem: How can we preserve the amenities we remember and want—clean air, sparkling brooks, nearby fields and woods, and a sense of identity with community—against the forces of urbanization.”⁶

Those who testified during Congressional hearings on NEPA often invoked the conventional conflict between the innocence of nature and the corrupting influence of civilization, a persistent theme in American culture, particularly in Romantic thought.⁷ Nature as an ideal, or at least as a cultural artifact, often vies with nature as a commodity in debates over environmental policy and law.⁸

NEPA, from a normative point of view, can be seen, then, as addressing a persistent cultural dilemma characteristic of American thought: The fundamental opposition of the country to the city, “of nature to civilization, with the assumption that all virtue, repose, dignity are on the side of ‘Nature’—spelled with a capital and

⁴Marx, *American Institutions and Ecological Ideals*, 170 *Sci.* 945, 949 (1970). Marx continues:

By “pastoral impulse” I mean the urge, in the face of complexity, to retreat in the direction of nature. . . . The writer or narrator describes, or a character enacts, a move away from a relatively sophisticated to a simpler, more “natural” environment. Whether this new setting is an unspoiled wilderness, like Cooper’s forests and plains, Melville’s remote Pacific, Faulkner’s Big Woods, or Hemingway’s Africa, or whether it is as tame as Emerson’s New England village common, Thoreau’s Walden Pond, or Robert Frost’s pasture, its significance derives from the plain fact that it is “closer” to nature: it is a landscape that bears fewer marks of human intervention.

Marx, *American Institutions and Ecological Ideals*, 170 *Sci.* 945, 949 (1970). *See also* L. Marx, *The Machine In The Garden: Technology And The Pastoral Ideal In America* (1964). For a brilliant study of the relationship between American national character and the romantic dilemma (*i.e.*, between the country and the city, the heart and the head, Nature and Civilization, etc.), *see* P. Miller, *The Romantic Dilemma In American Nationalism And The Concept of Nature*, in *Nature’s Nation* 197 (1967).

⁵Marx, *American Institutions and Ecological Ideals*, 170 *Sci.* 945 (1970).

⁶L. Marx, *The Machine In The Garden: Technology And The Pastoral Ideal In America* 19 (1964).

⁷For example, an appendix to the Senate Hearings on S. 10756 quotes AFL-CIO President George Meany:

Ambitious but too often heedless Americans have long since occupied the last frontier, felled the once limitless forests, slain the countless game, tilled the prairies, fouled the lakes and rivers and polluted the air. Now evils committed in the name of progress must be undone; what remains of nature’s beauty must be preserved and the air and waters purified.

Hearings on S. 1075, S. 237, and S. 1752, *National Env’tl. Policy*, Senate Comm. on Interior and Insular Affairs, 91st Cong., 1st Sess. 208 (1969).

⁸For example, Joseph Sax, in pleading for the preservation as opposed to the commercialization of the national parks, writes:

To those for whom wilderness values and the symbolic message of the parks has never been of more than peripheral importance, this book asks principally for tolerance: a willingness to entertain the suggestion that the parks are more valuable as artifacts of culture than as commodity resources; a willingness to try a new departure in the use of leisure more demanding than conventional recreation; a sympathetic ear tuned to the claims of self-paternalism.

J. Sax, *Mountains Without Handrails* 108 (1980).

referred to as feminine—against the ugliness, squalor and confusion of civilization, for which the pronoun was simply ‘it.’”⁹

Viewing NEPA in this way—as an example of the ritual *mea culpa* with which Americans have accompanied their exploitation of nature for “progress” or profit¹⁰—may not show us how to make any particular environmental policy decision. But it does tell us something about the ethical, aesthetic, and historical context in which environmental values are formed and environmental policy takes shape.

§ 10:58 The moral approach to NEPA—Man’s responsibility for nature

“Conservation,” Aldo Leopold wrote, “is a state of harmony between men and land.”¹¹ This view opposes that of Pinchot: “The First great fact about conservation is that it stands for development.”¹² These two conceptions of conservation suggest different approaches in environmental policy.

Leopold argued that our love, admiration, and respect for the natural world should direct our policies and actions. Love, admiration, and respect for nature are human values, of course, but they are not values which necessarily concern human welfare.³ They are supposed to engender an altruistic attitude or an attitude of aesthetic contemplation; love seeks not benefits for itself but the maintenance, existence, or flourishing of that which is the object of love.⁴ These values are directed to the good of nature, not the good of man.⁵

Pinchot, on the other hand, apparently believed that the good of man (*i.e.*, welfare) is the only conception of the good to be served by resource policy. On this view, reverence or respect for nature may affect resource policy only insofar as it may involve wants and interests, the satisfaction of which will contribute to human “satisfaction.”⁶ Thus, both Leopold and Pinchot could agree that only human beings *have* values; only humans, so far as we know, value things. Those in the tradition of Pinchot, however, also believe that only human welfare is valuable and constitutes the single criterion of environmental policy.

During the 1960s, Congress sought to draft legislation “to reverse what seems to be a clear and intensifying trend toward environmental degradation.”⁷ One commentator, after reviewing documents prepared during this period, concluded that

⁹P. Miller, *The Romantic Dilemma In American Nationalism And The Concept of Nature*, in *Nature’s Nation* 197 (1967).

¹⁰Senator Gaylord Nelson, testifying during Senate hearings on NEPA, and commenting on the destruction of the natural environment, noted: “all of this was done in the name of progress. You could substitute, ‘profits’ for the word ‘progress,’ and come out with the same result. In any event, we have dangerously degraded our total environment.” Hearings on S. 1075, Senate Comm. on Interior and Insular Affairs, 91st Cong., 1st. Sess. 59 (1969) (Statement of Hon. Gaylord Nelson).

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¹Leopold, *The Land Ethic*, in *People, Penguins, and Plastic Trees* 73, 75 (D. VanDeVeer & C. Price eds. 1968).

²G. Pinchot, *The Fight For Conservation* 42 (1910).

³Only human beings, as far as we know, value things, in the sense that “valuing” is an activity carried on by rational beings. Yet it does not follow from this that only human beings *have* value, or that only human welfare is ultimately valuable. Human beings may, indeed, do value things other than their own welfare, and this seems to be a driving factor in environmental law. For a discussion, see Weston, *Beyond Intrinsic Value: Pragmatism in Environmental Ethics*, 7 *Envtl. Ethics* 321 (1985).

⁴Aristotle, *Nicomachean Ethics* 217–24 (M. Oswald trans. 1962) (especially nos. 115a–1157b).

⁵For the sense in which living things can have a good of their own, see G. Von Wright, *The Varieties Goodness* chs. 3, 5 (1963).

⁶For an uncompromising statement of this position, see W. Baxter, *People or Penguins: The Case For Optimal Pollution* ch. 1 (1974).

⁷H.R. Rep. No. 378, 91st Cong., 1st Sess. 3 (1969), *reprinted in* United States Code Congressional and Administrative News pp 2751, 2753.

“NEPA was conceived as an environmental policy dictate to the federal government in response to the burgeoning public concern for the integrity of the environment.”⁸ This public concern for the integrity of nature may be understood in either of two ways. The public might be concerned insofar as the degradation of nature threatens its welfare. The public may also be concerned because of an ethical belief that we owe more to the magnificence of the environment than to turn every arcadia into an arcade and all of its beauty to blight even if, by doing so, we maximize the long-run “benefits” nature offers man.

NEPA, by discouraging environmental damage and degradation, as well as by encouraging harmony between man and his environment, arguably seeks to protect nature for its intrinsic characteristics and not simply for the sake of human welfare. This ethical regard for nature supposes that natural communities possess an order, integrity, and life which command our admiration and ought to be preserved for their own sake. According to one observer, “NEPA incorporates the basic principle of the Leopoldian ethic.”⁹

Insofar as NEPA insists that environmental obligations go “beyond” concerns with human welfare (although not “beyond” human values), NEPA anticipates subsequent environmental and wildlife legislation. Statutes enacted during the 1970s rarely, if ever, merely called for efficiency in the exploitation of natural resources. Rather, this legislation tends to echo NEPA in asserting society’s responsibility to protect the authenticity and integrity, not simply the productivity and usefulness, of the natural environment.¹⁰

Since the enactment of NEPA, legal scholars and others have struggled to explain, from a policy perspective, how environmental values can go “beyond” human welfare. A few legal scholars have explored the possibility that environmental objects, such as animals, trees, and so on, might have rights of the sort that could give them legal standing or, failing that, interests that might be entered into the general social calculus of costs and benefits on which environmental policy might be based.¹¹ This suggestion—that environmental policy ought to consider the rights and interests of animals and other natural objects by weighing these interests against our own—went nowhere. It failed, in part, because only individuals—particular animals—can possess rights and interests, while it is collections—species, communities, and ecosystems—that environmentalists wish to protect.¹² Thus, while the “animal rights” movement may be relevant to domestic, laboratory, and farm animals, such an assertion of rights appears irrelevant to the issues presented by environmental law.¹³

When we say that nature has an intrinsic value and, therefore, a good, an integrity, or a health of its own, however, we do not necessarily ascribe *rights* or even

⁸Holland, *Judicial Review of Compliance with the National Environmental Policy Act: An Opportunity for the Rule of Reason*, 12 *Envtl. Aff.* 743, 757 (1985) (footnotes omitted).

⁹Sessions, *Anthrocentrism and the Environmental Crisis*, *Humboldt J. Soc. Rel.*, Fall-Winter 1974, at 71, 80.

¹⁰The Coastal Zone Management Act, for example, calls for management programs that give “full consideration to ecological, cultural, historic, and aesthetic values as well as to needs for economic development.” 16 U.S.C.A. §§ 1451, 1452(2). For a general survey of economic and ethical concerns in federal wildlife management law, see M.J. Bean, *The Evolution Of Natural Wildlife Law* ch. 11 (1983).

¹¹See, e.g., C. Stone, *Should Trees Have Standing? Towards Legal Rights For Natural Objects* (1974); Tribe, *Ways Not To Think About Plastic Trees: New Foundations for Environmental Law*, 83 *Yale L.J.* 1315 (1974).

¹²Animal rights advocates generally acknowledge this point and, thus, may deny that we have a moral reason for saving species. “Species are not individuals, and the rights view does not recognize the moral rights of species to anything, including survival.” T. Regan, *The Case For Animal Rights* 359 (1983).

¹³For discussion, see Callicott, *Review of Tom Regan, The Case for Animal Rights*, 7 *Envtl. Ethics* 365 (1985). See also Callicott, *Animal Liberation: A Triangular Affair*, 2 *Envtl. Ethics* 311 (1980).

interests to nature. We consider nature as an object of our respect and admiration, not as a source or as a subject of “welfare.”

Our duties to respect the integrity of natural ecosystems, to preserve endangered species, and to avoid environmental pollution stem from the fact that these are ways in which we can make it possible for wild species populations to achieve and maintain a healthy existence in a natural state. Such obligations are due those living things out of recognition of their inherent worth.¹⁴

NEPA, on an ethical reading, establishes the priority of environmental values over ordinary interests and preferences. NEPA endows environmental goals and values, with special authority and significance, separating them categorically for the sorts of wants and preferences in terms of which conceptions of welfare are defined. It does this, roughly speaking, for paternalistic reasons, for reasons of national pride and character, and because of love, affection, and reverence for nature which has long been strong in American life. NEPA does not itself prescribe how environmental values should affect each policy decision; the statute delegates responsibility to the agencies to pursue their missions within the constraints of our general environmental objectives.

Judge Leventhal summarized this approach as follows:

It is the premise of NEPA that environmental matters are likely to be of secondary concern to agencies whose primary missions are nonenvironmental. From this vantage point, NEPA looks toward having environmental factors play a central role in the decisions of such agencies. The goal does not mean that environmental considerations are to be more important than every nonenvironmental agency mission; questions of housing, energy and inflation might have equal claim or even higher priority. But it does mean that environmental factors must be weighed heavily in the decisional balances. It is the function of review under NEPA to ensure that this purpose is served.¹⁵

§ 10:59 The market approach to NEPA

Economist Allen Kneese, while testifying before Congress in 1970, acknowledged the popularity of ethical concerns and values regarding the environment. He remarked:

It has often been said that what we need is a new morality or a new ethic if we are to avoid despoiling the earth. This is really a call for a new set of values which lays more emphasis on the natural, the tranquil, the beautiful and the very long run.¹

Kneese here correctly discerns the public temperament. Surveying the years in which NEPA became law, one historian noted:

[T]here is a definite ethical basis to a national policy for the environment. This centers upon the responsibility of government as the agent of the people to manage the environment in the role of steward or protective custodian for posterity. It requires abandonment of the government’s role as umpire among conflicting and competing resource interests and the adoption of the total environment as a focus for public policy.²

Dr. Kneese, in his prepared testimony, however, argued that “the frequent calls for morality with respect to the environment” are “[i]llustrations of the poverty of understanding” about the reasons social and economic systems produce the results

¹⁴Taylor, *The Ethics of Respect for Nature*, 3 *Envtl. Ethics* 197, 198 (1981).

¹⁵Leventhal, *Environmental Decisionmaking and the Role of the Courts*, 112 *U. Pa. L. Rev.* 509, 515 (1974) (footnote omitted).

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¹Hearings Before the House Subcomm. of the Comm. on Gov’t Operations, 91st Cong., 2d Sess. 191 (1970) (prepared statement of Dr. Allen V. Kneese).

²Wandesforde-Smith, *National Policy for the Environment: Politics and the Concept of Stewardship*, in *Congress and the Environment* 205, 208 (E. Cooley & G. Wandesforde-Smith eds. 1970).

they do.³ Kneese added: “I think assertions that there is a failure of morality, searching for villains, wondering why it is we have Government subsidies and the problem gets worse, are all manifestations of this lack of understanding of what some of the central problems are.”⁴

Dr. Kneese, in introducing what he believes is a better understanding of environmental problems, offered the congressional subcommittee a lesson in civics. The framers of the Constitution, he said, created a social system

built largely on the concepts of private property and individual freedom within the framework of laws to keep the channels of commerce open. This reflected the conviction that private ownership, freedom of individual choice, and the profit motive would direct resources to those uses where they are the most productive, given individual preferences for various goods and services and the income of the population. This conviction, plus fear of losing personal freedom, have underlain our national assumption that the role of collective action through government should be minimized and have been used to justify our traditional antipathy toward planning.⁵

Here Kneese presents the view, familiar in political theory since Locke,⁶ that the primary purpose of government is to enforce rights to person and property so that individuals may truck and bargain in equitable and efficient markets. The “invisible hand” of the marketplace will then allocate resources to those willing to pay the most for their use. Markets so arranged will maximize social welfare. This last statement expresses a tautology because “social welfare,” on this approach, is defined as the satisfaction of preferences ranked on the basis of willingness to pay.⁷

Within this conception of the legitimate role or purpose of government, Dr. Kneese outlined a now familiar theory of the cause and the cure of environmental problems. These problems arise because various resources, such as clean air and water, are unowned; they are “common property resources.” Dr. Kneese then testified:

Our usual method for limiting the use of resources and leading them into their highest productivity employments is the prices which are established in markets through exchanges between buyers and sellers. For common property resources this mechanism does not function. . . . This idea has been well developed in the economics literature. . . .⁸

In the literature to which Dr. Kneese refers,⁹ economists suggest ways the government may help to bring market “externalities,” for example, spillovers like pollution, into the pricing mechanism, and so close the gap between the “private” and the

³Wandesforde-Smith, *National Policy for the Environment: Politics and the Concept of Stewardship*, in *Congress and the Environment* 190 (E. Cooley & G. Wandesforde-Smith eds. 1970).

⁴Wandesforde-Smith, *National Policy for the Environment: Politics and the Concept of Stewardship*, in *Congress and the Environment* 187 (E. Cooley & G. Wandesforde-Smith eds. 1970).

⁵Wandesforde-Smith, *National Policy for the Environment: Politics and the Concept of Stewardship*, in *Congress and the Environment* 191 (E. Cooley & G. Wandesforde-Smith eds. 1970).

⁶For an historical account of this political philosophy, see C. Macpherson, *The Political Theory Of Possessive Individualism: Hobbes To Locke* (1962). For criticism, see, e.g., R. Wolff, *The Poetry Of Liberalism* (1968). Liberalism, of course, need not rely on “individualistic” foundations but may be consistent (as it is in Rawls) with democratic majority rules and with attention to communitarian values. See Sagoff, *The Limits of Justice*, 92 *Yale L.J.* 1065 (1983).

⁷The standard criticism of this tautology is that one must not simply assume but test the hypothesis that efficient market allocations maximize welfare. One way would be to consider labor markets at the turn of the century, which were fairly efficient since they were unregulated, and individuals (including parents of child laborers) understood the risks they took. See S. Tool, *The Discretionary Economy* 334 (1979); Hook, *Basic Values and Economic Policy*, in *Human Values And Economic Policy* 247 (S. Hook ed. 1967).

⁸Hearings Before the House Subcomm. of the Comm. on Gov’t Operations, 91st Cong., 2d Sess. 192 (1970) (prepared statement of Dr. Allen V. Kneese).

⁹For a useful bibliography of this literature, see Fisher & Peterson, *The Environment in Economics: A Survey*, 14 *J. Econ. Lit.* 1 (1976).

“social” costs of production.¹⁰ If markets cannot set prices for unowned resources, the government may set “shadow” or surrogate market prices, so that environmental resources will be allocated to those willing to pay the most for them and, in that sense, these resources will then find their most productive or efficient use.

While this cost-benefit or “efficiency” approach to environmental policy provides a way of considering conventional “spillovers,” such as pollution, it does not do as well to bring “presently unquantified environmental amenities and values”¹¹ into the administrative process.¹² Many economists believe that the problem of quantifying non-market, especially ethical and aesthetic values, is intractable, since these values cannot be measured “with honesty.”¹³ One commentator noted: “The courts unanimously agree that the 1969 NEPA does not require environmental impacts to be converted into monetary values. . . . The preferable view is to require quantification of each factor to the extent possible under existing methodologies.”¹⁴

Economists have been sensitive to the practical difficulties which attend the measurement of non-market costs and benefits. Accordingly, many, probably most, economists would list “intangible” or “moral” factors separately, describing them qualitatively as well as possible, leaving it to the legitimate political authority to take them into account.¹⁵ Other economists note, however, that cost-benefit techniques have been developed for ordinary “spillovers,” such as pollution. They argue that cost-benefit techniques should be developed to “price” non-market “externalities,” such as aesthetic and ethical costs and benefits, as well.¹⁶

Two fundamental conceptual problems, however, plague attempts to put NEPA policy on a firm economic or market basis. First, an efficient market and, therefore, cost-benefit analysis, at least in theory would maximize the satisfaction of the preferences we have, whatever the consequences; in this sense, cost-benefit techniques advance a formal conception of welfare which has no clear connection with substantive concerns about the quality of life.¹⁷ The efficiency criterion, in principle, is indifferent to the nature, quality, or wholesomeness of our desires.¹⁸ It answers to the

¹⁰For an introduction to these terms, see Ruff, *The Economic Common Sense of Pollution*, in *Microeconomics: Selected Readings* 498 (2d ed. E. Mansfield ed. 1975).

¹¹NEPA § 102(2)(B), 42 U.S.C.A. § 4332(2)(B).

¹²For discussion of the role of cost-benefit analysis in NEPA assessments, see Rosen, *Cost-Benefit Analysis, Judicial Review, and the National Environmental Policy Act*, 7 *Env'tl. Law* 363 (1977); Note, *Cost-Benefit Analysis in the Courts: Judicial Review Under NEPA*, 9 *Ga. L. Rev.* 417 (1975); Comment, *Judicial Review of Cost-Benefit Analysis Under NEPA*, 53 *Neb. L. Rev.* 540 (1974).

¹³E. Mishan, *Cost-Benefit Analysis* 160 (1976).

¹⁴Luke, *Environmental Impact Assessment for Water Resource Projects*, 45 *Geo. Wash. L. Rev.* 1106, 1108 (1977).

¹⁵For evidence that this is the usual practice, see Hare, *Contrasting Methods of Environmental Planning*, in *Ethics and the Problems of the 21st Century* 65 (K. Goodpaster & K. Sayre eds. 1979); E. Mishan, *Welfare Economics* 86 (1976).

¹⁶See, e.g., Cummings, Cox & Freeman, *General Methods for Benefits Assessment*, in *Benefits Assessment: The State of The Art* 161 (1986) (and references cited therein). For a fine, balanced discussion of “partial” versus “complete” quantification, see K. Shrader-Frechette, *Science Policy, Ethics, And Economy Methodology* ch. 6 (1985).

¹⁷Supporters of environmental legislation made this criticism of economic theory familiar during the 1960s. For example:

The economist prodding the nation to growth is not disturbed by the beer-can-littered landscape or the unsightliness of the strip mining location. His concern is to stimulate the appetite, not to cultivate the taste. His is a kind of science of collective gluttony. It has been aptly remarked that “one of the weaknesses of our age is our apparent inability to distinguish between our needs and our greeds.”

R. Rienow & L. Rienow, *Movement In the Sun* 233 (1967).

¹⁸Many attempts have been made, however, to “launder” the preferences which enter economic analysis. See, e.g., E. Mishan, *Cost-Benefit Analysis* 86 (1976) (“Thus, notwithstanding that all members of society agree that an individual is the best judge of his own welfare, society may not wish

preferences we have; it does not educate taste or encourage the formation of new or better preferences.

NEPA, however, seems more reformistic, more aspirational. The statute concerns not just the standard of living in America, but also the quality of life. In that sense, it may respond less to a national desire to satisfy consumer preferences than to a sense of dissatisfaction with those preferences.¹⁹ The statute apparently takes a substantive rather than a formal approach to welfare or well-being.

Second, the statute is political: It sets forth a general policy goal chosen by the political community through a deliberative and democratic process. NEPA calls for governmental planning and problem solving; it defends environmental objectives which may conflict with an efficient allocation of resources. Accordingly, the application of cost-benefit techniques in NEPA decisionmaking might substitute a goal Congress did not choose (allocatory efficiency) for the goals it explicitly mentions in legislation.

We shall now briefly examine these two conceptual difficulties and the ways economists have proposed to overcome them.

§ 10:60 The market approach to NEPA—Norms or preferences?

Classical welfare economists have long recognized that “[e]thically, the creation of the right wants is more important than want-satisfaction.”¹ Adam Smith argued that the state has an obligation to educate citizens to refine their judgment and tastes.² Alfred Marshall considered it part of the economist’s role to discuss substantive notions of welfare—for example, expenditures which actually make people happy—as distinct from expenditures which simply satisfy their desires. He suggested, among other things, the provision and maintenance of public parks.³ Likewise Wicksteed.⁴ Pigou observed that a person “attuned to the beautiful in nature or art” was “himself an important element in the ethical value of the world.”⁵ And Knight summarized the “fairly established consensus that happiness depends more on spiritual resourcefulness, and a joyous appreciation of the costless things of life, especially affection for one’s fellow creatures, than it does on material satisfactions.”⁶

The economist’s concern with the formation and quality of preferences—not merely with their satisfaction—goes back at least to Mill. Everyone knows his dictum: “It is

to admit a Pareto improvement by reference to utility alone which otherwise affronts in any particular the moral sense of society.”). *See also* A. Okun, *Equality And Efficiency: The Big Tradeoff* 78 (1975). Sen writes: “[A] liberal society narrows the range of supposed externalities dignified by social policy.” A. Sen, *Collective Choice and Social Welfare* 82 (1970).

¹⁹For an excellent study of consumer dissatisfaction and the turn to public or political action, *see* A. Hirschman, *Shifting Involvements: Private Interest And Public Action* (1982). Hirschman argues that the satisfaction of consumer preferences leads to dissatisfaction with them rather than to any sort of contentment or “satisfaction” in the sense of happiness. To attain the latter, individuals enter public life or engage in political action to change the basic conditions under which those preferences are formed. Eventually, they grow weary and frustrated with this as well, and return to private consumption. This seems to be a cycle.

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¹F. Knight, *The Ethics Of Competition* 23 (1935).

²A. Smith, *The Wealth Of Nations* bk. 5, ch. 1 (1976).

³For a discussion of Marshall’s views in the context of the paternalistic attitude of neoclassical economists, *see* S. Rhoads, *The Economist’s View Of The World* 175 (1985).

⁴S. Rhoads, *The Economist’s View Of The World* 175–76 (1985).

⁵A. Pigou, *The Economics Of Welfare* 17–18 (1938).

⁶F. Knight, *The Ethics Of Competition* 71 (1935).

better to be a human being dissatisfied than a pig satisfied; better to be a Socrates dissatisfied than a fool satisfied.”⁷

When Carlyle accused the utilitarians of advocating a “pig philosophy,” he assumed they failed to distinguish between better and worse desires.⁸ But this badly misrepresents Mill’s position. Mill recognized that if the satisfaction of preferences were our primary goal, then we should strive to make tastes gross, callous, and stupid, since “[i]t is indisputable that the being whose capacities of enjoyment are low, has the greatest chance of having them fully satisfied.”⁹

Mill did not define social welfare as the satisfaction of preferences. Rather, Mill and the great economists who followed him were concerned with the quality of preferences and the quality of life. They adopted a substantive not a formal approach to utility.¹⁰ They thought that happiness and well-being depend at least as much on the quality of one’s goals and values as on the degree to which one satisfies them. Accordingly, they considered the conditions under which preferences are formed, not simply the conditions under which they are satisfied, to be a principal issue in political economy.

With contemporary economists, however, it is different. Kneese,¹¹ Freeman,¹² Cummings,¹³ Brookshire,¹⁴ and many others depart profoundly from the classical tradition, first, by taking values as “given” in the preferences consumers reveal in their market behavior, and, second, by defining “welfare” and “utility” formally or tautologically in terms of the satisfaction of those preferences.

To be more precise: “Benefit-cost analysis maintains that consumers’ values should be the basis for measures of the benefits of an action. In defining them, economists have generally used an individual’s *willingness to pay* for the good or service provided by the proposed action.”¹⁵ In this context, cost-benefit analysis “judges actions based on an efficiency criterion.”¹⁶ Economic “efficiency requires that resources be allocated to their highest-valued uses,” *i.e.*, the uses for which consumers are willing to pay the most.¹⁷

During the 1970s, politicians, economists, and environmental activists argued that the advertising budgets of corporations were dedicated to producing consumer preferences (willingness-to-pay) for things which destroyed the beauty and integrity of the environment, while adding nothing to actual well-being and happiness. These

⁷J. Mill, *Utilitarianism* (1863), *reprinted in* *The Utilitarians* 410 (1961).

⁸Carlyle, *Pig Philosophy*, in *Latter Day Pamphlets* 400 (1960).

⁹Carlyle, *Pig Philosophy*, in *Latter Day Pamphlets* 400 (1960).

¹⁰Mill and the classical utilitarians were reformers; they sought social change, not the preservation of the status quo. Accordingly, when they saw that efficient labor markets (*e.g.*, markets in which fully informed individuals make bargains without transaction costs) led to horrendous social misery (child labor, death, etc.), they did not define this misery as social welfare simply because it resulted from transactions within those markets. Rather, they sought to change the conditions under which people formed their preferences, in order to increase happiness and well-being, or lessen pain; they adopted a substantive conception of welfare.

¹¹*See Handbook Of Environmental And Resource Economics* (A. Kneese & J. Sweeney eds. 1985).

¹²A. Freeman, *The Benefits Of Environmental Improvement: Theory And Practice* (1979).

¹³R. Cummings, D. Brookshire & W. Schultz, *Valuing Environmental Improvements: A State Of The Arts Assessment On The Economic Aspects Of The Contingent Valuation Method* (1986).

¹⁴Brookshire, Ives & Schulze, *The Valuation of Aesthetic Preferences*, 3 *J. Env'tl. Econ. & Management* 325 (1976).

¹⁵Smith, *A Conceptual Overview of the Foundations of Benefit-Cost Analysis*, in *Benefits Assessment: The State of The Art* 13, 16 (J. Bentkover, V. Covelio & J. Mumpower eds. 1986).

¹⁶Smith, *A Conceptual Overview of the Foundations of Benefit-Cost Analysis*, in *Benefits Assessment: The State of The Art* 13, 16 (J. Bentkover, V. Covelio & J. Mumpower eds. 1986).

¹⁷Smith, *A Conceptual Overview of the Foundations of Benefit-Cost Analysis*, in *Benefits Assessment: The State of The Art* 13, 16 (J. Bentkover, V. Covelio & J. Mumpower eds. 1986).

critics saw the quality of our preferences—not our failure to satisfy them—as a principal cause of the environmental crisis.

John Kenneth Galbraith, among others, pressed the opinion that corporations create through advertising the desires they satisfy; in today's economy, producers, not consumers, are sovereign.¹⁸ Senator McGovern, taking up this theme, worried that advertising can “brainwash the consumer. . . . No one was ever born, for example, with a taste for gas guzzling automobiles. That is one of so many created demands.”¹⁹

NEPA, if what we argued earlier is correct, concerns not only the satisfaction of consumer preferences but also our national dissatisfaction with them. If this is so, it is hard to see how a cost-benefit approach, which takes its values directly and uncritically from consumer preferences, could help the nation achieve its environmental objectives.

Contemporary policy analysts are aware of this criticism. In order to make cost-benefit techniques more relevant to these objectives, therefore, a group of economists has attempted to assign market prices to a variety of nonconsumer goods and non-user services which reflect, in some way, the kinds of ethical and aesthetic concerns which often underlie environmental legislation.

Consider, for example, the belief that the visibility in national parks should not be impaired by air pollution. People may hold this belief—and thus support relevant legislation²⁰—for various aesthetic, ethical, patriotic, or other reasons. This belief may have little relation to—indeed, it may conflict with—the preferences these people reveal by their behavior in consumer markets.²¹

Analysts may ask people how much they are willing to pay to keep national parks, let us say, free of pollution.²² By this technique, contemporary economists may convert an ethical or aesthetic conviction “from a value judgment to a datum of economic science.”²³ They may convert a person's objective belief about our national obligations to a subjective report about the intensity of his or her desires.

Once this conceptual shift has taken place, it is a simple matter to make cost-benefit techniques relevant, at least theoretically, to the aspirational and ethical aspects of environmental legislation. All that is required are techniques to “shadow” price the non-consumer or “moral” benefits of projects and decisions.

¹⁸J. Galbraith, *Economics as a System of Beliefs*, in *Economics, Peace and Laughter* 68 (1981); see also J. Galbraith, *The Affluent Society* ch. 11 (1958).

¹⁹See S. Rhoads, *The Economist's View Of The World* 148 (1985). Rhoads also cites Senator Philip Hart's estimate that \$200 spent by consumers in 1960 purchased nothing of value. Rhoads states similar views by Ralph Nader and Thorstein Veblen. S. Rhoads, *The Economist's View Of The World* 148 (1985). Also, from Marx:

[U]nder private property . . . every person speculates on creating a *new* need in another, so as to drive him to a fresh sacrifice, to place him in a new dependence and to seduce him to a new mode of *gratification*. . . . The extension of products and needs falls into *contriving* and *ever-calculating subservience* to inhuman, refined, unnatural and imaginary appetites.

Marx, *Economic and Philosophic Manuscripts of 1844*, in *The Marx-Engels Reader* 93 (R. Tucker ed. 1978) (emphasis added).

²⁰Clean Air Act § 165(a)(4), 42 U.S.C.A. § 7475(a)(4).

²¹Consider, for example, a person who believes the workplace ought to be safe, and so supports worker safety legislation. That same person, by trying to buy goods at the lowest prices, might “reveal” the contrary interest in his or her market behavior.

²²For many examples of this, see R. Rowe & L. Chestnut, *The Value Of Visibility; Economic Theory And Applications For Air Pollution Control* (1982).

²³Kennedy, *Cost-Benefit Analysis of Entitlement Problems: A Critique*, 33 *Stan. L. Rev.* 387, 406 (1981). Kennedy cites many examples of conversions of this kind.

Economists in recent years have developed various techniques to “price” non-consumption goods and non-user services associated with the environment.²⁴ These techniques measure in monetary terms the “existence,” “bequest,” “option,” and “quasi-option” worth of objects people may value intrinsically or wish to preserve for their own sakes.

Consider, for example, NEPA’s mandate that agencies “preserve important historic, cultural, and natural aspects of our national heritage.”²⁵ An economist may interpret this mandate to mean that many people want cultural, historical, and natural landmarks to be preserved, even though these people may not plan to visit those places. Preferences of this sort can be “priced” on the basis of willingness to pay for preservation. This is the “existence” value of a natural environment.

Now consider the directive in NEPA that federal agencies “fulfill the responsibilities of each generation as a trustee of the environment for succeeding generations.”²⁶ This seems to be an ethical command, which might be interpreted legally along the lines of a “public trust”²⁷ or “charitable trust”²⁸ doctrine. From an economic point of view, however, a person’s sense of moral obligation to future generations “might appear as utility to him from the enhanced utility of his heirs.”²⁹ This is the basis of “bequest” value.

Finally, NEPA directs agencies to “maintain, wherever possible, an environment which supports diversity, and a variety of individual choice.”³⁰ As if on cue, economists speak of “option value,” which reflects “the desire to preserve resources because of the uncertainty of demand. Option value . . . is the value of an option to consume the good when preferences are uncertain.”³¹ One may also add “quasi-option value” which is “the expected value of information gained from postponing an irreversible development.”³²

In short, economic analysts have responded to the ethical and aspirational aspects of NEPA by identifying relevant pockets of willingness to pay. As a result,

[v]alue concepts have proliferated—use value, option price, option value, expected consumer’s surplus, quasi-option value, existence value, preservation value, bequest value, etc.—but some of these are overlapping in concept while many are empirically elusive so that validation of estimates is difficult and often incomplete. Thus, confusion in some quarters is matched by skepticism in others.³³

All sorts of technical and practical problems beset attempts to measure non-consumer and non-user “costs” and “benefits.” Since these are discussed in the eco-

²⁴For examples, see Brookshire, Eubanks & Randall, Estimating Option Prices and Existence Value for Wildlife Resources, 59 Land Econ. 1 (1983); Brookshire, Ives & Schulze, The Valuation of Aesthetic Preferences, 3 J. Envtl. Econ. & Management 325 (1976); Schulze, d’Arge & Brookshire, Valuing Environmental Commodities: Some Recent Experiments, 57 Land Econ. 151 (1981).

²⁵NEPA § 101(b)(4), 42 U.S.C.A. § 4331(b)(4).

²⁶NEPA § 101(b)(1), 42 U.S.C.A. § 4331(b)(1).

²⁷See J. Sax, *Defending The Environment* (1971).

²⁸See Holland, *Judicial Review of Compliance with the National Environmental Policy Act: An Opportunity for the Rule of Reason*, 12 Envtl. Aff. 743, 746 (1985).

²⁹McConnell, *Existence and Bequest Value*, in *Managing Air Quality And Scenic Resources At National Parks and Wilderness Areas* 257 (R. Rowe & L. Chestnut eds. 1983).

³⁰NEPA § 101(b)(4), 42 U.S.C.A. § 4331(b)(4).

³¹McConnell, *Existence and Bequest Value*, in *Managing Air Quality And Scenic Resources At National Parks and Wilderness Areas* 254 (R. Rowe & L. Chestnut eds. 1983).

³²McConnell, *Existence and Bequest Value*, in *Managing Air Quality And Scenic Resources At National Parks and Wilderness Areas* 254 (R. Rowe & L. Chestnut eds. 1983).

³³Randall & Stoll, *Existence Value in a Total Valuation Framework*, in *Managing Air Quality And Scenic Resources At National Parks and Wilderness Areas* 254 (R. Rowe & L. Chestnut eds. 1983).

conomic literature, we need not consider them here.³⁴ Attempts to “price” moral and aesthetic values and obligations—to enter them into a utilitarian calculus along with consumer preferences—also confront logical or conceptual difficulties, however, which we should mention, since they are not discussed in the economic literature.

One principal difficulty appears to be this: Ethical values and consumer preferences belong to different conceptual categories and must, therefore, be evaluated and justified in different ways. Ethical and aesthetic judgments, having the form “*x* is good” or “*x* is beautiful,” constitute objective or public beliefs which are either true or false, correct or mistaken. Judgments of this sort are to be justified or criticized on the merits. Consumer preferences, having the form “I want *x*,” constitute private or subjective desires. These need not be judged on the merits but may be priced in a market.³⁵

To lump values of these different sorts together may be to commit a category mistake.³⁶ The problem here is not that those who take an economic approach to NEPA are committed “to think that every social value should eventually be handleable by something like cost benefit analysis.”³⁷ Rather, the problem is that “they are committed to something which in practice has those implications: that there are no ultimately incommensurable values.”³⁸

When a person says that something is good, beautiful, etc., he or she makes a disinterested judgment; this is not the same thing as expressing an interest, for example, in acquiring or consuming that object. Disinterestedness of this kind, indeed, seems to be the characteristic of moral and aesthetic judgment.³⁹

Statements which ascribe moral or aesthetic worth to objects or events are *statements of fact*, not *expressions of desire*. They take an impersonal stance and claim intersubjective agreement; their truth value has nothing logically to do with the speaker’s willingness to back them up with money.⁴⁰ A judgment of this sort entails nothing about the welfare or utility of the person who makes it.

Cost benefit analysis, in contrast, measures the utility of the person who ascribes value to an object or event, and then attributes that value to the object or event itself. This seems to assume that the only thing that can be valued or be good is the utility, or the preference-satisfaction, of individuals. What shall we say of this as-

³⁴For a practitioner’s view, see Hyman, *The Valuation of Extramarket Benefit and Costs in Environmental Impact Assessment*, 2 *Envtl. Impact Assessment Rev.* 260 (1981).

³⁵There is a simple way to illustrate the epistemological difference between judgments and preferences at stake here. Judgments can contradict one another; e.g., for any *x*, it is logically impossible that the statements “*x* is good” and “*x* is bad” are both true, even when uttered by different persons. The statements “I want *x*” and “I want non-*x*,” when uttered by different people, do not constitute a logical contradiction. Preferences can conflict, at most, in the sense that they compete for the use of scarce resources. This is not a form of logical or epistemic contradiction, not a matter of one being true while the other is false.

³⁶For an explanation of this sort of fallacy, see Ryle, *Categories*, in *Essays on Logic and Language* 65 (A. Flew ed. 1953).

³⁷B. Williams, *Morality: An Introduction To Ethics* 96–97 (1972).

³⁸B. Williams, *Morality: An Introduction To Ethics* 97 (1972).

³⁹J. Kant, *Critique Of Judgment* 38 (J. Bernard trans. 1951). “A judgment upon an object of satisfaction may be quite *disinterested*, but yet very *interesting*, i.e., not based on an interest, but bringing an interest with it; of this kind are all pure moral judgments. Judgments of taste, however, do not in themselves establish an interest.” J. Kant, *Critique Of Judgment* 39, n.2 (J. Bernard trans. 1951).

⁴⁰The truth or falsity of the statement “5+5=10,” for example, is not to be determined by a market or by measuring willingness to pay among mathematicians. Statements which describe our will, character, and obligations as a nation are similarly objective. One gives reasons for one’s views; this is not the same thing as paying money to satisfy one’s desires.

sumption? Does it state a view or express a preference? The difference between these activities should be plain.⁴¹

NEPA, as we have suggested, attaches an intrinsic merit or worth to the preservation of environmental quality and beauty; we value these things (so it seems) in themselves and not simply for the use we can make of them. The conception of value at work in NEPA involves love, reverence, and respect for our natural heritage. Valuation of this sort must be distinguished from—not assimilated to—self-interest. It expresses an objective view of what is desirable, not a subjective report of what is desired.

NEPA, in short, argues that the environment is valuable; hence we are willing to pay to protect it. A cost-benefit approach reverses the equation. It argues that we are willing to pay to protect the environment; hence it is valuable.

Those who defend the new techniques of cost-benefit accounting offer a forceful reply to these conceptual objections. They *concede* that these objections are logically sound. They argue, however, that a cost-benefit approach provides a rational basis on which policymakers can consider “qualitative” or “intangible” values. The alternative may be simply to ignore those values.

Thus, one commentator points out

that failure to quantify allegedly qualitative costs, however, results in their being excluded from technology assessments and environmental impact analyses. . . . If failure to quantify indeed causes us to ignore such factors, then non-quantification also results in a very practical sort of “economic Philistinism” and perhaps one more serious than that arising from imperfect attempts to assign cardinal or ordinal measures.⁴²

That is how the debate, at present, stands. We shall have to consider alternative methods of NEPA enforcement before we can evaluate this reply.

§ 10:61 The market approach to NEPA—Individual or community choice?

At the Senate Hearings on NEPA, Stewart Udall, former Secretary of the Interior, testified that “we have an unmatched opportunity to reassess our national purpose and our national priorities.”¹ He added: “I believe the Nation has ahead of it, in the immediate years ahead, the best opportunity it has had in the entire postwar period to look at its national priorities and its national needs and perhaps to reshape them.”²

This sort of rhetoric, which refers to national purposes and priorities, occurs, one supposes, in many congressional debates. NEPA itself adopts this rhetoric in establishing “a national policy for the environment.”³ This language suggests the possibility that Congress, through a deliberative political process, sets goals or objectives for the community which may legitimately differ from outcomes individuals might reach by making trades among themselves, even in the most efficient markets.

One difference between NEPA and a cost-benefit approach to environmental

⁴¹Thus, one would not ask a cost-benefit analyst how much he or she is willing to pay to for the nation to adopt efficiency as a criterion in environmental policy. A recommendation—whether for efficiency or some other criterion—represents a political statement to be backed by reasons, not a subjective preference to be backed by money.

⁴²K. Shrader-Frechette, *Science Policy, Ethics, And Economy Methodology* 200 (1985).

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¹Hearings on S. 1075, S. 237, and S. 1752, National Env'tl. Policy, Senate Comm. on Interior and Insular Affairs, 91st Cong., 1st. Sess. 141 (1969).

²Hearings on S. 1075, S. 237, and S. 1752, National Env'tl. Policy, Senate Comm. on Interior and Insular Affairs, 91st Cong., 1st. Sess. 141 (1969).

³42 U.S.C.A. § 4321 (NEPA Preamble).

policy, then, might be this: NEPA states a policy, or at least a general direction for policy to take. On the contrary, a market and, therefore, cost-benefit analysis, on the contrary, “has no inherent direction, no internal goal other than to satisfy the forces of supply and demand.”⁴ Amusingly, some analysts have observed that people become outraged when they learn that cost-benefit analysis or some other “rational” procedure has been adopted in community decisionmaking. Citizens become angry or resentful, according to this appraisal, because the use of these methodologies challenges their “Cherished Illusion” that policy objectives come from the minds of their political representatives, not from the computers of bureaucrats.⁵ This cherished illusion may be so strong—the resentment so great—that the use of cost-benefit analysis cannot be justified even on welfare grounds.⁶

It may be more than a cherished illusion, moreover, to suppose that as a democratic political community we can choose environmental goals and policies which go “beyond” efficiency in the allocation of resources. If so, cost-benefit or economic approaches to NEPA, which take their authority from the real or imagined functioning of markets, may provide more of an alternative to than a framework for democratic processes of decisionmaking.

The relevance of the efficiency criterion to the political process depends, in part, on what one takes “efficiency” to mean. Many economists define efficiency narrowly to refer to the outcome of a market in which all assets are owned and traded, and there are no externalities. These economists restrict the concept of an “externality” to refer only to actual loss or damage to person or property of the sort defined by the common law of tort.⁷

These economists think of externalities as arising from the failure of markets to set prices for goods and services of the kind for which markets typically exist and are appropriate. Economists who define externalities in this narrow way—roughly as “spillovers” such as pollution—do not try to measure people’s “willingness to pay” for the sort of policy one argues for in a legislature, rather than what one bargains for in a market.

Analysts of this mind think of “externalities” as arising from a failure to have markets to deal with political, ethical, or communitarian goals or objectives. Thus, cost-benefit analysis of this sort seems consistent with democratic decisionmaking; it informs, but does not attempt to replace, the political process.

At about the time that NEPA was enacted, however, many economists began to replace the notion of a physical spillover with the notion of a bargaining cost as an identifying feature of a market externality. Due in part to the work of Ronald Coase,⁸ they began to ask “what is a cost of what?” rather than “what is a cause of what?” They could then “open up” the notion of an externality to include anything a person might be willing to pay for in a real or in a hypothetical market.⁹

Once the concept of an externality had widened in this way, economists developed all sorts of hypothetical markets, such as “bidding games” to “price” the moral, aes-

⁴R. Odell, *Environmental Awakening* 13 (1980) (quoting SRI International, *City, Size and Quality of Life*).

⁵Tarasovsky, *Cost-Benefit Analysis, Cherished Illusions and Anxiety: An Aspect of the Hickey Effect*, in *Frontiers of Economics* (G. Tullock ed. 1976).

⁶Cuyler, *The Quality of Life and the Limits of Cost-Benefit Analysis*, in *Public Economics and the Quality of Life* 141, 143 (L. Wingo & A. Evans eds. 1977).

⁷The usual example of an externality of this sort is pollution. *See, e.g.*, E. Mishan, *Introduction to Normative Economics* ch. 50 (1981).

⁸Coase, *The Problem of Social Cost*, 3 *J. Law & Econ.* 1 (1960).

⁹Kennedy writes: “Coase forced us to redefine an externality as a cost, associated with an activity, which is not reflected in the activity’s price because transaction costs prevent those on whom the loss falls from making a contract with whomever might prevent it.” Kennedy, *Cost-Benefit Analysis of Entitlement Problems: A Critique*, 33 *Stan. L. Rev.* 387, 398 (1981) (footnote omitted).

thetic, and political “externalities” of public investments.¹⁰ They could then claim that an efficient policy is the “right” policy because it takes account of the views and objectives individuals espouse as citizens, not simply the preferences or interests they pursue as consumers. At this point, cost-benefit analysis became continuous with the assumption of utilitarianism, namely, that all values are commensurable and can be reduced, at least in theory, to a common measure.

Whether one accepts or rejects this contention depends on one’s general political theory. Those who believe, with Kneese, that the government should function primarily as a prophylactic on markets may find this general assumption convincing. The alternative to economic analysis, namely, the political process, moreover, is not poetry in motion. Backscratching, log rolling, payoffs, ignorance, and chance are candidates to replace “rational” methodologies of decisionmaking.¹¹

Those who believe that there is something “sacred,” or at least legitimate, about the rule of law in a democratic society will reject “the paternalism of expertise.”¹² They will insist that the goals of a democratic community be chosen through a democratic process and that the goals cannot be reduced or analyzed into tradeoffs that might more effectively be reached in a market.¹³ At any rate, they will point out that the Constitution empowers Congress to choose the goals of the nation within broad constraints. Congress has not yet ceded this power to economists.¹⁴

We have now considered, in a general way, the economic approach to NEPA. Its acceptability may depend on its inevitability, that is, on whether there is any other way to make tradeoffs and take costs into account. We shall now turn to this question.

§ 10:62 Mitigation: Reconciling the moral and the market approaches to NEPA

Reviewing the decade which produced NEPA, Lynton Caldwell wrote:

By the early 1960s evidence of a changing public attitude could be read on the front pages of newspapers from New York to California. A cursory view of such popular periodicals as *Atlantic*, *Harper’s*, *Saturday Review*, and *Life* reflected a growing belief that ugliness, disorder, and an unhealthy environment did not have to accompany economic growth. The assumption in these and other journals, as well as in the newspapers, was that the disfiguring or polluting aspects of the American industrial economy were largely the result of the failure of the civic conscience of the American people to use their technological capabilities wisely. Only a few commentaries . . . suggested that environmental degradation might be a “built-in” aspect of America’s affluent society.¹

The idea that economic growth and environmental quality were reconcilable—that we could enjoy a high standard of living and a high quality of life—had an

¹⁰For a good review, see Cox, *Theory of Regulatory Benefits Assessment: Econometric and Expressed Preference Approaches*, in *Benefits Assessment* 85 (1986).

¹¹The same kind of objection can be registered, of course, against economic techniques, namely, that they may look good in theory, but they are likely to be abused in fact.

¹²See K. Shrader-Frechette, *Science Policy, Ethics, and Economy Methodology* 298 (1985) (quoting T. Roszak). “The key problem we have to deal with is the paternalism of expertise within a socio-economic system which is so organized that it is inextricably beholden to expertise. And, moreover, to an expertise which has learned a thousand ways to manipulate our acquiescence with an imperceptible subtlety.” K. Shrader-Frechette, *Science Policy, Ethics, and Economy Methodology* 298 (1985).

¹³For an excellent analysis of the conditions of participatory democracy, see Care, *Participation and Policy*, 88 *Ethics* 316 (1978).

¹⁴Congress may have flirted with the idea of doing so. See S. Rep. No. 305, 97th Cong., 1st Sess. (1981) (discussing the Regulatory Reform Act (S. 1080)).

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¹L. Caldwell, *Man and His Environment: Policy and Administration* 24 (1975) (footnote omitted).

overwhelming political appeal at the time NEPA was enacted.² NEPA, according to the opinion of the day, would help us “apply our technological prowess in harmony with social and environmental quality goals; that is to pursue a policy of balanced growth.”³

In introducing the original version of NEPA in Congress, Senator Jackson quoted a *Washington Post* editorial to this effect. The editorial said:

It is often man’s crass indifference to the consequences of technological advance in exploiting nature which is leading to the despoiling of nature. That is to say, the gains from technology seem to run only one way—to profits rather than to preservation of a planet on which man may comfortably live.

. . . .

The time has come to turn around the thesis under which natural resources have long been regarded. Instead of deciding that we must exploit them because we are technically able to do so, we ought to postpone exploiting them until the need is or our knowledge of what damage exploitation may do is substantially greater.⁴

NEPA responded to the opinion popular at the time that a wise use of science and technology could solve the problems that careless use had provoked. This view became particularly strong in 1968, when, on Christmas Eve, the Apollo IX astronauts sent back the first pictures of the earth as seen from outer space. The image of “spaceship earth” became a powerful symbol for environmentalists. “If technoscience could place a man on the moon and return him to earth, why could not that same capability be employed to obtain the fruits of the earth without destroying the life-support system that made them possible?”⁵

NEPA enlists and develops scientific and technological knowledge in an effort to make publicly approved programs and projects consistent with national environmental objectives. It does this in two ways.

First, it seeks to advance scientific and especially ecological research,⁶ for example, by directing the Council on Environmental Quality “to conduct investigations, studies, surveys, research, and analyses relating to ecological systems and environmental quality.”⁷ The statute also directs federal agencies to “[i]nitiate and utilize ecological information in the planning and development of resource-oriented projects.”⁸

NEPA recognizes that no single science or discipline is adequate to explore the complex relationships in nature and between nature and man. It therefore requires agencies to “[u]tilize a systematic, interdisciplinary approach which will ensure the integrated use of the natural and social sciences and the environmental design arts in decisionmaking which may have an impact on man’s environment.”⁹

²See, e.g., Radio Address of Richard M. Nixon, Republican Presidential Nominee, CBS Radio, October 18, 1968, *reprinted in* U.S. Senate, Comm. on Interior and Insular Affairs, National Env'tl. Policy, 91st Cong., 1st Sess. 101 (1969).

³Carpenter, *Goals and Policies for Environmental Improvement*, in *Congress and the Nation's Environment* 4 (1971).

⁴Hearings on S. 1075, S. 237, and S. 1752, National Env'tl. Policy, Senate Comm. on Interior and Insular Affairs, 91st Cong., 1st Sess. 24 (1969) (remarks of Senator Jackson).

⁵L. Caldwell, *Science and the National Environmental Policy Act: Redirecting Policy Through Procedural Reform* 46 (1982).

⁶One purpose of NEPA is “to enrich the understanding of ecological systems.” NEPA § 2, 42 U.S.C.A. § 4321.

⁷NEPA § 204(5), 42 U.S.C.A. § 4344(5).

⁸NEPA § 102(2)(G), 42 U.S.C.A. § 4332(2)(G).

⁹NEPA § 102(2)(B), 42 U.S.C.A. § 4332(2)(B).

Second, NEPA lays particular stress on the responsibility of the agencies to consider “[a]lternatives to the proposed action.”¹⁰ The statute directs agencies to “[s]tudy, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involved unresolved conflicts concerning alternative uses of available resources.”¹¹

The general policy directive in NEPA is clear: Agencies are to determine whether, by using alternative means, including alternative technologies, they may carry out their missions in ways that “mitigate harmful environmental impacts.”¹² One court described the obligation to consider alternatives as the “linchpin” of the impact assessment process.¹³ It is the “heart” of the impact statement, according to the Council on Environmental Quality.¹⁴

The question before us is whether mitigation—the minimization and avoidance of environmental damage—provides a basis for reconciling moral and market motives in NEPA. Can the consideration of alternatives, along with the wise use of science and technology, provide methods by which agencies can pursue economic growth within ethical constraints? We conclude by considering this question.

§ 10:63 Mitigation: Reconciling the moral and the market approaches to NEPA—Science and technology

The discussion of environmental policy prior to NEPA reached near unanimity on one point: the need to support ecological research. The following testimony by Stewart Udall, Secretary of Interior in 1968, is typical:

No. 1, we must begin to work with, not against, the laws of the planet on which we live. (This is a little space ship, and that’s about as accurately as I can describe it), rejecting once and for all the false notion that man can impose his will on nature. This requires that we begin to obey the dictates of ecology, giving this master science a new and central position in the Federal scientific establishment.¹

Ecology, like any science, might function in either of two ways to provide guidance to policymakers. These are not exclusive, but they are different. First, a science might describe situations in a way that makes it possible for policymakers to predict, manipulate, and control events to reach given objectives. Second, a science might contain concepts or terms or ideas that help policymakers decide what their objectives should be; in other words, what they should preserve and what they should try to change.²

Both kinds of science—or kinds of concepts—are perfectly legitimate, perfectly “scientific.” Which vocabulary one prefers has to do with the problems one wishes to solve or the purposes one has in mind.

¹⁰NEPA § 102(2)(C)(iii), 42 U.S.C.A. § 4332(2)(C)(iii). It is difficult to trace the legislative history of this provision. For early attempts to do so, see Jordan, *Alternatives Under NEPA: Toward an Accommodation*, 3 *Ecol. L.Q.* 705 (1973); Picher, *Alternatives Under NEPA: The Function of Objectives in an Environmental Impact Statement*, 11 *Harv. J. on Legis.* 595 (1974).

¹¹NEPA § 102(2)(D), 42 U.S.C.A. § 4332(2)(D).

¹²D. Mandelker, *Environment and Equity* 120 (1981). For a discussion of judicial review of the consideration of alternatives under NEPA, see Mandelker, *NEPA Law and Litigation* § 9:17.

¹³*Monroe County Conservation Council, Inc. v. Volpe*, 472 F.2d 693, 3 *Envtl. L. Rep.* (Envtl. L. Inst.) 20006 (2d Cir. 1972).

¹⁴40 C.F.R. § 1502.14.

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¹The testimony was given before a Joint House-Senate Colloquium to Discuss a National Policy for the Environment.

²Richard Rorty explains that there are two criteria we might apply to the vocabulary of a science: “(1) It should contain descriptions of situations which facilitate prediction and control; (2) It should contain descriptions which help one decide what to do.” R. Rorty, *Consequences of Pragmatism* 197 (1982).

If one wishes to maximize the economic yield, say, of an estuary, then one may apply the methods of engineering and technology to transform a natural ecosystem to the purposes of aquaculture.³ This approach is not likely to preserve the “authenticity” or “integrity” of the environment. Rather it will replace wild ecosystems with computer-controlled, artificially-maintained processes, which are likely to be far more efficient or more profitable.⁴

The carefully managed and manipulated systems by which Frank Perdue produces chickens, for example, can be duplicated, *mutatis mutandem*, in the production of fish. If this sort of economic yield is our goal, then we may rely on approaches in science and technology which help us to predict, control, manipulate, and eventually transform the natural environment. The computer may replace the tiller and the plow.

Stuart Udall, in the testimony quoted above, however, did not have this use of science and technology primarily in mind. The question is not whether man can or cannot impose his will on nature.⁵ Probably, he can. Advances in science and technology, particularly recombinant DNA research, in any event, have given human beings power over nature of a sort few could have imagined in 1969.

The question, rather, is whether we want to impose our will on nature. We might choose instead to preserve or protect the “integrity” or “authenticity” of nature because we admire, respect, or appreciate these aspects of the environment. We shall then try to develop scientific concepts, descriptions, and approaches which will help us identify and maintain the “health” of the “well-being” of ecosystems.⁶ These are not necessarily the kinds of concepts or approaches we would rely on to replace those systems with quasi-artificial processes or, therefore, to maximize the production of goods and services that nature provides man.⁷

Ecologists remarked on this conceptual distinction shortly after NEPA was enacted. Two prominent ecologists wrote:

Ecologists function at two conceptual levels. The first level is directly concerned with their day-to-day research, and the second constitutes a way of viewing the world. We contend that the nature of the crisis is such that the second kind of ecological thinking is the more significant, and that it determines the kind of solution ecologists (and oth-

³The historical trend in agriculture has been from less to more industrial methods of production. See W. Cochrane, *The Development of American Agriculture* (1979). Aquaculture, by replacing natural with artificial processes of production, illustrates the same trend. See Klausner, *Food From the Sea*, 3 *BIO/Technology* 32 (1985).

⁴The enormous efficiency of artificial or technological processes of agricultural and—soon—aquaculture production (greatly exceeding natural carrying capacity) accounts in large part for the surpluses, depressed prices, etc., that plague farming. For a description of the incredible efficiency of the “technological treadmill” in agriculture, see Kloppenburg, *The Social Impacts of Biogenic Technology in Agriculture: Past and Future*, in *The Social Consequences and Challenges of New Agricultural Technologies* 291 (G. Berardi & C. Geisler eds. 1984).

⁵During the 1960s, some environmentalists took the position that further attempts to transform nature to our purposes through technological intervention would be dangerous and disastrous. For an unfavorable review of this literature, see J. Maddox, *The Doomsday Syndrome* (1972). For an intelligent anthropological perspective on the environmental “millennialists,” see M. Douglas, *Implicit Meanings* (1975).

⁶Leopold blended ethics and ecology by pointing out that ethical concerns determined the properties of ecosystems ecologists studied. “That land is a community is the basic concept of ecology, but that land is to be loved and respected is an extension of ethics.” Leopold, *The Land Ethic*, in *People, Penguins, and Plastic Trees* 773, viii (D. VanDeVeer & C. Price eds. 1968).

⁷The problem of agricultural surpluses provides an important reason to protect natural environments, that is, to take them out of production. The issue is surplus, not scarcity, for many of the goods and services for the sake of which we justify maintaining or altering environments.

ers) should press for in solving the environmental crisis in the United States—and for that matter, on a global basis.⁸

Ecologists have attempted to describe a perspective on environmental policy which would give officials some way to ground the normative concepts with which they had to work.⁹ These attempts, however, failed to establish any “laws of the planet” which might help to define “harmony” between man and the environment.¹⁰ Efforts to define ecological “diversity” and to link it with “stability,” for example, while a staple of ecological research for many years, ended in frustration.¹¹ Likewise, concepts involving a putative “balance of nature” have receded in ecological thought.¹²

Ecologists have succeeded better in providing policymakers with environmental indices¹³ by which to estimate the divergence of ecosystems from some “natural” or historically authentic condition.¹⁴ A species list may constitute the best index of the “integrity” of an ecosystem, and, therefore, the best indication of what must be preserved if that ecosystem is to be protected.¹⁵ Several ecologists have written:

We suggest most strongly and seriously that the optimal definition available for any ecosystem is the list of species that has been found in that system. . . . We are asserting that knowledge about the component species is extremely useful as a first step to the understanding of the ecosystem for any purpose.¹⁶

Ecologists have not been particularly successful, however, in finding theoretical or other ways to predict the impact of projects or policies on the environment. Some commentators find this disconcerting. One writer, reviewing the law-science relationship under NEPA, remarked that “the essence of an environmental impact statement is prediction. Decisionmakers must predict and they ask for assistance in that function.”¹⁷ He added: “Ecology provides an adequate foundation for fascinating and detailed description, and this gives the impression of knowledge. Unfortunately, there are not many explanatory theories in ecology upon which to base prediction.”¹⁸

The widely recognized limitations of ecology as a predictive science, however, need not detract from its usefulness in relation to NEPA. To see why, one needs to recall the two functions a science may serve. It may serve to predict and, therefore, help policymakers to control or manage events. It may also serve to make recommendations and suggest what policymakers should do to mitigate possible impacts or otherwise maintain the “integrity” of the environment.

⁸Murdoch & Connell, *The Ecologist's Role and the Nonsolution of Technology*, in *Ecocide—And Thoughts Toward Survival* 47, 47 (C. Fadiman & J. White eds. 1971). *See also* Auerbach, *Ecology, Ecologists, and the E.S.A.*, 53 *Ecology* 205 (1972); Hollander, *Scientists and the Environment: New Responsibilities*, 1 *AMBIO* 116 (1972) (assessing the role of ecologists after NEPA).

⁹For a history and an assessment of these efforts, *see* R. Macintosh, *The Background of Ecology: Concept And Theory*, chs. 6 & 8 (1985).

¹⁰Suter, *Ecosystem Theory and NEPA Assessment*, 62 *Bull. Ecological Soc'y Am.* 186 (1981).

¹¹*See* Goodman, *The Theory of Diversity-Stability Relationships*, 50 *Q. Rev. Biology* 237 (1975).

¹²Egerton, *Changing Concepts of the Balance of Nature*, 48 *Q. Rev. Biology* 322 (1973).

¹³*See* Train, *The Quest for Environmental Indices*, 178 *Sci.* 121 (1978) (describing scientific problems in enforcing NEPA).

¹⁴These are the bases for baseline and process studies. For a critique, *see* Hilborn & Walters, *Pitfalls of Environmental Baseline and Process Studies*, 2 *Envtl. Impact Assessment Rev.* 265 (1981).

¹⁵The Clean Water Act relies on this criterion, *i.e.*, “the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife.” 33 U.S.C.A. §§ 1251, 1312.

¹⁶Slobodkin, Botkin, Maguire, Moore & Morowitz, *On the Epistemology of Ecosystem Analysis*, in *Estuarine Perspectives* 497, 500–01 (V. Kennedy ed. 1980).

¹⁷Carpenter, *Ecology in Court and Other Disappointments of Environmental Science and Environmental Law*, 15 *Nat. Resources Law.* 573, 589 (1983).

¹⁸Carpenter, *Ecology in Court and Other Disappointments of Environmental Science and Environmental Law*, 15 *Nat. Resources Law.* 573, 590 (1983).

This distinction is illustrated in more than a decade of intensive litigation over the siting of energy facilities along the Hudson River. Teams of ecologists and other scientists attempted to predict the impact of electric power generation on populations of striped bass. After reviewing the unprecedented efforts of ecologists to model the relevant factors, the Atomic Safety and Licensing Board in 1972 concluded that the population biology of a complex system such as a river simply defied prediction.¹⁹

Six leading ecologists who worked on modeling bass populations in the Hudson say that this conclusion was as true in 1984 as in 1973. “After more than a decade of study and the expenditure of tens of millions of dollars, it was still not possible to draw definitive conclusions about the long-term effects of entrainment and impingement of fish populations in the Hudson River.”²⁰

These ecologists then emphasized the distinction that offers guidance to anyone involved with the integration of environmental science with environmental law. The knowledge we need reliably to predict environmental impacts is not the knowledge we need to identify possible sources or causes of environmental damage and to recommend ways to avoid or to mitigate that damage. Rather, we need to be sensitive to our wider purposes and goals and operate within them, “rather than being deferred indefinitely in the hope that scientists will come up with definitive solutions.”²¹

These ecologists wrote:

The ultimate question, “what will be the long-term effects of once-through cooling on Hudson River fish populations?” was unanswerable. Attempts to answer it contributed to years of costly litigation and benefited neither the environment nor the public. Asking the alternative questions, “what are the available methods of reducing the impact of once-through cooling, and how can they be most effectively deployed?” enabled scientists to make a positive contribution to arranging a “Peace Treaty for the Hudson.”²²

It is fair to say that policymakers seek advice from scientists at least as much as they seek predictions.²³ As one observer said: “NEPA is an attempt to bring the legal framework closer to the ecological framework, to make policy decisions with the recognition of a multifaceted world as it is perceived by ecologists.”²⁴ The intention (or hope) expressed in NEPA is that agency officials and consultants, by adopting an ecological and—optimistically—interdisciplinary perspective, will be able to choose among possible projects and provide strategies to mitigate possible environmental deterioration. One official noted: “Consultants, and others who

¹⁹The Board wrote:

No one knows in detail what activities of life go on in the unseen depths of the Hudson River nor what the future response to changing inputs is going to be. Under these conditions the experts are free to choose those assumptions which best fit their beliefs about what may go on, and the arguments that follow produce thousands of pages of testimony and documents without providing answers that can be agreed upon, or that can provide clear guidance to a Board.

Atomic Safety and Licensing Appeal Board of the U.S. Atomic Energy Commission, Decision in the Matter of Consolidated Edison Company of New York, Inc. (Indian Point Station Unit No. 2.) 4 (Apr. 1974), *quoted in* Barnthouse, Christensen, Goodyear, Van Winkle & Vaughan, Population Biology in the Courtroom: The Hudson River Controversy, 34 Biosci. 14, 17 (1984).

²⁰Barnthouse, Christensen, Goodyear, Van Winkle & Vaughan, Population Biology in the Courtroom: The Hudson River Controversy, 34 Biosci. 14, 18 (1984).

²¹Barnthouse, Christensen, Goodyear, Van Winkle & Vaughan, Population Biology in the Courtroom: The Hudson River Controversy, 34 Biosci. 14, 18 (1984).

²²Barnthouse, Christensen, Goodyear, Van Winkle & Vaughan, Population Biology in the Courtroom: The Hudson River Controversy, 34 Biosci. 14, 18 (1984).

²³This need for scientists to give advice within a social and economic framework, not simply to make predictions, underlies C.S. Holling’s popular “adaptive” method in assessment and management. See Holling, Adaptive Environmental Assessment And Management (1978).

²⁴Davies, NEPA Symposium, 3 Nat. Resources Law. 605, 607 (1984) (Panel Discussion).

undertake impact assessments, should proceed beyond the objective reporting of results, and should provide recommendations on the most environmentally acceptable alternatives.”²⁵

Can the search for the “most environmentally acceptable alternatives” provide a general way to reconcile economic and ethical motives in NEPA? The statute, as we shall now see, suggests a generally affirmative answer to this question.

§ 10:64 **Mitigation: Reconciling the moral and the market approaches to NEPA—The consideration of alternatives**

An important Congressional White Paper issued in 1968 anticipated NEPA’s environmental impact statement requirement. The White Paper stated:

Alteration and use of the environment must be planned and controlled rather than left to arbitrary decision. Technological development, introduction of new factors affecting the environment, and modifications of the landscape must be planned to maintain the diversity of plants and animals. Furthermore, such activities should proceed only after an ecological analysis and projection of probable effects. Irreversible or difficult reversible changes should be accepted only after the most thorough study.¹

The apparent intent of this statement is not to rule out economic development even in environmentally sensitive areas, but to constrain development to respect environmental and other values. NEPA leads agencies procedurally to this goal by requiring them to “study, develop, and describe appropriate alternatives to recommended courses of action. . . .” According to an early court decision, this requirement seeks to ensure that each agency decision maker has before him and takes into proper account all possible approaches to a particular project (including total abandonment of the project) which would alter the environmental impact and the cost-benefit analysis. Only in that fashion is it likely that the most intelligent, optimally beneficial decision will ultimately be made.²

The extent to which agencies are required to consider alternatives—both to the project³ and in the project⁴—is the subject of a vast NEPA jurisprudence we cannot consider in this section.⁵ This jurisprudence, however, goes to the heart of the question of how we are to balance environmental quality with economic growth. There is no expectation that society will give up its nonenvironmental goals even if they inevitably involve some environmental degradation. Yet the purpose of NEPA’s requirements is “to insist that no major federal project should be undertaken without intense consideration of other more ecologically sound courses of action, including

²⁵G. Beanlands & P. Duinker, *An Ecological Framework For Environmental Impact Assessment in Canada* (1983) (anonymous interviewee). This superb study remains the best guide to the role of environmental science in the environmental impact assessment process, both in Canada and the United States.

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¹Staffs of Sen. Comm. on Interior & Insular Affairs & House Comm. on Science & Astronautics, *Congressional White Paper on a National Policy for the Env’t*, 90th Cong, 2d Sess. 18 (Comm. Print 1968).

²*Calvert Cliffs’ Coordinating Comm., Inc. v. United States Atomic Energy Comm’n*, 449 F.2d 1109, 1 *Envtl. L. Rep.* (Envtl. L. Inst.) 20346 (D.C. Cir 1971).

³A “primary” alternative to a proposed action would replace that action entirely with another which accomplishes its purpose in another manner. For the extent to which agencies must consider primary alternatives, *see* Mandelker, *NEPA Law and Litigation* § 10:26.

⁴A secondary alternative provides a different way of doing a project. Mandelker, *NEPA Law and Litigation* § 10:27.

⁵The leading case is *Natural Resources Defense Council Inc. v. Morton*, 458 F.2d 827, 2 *Envtl. L. Rep.* (Envtl. L. Inst.) 20029 (D.C. Cir. 1972). Its “rule of reason” doctrine was modified but affirmed in *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519, 8 *Envtl. L. Rep.* (Envtl. L. Inst.) 20288 (1978).

shelving the entire project, or of accomplishing the same result by entirely different means.”⁶

What is relevant here is that this requirement recognizes or establishes the nature of the priority of environmental over economic concerns in the formation of public policy. The economic goal or mission of an agency is given, for example, to provide nuclear power, lease oil fields, build bridges, or whatever. Environmental quality does not figure as another goal to be balanced with that one in a general calculus of costs and benefits. Rather, it constitutes a side-constraint, that is, a separate criterion under which alternative strategies for achieving that mission or goal are to be considered.

We may return to the rights analogy.⁷ Consider two ways of building a highway. In the first, the government throws people out of their homes and takes their property without respecting their Fifth Amendment right to compensation. This policy could be justified, perhaps, by a cost-benefit analysis, which shows that only transfer payments are involved, so that the failure to compensate is efficient.⁸ A second strategy would attempt to buy the property or take it by eminent domain. That policy seeks an economic good, to wit, a highway, but it is constrained by a respect for constitutional rights.

NEPA, especially in requiring the intense consideration of alternatives, endows environmental values with a similar lexical priority over economic concerns. The nature of this priority is the same in kind, but not the same in degree, as that which attaches to rights. Thus, the most environmentally benign way of building a needed highway may not leave the environment entirely unscathed. Yet it is doubtful that a court would stop the project on those grounds, as it might if there were a violation of rights.

Environmental values after NEPA, then, should be seen as posing a side-constraint on agency decisions, rather than as presenting a group of non-consumer wants and preferences to be “balanced” along with consumer wants and preferences in the agency’s decision. The attempt to enter ecological and ethical considerations into cost-benefit analysis at the agency level may be useful and informative. It is no substitute, however, for the requirement that the agency accomplish its economic objectives in the most ecologically and environmentally acceptable ways.

The insistence on the consideration of alternatives, on the mitigation of environmental impacts, and on the development of science and technology for protecting, and not simply exploiting, the environment are the primary means by which NEPA reconciles the goals of economic growth and environmental quality. They also provide the background against which one may consider the subsequent history of environmental legislation.

III. THE COUNCIL ON ENVIRONMENTAL QUALITY*

§ 10:65 In general

The Council on Environmental Quality (CEQ) is the federal agency charged with the tasks of advising the President on environmental matters and coordinating the federal government’s compliance with the National Environmental Policy Act

⁶Environmental Defense Fund, Inc. v. Corps of Eng’rs, 492 F.2d 1123, 4 Env’tl. L. Rep. (Env’tl. L. Inst.) 20329 (5th Cir. 1974).

⁷See § 10:58. We do not suggest, of course, that NEPA establishes a “right” to environmental quality.

⁸For a discussion of the efficiency of paying and not paying compensation under the Fifth Amendment, see B. Ackerman, *Private Property and the Constitution* chs. 2, 3 (1977).

*By **Mark S. Tawater**; updated by **Nicholas C. Yost**.

(NEPA).¹ Established in 1970 by Title II of NEPA, the Council was at first envisioned by some lawmakers to be the environmental ombudsman of the federal government, taking an activist role in pursuing better environmental policies and using its political leverage as part of the Executive Office of the President to cajole other federal agencies into accepting and implementing those policies. Others saw the new agency as capitalizing on its White House location to ensure that the President was presented with the environmental perspective on a full range of issues—necessarily a more discreet and less public, but potentially more influential, role.

Despite these high expectations and periods of activism, in recent years the Council has chosen instead to emphasize its advisory roles of reporting to the President on the state of the nation's environment and providing guidance and regulations for federal agency compliance with the environmental assessment and impact statement requirements of NEPA. On a small scale, the Council has also in recent years taken on the function of mediating certain interagency environmental disputes. But CEQ's role as mediator, like the other roles it has undertaken and continues to play, is largely reactive rather than proactive.

§ 10:66 CEQ structure

The Council as created by NEPA envisioned three council members who are appointed for indefinite terms by the President, with the advice and consent of the Senate.¹ All three council members are full-time employees of the agency. One council member is designated by the President as chairman,² and that individual serves as the chief coordinating officer of the council and as primary advisor to the President. Both Presidents Bush and President Clinton, however, have nominated only Chairs of CEQ and not other members. The Chair of CEQ³ also serves as Director of the Office of Environmental Quality (OEQ), which was established by companion legislation to NEPA for the purpose of providing staff assistance to the Council.⁴ Each President since George H.W. Bush has chosen to appoint a Chair only and has never appointed the other two members.

In addition to its Presidential appointee(s), CEQ, through its Office of Environmental Quality, employs a small staff of attorneys, economists, scientists, and policy analysts who carry on the day-to-day work of the agency. The height of CEQ's staff resources and activity occurred during its early years, in the Nixon and Ford Administrations, and then in the Carter Administration, when the agency enjoyed an annual operating budget of over \$3 million and employed a full-time staff of nearly fifty persons as well as detailees from other agencies, bringing its total staff to 70. During the Reagan Administration, CEQ's budget was cut so severely (to less

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¹National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (1970), codified as amended at 42 U.S.C.A. §§ 4321 to 4370 [hereinafter cited as NEPA].

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¹NEPA § 202, 42 U.S.C.A. § 4342.

²NEPA § 202, 42 U.S.C.A. § 4342.

³The first chairman, Russell Train, played a unique role in formulating federal policy when CEQ was still being organized and the major environmental statutes were being drafted; he later served as Administrator of EPA. The following is a roster of CEQ chairs since 1970 and their respective years of service: 1970-73—Russell Train; 1974-76—Russell Peterson; 1976-77—John Buserud; 1977-79—Charles Warren; 1980-81—Gustave Speth; 1981-1989—Alan Hill; 1989-93—Michael Deland; 1994-1998—Kathleen McGinty; 1998-2001—George Frampton; 2001-09—James Connaughton; 2009-present—Nancy Sutley. Encouragingly, Chairwoman Sutley is joined as CEQ Chief of Staff by Jon Carson, who was the National Field Director of the Obama campaign.

⁴The Environmental Quality Improvement Act of 1970, Pub. L. No. 91-224, 84 Stat. 114 (1970), codified as amended at 42 U.S.C.A. §§ 4371 to 4374.

than \$1 million for most years) that its staff dwindled to fewer than fifteen persons, making it one of the smallest federal agencies in existence.⁵

The total staff increased modestly in the first Bush and Clinton years and then diminished to fewer than 20 in the second Bush period. The Obama administration has again enlarged the staff.

§ 10:67 CEQ duties

CEQ's duties, as conferred by NEPA and several executive orders issued since its inception, are primarily advisory in nature. The Council not only advises the President on environmental issues of national concern, but also attempts through advice and recommendations to coordinate and assist federal agencies in meeting their obligations under NEPA.¹ The former role of preparing CEQ's annual environmental report was discontinued during the Clinton years.

§ 10:68 CEQ duties—Research and analytical duties

CEQ's research and analytical duties under NEPA include conducting special studies on the progress of NEPA compliance, on trends in environmental quality, and on specific environmental problems of concern to the nation.¹ However, Congress in cutting back on reports generally throughout the government has eliminated the requirement for CEQ's Annual Report.

CEQ's research efforts into specific environmental problems and trends have suffered from a lack of adequate funding and technical staffing, especially in recent years. In the 1970s, the most notable era for CEQ analytical activity, the Council employed a host of environmental professionals—ranging from lawyers, to economists, to scientists. During that time, CEQ's output of study material was substantial and of high quality. The agency, for example, played the leading role in the preparation of landmark studies entitled *The Global 2000 Report to the President* and *Global Future: Time to Act*.² But with severe budget cuts starting in 1981, the Council was forced to curtail substantially its volume of analytical activity and to contract out many of its remaining research projects to public and private consultants. During the subsequent administrations, the level of activity increased, but never to the bipartisan levels of the 1970s.

§ 10:69 CEQ duties—Coordinating federal agency compliance with NEPA

Apart from its analytical duties, the Council has also undertaken primary responsibility for coordinating federal agency compliance with NEPA. The statute's requirement that an environmental impact statement (EIS) be prepared for any ma-

⁵For fiscal year 1981, for example, CEQ's budget was cut from \$3.3 million to \$2.5 million and its forty-nine member staff cut to fifteen. Budget reductions then occurred in every subsequent fiscal year of the Reagan administration's first term. By fiscal year 1985, the CEQ budget stood at \$700,000, and the staff was down to thirteen persons; and throughout the Reagan administration's second term, the CEQ budget and staff resources continued to languish in neglect at approximately these levels.

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¹For a relatively recent evaluation of CEQ, see Boyd Gibbons, *CEQ Revisited: The Role of the Council on Environmental Quality* (1995). For a current set of recommendations by a gathering of many of those who have been active with CEQ over the years—including most of the former chairs—see "Facing the Future: Recommendations on the White House Council on Environmental Quality—A Report to the President-Elect" (Mt. Vernon, Virginia, Oct. 2008).

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¹See generally NEPA § 204, 42 U.S.C.A. § 4344.

²Council on Environmental Quality & Department of State, *The Global 2000 Report to the President* (1980) (Gerald O. Barney, Study Director); Council on Environmental Quality & Department of State, *Global Future: Time to Act* (1981) (Nicholas C. Yost, Study Director).

major federal government action significantly affecting the quality of the human environment¹ applies to all federal agencies. Therefore, the need exists for a federal body to guide, assist, and coordinate federal agencies in their preparation of environmental assessments and environmental impact statements in terms of both substance and consistency. The Council has attempted to play the role of coordinator, first through the adoption of regulations governing the content and preparation of environmental impact statements, and, second, by review of certain EISs and interagency disputes that may arise from them.

During only one administration did CEQ have a significant role in dealing with the Justice Department's handling of litigation under NEPA. Justice habitually sees its role as representing client agencies which are sued under NEPA, which places Justice in the position of universally assuming a defensive position against complaints that Federal agencies violated NEPA. The one exception was the Carter administration, where the Justice Department also recognized its client responsibilities to CEQ—the agency to which the Supreme Court says substantial deference is due on NEPA interpretation—by circulating all proposed NEPA pleadings for comment to CEQ as well as to the agencies that were sued.

§ 10:70 CEQ duties—Coordinating federal agency compliance with NEPA—CEQ regulations

The Council has adopted detailed regulations governing the decision on whether an agency must, in the first instance, prepare an environmental impact statement and then, if an EIS is deemed necessary, the steps required in actual preparation of the document.¹ The regulations also provide federal agencies guidance on the contents and scope of environmental impact statements, as well as guidance on the investigation and discussion of alternatives to a proposed federal action.

President Nixon in 1970 issued an executive order allowing the Council to adopt “guidelines” for the preparation of environmental impact statements.² CEQ published such guidelines in 1971 and 1973, although they never attained the status of formal regulations.

In 1977, President Carter modified the 1970 executive order, granting the Council full authority to issue regulations concerning the preparation of environmental impact statements.³ One year later, in 1978, CEQ promulgated regulations governing the EIS process. In 1979 the Supreme Court relied upon those regulations, characterizing them as “mandatory regulations applicable to all Federal agencies” and describing CEQ's role interpreting NEPA as “entitled to substantial deference.”⁴ These regulations have remained substantially unchanged over the years.

§ 10:71 CEQ duties—Coordinating federal agency compliance with NEPA—EIS reviews and environmental referrals

In its missions of monitoring and coordinating NEPA compliance, the Council pos-

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¹See NEPA § 102(2)(C), 42 U.S.C.A. § 4332(2)(C).

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¹See 43 Fed. Reg. 55998 (1978), codified at 40 C.F.R. § 1500.

²Exec. Order No. 11514, 35 Fed. Reg. 4247 (1970), *reprinted in* 42 U.S.C.A. § 4321 app. at 508–10 (1982) (as amended by Exec. Order No. 11991).

³Exec. Order No. 11991, 3 C.F.R. 123 (1978). *See generally* *Andrus v. Sierra Club*, 442 U.S. 347, 9 *Envtl. L. Rep. (Envtl. L. Inst.)* 20390 (1979) (relying on the CEQ NEPA regulations and describing the process of their adoption).

⁴*Andrus v. Sierra Club*, 442 U.S. 347, 357–358 (1979).

sesses the authority to review and comment on environmental impact statements.¹ Due to the large number of EISs prepared each year and the historic scarcity of staff resources at CEQ, however, the Council has not undertaken any systematic review of environmental impact statements over the years leaving that task to EPA, acting under its Clean Air Act § 309 authority. Instead, it has chosen to review only projects of national significance, and usually only when such projects have generated disagreements between federal agencies over their environmental impacts.

The process by which interagency disputes over the environmental impacts of proposed major federal actions are brought to the attention of CEQ is called the “referral” process. Although NEPA does not explicitly provide for referrals, CEQ’s dispute resolution responsibilities, including its referral activities, may be reasonably inferred from the statute’s mandate that CEQ oversee and coordinate major federal actions significantly affecting the environment. The referral process allows federal agencies to bring to the Council interagency disagreements concerning proposed major federal actions which may cause unsatisfactory environmental effects. CEQ often attempts to resolve the disputes through mediation, sometimes assisted by its own independent fact-finding efforts. CEQ normally issues findings and recommendations on referrals, but its recommendations, although they carry great weight, are not legally binding on the parties to a dispute.

There are two routes by which referrals come to CEQ. First, under Part 1504 of CEQ’s NEPA implementation regulations,² any federal agency or department may refer a proposed major federal action to CEQ within twenty-five days after a final environmental impact statement on the action has been made available to EPA, to commenting agencies, and to the public. A second referral route is provided by section 309 of the Clean Air Act.³ Under section 309, the EPA Administrator may refer to CEQ any proposed major federal action which he or she deems to be environmentally unsatisfactory.

Since the inception of the formal referral process under CEQ’s 1973 “interim guidelines,” the Council has received a small number of referrals of proposed federal actions, which has dwindled to none in the Obama administration. EPA has been the agency making the most referrals to CEQ. The fact that CEQ has received so few referrals is rather intriguing when one considers the vast number of federal and federally-assisted projects which are subject to the environmental impact statement requirements of NEPA.

There are probably two important reasons for the dearth of referral activity. First, since the beginning of the referral process, CEQ has discouraged the referral of interagency environmental disputes lacking elements of “national importance.” This national importance standard is established in CEQ regulations as one of the basic criteria for determining the propriety of Council intervention.⁴ The rationale for this important limitation on CEQ jurisdiction appears to be a combination of limited Council resources and the fact that NEPA’s apparent charge for CEQ is to address environmental concerns which are national in scope, rather than to pass judgment on highly politicized or purely local impacts of federal actions.

Another, and perhaps more important, reason for the small number of CEQ referrals is that the mere existence of the referral process and the threat of its use prompt agencies to seek early and informal resolutions of environmental disputes with would-be referring agencies. The existence of the referral process may also

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¹NEPA § 102(2)(c), 42 U.S.C.A. § 4332(2)(C).

²43 Fed. Reg. 55998 (1978), codified at 40 C.F.R. pt. 1504.

³42 U.S.C.A. § 7609.

⁴See 43 Fed. Reg. 55998 (1978), codified at 40 C.F.R. §§ 1504.3(c)(2)(iv), 1504.3(f)(4).

force federal agencies to more fully consider the environmental consequences of their actions and the objections of their sister agencies, to make accommodations when possible, and even to adopt less environmentally intrusive alternatives.⁵

⁵For an evaluation of the effectiveness of the referral process as a mechanism for dispute resolution and for meeting the objectives of NEPA, *see* S. Rand & M. Tawater, *Environmental Referrals and The Council on Environmental Quality* (1986).