MINNESOTA POLLUTION CONTROL AGENCY

Quality Control Checks in WISKI

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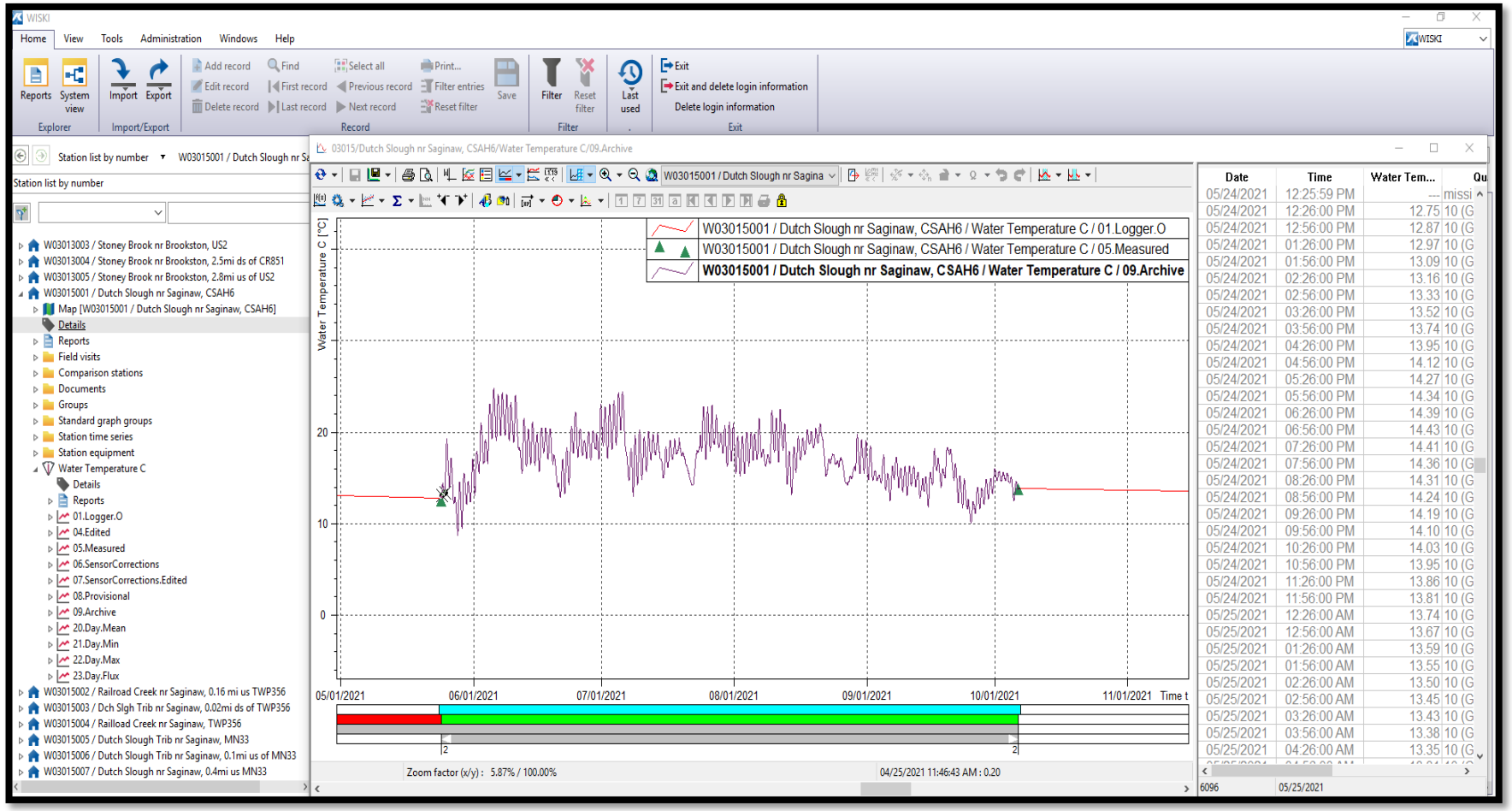
What is WISKI?

- **W**ater **I**nformation **S**ystem from **KI**STERS
- Time series database to store, analyze, and share environmental data
- Shared database with Pollution Control Agency, Department of Natural Resources, and Department of Agriculture



Water Monitoring Data Types

Types of Data Stored in WISKI

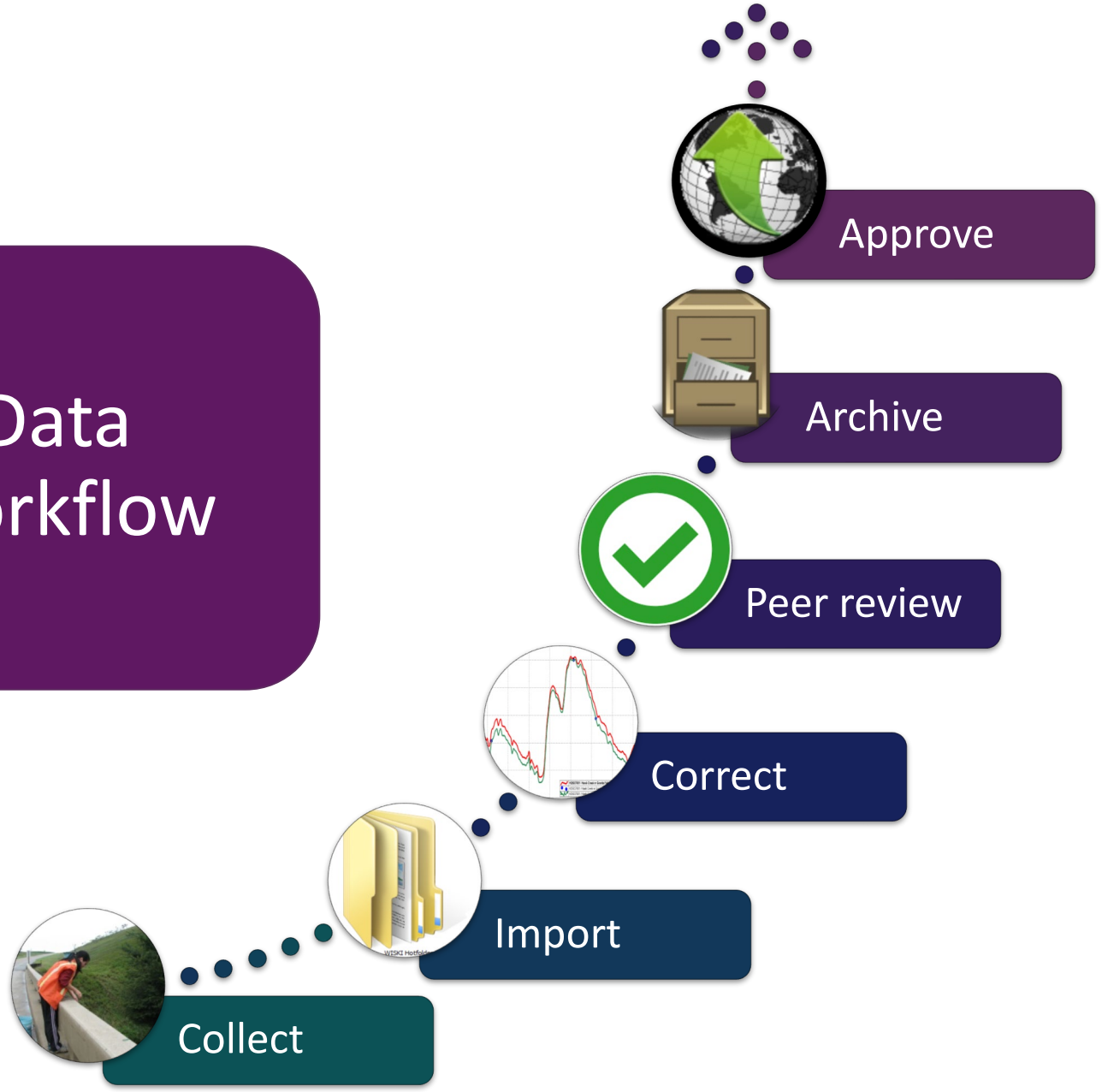
- ACIS
- Mesonet stations
- Basin
- Wetland
- Edge of field
- Groundwater
- Spring
- Surface water: rivers, streams, tributaries

Water Monitoring Parameters

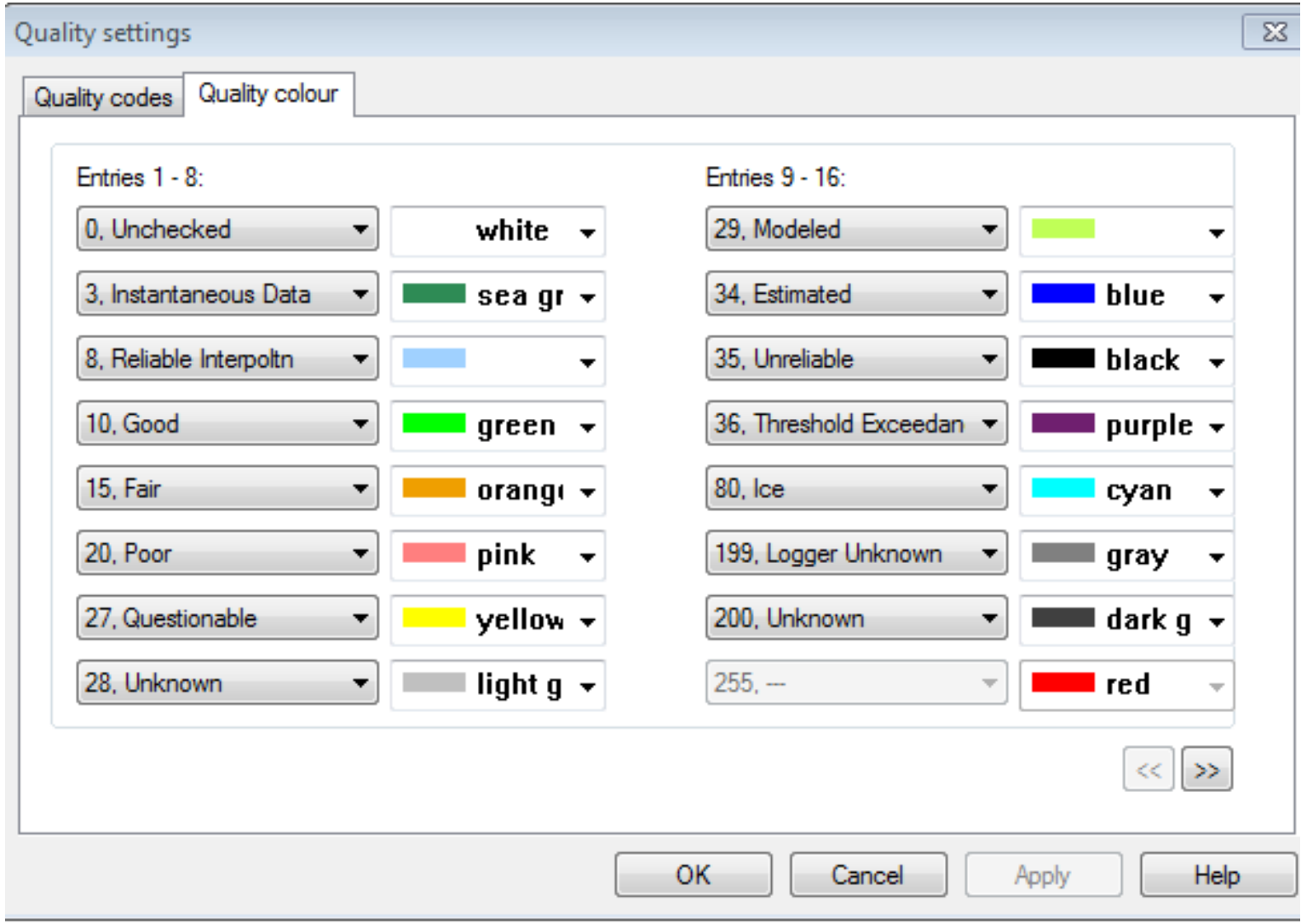
- Precipitation
- Level
- Discharge
  - Load
- Water quality
  - Dissolved oxygen
  - pH
  - Specific conductance
  - Water temperature
  - Nitrate
  - Turbidity

7430 Total stations in our database

Data Workflow



Quality Codes



Quality code threshold examples

Temperature (°C)

Table 18: Water temperature quality coding thresholds

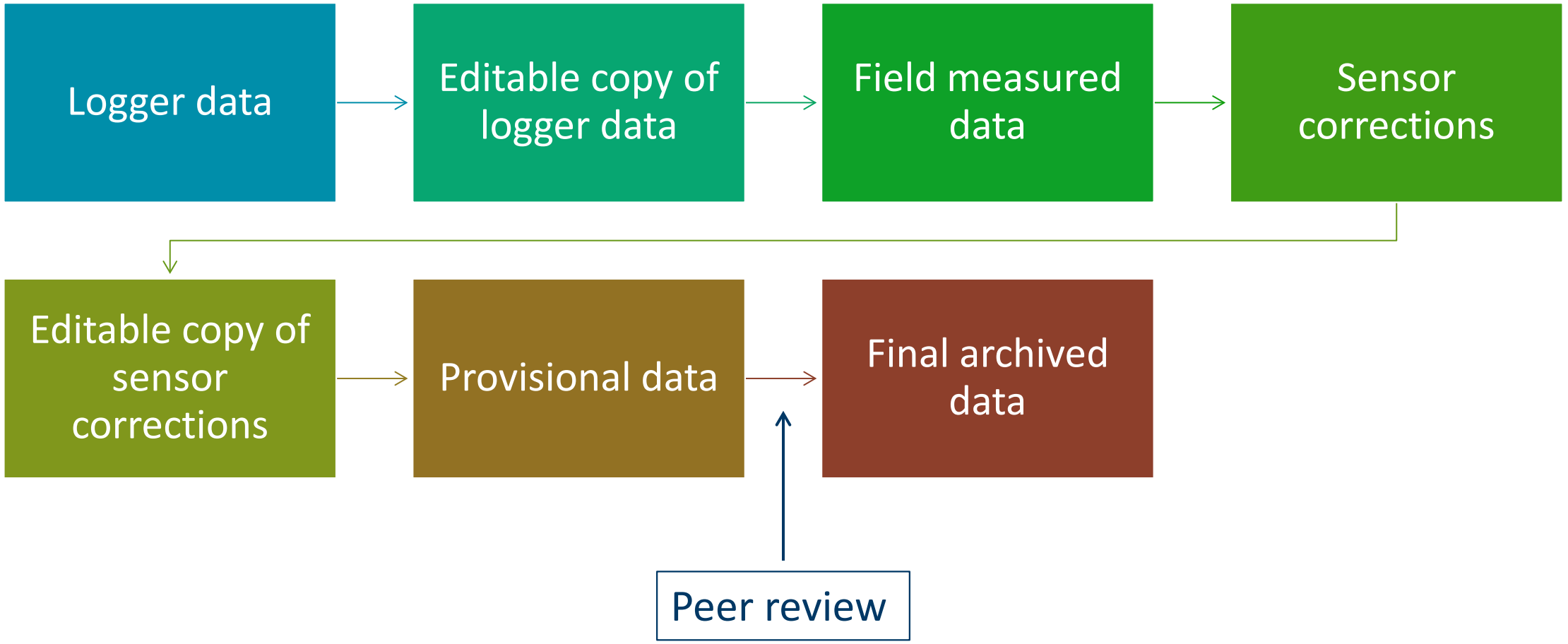
Difference from NIST traceable thermometer/thermistor	Quality Code	Sensor corrections
≤0.5	10 (Good)	Set sensor correction value to zero
>0.5 to ≤0.8	15 (Fair)	
>0.8 to ≤2	20 (Poor)	
>2	NA	Delete values

Dissolved Oxygen (mg/L)

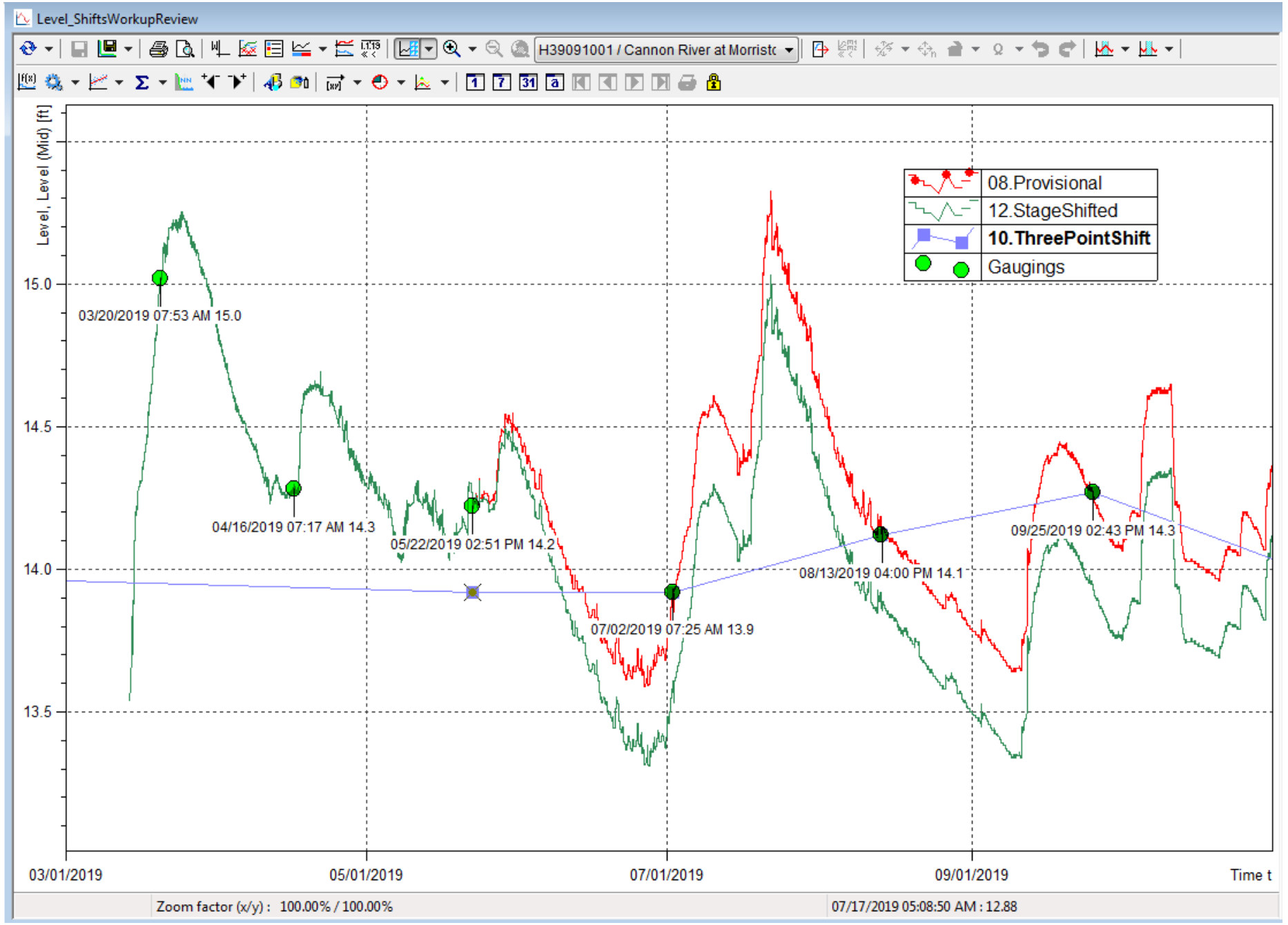
Table 19: Dissolved oxygen quality coding thresholds

Difference from calibrated secondary sonde	Quality Code	Sensor corrections
≤0.5	10 (Good)	Set sensor correction value to zero
>0.5 to ≤2	20 (Poor)	Sensor correction is the calculated difference from calibrated secondary sonde
>2	NA	Delete values

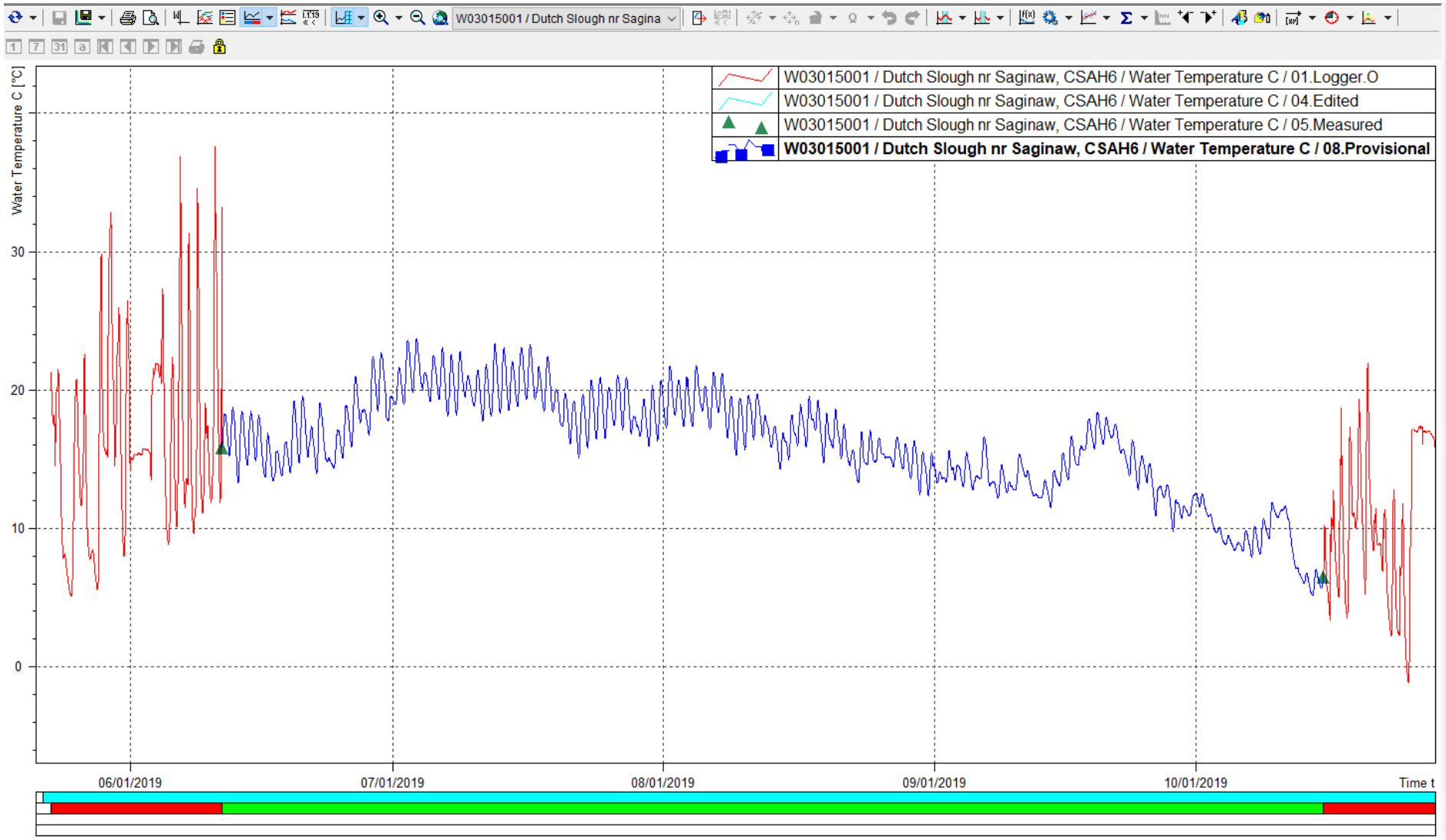
Time series work up data flow



Data visualization, workup, and analysis



Water temperature data correction



Date	Time	Water Tem...	Quality	In
05/22/2019	08:58:00 PM	---	missing, calc	
06/11/2019	11:28:00 AM	---	missing, calc	
06/11/2019	11:58:00 AM	15.89	10 (Good), calc	
06/11/2019	12:28:00 PM	16.23	10 (Good), calc	
06/11/2019	12:58:00 PM	16.53	10 (Good), calc	
06/11/2019	01:28:00 PM	16.77	10 (Good), calc	
06/11/2019	01:58:00 PM	17.03	10 (Good), calc	
06/11/2019	02:28:00 PM	17.27	10 (Good), calc	
06/11/2019	02:58:00 PM	17.49	10 (Good), calc	
06/11/2019	03:28:00 PM	17.77	10 (Good), calc	
06/11/2019	03:58:00 PM	18.01	10 (Good), calc	
06/11/2019	04:28:00 PM	18.20	10 (Good), calc	
06/11/2019	04:58:00 PM	18.27	10 (Good), calc	
06/11/2019	05:28:00 PM	18.25	10 (Good), calc	
06/11/2019	05:58:00 PM	18.20	10 (Good), calc	
06/11/2019	06:28:00 PM	18.20	10 (Good), calc	
06/11/2019	06:58:00 PM	18.25	10 (Good), calc	
06/11/2019	07:28:00 PM	18.25	10 (Good), calc	
06/11/2019	07:58:00 PM	18.25	10 (Good), calc	
06/11/2019	08:28:00 PM	18.20	10 (Good), calc	
06/11/2019	08:58:00 PM	18.11	10 (Good), calc	
06/11/2019	09:28:00 PM	17.99	10 (Good), calc	
06/11/2019	09:58:00 PM	17.87	10 (Good), calc	
06/11/2019	10:28:00 PM	17.75	10 (Good), calc	
06/11/2019	10:58:00 PM	17.63	10 (Good), calc	
06/11/2019	11:28:00 PM	17.46	10 (Good), calc	
06/11/2019	11:58:00 PM	17.30	10 (Good), calc	
06/12/2019	12:28:00 AM	17.13	10 (Good), calc	
06/12/2019	12:58:00 AM	16.96	10 (Good), calc	
06/12/2019	01:28:00 AM	16.82	10 (Good), calc	
06/12/2019	01:58:00 AM	16.65	10 (Good), calc	
06/12/2019	02:28:00 AM	16.51	10 (Good), calc	
06/12/2019	02:58:00 AM	16.34	10 (Good), calc	
06/12/2019	03:28:00 AM	16.20	10 (Good), calc	
06/12/2019	03:58:00 AM	16.03	10 (Good), calc	
06/12/2019	04:28:00 AM	15.84	10 (Good), calc	
06/12/2019	04:58:00 AM	15.68	10 (Good), calc	

Information:

Load range: 01/01/2019 12:00 AM - 05/15/2025 11:59 PM

Maximum: 24.80 (06/05/2021 05:26 PM)

Mean value (time weighted): 16.44

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Review data work and finalize data

AGENCY LOGO HERE

Thank you!

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