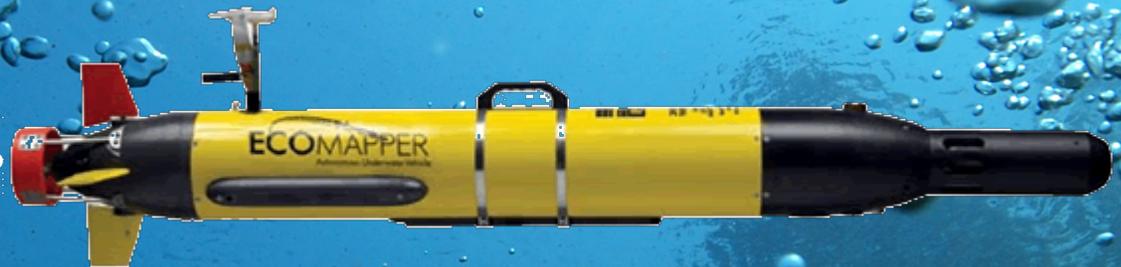


# Sensors & Other Activities of the Methods Board



Dan Sullivan, USGS

Gayle Rominger, YSI, Inc.



# Board Activities

- Sensors subcommittees
  - QA Initiative – “Vital Signs” sensors
    - Review Board
  - Technology subcommittee
  
- Statistics workgroup (coll. w/ WIS)

# Sensors Background/Gap Analysis

- Well documented info on lab methods & lab QA
- Fast-growing use of field continuous monitoring equipment
- Current need for robust QA/SOPs for field work

# Genesis of Sensors Workgroup

- One of 4 areas of interest the Board put forward prior to Atlantic City NWQM Conference, 4/08
- Intense interest from government AND private sector (manufacturers)
- First meeting in Atlantic City
- Monthly phone conferences
- Last meeting in Chicago, April, 2009

# Objectives

- Formed to address issues of data quality and comparability in re: field sensors/real-time data
- Focus on providing tools to field personnel

# Membership

- Core Working group
  - Federal agencies, State agency, Consultant and Private industry\*
- Review Board
  - Federal agencies, State agencies and Academia

\* Four major suppliers of field sensors

# Phase I: QA Initiative

## ➤ Products:

- QA matrix
- Field deployment guide
- Data elements
- Glossary

# QA Matrix

- DO, pH, SC, Temp, Turbidity, ORP & depth (*“Vital Signs”*)
- Organized by sensor type
- “ACRR” – actions to **affect** (calibrate, clean probe, etc.), **check** (prec & bias), **record** and **report**

# Product example: QA matrix

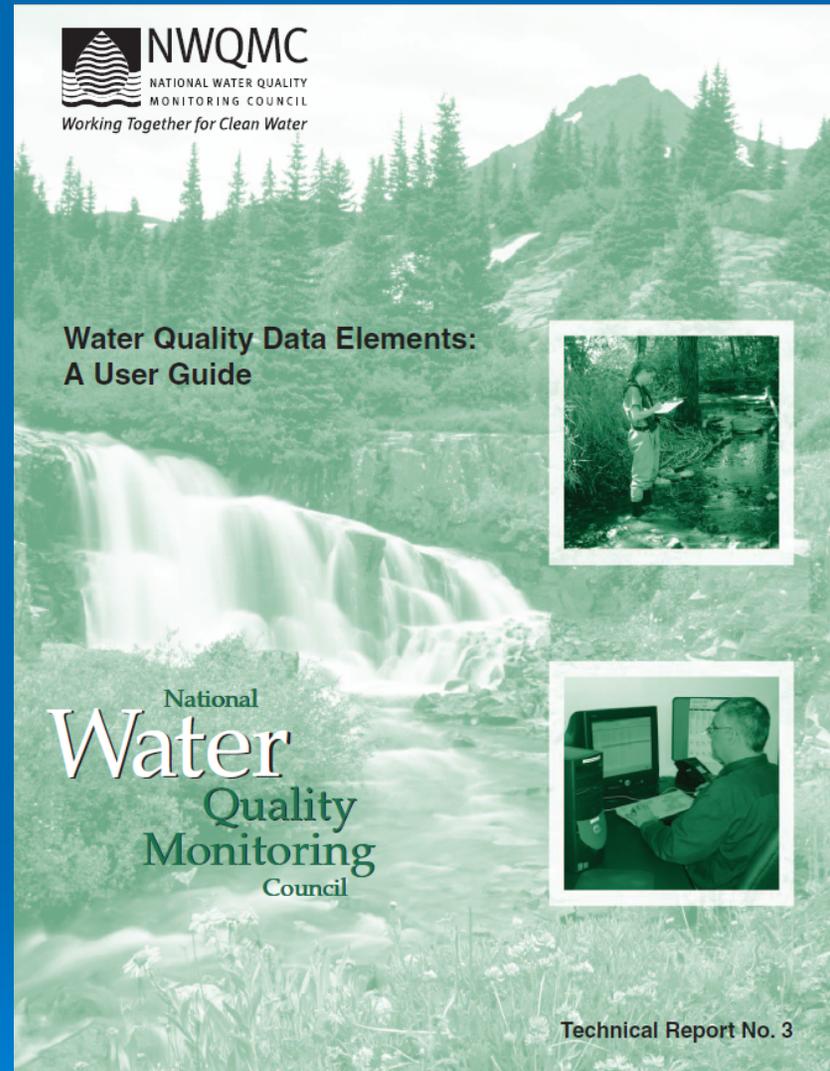
Parm	Type	DQ Aspect	Mode	Affect	Check	Record	Report
D.O.	Clark Electrode	Bias	Attended	Calibrate*	Conduct bias check	Instrument reading and "true" value (standard)	% difference from true value

# Field deployment guide

- Field guide w/ refs to more detail
- Micro site selection, not study design
- Lakes/ponds; rivers/streams; estuaries/bays/coastal
- Continuous monitoring & episodic

# Data elements

- Update to 2005 User Guide
- Not a database schema, but contains components



# Timeline: Field QA Initiative

March 2009	April 2009	Aug. 2009	Dec. 2009	April 2010
Glossary to Review Board				
Matrix 1 <sup>st</sup> draft: Temp & S.C.				
Matrix, field guide, and data elements draft				
Approved and ready for publishing/distribution				
Workshop and presentations at 2010 National Monitoring Conference				

# Success Measures

- User Adaption—field personnel use the tools and report data per the guidelines
- Collaboration—groups share data without compromising quality
- Higher Resolution Sensing Networks—all data collected in an area is shared and archived.

# Technology subcommittee

## ➤ Sensors subcommittees

- Up to 6 additional sensors: nutrients, chlorophyll, telemetry, velocity/discharge
- Recommendations for NMN
- ACT/NEMI Coordination

## ➤ Statistics workgroup (coll. w/ WIS)

# Technology subcommittee

- Potential “next batch” of sensors include
  - Chlorophyll
  - Nitrate
  - Phosphate/phosphorus
  - pCO<sub>2</sub>
  - Wet chem. analyzers?
  - PAR
- Other
  - Recommend sensors for Network
  - ACT/NEMI collaboration

# Related activities

- Value Engineering Study
  - USGS, YSI, In-Situ
- NWIS/WQX Web services
- Alliance for Coastal Technologies



Questions?