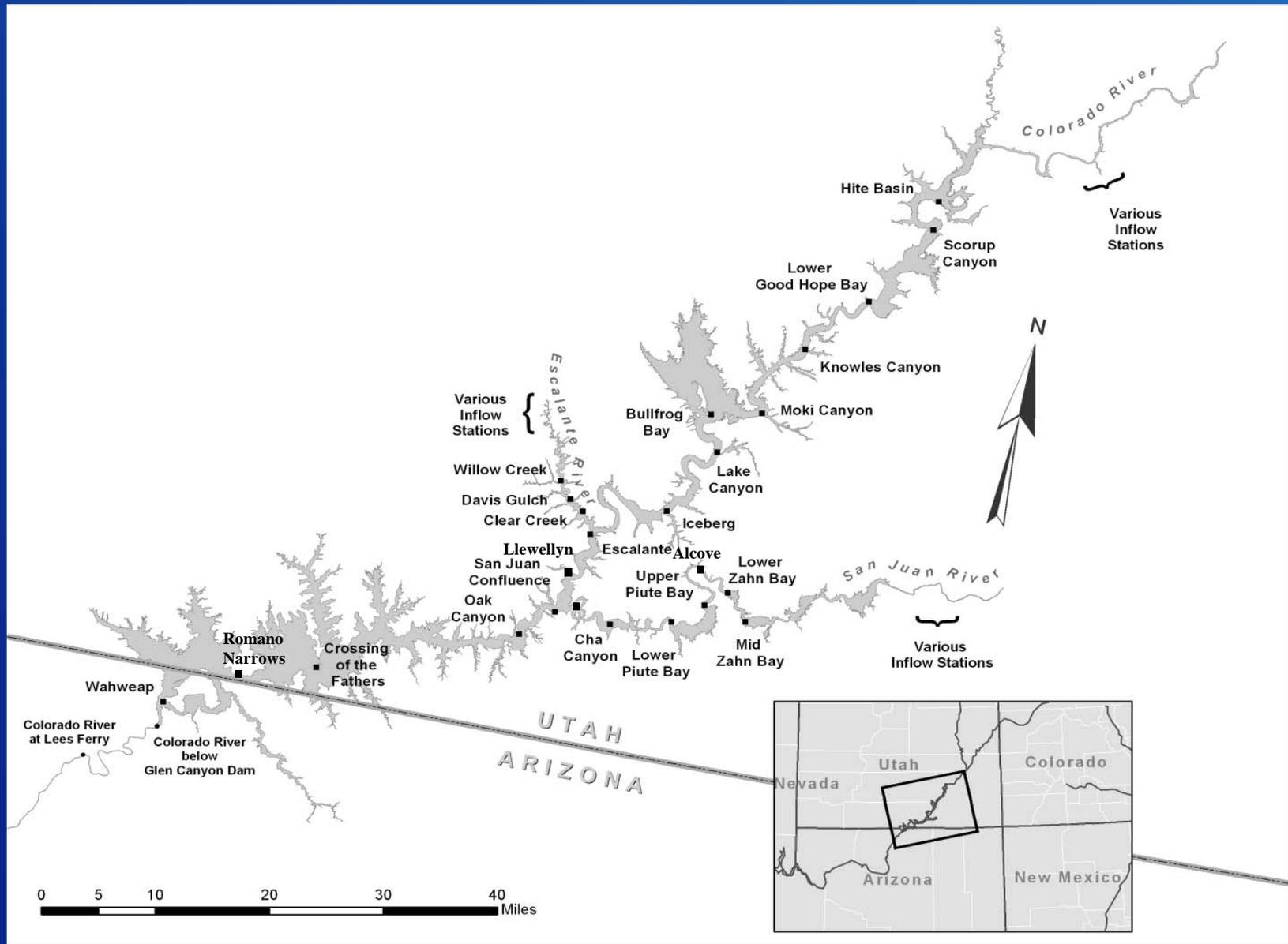




**Lake Powell Water Quality  
Sampling Program**

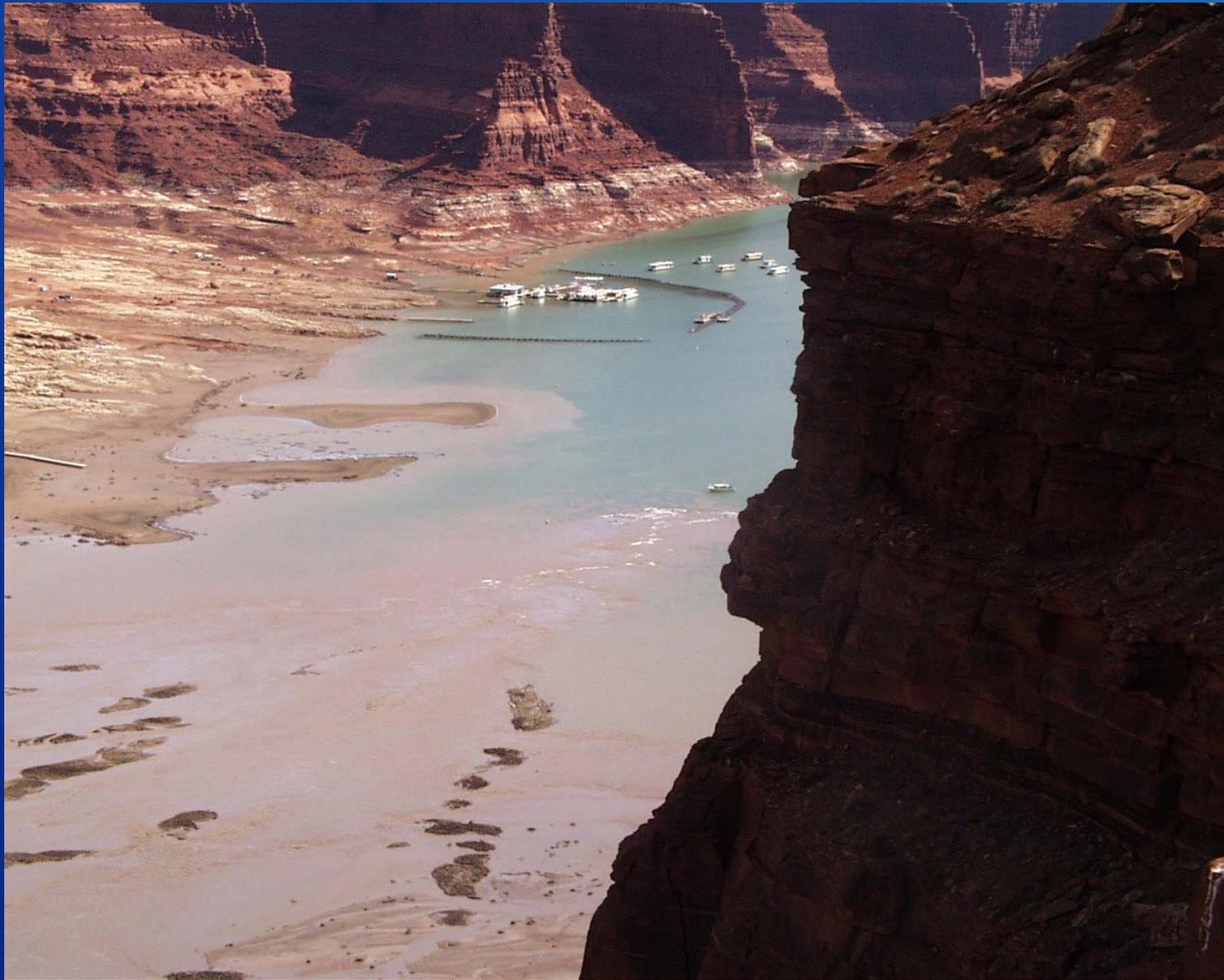
**RECLAMATION**



# RECLAMATION



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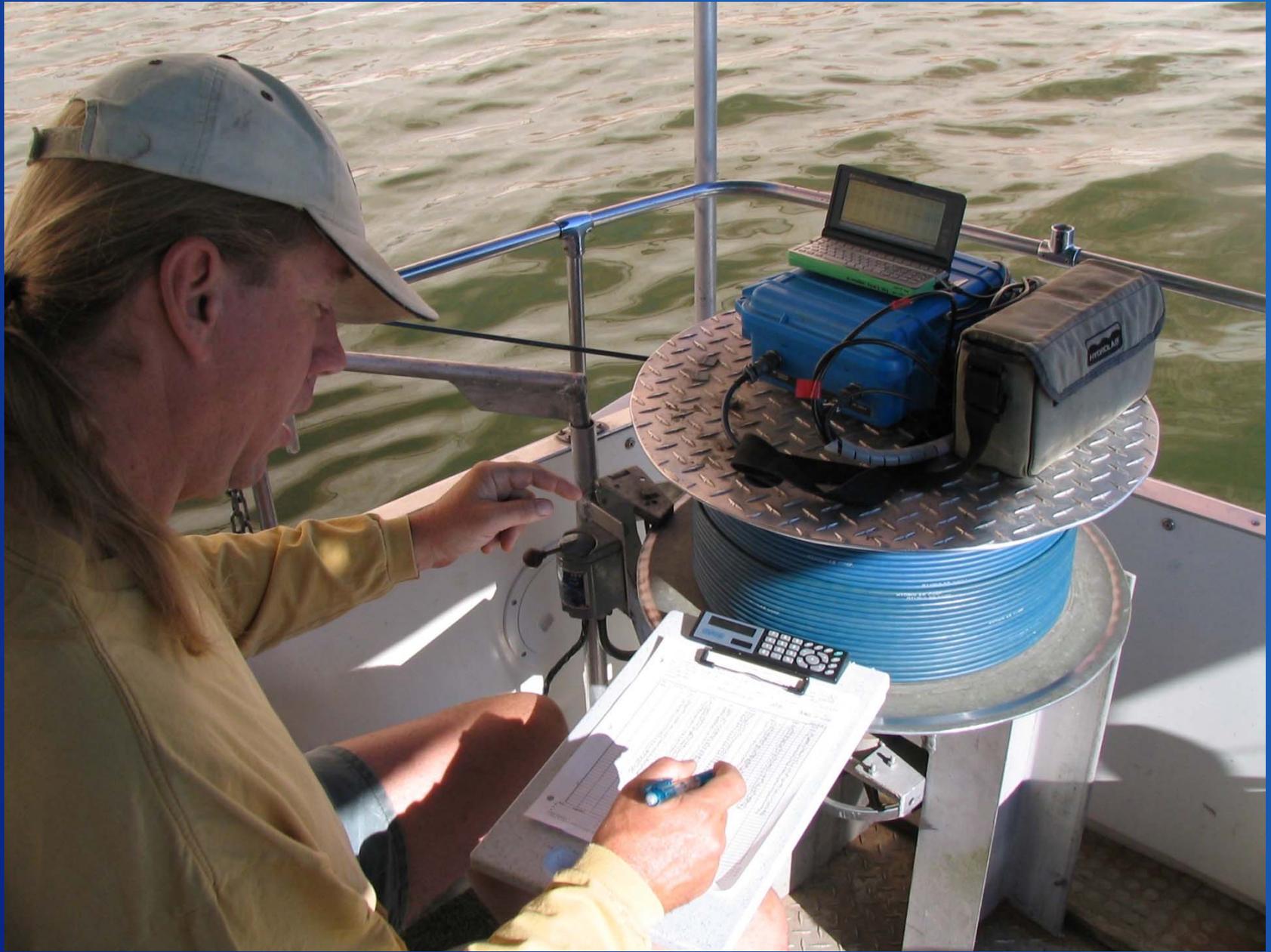
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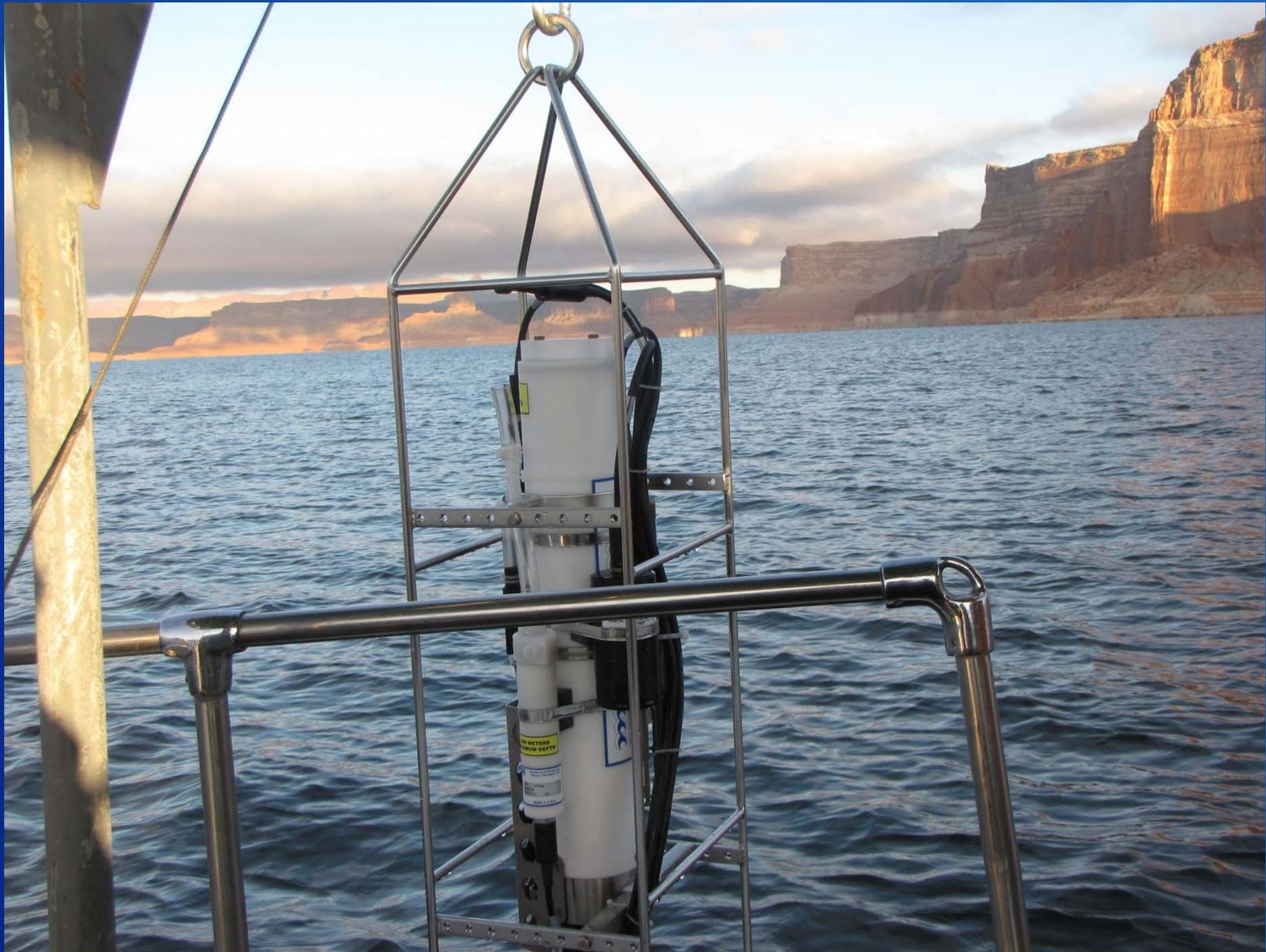
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# Instrument Sensors

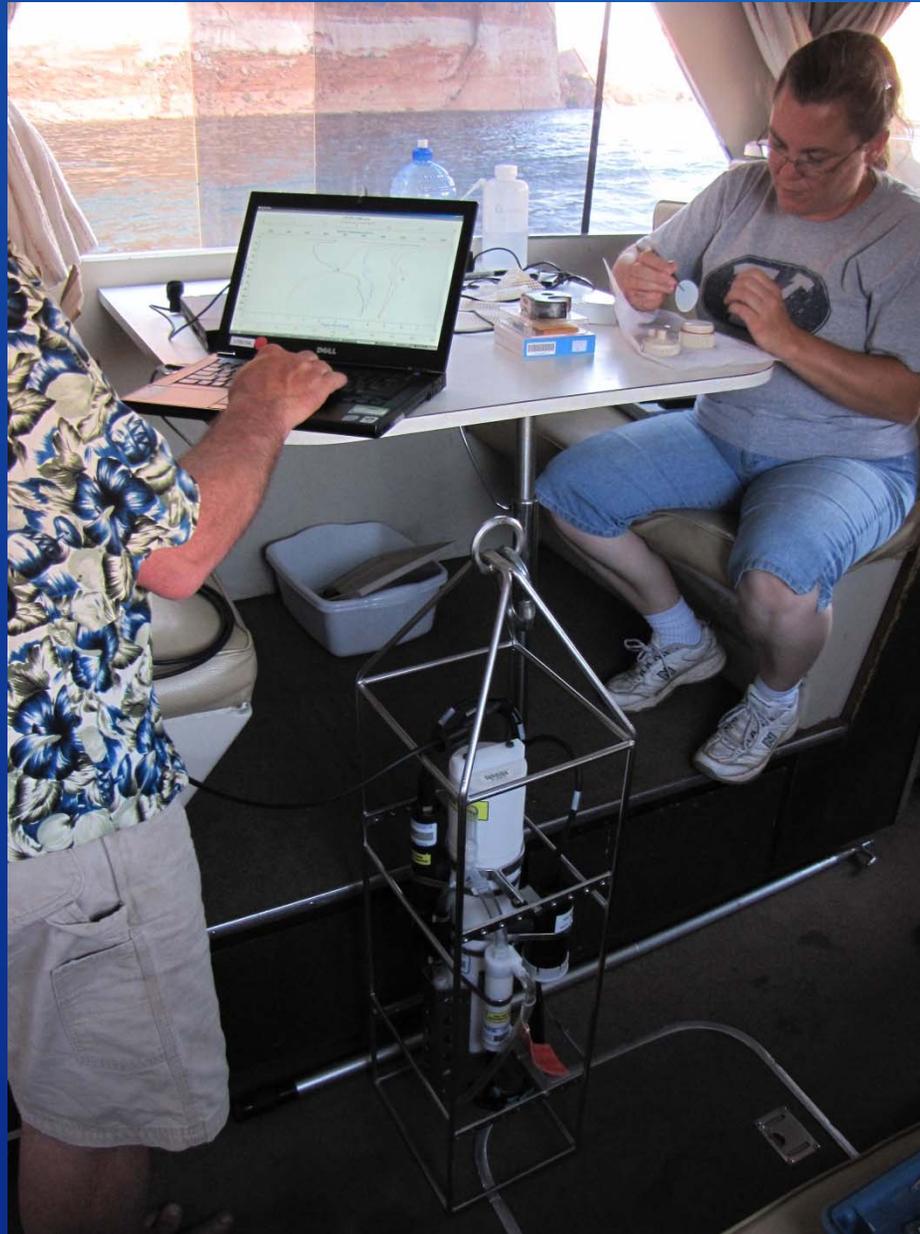


- Temperature
- Dissolved Oxygen
- pH
- Conductivity
- Turbidity
- Chlorophyll a
- Depth
- Redox

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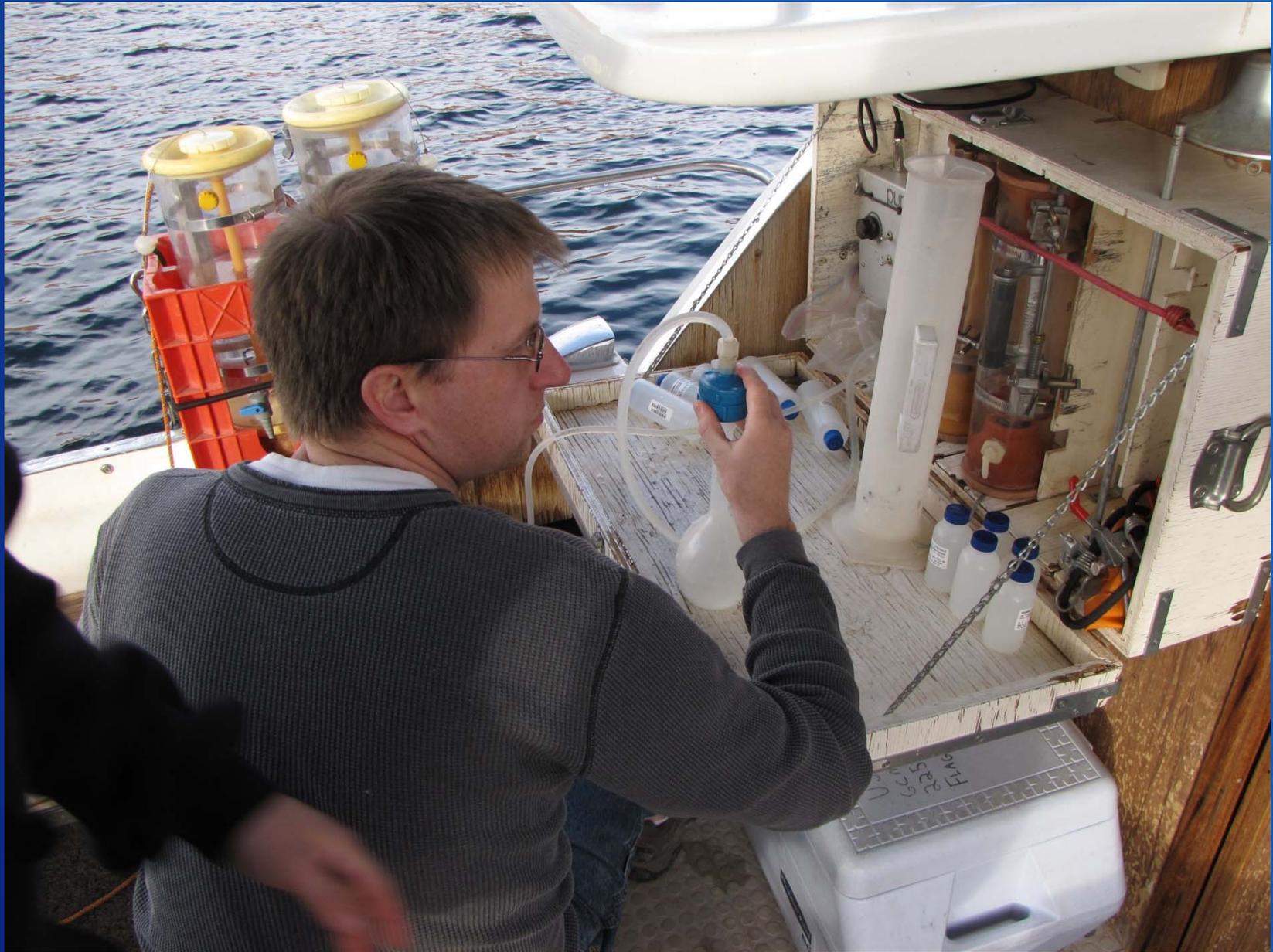
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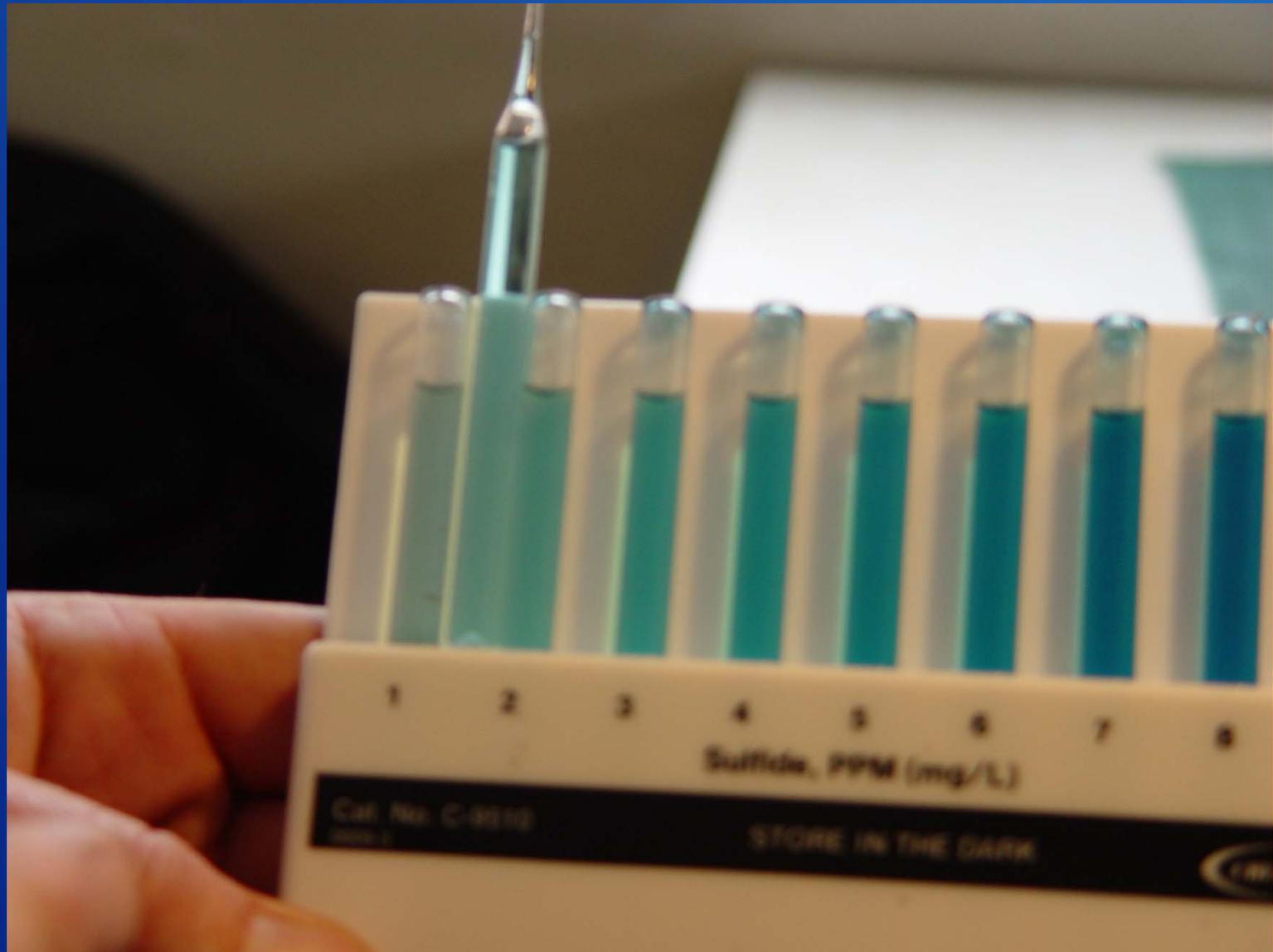
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# Lab Water Quality Analyses



- TDS / TSS
  - ROE & SOC
- Major ions
- pH
- Conductivity
- Chlorophyll
- Alkalinity
- Nutrients
  - P and N
- DOC/TOC
- Plankton
  - Phyto and Zoo
- Metals / ICP Scan

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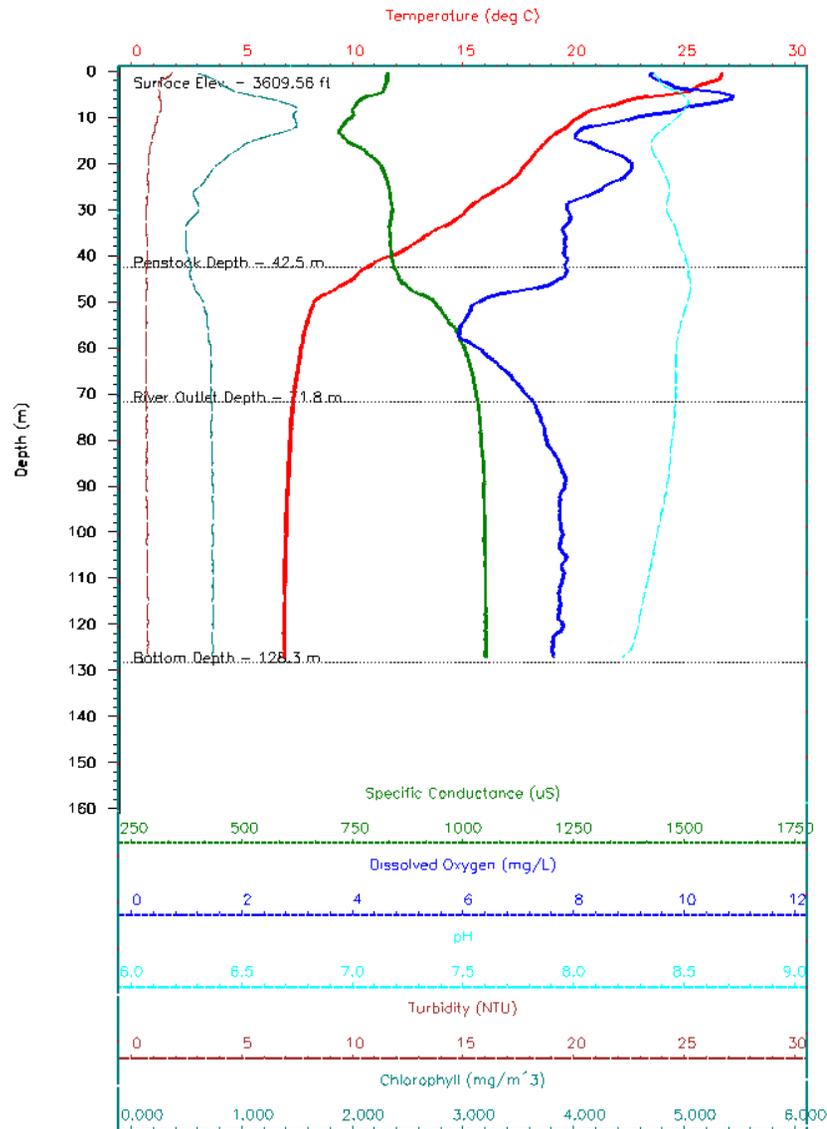
# Other Data Collected at Station



- Secchi disk depth
- Meteorological info
- Station Depth
- Wave height / wind
- Surface elevation

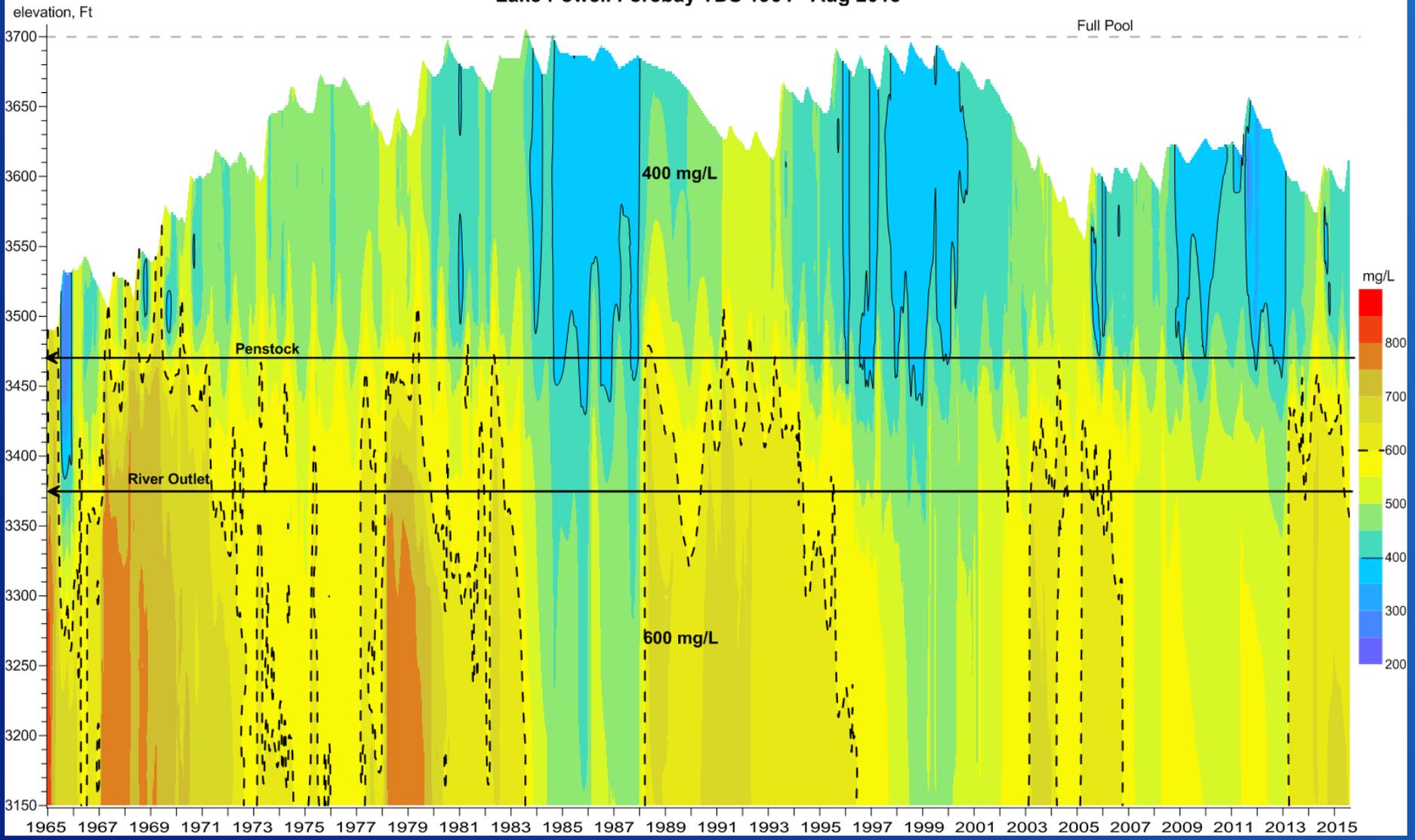
RECLAMATION

Wahweap – LPCR0024  
July 15, 2014



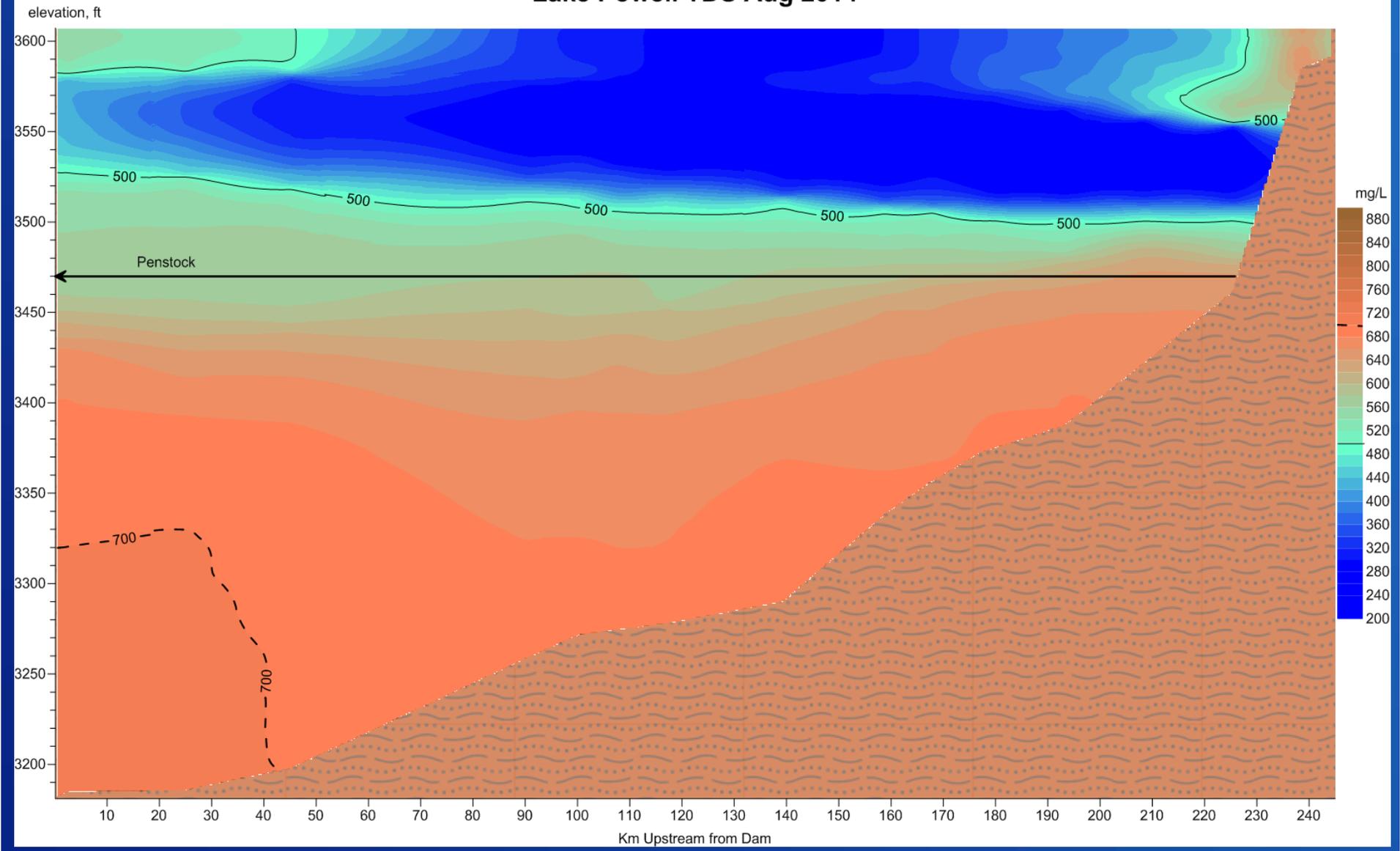
RECLAMATION

# Lake Powell Forebay TDS 1964 - Aug 2015



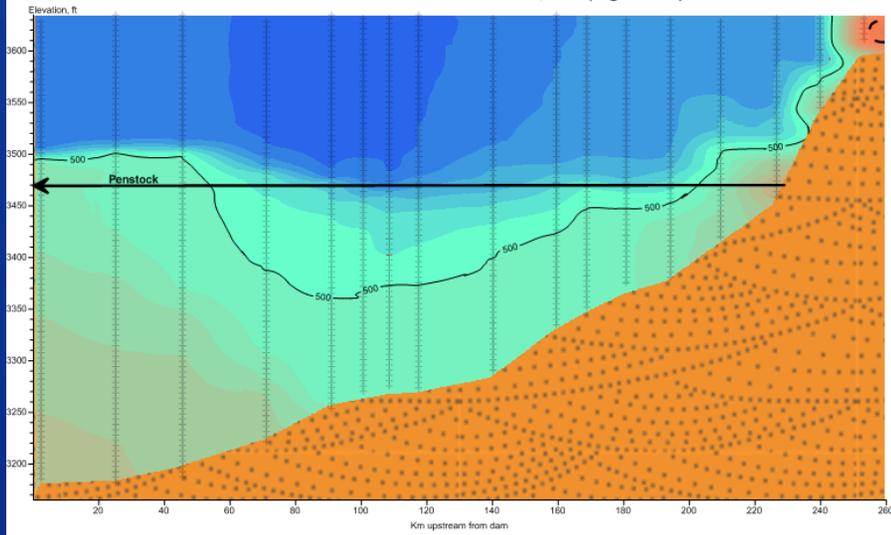
# RECLAMATION

# Lake Powell TDS Aug 2014

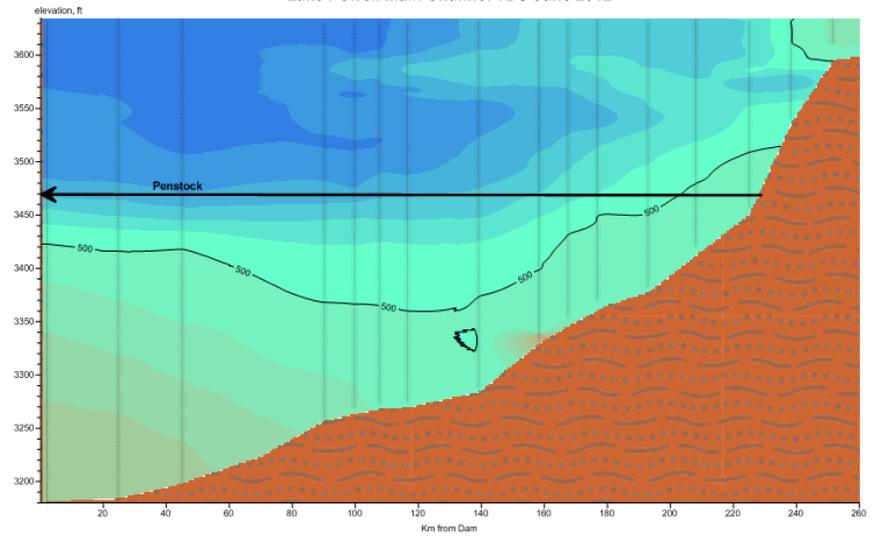


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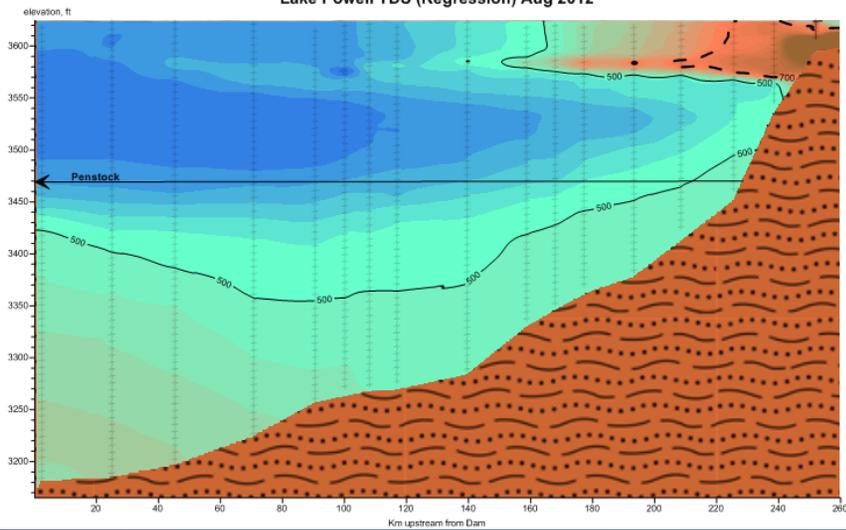
Lake Powell Main Channel March 2012, TDS (regression)



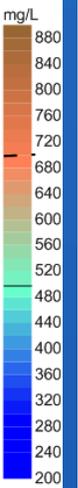
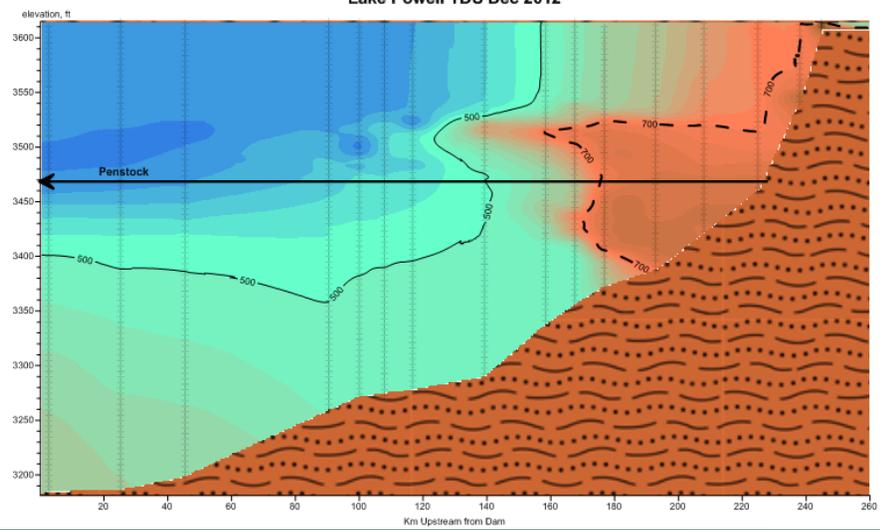
Lake Powell Main Channel TDS June 2012



Lake Powell TDS (Regression) Aug 2012

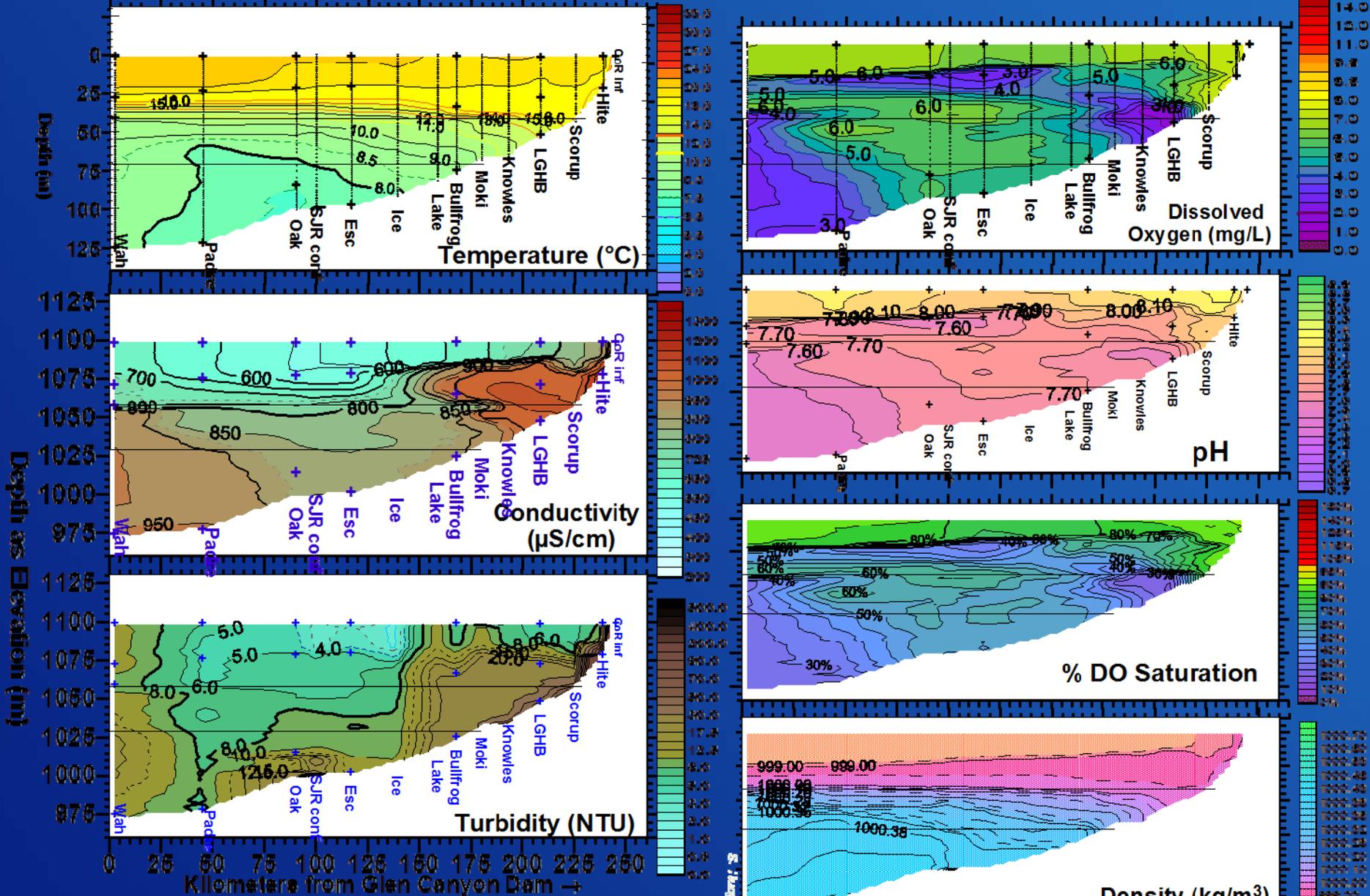


Lake Powell TDS Dec 2012



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# Main Channel of Lake Powell, October 13-17, 2006



Temperature (°C), conductivity (µS/cm), turbidity (NTU), dissolved oxygen (mg/L), pH, and dissolved oxygen saturation (%) and density (kg/m³) collected in the main channel of Lake Powell, October 13-17, 2006. Horizontal elevation is at 1067.7 m (+2 m), elevations at 1025.4 m. Elevation elevations averaged 1075.5 m / 1000.0 ft above sea level. Profile elevations are indicated by points in the temperature plot. Photo by Scott A. Smith



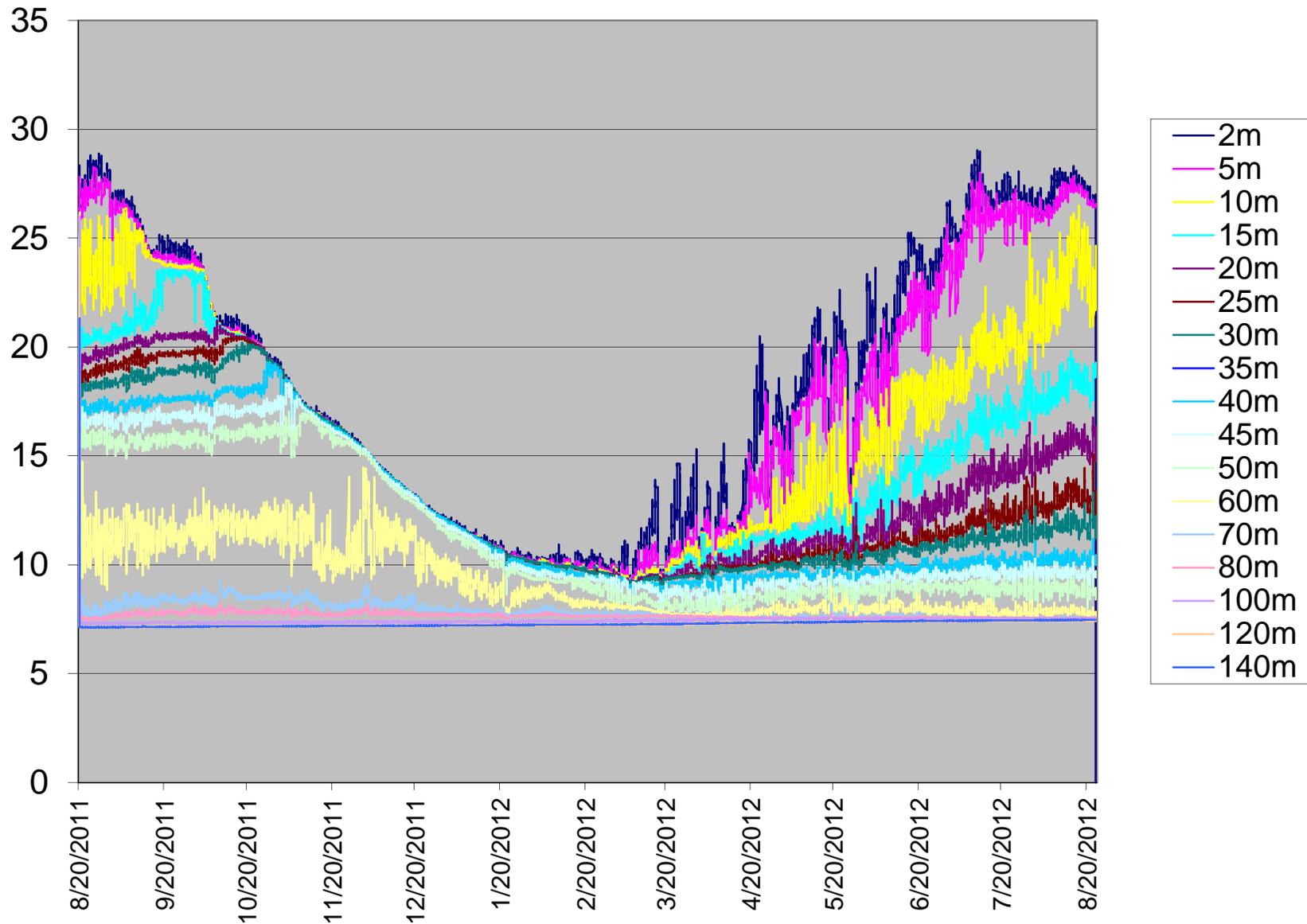


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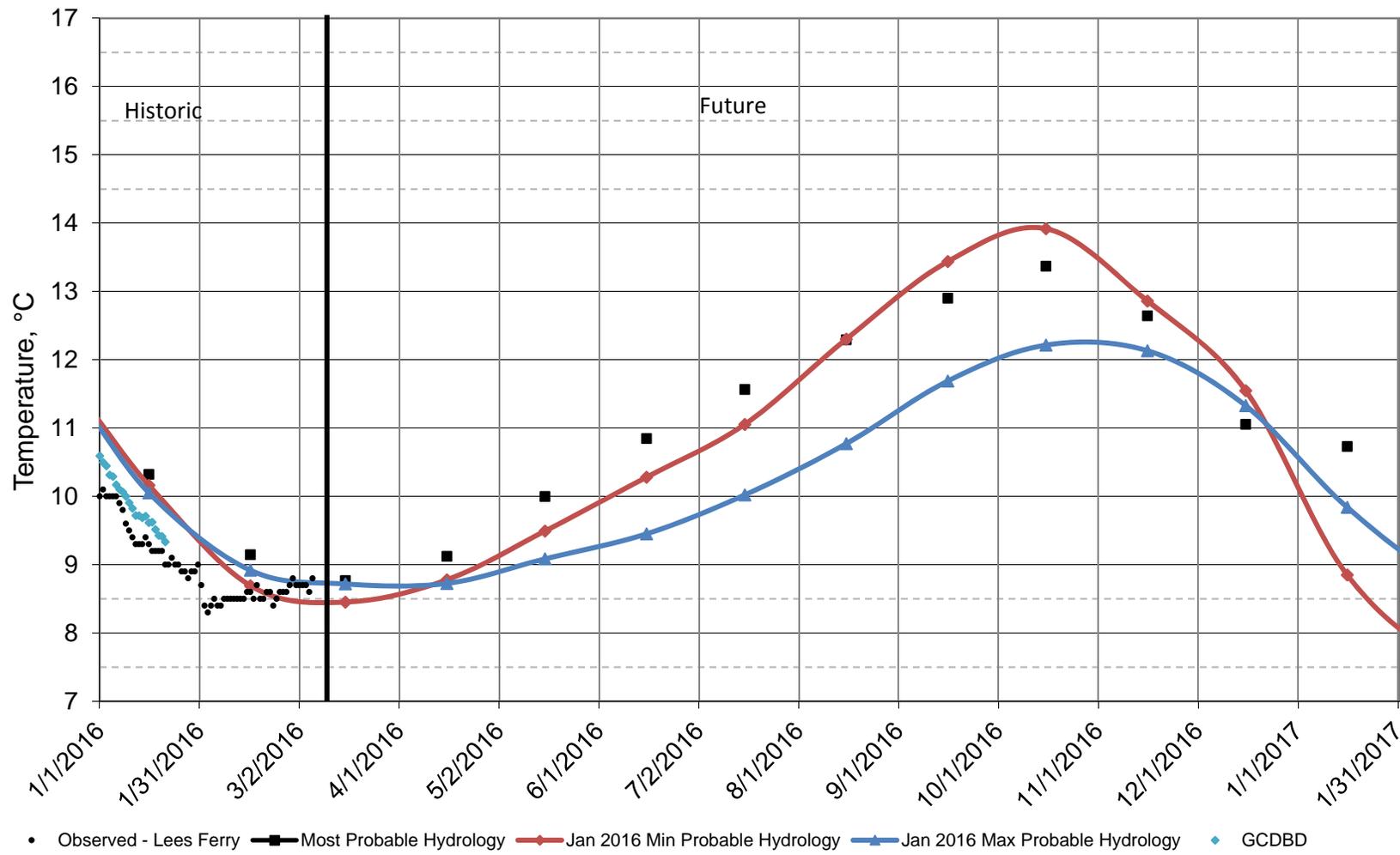
RECLAMATION

## Temperature in Dam Forebay over Time



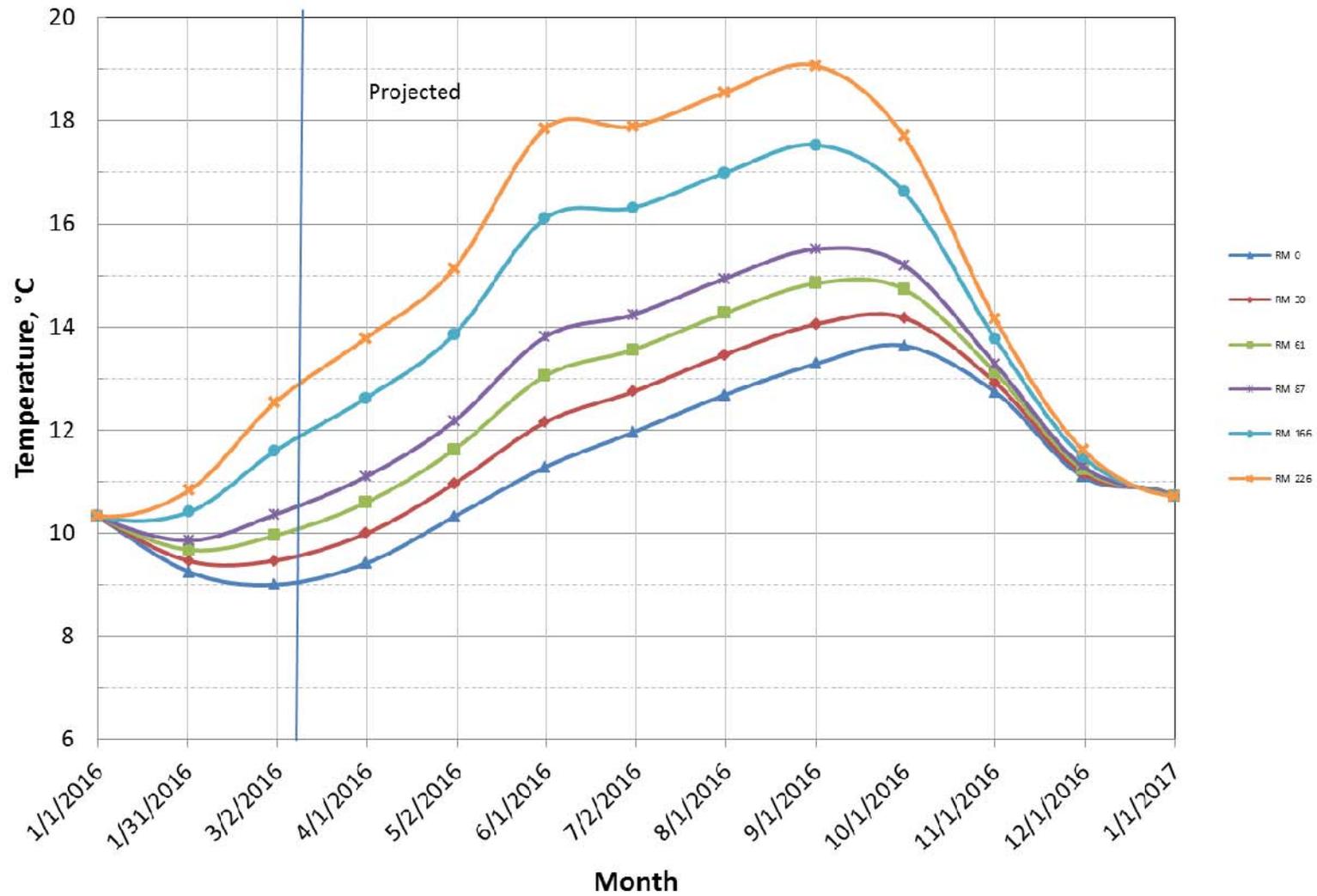
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## Lake Powell Release Temperature 2016 Projected Temperature based on March 2016 Forecast



#Projection start date is based on initial conditions (May 2015)

## Colorado River, Grand Canyon Water Temperatures Projections based on March 2016, Most Probable Hydrology



# RECLAMATION

# Changes in WQ sampling:

- Radionuclide samples were taken for MWD, but this was discontinued as no critical levels were found over time.
- Samples for general metal analysis (ICP Scan) has been provided for the State of UT, recently due to results of no critical levels and budget issues the metal sampling has been reduced to once a year.
- Changes in instrumentation over time.
- Changes in sampling interval over time.

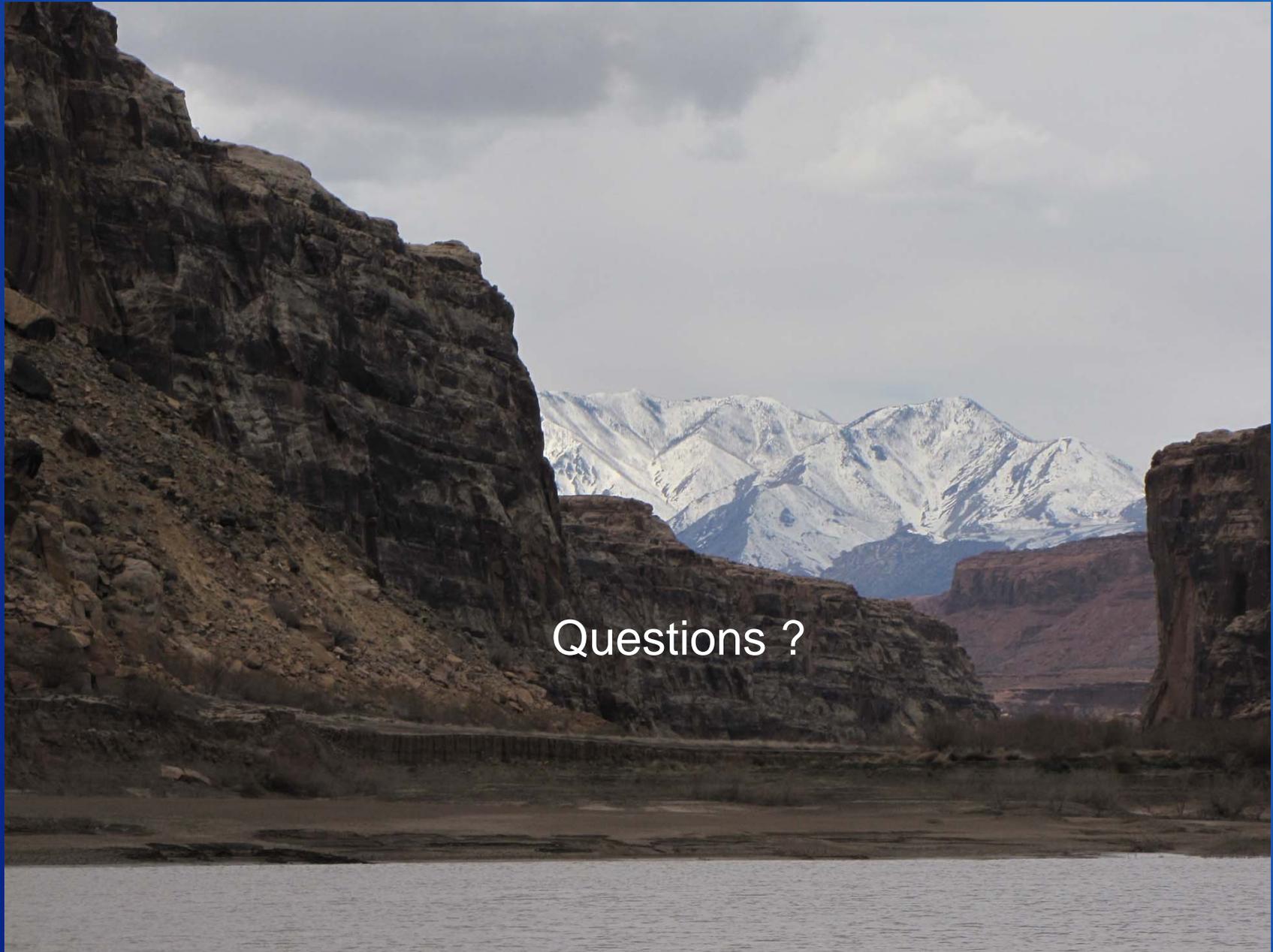
RECLAMATION

# Past Unique Lake Powell Water Quality Sampling Projects

- Hydrocarbon levels
- Mercury levels in water, sediment and fish tissue
- Selenium loading
- Sediment chemistry of the Colorado R delta
- Gold King mine spill metal analysis, water & sediment



RECLAMATION



Questions ?

RECLAMATION