

# \* AWQMS:

## Data Extraction, Utilization, and Assessment

Session C5: Data Soup: Recipes & Secret Spices

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11th NATIONAL MONITORING CONFERENCE



Working Together for Clean Water

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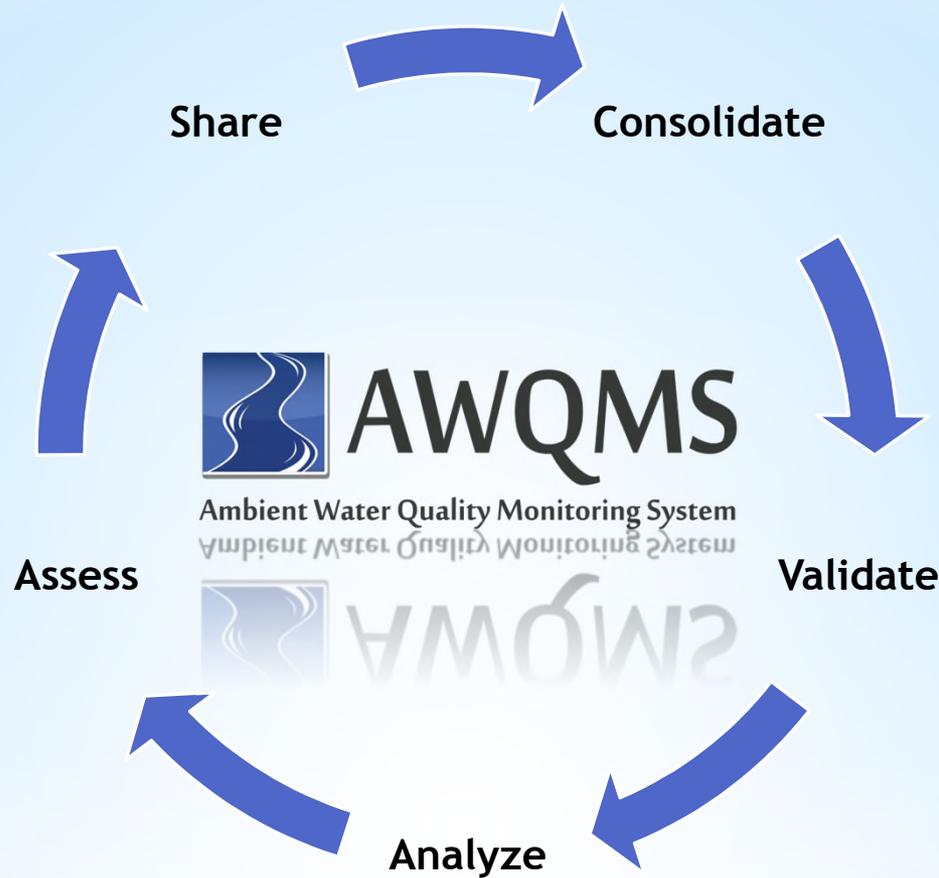


NWQMC

- \* OKWRB's implementation of AWQMS
- \* Using Water Quality Portal data within AWQMS
- \* Challenges encountered while using multi-agency data
- \* Solutions and demonstrations

**\* An innovative approach for using Water Quality Portal data**

**\*OKWRB's  
implementation of the  
Ambient Water Quality  
Monitoring System  
(AWQMS)**



\* A web-based water quality sample and observations database application

- \* Data Consolidation - One secure, multi-user place for all types of our water quality data
- \* Optimized for both both time series and discrete samples
- \* Data Quality & Consistency Checking
- \* Data Management / Editing Tools
- \* Basic Data Analysis (Statistics, Reporting, and Graphing)Tools
- \* Built in Google Mapping Tools

## \* Major AWQMS Capabilities

- \* Easily submit data to WQX and related feedback tools
- \* Export to other crosstab and flat file formats
- \* Public water quality portal (if needed)
- \* Integration with other systems via web services
- \* Trip Planning
- \* Easily submits BEACH Notifications to PRAWN (if needed)
- \* WQX Domain values auto-sync
- \* Assessments Meta Data & Exceedance Exports

## \* Other Features Worth Mentioning

- \* Data Preparation:
  - \* Batch updates for Activities data
  - \* Batch updates for Results data
- \* Redundant Data Entry for QC purposes
- \* Leverage EPA Water Quality Portal for combined data analysis

## \* Recent New Features

- \* Integration with EPA national solution for Continuous Monitoring (time series sensor) Data (Interoperable Watersheds Network)
- \* Capture and submit assessments to ATTAINS
- \* Better decision support for assessments
- \* Auto calculation of water quality standards for metals
- \* Integrated Continuous Monitoring Data Review & QA Processess
- \* Automated generation of benthic macroinvertebrate abundance metric scores per associated index type

## \* Major Features Under Construction

**\*Using Water Quality  
Portal data within  
AWQMS**

National  
Water Quality  
Portal

Web Services

1. Request data

2. Respond with data

OK Water Resources Board



**AWQMS**

Ambient Water Quality Monitoring System

Αmbient Water Quality Monitoring System



AWQMS

\* Request & Receive  
WQP Data

2. Respond with data

- \* One-time configuration
- \* Configure as many as you need
- \* Schedule the period
- \* Data is stored in AWQMS but flagged as “External”
- \* Can be reviewed / analyzed like any other data in AWQMS

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**AWQMS**

Ambient Water Quality Monitoring System  
Αμβιουτ Βασηρ Κουαλιτυ Μονιτοριγ Συστημ



AWQMS

**\* Request & Receive  
WQP Data**

**\* Challenges  
encountered while  
using multi-agency  
data**

- \* Characteristics, Measurement Units, and Monitoring location types
- \* Monitoring Locations
- \* Assessment Units
- \* Designated Uses
- \* Water quality criteria
- \* Ability to provide filtering criteria

**\* Ensuring consistency  
for analysis and  
assessment**

# \*Solutions and demonstrations

- \* Ability to set up translations on characteristics , measurement units, and monitoring location types in AWQMS
- \* Ability to configure retrieval of data from the WQP using AWQMS
- \* Ability to display WQP data in the AWQMS internal Google map
- \* Ability to analyze WQP data alongside our own latest data in AWQMS

**\* Solutions and  
demonstrations**

# Ambient Water Quality Monitoring System

Log Out (39 min.)

Setup ▾ Metadata ▾ Import ▾ Enter ▾ Review ▾ Batch ▾ Analyze ▾ Publish ▾ Admin ▾ Help ▾

- Color Scheme >
- Data Entry Page Configurations
- Import Configurations
- My User Details
- My User Preferences
- Organizations
- Organization Preferences
- Trip Plans

Water Quality Portal Translations >

Characteristics >

Measurement Units

Monitoring Location Types

\* Ability to set up translations on characteristics in AWQMS

**Ambient Water Quality Monitoring System** Log Out (45 min)

Setup ▾ Metadata ▾ Import ▾ Enter ▾ Review ▾ Batch ▾ Analyze ▾ Publish ▾ Admin ▾ Help ▾

**Water Quality Portal Translations (for Characteristic Name)**

Save Add New Cancel Search

Translate From: Contains ▾ Characteristic Name: Contains ▾

Translate From	Characteristic Name	Method Speciation	Sample Fraction	Statistical Base Code	Time Basis	Temperature Basis	Value Type	Discard?
✘ 1H-Benzotriazole, 5-methyl-	5-Tolyltriazole							<input type="checkbox"/>
✘ 2,4-Pyrimidinediamine, 5-[(3,4,5-trimethoxyphenyl)methyl]-	Trimethoprim							<input type="checkbox"/>
✘ 2-Amino-N-isopropylbenzamide	Benzamide, 2-amino-N-(1-methylethyl)-							<input type="checkbox"/>
✘ 2-Propanol, 1,3-dichloro-, phosphate (3:1)	Tris(1,3-dichloro-2-propyl)phosphate							<input type="checkbox"/>
✘ Alkalinity	Alkalinity, total							<input type="checkbox"/>
✘ Alpha emitting radium isotopes	Radium							<input type="checkbox"/>
✘ Androst-4-en-3-one, 17-hydroxy-, (17.beta.)-	Testosterone							<input type="checkbox"/>
✘ Androstan-17-one, 3-hydroxy-, (3.alpha.,5.alpha.)-	Androsterone							<input type="checkbox"/>
✘ Benzenesulfonamide, 4-amino-N-(2,6-dimethoxy-4-pyrimidinyl)-	Sulfadimethoxine							<input type="checkbox"/>
✘ Carbonate (CO3)	Carbonate	as CO3						<input type="checkbox"/>
✘ Cholestan-3-ol, (3.beta.,5.beta.)-	Coprosterol							<input type="checkbox"/>
✘ cis-Androsterone-2,2,3,4,4,5	Androsterone							<input type="checkbox"/>

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\* Ability to set up translations on characteristics in AWQMS

# Ambient Water Quality Monitoring System

Setup ▾ Metadata ▾ Import ▾ Enter ▾ Review ▾ Batch ▾ Analyze ▾ Publish ▾ Admin ▾ Help ▾

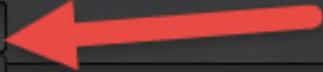
## Organization Detail

Return Save Cancel Delete Retrieve External Data User Access Rights Preferences

ID\*:

Name\*:

Description:

Source\*:  

Tribe:

Address: (Limit 5)

\* Ability to configure retrieval of data from the WQP using AWQMS

# Ambient Water Quality Monitoring System

Setup ▾ Metadata ▾ Import ▾ Enter ▾ Review ▾ Batch ▾ Analyze ▾ Publish ▾ Admin ▾ Help ▾

## Organization Detail

Return Save Cancel Delete Retrieve External Data User Access Rights Preferences

ID:\*

Name:\*

Description:

Source:\*

Tribe:

Address: (Limit 5)

\* Ability to configure retrieval of data from the WQP using AWQMS

## Organization Preferences for WIDNR\_WQX

Return

Save

Cancel

### Water Quality Portal (WQP)

Automatically download monitoring locations and results from the Water Quality Portal every  days

When displaying results on the map, use results in AWQMS (rather than retrieving them from the WQP everytime). This is recommended to improve performance.

Keep  years of data in AWQMS.

\* Ability to configure retrieval of data from the WQP using AWQMS

# Ambient Water Quality Monitoring System

Setup ▾ Metadata ▾ Import ▾ Enter ▾ Review ▾ Batch ▾ Analyze ▾ Publish ▾ Admin ▾ Help ▾

## Organizations

Search Add New

Organization Name: Starts With ▾ W

Organization ID: Contains ▾

ID	Name	Source
<a href="#">WIDNR_WQX</a>	Wisconsin Department of Natural Resources	<u>External - WQX/STORET (via Water Quality Portal)</u>
WILLOWCREEK	Willow Creek Reclamation Committee	Internal - AWQMS

\* Ability to configure retrieval of data from the WQP using AWQMS

# Ambient Water Quality Monitoring System

Setup ▾ Metadata ▾ Import ▾ Enter ▾ Review ▾ Batch ▾ Analyze ▾ Publish ▾ Admin ▾ Help ▾

## Integrated Locations Map (including external organizations)

Return

Default Search Criteria

Load Search Criteria

Save Search Criteria

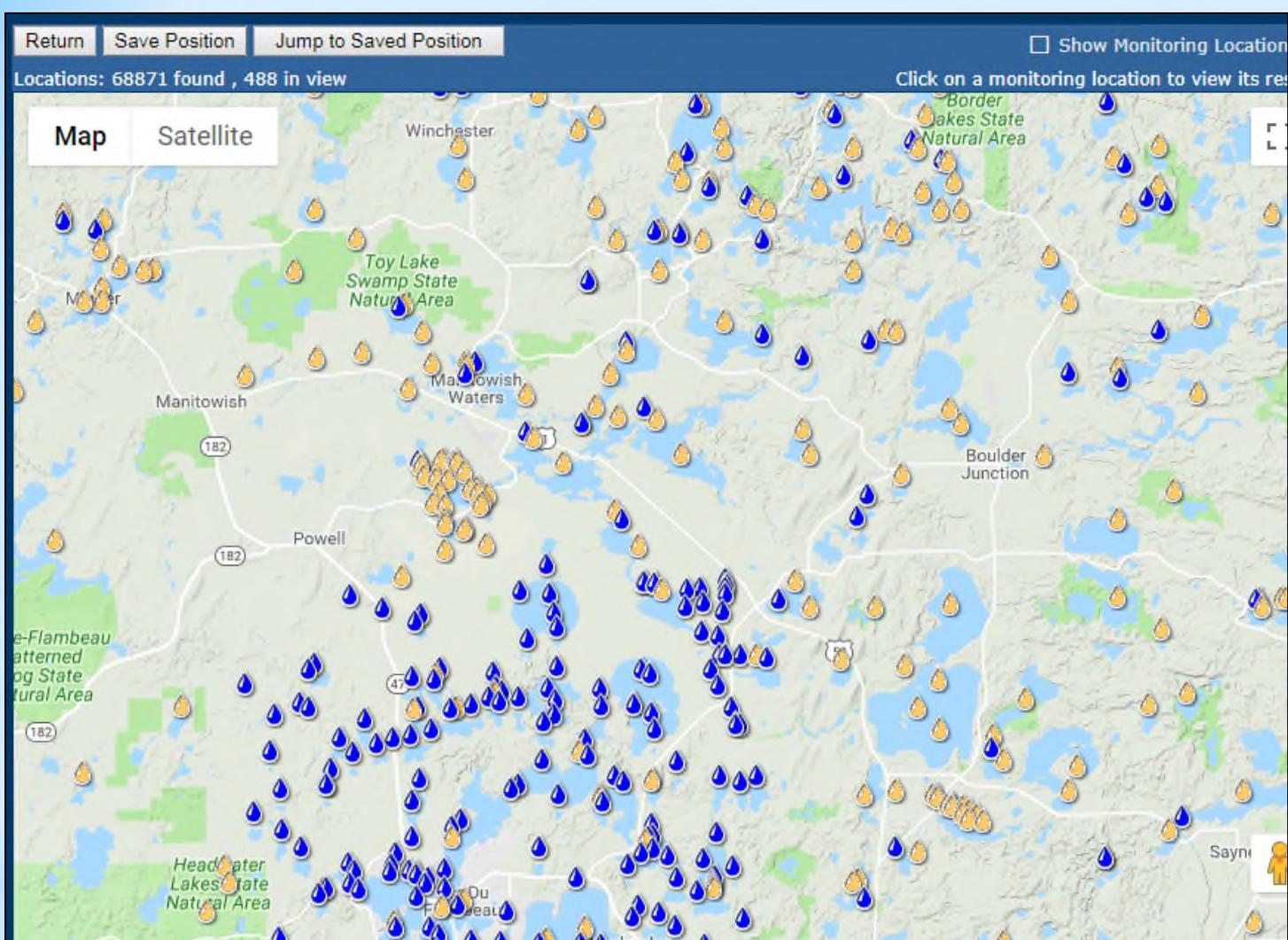
Create Map

### Organizations Search Criteria

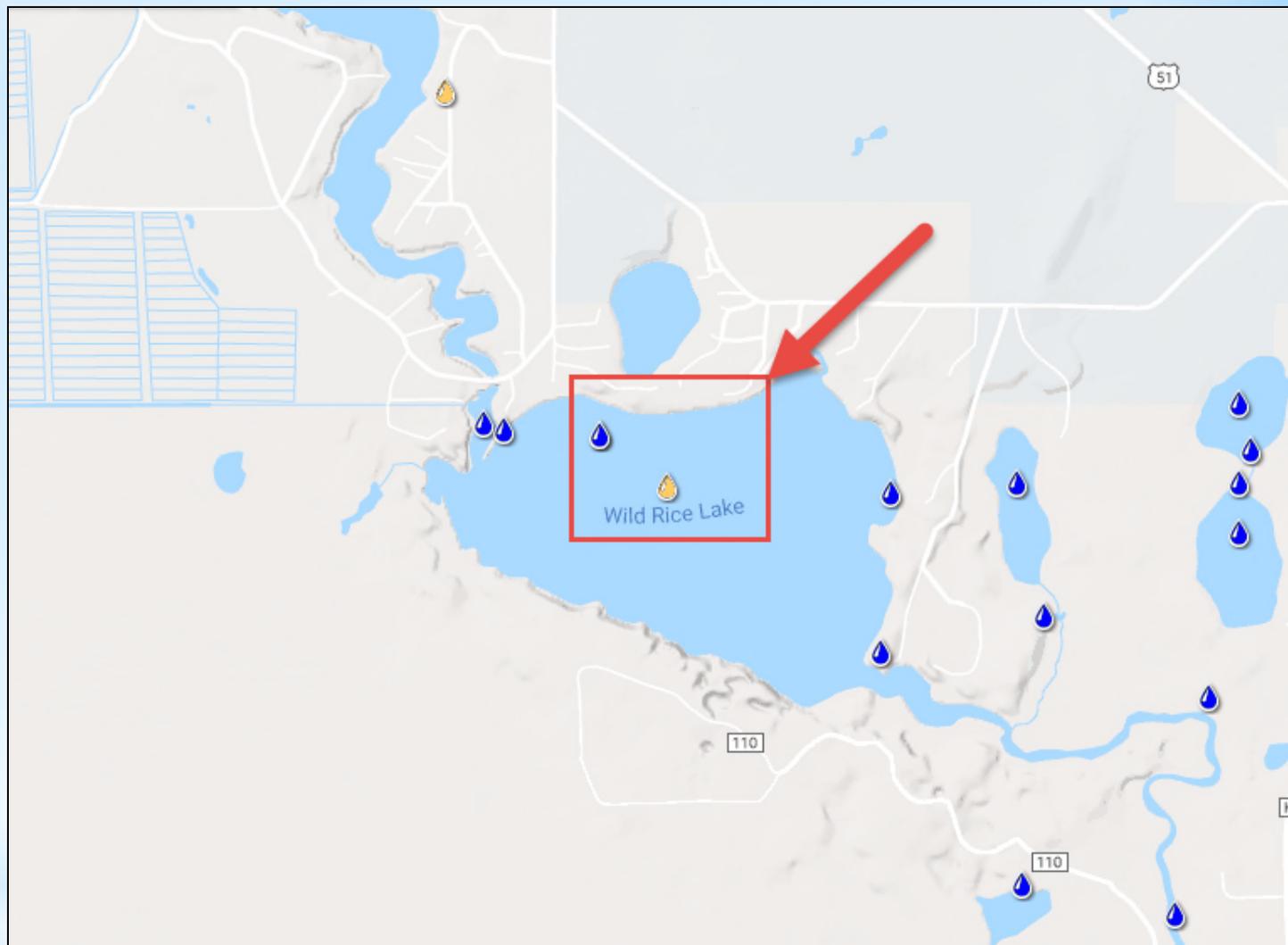
Organizations: 2 items checked

- LDFWATER2007 ~ Lac Du Flambeau Band of Lake Superior Chippewa Indians Water Program
- WIDNR\_WQX ~ Wisconsin Department of Natural Resources
- LEWWTP\_WOX ~ Littleton/Englewood Wastewater Treatment Plant

\* Ability to display WQP data in the AWQMS internal Google map



\* Ability to display WQP data in the AWQMS internal Google map



\* Ability to display WQP data in the AWQMS internal Google map

## Organizations Search Criteria

Organizations: 2 items checked

- LDFWATER2007 ~ Lac Du Flambeau Band of Lake Superior Chippewa Indians Water Program
- WIDNR\_WQX ~ Wisconsin Department of Natural Resources

## Activities

Search

Clear Search Criteria

Add New

Export to Excel

Search Criteria

Activities

Organization ID:

Monitoring Locations:

Project ID:

Date (min):

Media:

All items checked

Check All

WR\_DP

643270

\* Ability to analyze WQP data  
alongside our own latest  
data in AWQMS

# Ambient Water Quality Monitoring System

Log Out (44 min)

Setup ▾ Metadata ▾ Import ▾ Enter ▾ Review ▾ Batch ▾ Analyze ▾ Publish ▾ Admin ▾ Help ▾

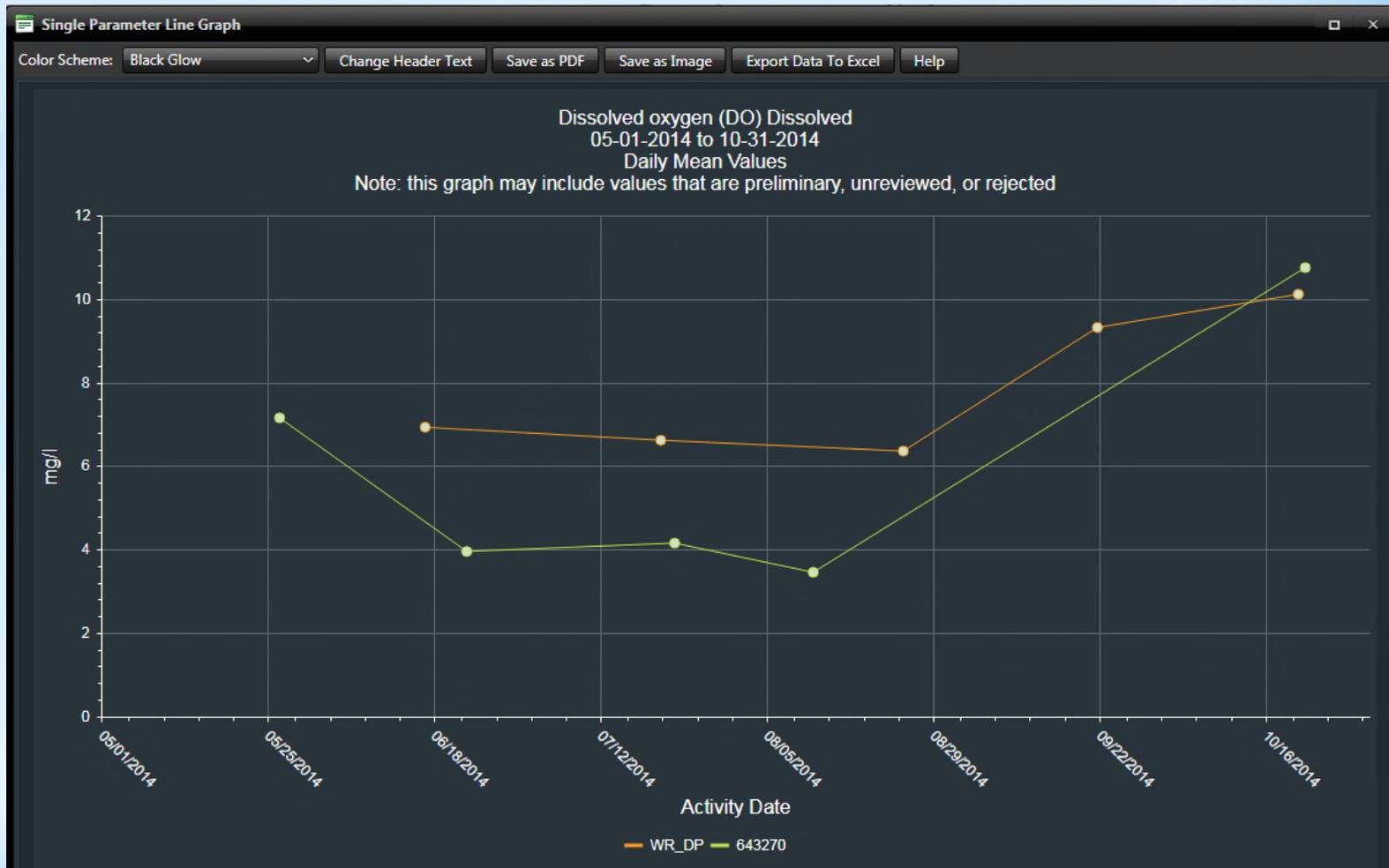
## Activities

Search Clear Search Criteria Add New Export to Excel

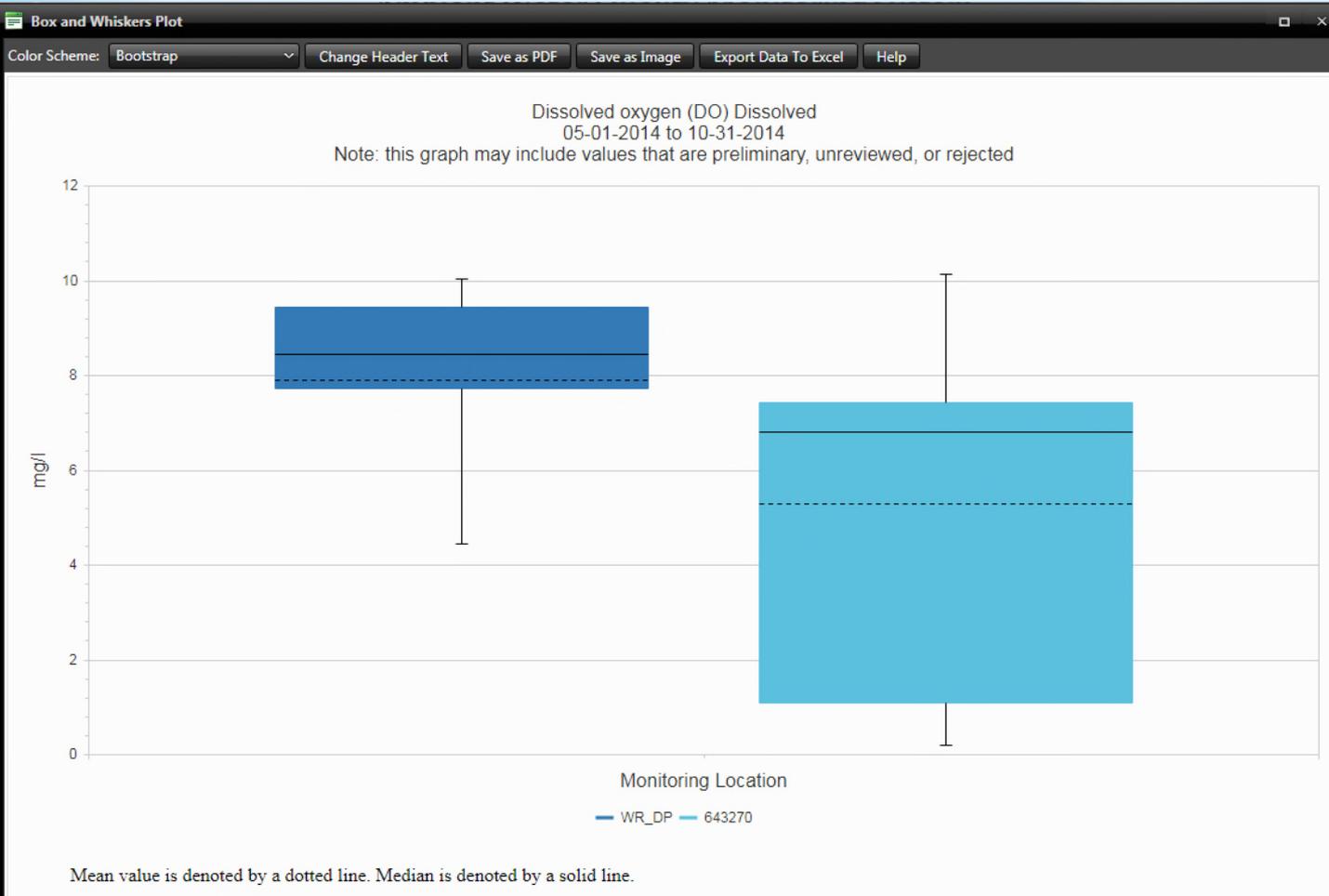
Search Criteria Activities

Organization ID	Activity ID	Date ▾	Activity Type	Media	Monitoring Location ID	Monitoring Location Name
WIDNR_WQX	<a href="#">105575216</a>	10-22-2014	Sample-Routine	Water	643270	Wild Rice Lake - Deep Hole
WIDNR_WQX	<a href="#">105575224</a>	10-22-2014	Field Msr/Obs	Water	643270	Wild Rice Lake - Deep Hole
WIDNR_WQX	<a href="#">105575254</a>	10-22-2014	Sample-Routine	Water	643270	Wild Rice Lake - Deep Hole
WIDNR_WQX	<a href="#">105575260</a>	10-22-2014	Field Msr/Obs	Water	643270	Wild Rice Lake - Deep Hole
LDFWATER2007	<a href="#">WRL DP2014-10215</a>	10-21-2014	Field Msr/Obs	Water	WR_DP	WildRiceLake_Deep
LDFWATER2007	<a href="#">WRL DP2014-10216</a>	10-21-2014	Field Msr/Obs	Water	WR_DP	WildRiceLake_Deep
LDFWATER2007	<a href="#">WRL DP2014-10213</a>	10-21-	Field Msr/Obs	Water	WR_DP	WildRiceLake_Deep

\* Ability to analyze WQP data alongside our own latest data in AWQMS



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\* Ability to analyze WQP data alongside our own latest data in AWQMS



- \* Need Ability to Filter WQP Data by Lat/Long Box
- \* Need to efficiently process and track partial WQP Downloads
- \* Need to address some of the issues preventing WQP data from being saved in AWQMS
- \* Need a separate page for managing/viewing WQP Settings and Status

- Credit: Brian Boling, ORDEQ

\* **Making a good tool into a great tool**

# \* Questions?

## \* AWQMS: Data Extraction, Utilization, and Assessment

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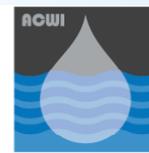
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