

Welcome to the Surface Water Data Viewer!

Last Updated: October 2024

The Surface Water Data Viewer (SWDV) is a mapping tool for the State of Wisconsin. It provides interactive web mapping tools for a variety of datasets, including chemistry, physical, and biological data. The data managed in layers that can be turned on and off as needed. The following page shows the homepage of the Surface Water Data Viewer (SWDV) with many commonly used features labeled. Descriptions of the features are as follows:

Toolbars: There are a variety of toolbars with different themes to help complete tasks using the SWDV. The toolbars can be used to display the layers available to the map, add or remove shapes, text, or measurement features, identify points, print maps, and more!

Search Bar: Using the search bar, you can search monitoring stations by number, locations by keyword, and waterbodies by WBIC. Be careful when using the search bar, partial matches do not always appear in the results.

Table of Contents: The table of contents panel is where results will appear from searches, where you are able to select layers for the map, and features for printing. You will be able to refine the data that is shown here, if desired. You can hide the navigation panel by clicking the left-facing arrow at the top.

Coordinates and Coordinate System: To view coordinates, click the Show Coordinates button in the upper right corner of the map. The coordinates will display for any point moused over on the map. Click the black triangle to select your preferred method for displaying Latitude/Longitude (DD, DDM, DMS) or Wisconsin Transverse Mercator.

Scale Bar: The scale bar (lower left corner of the map) shows the current extent of the map.

Navigation Toolbar: Navigation tools for zooming in/out, zooming to next or previous extents, return to full extent and to reset the compass orientation.



Surface Water Data Viewer

Wisconsin Department of Natural Resources **DEVELOPMENT**

Search for ...

Home Layers

Basic Tools Locate & Identify Draw & Measure Help & Resources

Welcome!

The Surface Water Data Viewer (SWDV) is a Wisconsin DNR data delivery system that provides interactive web mapping tools for a wide variety of datasets including chemistry, physical and biological data.

Map Layers

- Click the "greater than" symbol (>) to expand the data content in the layers.
- Turn a map layer on/off by clicking the checkbox () next to the layer name.
- Click the vertical ellipsis (:) to change layer transparency.
- If layers are listed as "Zoom in to view," zoom in on the map until the layer is available and the "Zoom in to view" text disappears.

Toolbars

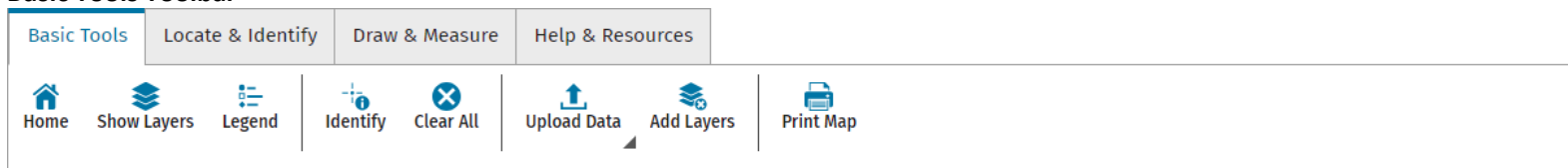
- **Basic Tools** - Tools to show the home, layers and legend tabs; identify by point and clear; upload

Home Show Layers Legend Identify Clear All Upload Data Add Layers Print Map

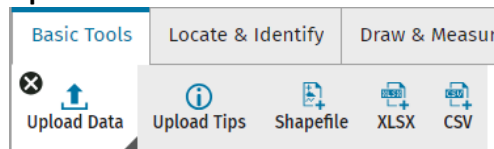


When using the Surface Water Data Viewer, there are a variety of Toolbars that can be applied. Toolbars give you the ability to plot points on the map, make drawings, label points, measure distances, etc. The most common Toolbars that you will use are:

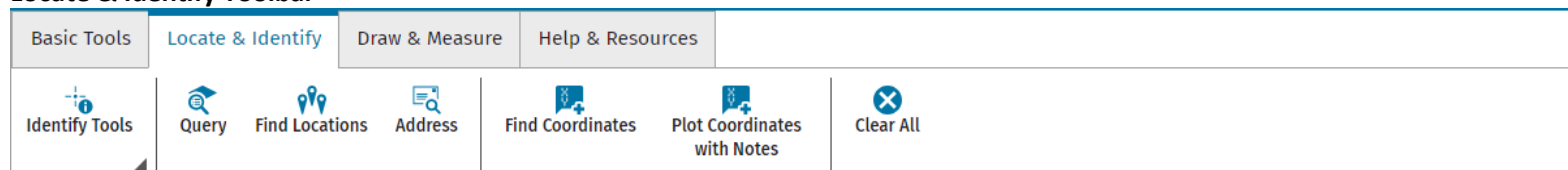
1. Basic Tools Toolbar



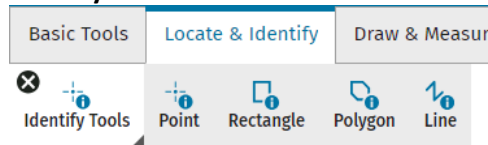
Upload Data Toolset



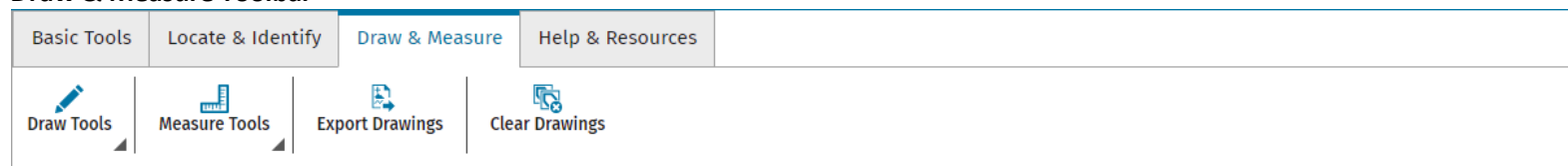
2. Locate & Identify Toolbar



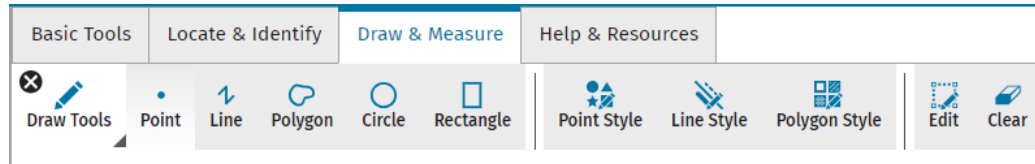
Identify Toolset



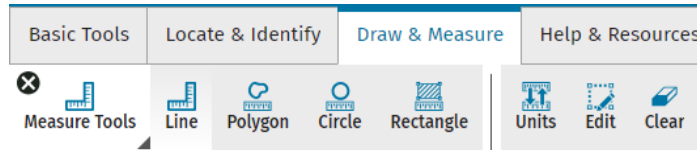
3. Draw & Measure Toolbar



Draw Toolset



Measure Toolset



4. Help & Resources



5. Navigation Tools Toolbar (in Map Frame)

Zoom In - There are three (3) ways to Zoom within the map frame.

- (1) Click on the + symbol on the toolbar.
- (2) Hold the SHIFT key, left click on the map, hold down the mouse key and drag.
- (3) Using your mouse wheel scroll up.

Zoom Out – There are two (2) ways to Zoom Out within the map frame.

- (1) Click on the – symbol button on the toolbar.
- (2) Using your mouse wheel scroll down.

Pan – Click on the map, left click on the map, hold down the mouse key and drag the map.

Next Extent – Click on the forward-facing arrow key to return forward to the last extent.

Previous Extent – Click on the reverse-facing arrow key to return to the previous extent.

Full Extent – Click on the button with 4 arrows to zoom out to the entire state.

Reset Compass Orientation – Click on the North Arrow key to reset map to the North.



1. Basic Tools Toolbar

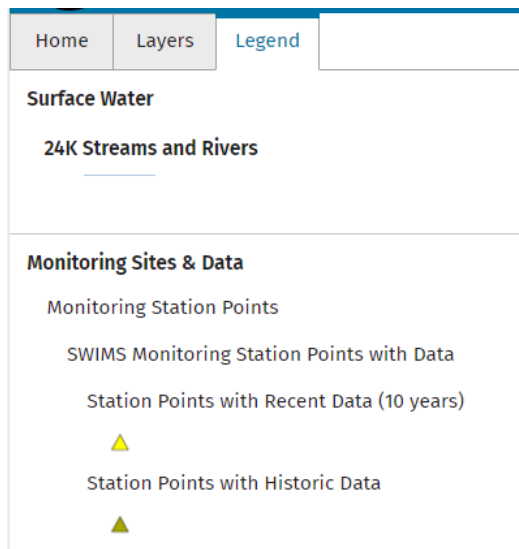


Home: The home button can be found in two places. The first is in the **Basic Tools Toolbar**. The second is in the ribbon at the bottom of the **Table of Contents** panel.



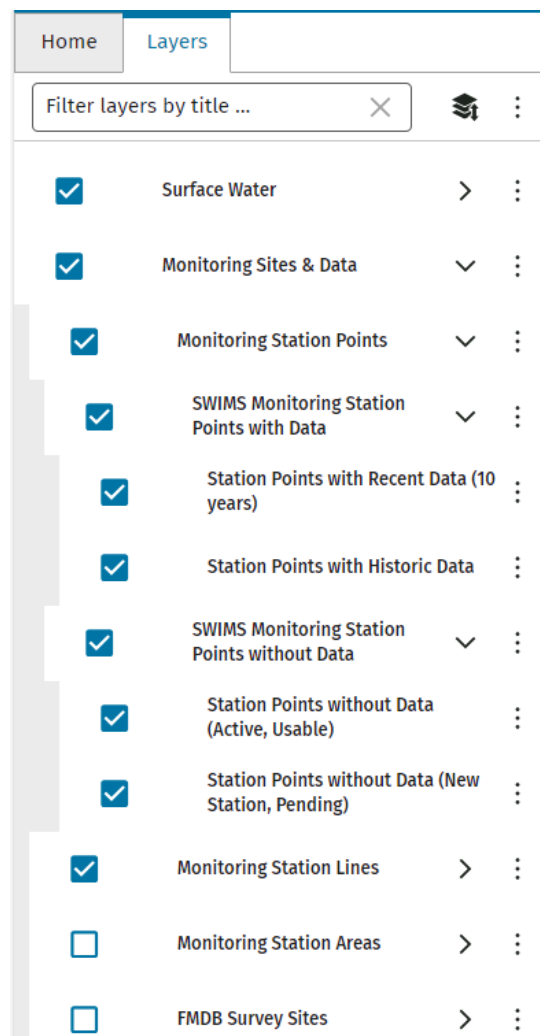
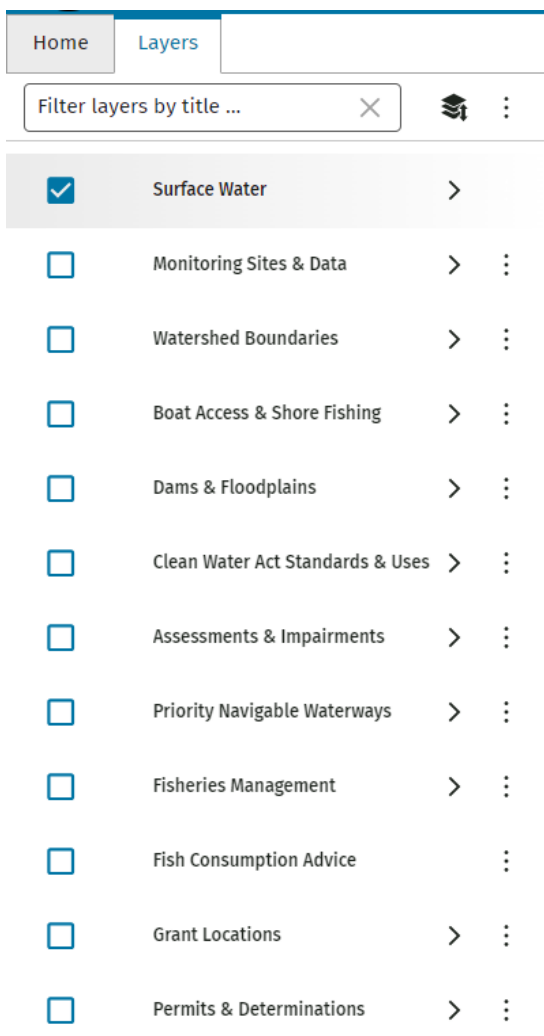
Clicking on **Home** tab will open a tab containing the basic description of the SWDV in the **Table of Contents** panel. If you have search results, don't worry, clicking **Home** does not lose your results.

Legend: The **Map Legend** describes each of the features on the map. As more layers are added to the map, it will become more complicated, and more features will be added to the legend. When a map is printed, the legend will print alongside it.



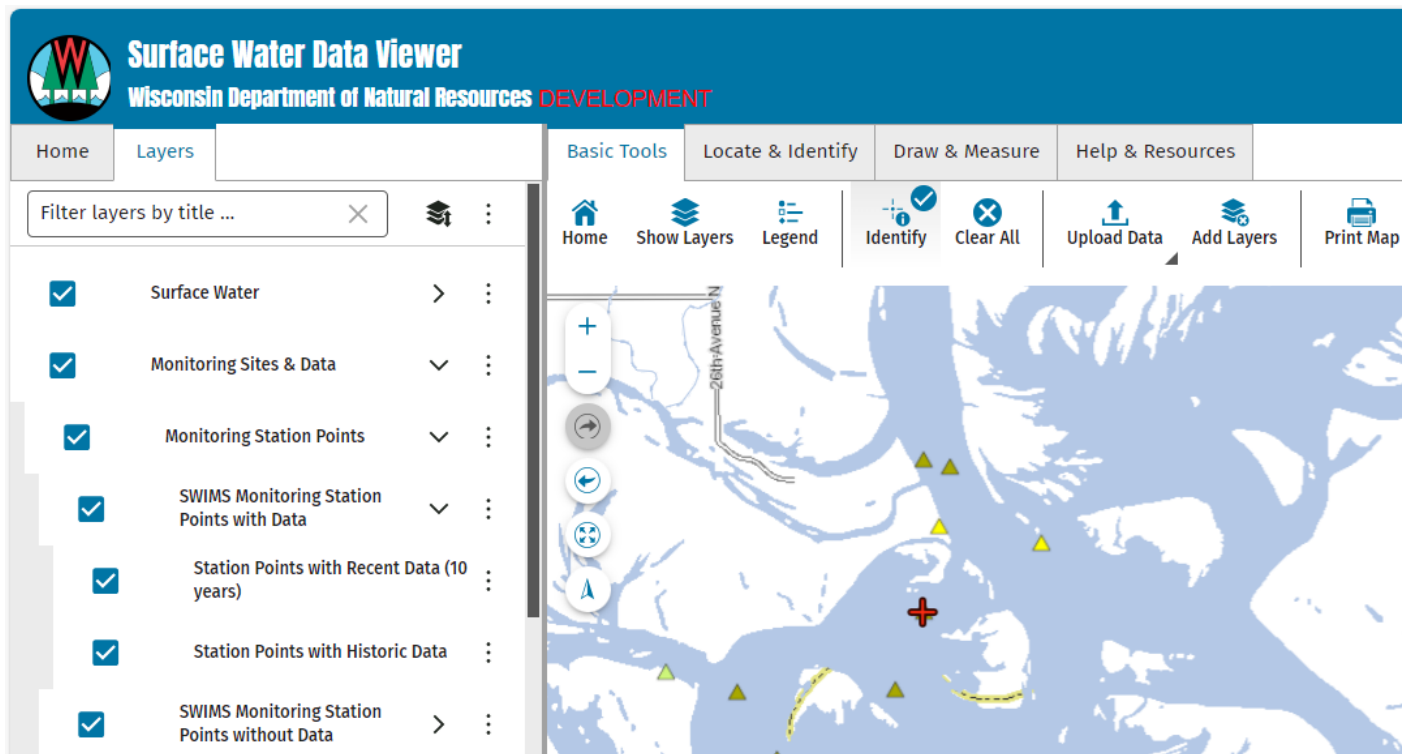
Show Layers: This tool opens a list in the Table of Contents panel of data layers that can be applied to the map. See the following screenshots of the Show Layers panel. These layers can be turned on or off to apply different datasets to the map.

This is a partial list of layers that will appear when the Show Layers button is clicked. Scroll down through the **Table of Contents** panel to view all available layer categories. Select the > symbol on the layer category to view available layers within that category.



Point Identify: Use the **Point Identify** tool to gather information about features on the map. Select the tool, then click on the feature. Information will appear in the **Table of Contents** panel to the left.

For example, clicking on the map using the **Point Identify** (as seen below) results will be displayed in the **Table of Contents** panel under the **Results** tab.



To view more detailed information (3 levels of detail) about the results returned, click on the layer of interest. Each level provides more detailed information (e.g., first level – layers identified, second level – general information about the layer as well as links to additional information, third level – detailed information about the layer (e.g., field names and values).

Home Layers Results

Identify results: (4)

> Refine

- County Boundaries: (1)
- Municipality: (1)
- Open Water: (1)
- Station Points with Historic Data: (1)

Home Layers Results

Station Points with Historic Data: (1)

> Refine

Wisconsin River at Fish Lake (121)

[Link to Monitoring Data](#) | [Metadata](#)

Home Layers Results

Wisconsin River at Fish Lake (121)

[Link to Monitoring Data](#) | [Metadata](#)

SWIMS Station ID	121
Primary Station Name	Wisconsin River at Fish Lake
Station Type	LAKE
Waterbody Name	Petenwell Lake
WBIC	1377100
Station Status Code	ACTIVE
Status Description	Active, Usable.
Fieldwork Code	HISTORIC
Earliest Fieldwork Date	May 6, 1976, 12:00 AM
Latest Fieldwork Date	May 6, 1976, 12:00 AM

As mentioned above, some layers have links to additional information. As seen in the above example, by clicking on the “Link to Monitoring Data”, a new web page will be opened.

Wisconsin Department of Natural Resources

Monitoring Station

Station ID: 121 Station Name: Wisconsin River at Fish Lake

Specific Parameter: -- All Parameters --

Sample Results

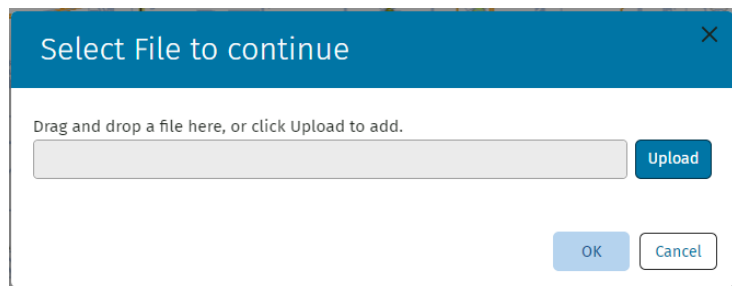
Show 10 entries

Project	Date/Time	DNR Parameter	Species	Result	Units
Migrated from STORET Legacy	5/6/1976 12:00:00 AM	PCB TOTAL		.14	MG/KG
Migrated from STORET Legacy	5/6/1976 12:00:00 AM	PCB TOTAL		.72	MG/KG
Migrated from STORET Legacy	5/6/1976 12:00:00 AM	PCB TOTAL		.4	MG/KG

Showing 1 to 3 of 3 entries

Clear All: Use this tool to clear ALL graphics from the map frame.

Upload Data: Use this tool to temporarily upload data from your computer to the map. Select the **Upload Data** button and click one of the options (click on the Upload Tips button for additional information). A dialogue box will appear.



Add Layers: Use this tool to temporarily add layers from an outside valid map service to the Surface Water Data Viewer map.

Lakes & AIS Viewer
Wisconsin Department of Natural Resources

Home Layer List Search

Basic Tools Locate & Identify Draw & Measure Help & Resources

Home Show Layers Show Legend Get Info Upload Data Add Layers Clear All Print Map

Add layer(s) from REST endpoint
Choose a map service or feature layer to add to the map. Then give the map service or feature layer a name to be used in your map (required). If there are no errors, the tool will close after clicking "Submit." Please check your layer list to view the addition.

Types of REST URLs supported

- Map Service, for example:
https://dnrmaps.wi.gov/arcgis/rest/services/WT_Condition_Viewer/WY_CWA_AU_RESULTS/MapServer
- Individual feature layer, for example:
https://dnrmaps.wi.gov/arcgis/rest/services/WT_Condition_Viewer/WY_CWA_AU_RESULTS/MapServer/1

URL of REST endpoint to add *

Name to use for the REST endpoint layer(s) in the map *

Submit Cancel

Print: This tool will print the current extent of the map, including all plotted points and drawings within that extent. The printed map will also include the **Whole State View**.

Home Layers **Print**

Basic Tools Locate & Identify Draw & Measure Help & Resources

Home Show Layers Legend Identify Clear All Upload Data Add Layers Close Print

Printing

Choose a print template layout from the dropdown below. Enter a title and any notes needed. Move the map to fit within the print window at the scale desired. Once the button 'Print' is clicked the map will take a few minutes to generate. A banner above the map will display the final link to the map PDF.

Print Map

Print Template
Letter - Portrait

Scale:
117186

Rotation:
0

Title
Map Title

Notes

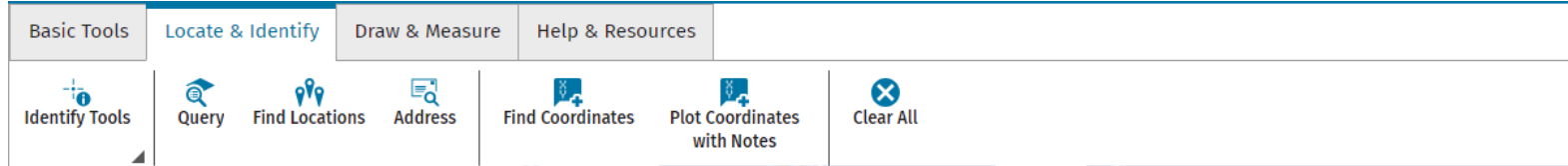
Print Cancel

Adjust the map area you want to print.

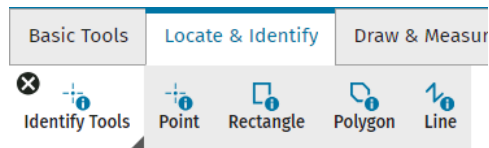
5 mi

WIDNR, USGS, and other data | WI Dept. of Natural Resources, Water Division

2. Locate & Identify Toolbar



Identify Tools: To use the **Identify Tools**, first select the **Identify Tools** button. The **Identify Tools** button is not named on the toolbar. Instead, it appears as whatever identification form you have selected. Click any of the identify tools to activate them (you will not be able to identify if you do not click one of them).



NOTE: Once results are returned, the tool must be clicked on again.

(continue to next page)

Query: Use this tool to perform an advanced search for a feature. Selecting **Query** will open a process in the **Table of Contents** panel. Select the **Data Source** on which you would like to perform the query and enter the **Query** parameters (Find results where).

Home Layers **Query Builder** ×

Query Data Layers

This tool allows users to search specific layers in the map. Choose a layer (Data Source) and search area (Map Area). Then choose the search conditions using the three dropdown boxes for data field, condition and value (if not visible, click "+ Add Condition").

Data Source
24K Lakes and Open Water ▾

Map Area
All ▾

Advanced Mode

Find results where:

All of the following are true

Any of the following are true

Hydro Cc ▾ Equal To ▾ Backwat ▾ + 🗑

+ Add Condition × Clear

Find Locations: Use this tool as a search feature to find specific features on the map. Selecting **Find Locations** will generate a list of search options in the **Table of Contents** panel. To find a location, select the feature magnifying glass.

Home Layers Find Locations

×

Find Locations

Click on one of the query tools listed below to open a location search tool. **Some of the tools take a moment to open; please be patient.**

- 🔍 Lakes & Open Waters
- 🔍 Rivers & Streams
- 🔍 Assessment Unit - Lakes
- 🔍 Assessment Unit - River Stream
- 🔍 City, Town, Village
- 🔍 Coordinates
- 🔍 County
- 🔍 Town, Range, Section
- 🔍 Dam
- 🔍 Floodplain Analysis
- 🔍 SWIMS Stations
- 🔍 USGS Gage Station
- 🔍 DNR Water Management Unit

Find Address: Use this tool as a search feature to find a specific address.

Home Layers Find Address ×

Find Address

This tool requires multiple steps. The first step is entering a street address and municipality (city, town or village) and hitting the "Search" button. This will generate a list of matching addresses in Wisconsin. The second step is to select an address from the generated dropdown list. Once an address

Street Address

Municipality

Click Search to Get Full Address Options

Select Full Address in Dropdown

Find Coordinates: Use this tool to find enter and plot a point on the map at the desired X,Y coordinates (Lat/Long – DD, DDM, DMS or WI Transverse Mercator (WTM)).

Enter coordinates

Decimal Degrees (DD)

Latitude *

44.225733 °

Longitude *

-89.870727 °

OK Cancel

Plot Coordinates with Notes: This tool is very similar to the Find Coordinates. However, the **Plot Coordinates with Notes** allows users to **Select on Map** the location that they would like to return coordinates for.

Enter coordinates, or click 'Select on Map'

Decimal Degrees (DD)

Latitude *

44.225733 °

Longitude *

-89.870727 °

Next Select on Map Cancel

After selecting a location on the map, the user will need to select the coordinate type from the **Coordinates** section. Once a Coordinate type has been selected (e.g., Wisconsin Transverse Mercator), coordinates will be added to the **Note** section. Click **Done** and the coordinates will be added





to the map.

Location Note ✕

X: 529566.85 Y: 416210.09

✓ Copy Text Snippet

Coordinates

-  Wisconsin Transverse Mercator (WTM)
-  Decimal Degrees (DD)
-  Degrees Decimal Minutes (DDM)
-  Degrees Minutes Seconds (DMS)

Nearby Features

- Rome (T) >
- Adams County >

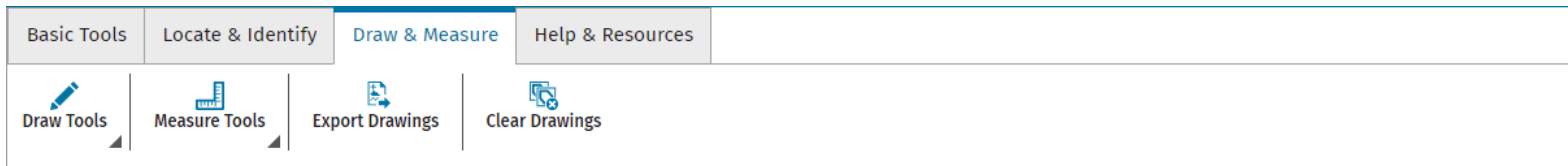
> Display Options

Done Cancel

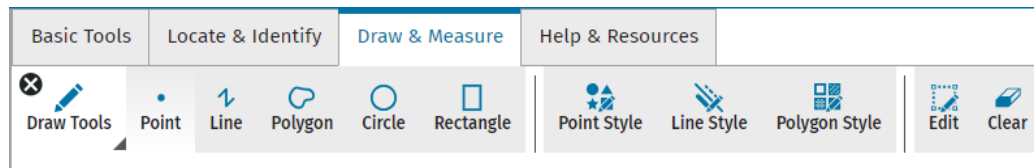
Clear All: Use this tool to clear ALL graphics from the map frame.

3. The Draw & Measure Toolbar

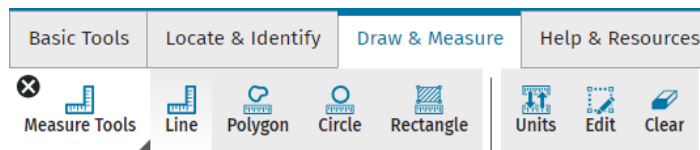
The **Draw & Measure Toolbar** is an excellent tool for making your own custom maps. It is very helpful to show where individual monitoring sites are – you can type the names of the sites next to their identification points or color-code them! It is also useful if you need to perform calculations of area or distance on the map.



Draw Tools: To use any of the drawing tools, first select the desired tool from the **Draw Tools** options. Like the **Identify** tool, use the dropdown to select the desired tool. Click on the Point, Line or Polygon Style buttons to change the default settings for the Draw tools.



Measure Tools: To use any of the measuring tools, like the **Draw Tools**, first select the desired tool from the **Measure Tools** options. Like the **Identify** tool, use the dropdown to select the desired tool.



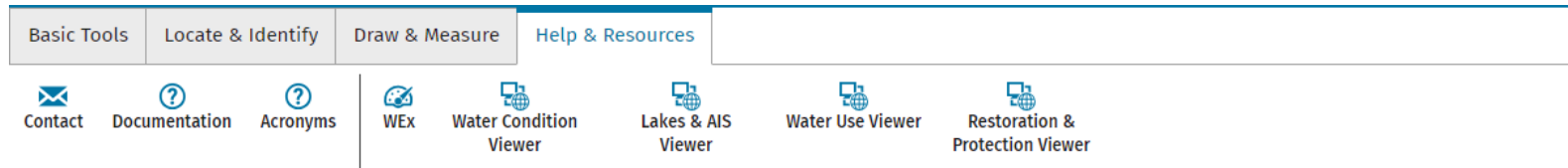
Measure Tools: To use any of the measuring tools, first select the desired tool from the **Measure Tools** options. Similar to the **Identify** tool, click the desired tool. Click on the Units button to change the default settings for the Draw tools.

To Edit existing measurements, click the Edit button, then select the measurement to be editing. Adjust measurement as needed.



4. Help & Resources Toolbar

If you need to troubleshoot any issues with the Surface Water Data Viewer or would like to learn more about the features of the viewer, you can toggle through the resources in the **Additional Features Toolbar**. If you encounter a problem with the Surface Water Data Viewer, use the **Contact** tool to send a message to the Surface Water Data Viewer Team.



Contact: If you encounter a problem with the Surface Water Data Viewer, use the **Contact** tool to send a message to the Surface Water Data Viewer Team.

Documentation: Use this tool to open the Surface Water Data Viewer guidance document.

Acronyms: Use this tool to open a new panel in the **Table of Contents** panel that provides a list of abbreviations and their meanings.

Other DNR Viewers: Use these tools to launch other DNR mapping applications.

WEx (Water Explorer Tool): A data visualization tool that allows users to interface with water quality data for waterbodies throughout the state.

Water Condition Viewer: A web mapping tool that focuses on water condition, monitoring, assessment and management data.

Lakes & AIS Viewer: A web mapping viewer that allows users to search and map monitoring locations for lakes and aquatic invasive species (AIS).

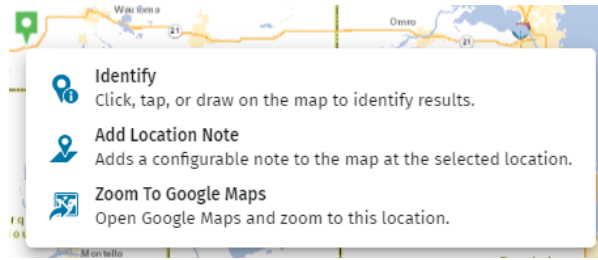
Water Use Viewer: The Water Use Viewer is a mapping tool that allows the public to view the locations and volumes of high capacity wells and surface water withdrawals.

Watershed Restoration & Protection Viewer: A web mapping tool designed to help users view water quality improvement projects across the state.

Other Features

There are a few Surface Water Data Viewer features that are not housed in a **Toolbar** or **Table of Contents** panel.

Right Click: Use this tool to generate a dropdown menu of options for the location selected on the map. **Right Click** a location to select. A small map marker will drop on the site.



Identify: This tool works in a similar way to **Point Identify**. Selecting **Identify** will return results for identifiable features at the selected location in the **Results** panel.

Add Location Note: This tool replicates the functionality of the **Plot Coordinates with Notes**. Users select a point on the map, choose the desired **Coordinates**, and click **Done**.

Note: This tool can also be used to add text to the map. Instead of selecting a **Coordinates**, type in the text the is wanted on the map. Click **Done** and the text will be added to the map.

Zoom to Google Maps: Use this tool to open Google Maps and zoom to the current location.