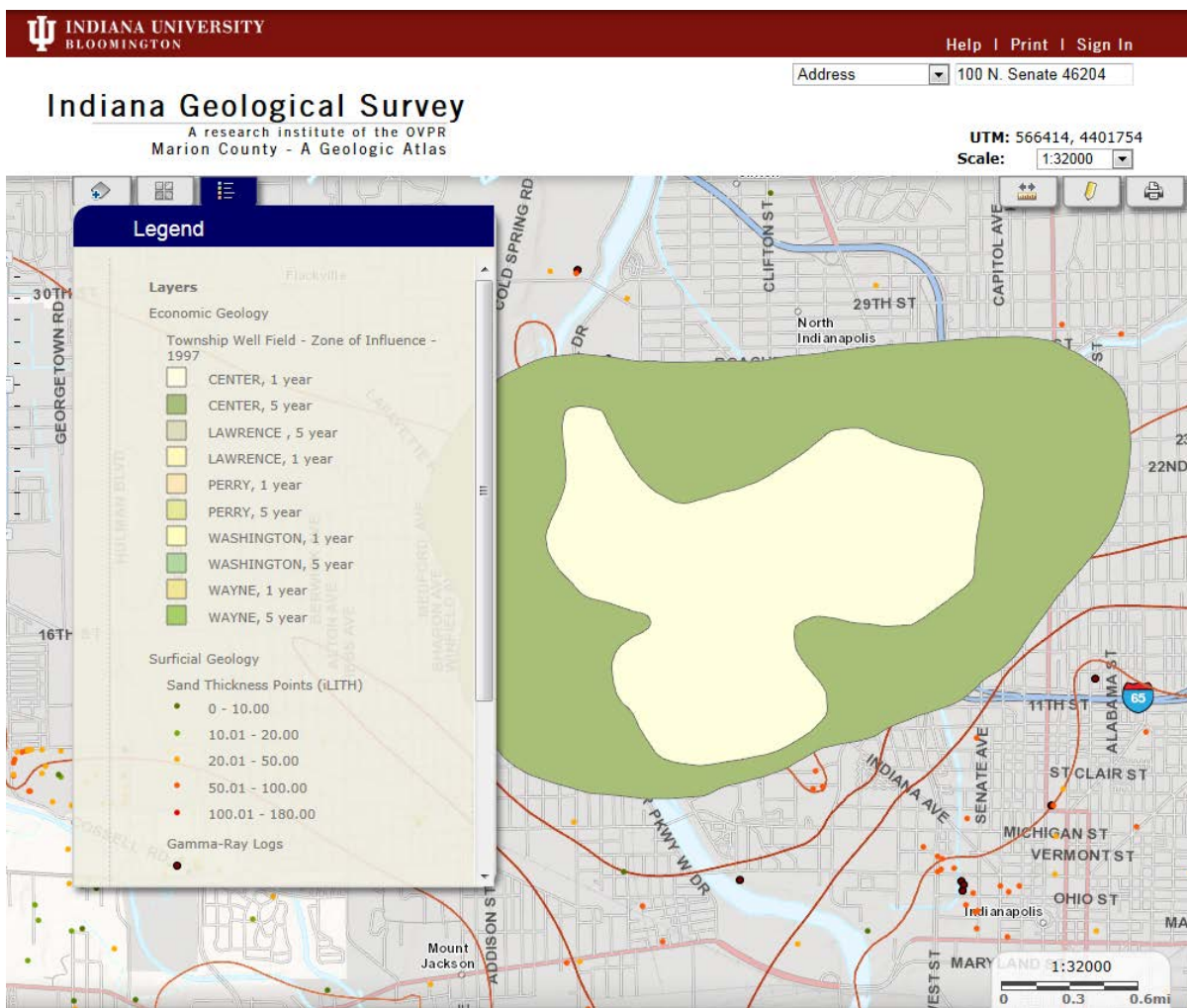


# IGSMap

## How to use the IGSMap Map Viewer



# How to Use the IGSMAP Viewer

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# How to Use the IGSMAP Viewer

## What is IGSMAP?

IGSMAP is a collection of interactive Web based thematic geologic maps produced by the staff of the Indiana Geological Survey. Each interactive Web based thematic map offers the end user access to geologic data for viewing and tools to query and analysis those data.

Some IGSMAPs come in two different versions:

- **IGSMAP Basic**  
The Basic IGSMAP viewer offers a large number of online map features and options at no cost.
- **IGSMAP Premium**  
The Premium IGSMAP viewer includes more options, uses more sophisticated layers for processing the data, and is fee based.

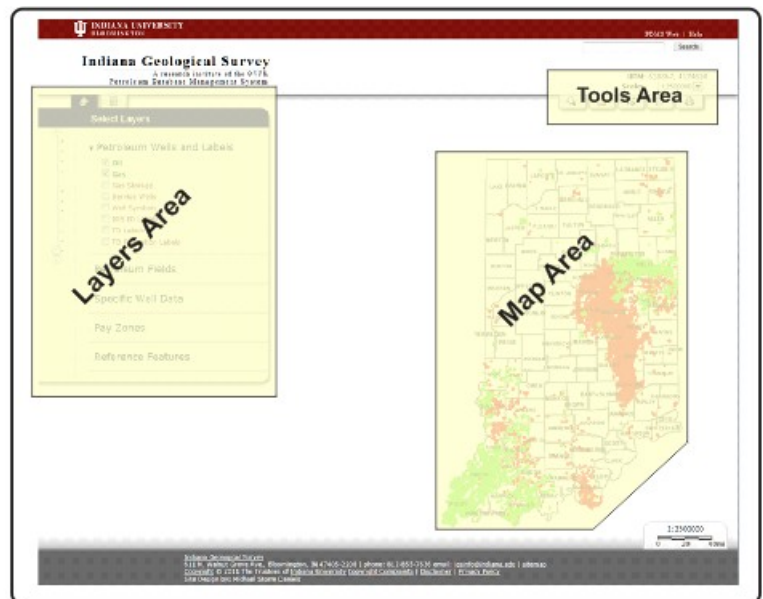
New maps are being developed regularly so check back often for the latest collection of IGSMAPs.

## IGSMAP Overview

The IGSMAP viewer opening screen shows three Screen Areas that interact based on the user's input. The relative positions of the Screen Areas may vary depending on screen size and resolution. The Areas are:

1. **Map Area (the Map)**—interactively displays data selected from the Layers Area. Users can zoom and pan the map and identify map features.
2. **Layers Area**—user can manage the display of the map by selecting a basemap and layers, map legend, and layer information. The functionality of each Section is described below.
3. **Tools Area**—user selects tools to interact with the layers such as search, map scale, measure, draw, and printing features.

### Screen Areas

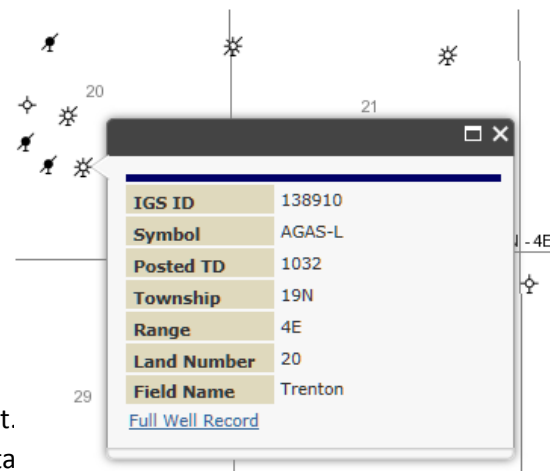


### Conventions used throughout the Map Viewer Help:

- Unless otherwise stated, “click” or “clicking” means to click down on the user's left mouse button and release.
- “Drag” (also called “pan”) means to click the left mouse button and continue holding it down while dragging the Map (or other specified object) around on the screen.
- “Map” may be used as a shortened form of “Map Area.”
- “IGS” refers to the Indiana Geological Survey.

## Map Area

- When opened, the Map Area displays the thematic geologic map at a preset scale.
- The layers displayed on the Map are selected from the available options in the Layers Area.
- The Map can be zoomed or panned from within the Map itself (other methods of navigating and zooming are described later in the Layers Area and in the Tools Area).
- Zoom in or out using the mouse wheel
  - Place the mouse cursor anywhere on the Map.
  - Roll the mouse wheel back and forth to zoom in or zoom out.
  - The map will zoom to the cursor location where the zoom started.
  - Users who do not use a mouse with a wheel will need to zoom using one of the other methods in the
    - Layers Area or the Tools Area.
- Move the Map by dragging it around the screen. This works anywhere on the Map.
- Clicking on any geologic symbol such as a line, point, or polygon will open a small information box to identify information about the selected symbol or feature. It's best to zoom in to the Map some to select the symbol or feature to be identified.



## Layers Area

Information to be displayed on the Map is selected from available choices in the Layers Area.

Three tabs are located at the top of the Layers Area:

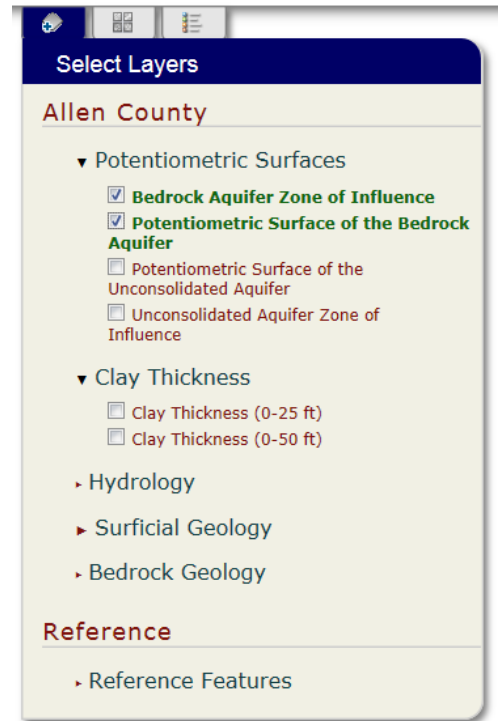
1. **Select Layers**
2. **Change Basemap**
3. **Legend**



## Select Layers – Overview

The **Select Layers** button opens the default layer settings and user- available options. Select layers of interest to add to the map. The map layers are organized thematically into groups.

- Click a group name to expand or collapse its layer list
- Check the box next to the layer’s name to add it to the map (uncheck the box to remove the layer from the map)
- Click a layer name to view its short description.



## Select Layers – Details

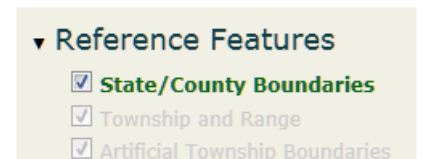
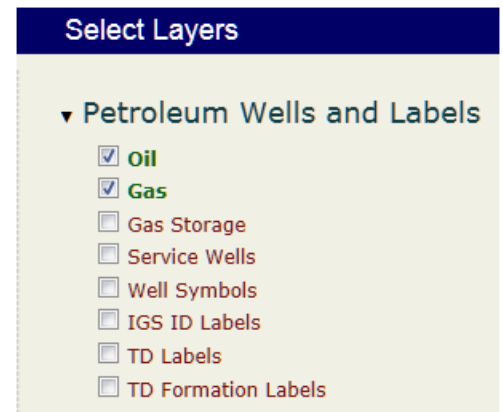
Before proceeding, a few more conventions should be noted:

The various Map Layers are grouped into Layer Groups. The Group names are preceded by a “▼” on the list of Layer names. The list of Layers contained in a Layer Group can be toggled from visible to hidden by clicking on the Layer Group Name.

Any Layer labeled in **Bold Green Text** and preceded with a checkmark is “active,” and will be visible on the Map.

Any layer labeled in normal **Burnt Red** is not visible on the map, but could be made active (visible) on the map by clicking the adjacent checkbox.

Any layer labeled in **Gray Text** and with a checkmark is available, but cannot be made visible at the current Zoom Level. This feature is available on select IGSMAP.



## Reference Features

The Reference layers mostly show natural features and government boundaries. The layers are listed below with comments. Marking the checkboxes next to the layer names adds the layer content to the Map. Grayed out labels are not available at the selected Map Scale.

**State/County Boundaries** are visible by default at any map scale. They can be unchecked at any scale. County name labels automatically appear in the layer and cannot be turned off independently.

**Artificial Township Boundary** outlines and names are shown on the Map in the same manner as those for true Township and Range features described above.

**Township and Range** outlines and names are turned on when zoomed in to scales of 1:250,000 or closer. They can be turned off by unchecking the layer checkbox, but they will return when the Map is zoomed out beyond 1:250,000.

**Civil Townships** are land divisions used locally in Indiana. They are not used in the petroleum community to describe drilling and production activity. They are included in the PDMS Map Viewer to facilitate communication with land owners who commonly describe their property as located in a particular Civil Townships. Civil Township boundaries and names are contained on the same layer and cannot be searched for in the PDMS. The layer is not visible by default, but can be checked on at in map scale. Civil Township labels only appear on the Map when zoomed in to 1:250,000 or closer.

**Topo Quad Outlines** (Topographic Quadrangles) shows the locations of US Geological Survey 7.5 Minute Topographic Quadrangle Maps. The layer is turned on checking the checkbox next to the layer name. It is visible at all map scales. The Topo Quad Labels are shown on a separate layer.

**Topo Quad Labels** are the names of US Geological Survey 7.5 Minute Topographic Quadrangle Maps. They are visible at scales of 1:500,000 or closer. Although they appear on the Map automatically with the Outlines layer, they may be un-check marked and turned entirely.

**Sections and Land Units** are the smaller units of the US Township and Range System and other locally exceptional units in Indiana. They only appear on the Map when zoomed to scales of 1:125,000 or closer.

**Highways** are the INDOT 2004 24K Interstates, U.S. Highways.

**All Roads** are the INDOT 2005 100L road consisting of city streets, county roads, U.S. state and interstate roads, and non-certified other roads.

## Reference

### ▼ Reference Features

- State/County Boundaries
- Artificial Township Boundaries
- Township and Range
- Civil Townships
- Topo Quad Outlines
- Topo Quad Labels
- Sections and Land Units
- Highways
- All Roads
- Rail System - Active
- Streams 24k (NHD)
- Rivers 24k (NHD)
- Wetlands 24k (NHD)
- Lakes 24k (NHD)
- Streams 100k (NHD)
- Lakes/Rivers 100k (NHD)
- Wetlands 100k (NHD)
- Populated Areas

**Rail Systems –Active** are the INDOT 2006 1.2K showing rail systems in Indiana

**Streams 24K (NHD)** 2008 shows streams, rivers, canals, artificial paths, coastlines, connectors, and pipelines

**Rivers 24K (NHD)** 2008, shows rivers, inundation areas, canals, submerged streams, and other linear water bodies.

**Wetlands 24K (NHD)** 2008, shows lakes, ponds, reservoirs, swamps, and marshes

**Lakes 24K (NHD)** 2008, shows lakes, ponds, reservoirs, swamps, and marshes

**Streams 100K (NHD)** contains routes representing linear features from the National Hydrography Dataset

**Lakes/Rivers 100K (NHD)** contains routes representing linear features from the National Hydrography Dataset

**Wetlands 100K (NHD)** contains routes representing linear features from the National Hydrography Dataset

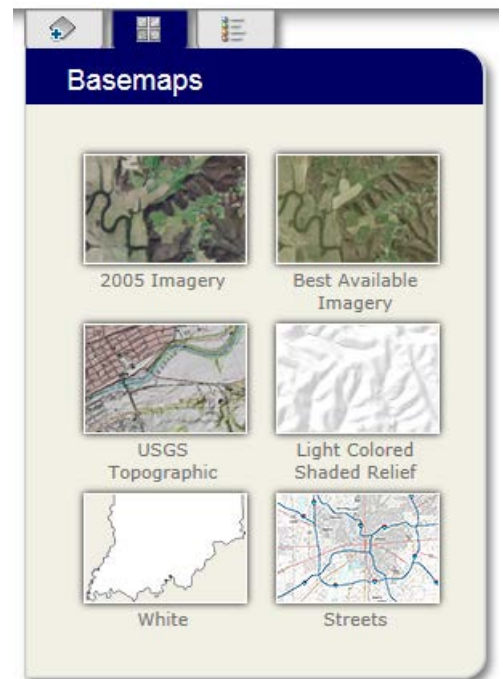
**Populated Areas** shows all populated places identified by the U.S. Bureau of Census in 2000

### Change Basemap – Overview

The **Change Basemap** button opens a selection box that contains six basemaps (background map layers) that can be used with the Map. A basemap is a reference layer that displays underneath all other layers. More details are displayed as the map is zoomed in. The identify tool will not identify features on a basemap layer.

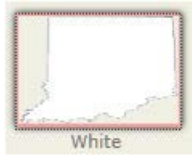
To change the basemap:

- Click on a basemap icon and the map will update immediately to the new basemap
- The basemap can be changed at any time.



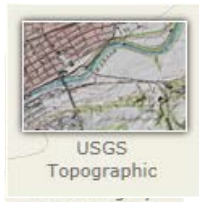
## Basemap Layers – Details

As described earlier, a choice of one of six basemaps (background map layers) can be used with the Map. The Basemap is a single layer that appears behind all of the other layers selected to show on the map.



### White

The White Basemap is the default option when opening the Map Viewer. It shows no objects and creates an uncluttered Map.



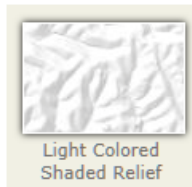
### 2005 Imagery

Orthophotography Basemap, (2005) - The orthophotography is natural color high-resolution (3-band) orthophotography for Indiana, collected during leaf-off conditions in March and April 2005. In 2005 the Indiana Geographic Information Council (IGIC) coordinated the 2005 IndianaMap Orthophotography Project, which facilitated the acquisition of statewide, high-resolution orthophotography and digital elevation data for Indiana. Standard resolution was established to be 1 foot pixels, while some participating counties agreed to buy-ups with 6 inch pixels. These data are hosted and maintained by our data partners at the Indiana Spatial Data Portal (ISDP), University Information Technology Services (UITS), Indiana University. Use the links below to access ISDP website for metadata and download information



### Best Available Imagery

Best Available Imagery, (2005 - 2010) - Shows imagery that is considered the best available imagery for Indiana based on obtaining the most recent imagery that has a resolution of 1 foot (pixels are 1 ft x 1 ft) or better. These data are hosted and maintained by our data partners at the Indiana Spatial Data Portal (ISDP), University Information Technology Services (UITS), Indiana University. Use the links below to access the ISDP website for metadata and download information.

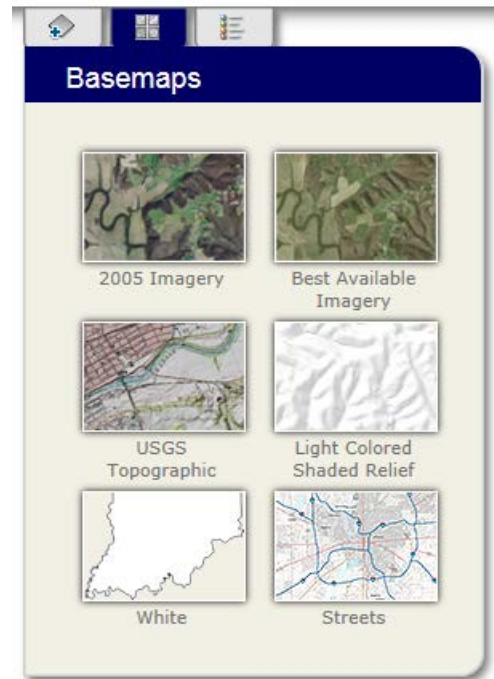


### Light Colored Shaded Relief

Shows a shaded relief of Indiana representing a 3D surface.

### USGS Topographic Map

USGS Topographic Map US Geological Survey 7.5 Minute Topographic Maps, most recent





vintages, have been georeferenced and stitched in a continuous layer.



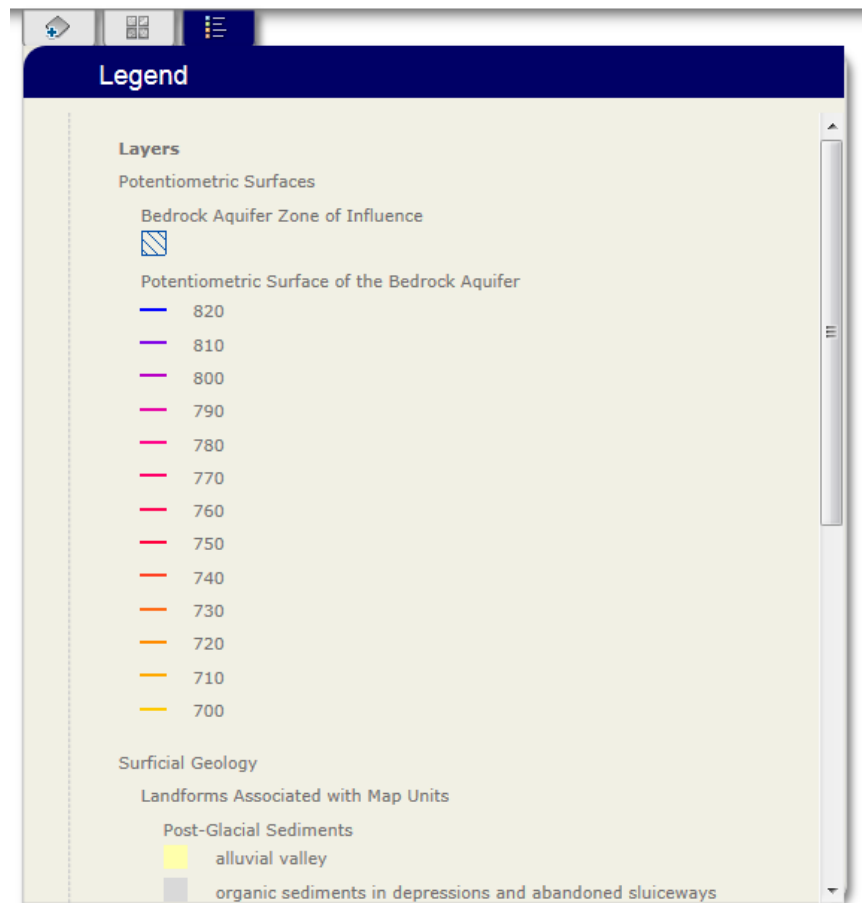
### Streets

Streets Basemap, (2011) - A scale-dependent basemap that combines the latest digital elevation model (DEM) with selected transportation and other layers. Transportation layers include interstates, federal and state highways, county roads, streets, and active railroads. County boundaries, incorporated areas, and place names are also included.

### Legend

The **Legend** button opens a window displaying the legend for selected layers on the map.

- Clicking the Legend button will open and close this window.



### Map Scale Slider Selector

The **Map Scale Slide Selector** is one of several ways to change the map scale.

- Simply click the white bar to select one of the available map scales. The Scale Selector is always available onscreen near the Layers Area.
- As mentioned earlier, the map scale can also be changed by scrolling the Mouse Wheel.
- No matter which zoom method is used to change the Map Scale, the only available scale selections are 1:2,500,000; 1:1,000,000; 1:500,000; 1:250,000; 1:125,000; 1:64,000; 1:32,000; 1:16,000; 1:8,000; 1:4,000; 1:2,000; 1:1,000.

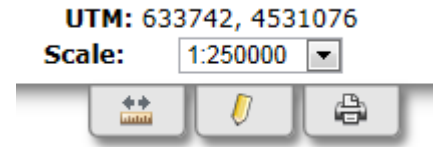


- A third way to change the map scale is to select a scale from the dropdown list located in the upper right of Tools Area.
- The UTM values represent the Universal Transverse Mediator, Zone 16, NAD83, ground coordinates for the location of the cursor on the map.

UTM: 664963, 4575824  
 Scale: 1:250000

## Tools Area

- Hover the mouse over each tool tab to see the tool tip.
- Click on a tab to open or close the tool.
- Select maps include optional tools. See Optional Tools below.



### Measure Tool

Use to measure areas, distances, or point locations in a variety of units.



### Area Button

Measure Area:

- Click the “Area” button.
- Default units are given in acres.
- Use the dropdown box to select other units.
- Click the map to begin.
- Move the pointer to the desired destination and click again – this process draws a line.
- Continue clicking on the map to outline an area and double click to finish.



### Distance Button

Measure Distance:

- Click the “Distance” button.
- Default units are given in feet.
- Use the dropdown box to select other units.
- Click the map to begin.
- Move the pointer to the desired destination and click again – this process draws a line.
- Double click to finish, or continue the process of single clicks and drawing lines to get a series of measurements with a cumulative result.



### Location Button

Determine a Location:

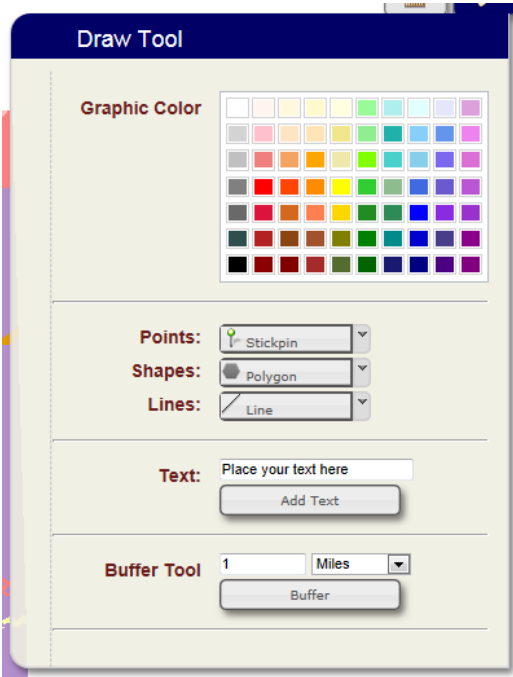
- Select the “Location” button.
- Default units are given in degrees.
- Use the dropdown box to select DMS (Degrees Minutes Seconds).
- Click on the map to determine coordinates.

- Results are returned in a variety of coordinate systems.
- Note: UTM X and Y coordinates are always available in the upper right corner above the scale.



### Draw Tool

Use the draw tool to add basic shapes, buffer circles, and add text to the map. Once added, graphics can be selected to move, edit, or delete.



To add a Shape:

- Select the graphic color
- Select one of the basic shapes from the dropdown menus
- Hover the mouse over the map and follow the tool tip instructions to place the graphic.

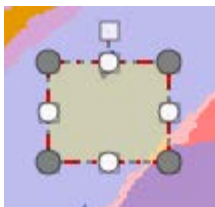
To add Text:

- Select the graphic color
- Enter custom text in the dialog box
- Click the “Add Text” button
- Click on the map to place the text.

Add a Buffer:

- Select the graphic color
- Enter the buffer distance (radius) and select the units
- Click the “Buffer” button
- Click on the map to place the graphic.

Move a graphic object on the map:



- Click on the graphic object in the map
- Click and Drag the object to a new location

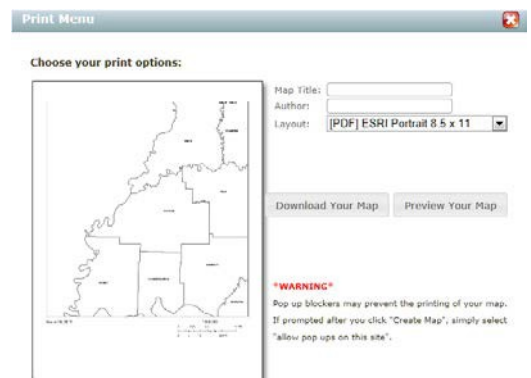
Edit the shape/size of a graphic object (excluding text):

- Click on the graphic object in the map
- Click and Drag the objects handles
- To deselect the graphic object click in the map away from a graphic object



### Print Menu Tool

Click the Print tab to show print options and to preview or download the Map.



## Tools Tabs – Optional Tools

### As shown on the Petroleum Database Management System Map



#### Zoom To Tool



#### Zoom to County:

- Select “County” in the Search Criteria dropdown.
- Select the desired county name in the Selection dropdown.

#### Zoom to Township/Range:

- Select “T/R” in the Search Criteria dropdown.
- Type the number and direction of the desired Township and Range into the Selection box.
- Press Enter to zoom to the location.
- Note: there is a dropdown box under Selection that can be used to switch from the 2<sup>nd</sup> Prime Meridian to the 1<sup>st</sup> Prime Meridian if needed.

#### Zoom to IGS ID:

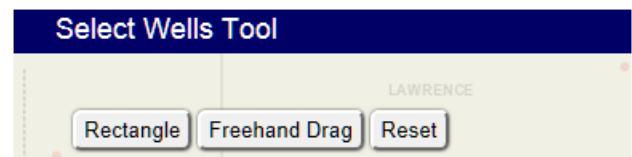
- Select “IGS ID” in the Search Criteria dropdown.
- Type the IGS ID number into the Selection box.
- Press Enter to zoom to the well.
- Note: this process will automatically turn on the well symbols layer.

### As shown on the Petroleum Database Management System Map



#### Select Wells Tool

Use to select a group of wells and return a list of detailed information about each well, including a link to the Well Record Table for each well.



Start by turning on the Oil, Gas, Gas Storage, Service Wells, or Well Symbols layer, or any combination of these layers.

**Rectangle**

#### Select by Rectangle:

- Click the “Rectangle” button.
- Move the pointer to the desired area on the map.
- Start one corner of the rectangle by holding down the mouse button and moving across the map.

- A rectangle will be drawn around the desired wells to be selected.
- When all the wells have been encompassed by the rectangle, stop the movement and release the mouse button.
- A list will appear with various well data and links to the Well Record Tables.
- Hover over each well in the list to see its location on the map.

**Freehand Drag**

#### Select by Freehand Drag:

- Click the “Freehand Drag” button.
- Move the pointer a the desired area on the map.
- Start by holding down the mouse button and moving around the desired group of wells.
- A shape will be drawn around the desired wells to be selected.
- When all the wells have been encompassed by the shape, stop the movement and release the mouse button.
- A list will appear with various well data and links to the Well Record Tables.
- Hover over each well in the list to see its location on the map.

**Reset**

Select “Reset” to remove all selected well data.

### As shown on the Coal Mine Information System Map



#### Zoom Tool

Zoom Tool	
Search Criteria	Selection
County <input type="text"/>	<input type="text"/>
<input type="button" value="Remove Highlight"/>	

- The zoom tool is used to zoom-in quickly to a County, Mine ID, Quad Name, Township/Range, or Township/Range/Section of interest.
- Select the zoom option from the Search Criteria drop-down box:
  - County - select a county from the Selection drop-down box
  - Mine ID - type the 6 digit Mine ID, press enter to zoom to the mine.
  - T/R - type township and range, example - 8N8W, press enter to zoom.
  - T/R/S - type township, range and section, example - 8N8WSec21 press enter to zoom to the Township/Range/Section selection.
  - Quad Name - type a quad name, example, Jasonville, press enter to zoom to the Quad selection.
- The selection will be highlighted.
- Click the Remove Highlight button to remove the highlight.