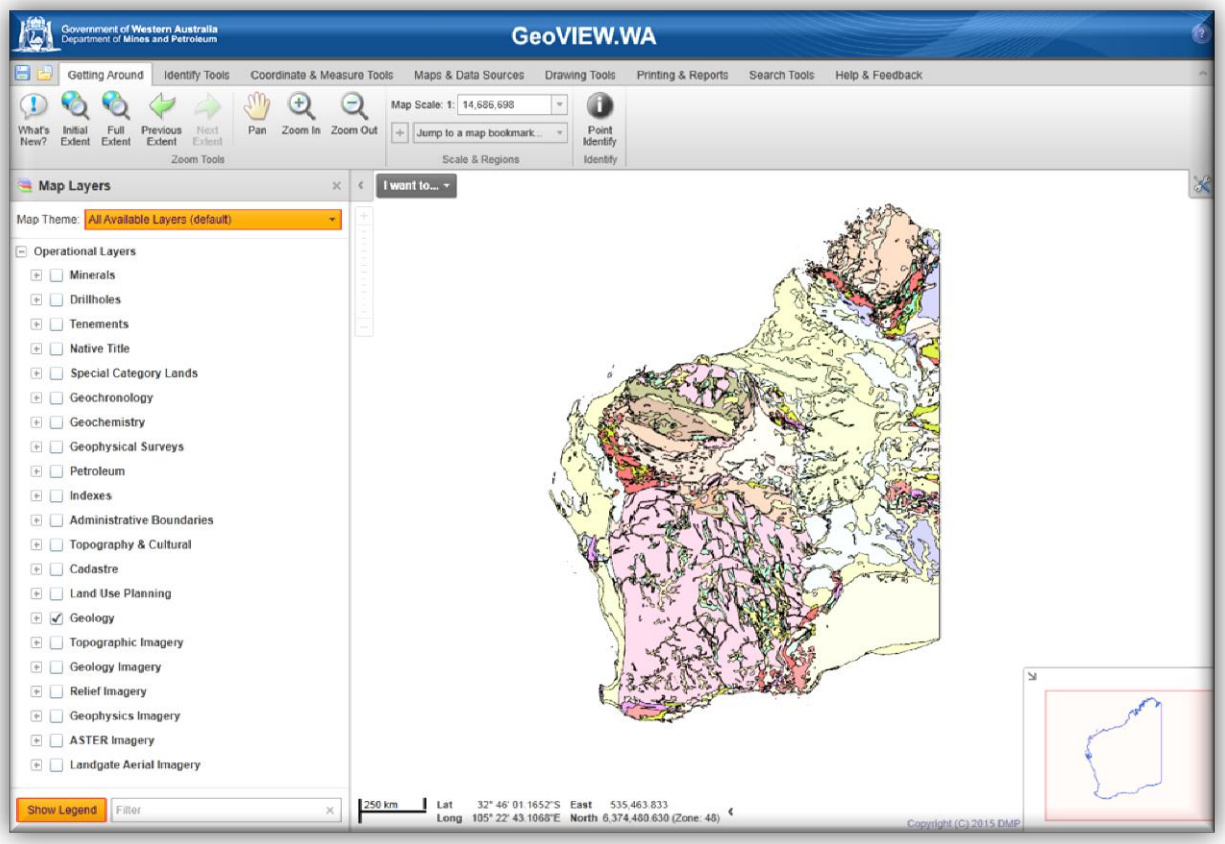
GeoVIEW.WA

User Guide



Version 1.4 — November 2015

Government of Western Australia
Department of Mines and Petroleum

Geological Survey of
Western Australia

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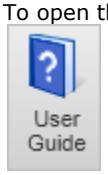
Welcome

Welcome to GeoVIEW.WA, an interactive (GIS-based) mapping system. You can construct and print your own geological map (your chosen area and scale) and incorporate other mineral and petroleum exploration datasets including mines and mineral deposits, petroleum wells, active leases, and much more.

Using this Guide

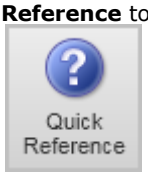
This User Guide explains how to navigate and use the application. You can open the User Guide in the application by doing any of the following:

- To open the User Guide: On the **Help & Feedback** tab of the toolbar, click the **User Guide** tool.

  User Guide tool

- To open the Toolbar Quick Reference: On the **Help & Feedback** tab of the toolbar, click the **Quick Reference** tool or click the **Quick Reference** button on the right hand side of the **Title Bar**.

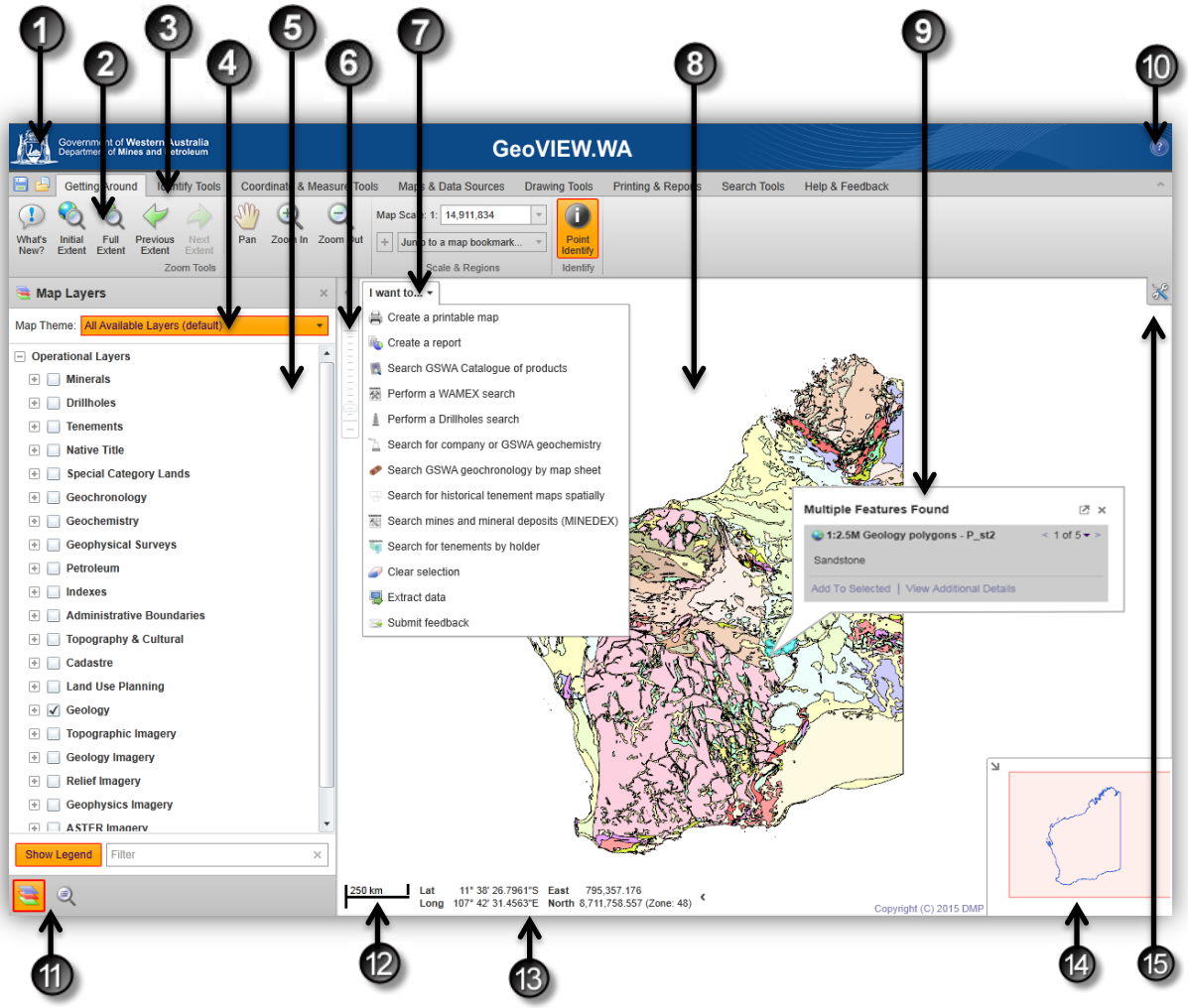
  or 

  Quick Reference tool

- Press the **F1** key anywhere in the application to open a help topic about that feature.
  Not every feature has a help topic.

The Main Screen

When you will open GeoVIEW.WA, you see a screen similar to the one below. It may contain a different map and some extra features, but it is likely t have most of the features described. In the example below, all the navigation elements like the toolbar, the information panel, the **I want to...** menu and the **Overview Map** are visible so that they can be described. Normally, at least some of these elements would be hidden.



Navigation features in the main screen of the Viewer

Number	Screen Element
1	**Viewer title bar**: Displays the title of the application.
2	**Toolbar**: The toolbar contains numerous tools that are grouped into tabs by function.
3	**Toolbar tabs**: The toolbar consists of tabs that categorize the tools into high-level groups: Getting Around, Identify tools, Coordinate & Measure Tools, Maps and Data Sources, Drawing Tools, Printing & Reports, Analysis and Help & Feedback.
4	**Map Theme**: Select from a list of predefined Map Themes (i.e. Geoscience) or All Available Layers (default).
5	**Information panel**: This panel lists different kinds of information when you interact with the map. For example, it displays Map Layers where you can select different layers to hide or show on the map or it displays a list of map features in the Results List when you perform a search or use

Number	Screen Element
	the Identify tool. The filter and icons at the bottom of the panel allow you to control what information to display in the panel.
6	**Zoom Slider**: Use this slider to zoom in or out on the map by clicking the **+** or **-** or by dragging the marker up and down.
7	**I want to...**: A menu of shortcuts to frequently-used tools. This menu tries to anticipate what you will want to do most often.
8	**Map**: The map window where you interact with the map by zooming, panning, annotating, or right-clicking to get more information.
9	**Map Tip**: Map tips appear when you hover over a feature in the map window. To enable map tips click in the Maps & Data Sources tab and check the Enable Map Tips box. To find more information about the feature in the map tip, you can click View Additional Details. Click **Add To Selected** to add this feature to the Selected list. You can then find the feature later by clicking the Selected icon ★ in the Information Panel toolbar.
10	**Show User Guide**: Shows the help documentation.
11	**Information Panel Toolbar**: Contains icons and a filter that you can use to control the information listed in the Information Panel. Clicking different icons changes the information to Map Layers, Results and any other options configured for the map. The Information Panel opens when you click the Show Layers button or when you run a search. To open it manually, click the arrow to the left of the **I want to...** menu. › The **Show Layers**/**Show Legend** button allows you to toggle between the map legend and the map layers in the panel. The legend only displays symbols for the layers that are active on the map. The legend items change with the scale of the map.
12	**Scale**: The current scale of the map.
13	**Mouse Position**: The position (co-ordinates) of the computer cursor on the current map. To hide the mouse position, click the small arrow on the right.
14	**Overview Map**: Displays a thumbnail of the whole map with the current view shown as a small square on the map. The Overview map is an orientation tool to identify which part of the overall map you are currently zoomed in to. To hide the Overview map, click the arrow in the top left corner.
15	**Toolbar Icon**: Shows or hides the toolbar when clicked.

Get Started

This web-based map is very different from a paper-based map. For one thing, it allows you to move around the map and zoom in and out, but this is just the beginning. Web-based maps contain many different types of information and this information is added layer by layer starting with the first layer, usually referred to as a base map. This way of building a map — in layers — makes it possible to interact with the map in useful ways — most importantly — to search for, and analyze the information stored on all those layers. This makes web-based maps extremely powerful tools for researching and understanding the world around us.

Get Around

The map has many different navigation features that make it easy to move around, for example, you can click the map and scroll your mouse wheel to zoom in or out. If you have a touch screen, you can touch the screen and drag the map to move it around, double-tap to zoom in, or pinch to zoom out.

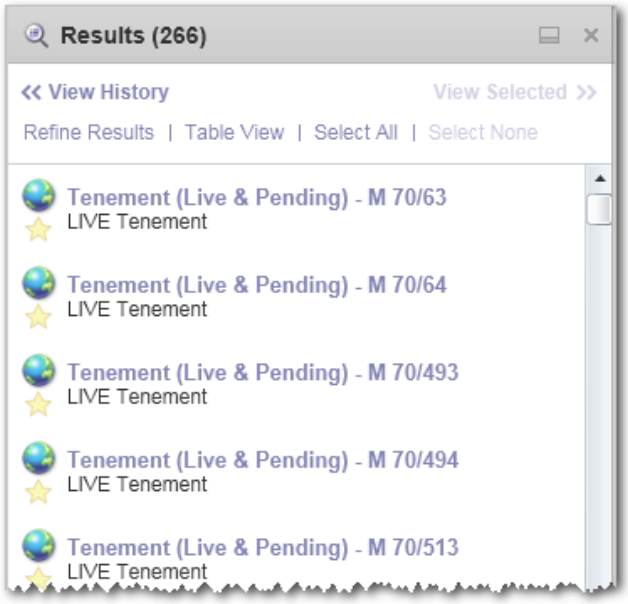
Find Stuff

One of the greatest benefits of web-based maps is the ability to search for information. There are several ways to search in the map, but one of the easiest is to use the Global Search tool on the Search tab.

Global Search tool

When you type in a word, the application tries to find all the most relevant results from a list of predefined layers and display the results in the Results List. For example, if you type in the word "Titanium", the Results List will include any occurrences of “Titanium” in the following layers;

- Mines Deposits and Prospects
- Live Tenements
- Core Library Drill Holes
- Mineral Exploration Reports
- Abandoned Mines



Example of results from the Global Search tool

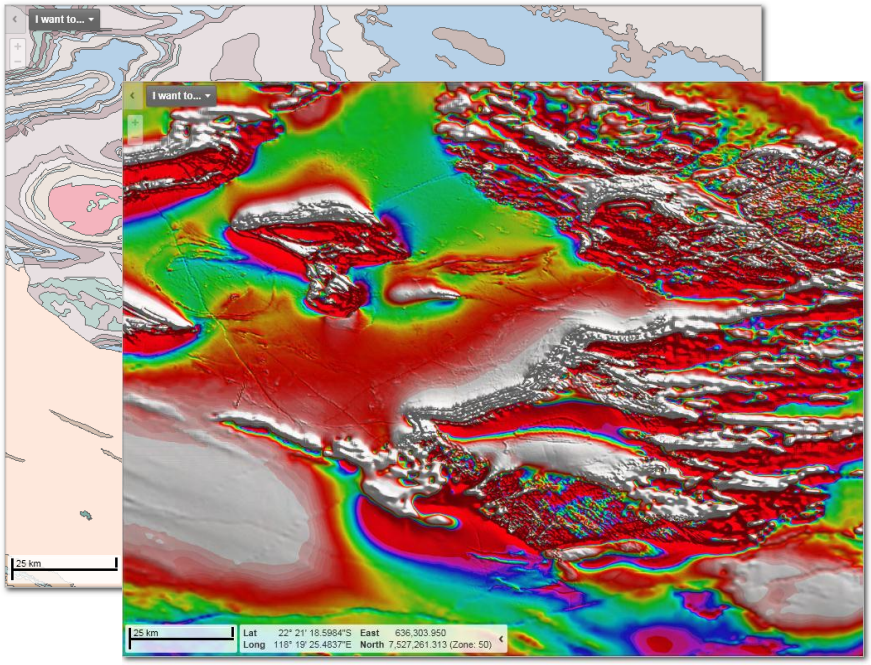
In addition to the standard search, there are ad hoc searches, usually created for those searches that people need to run often, for example, Geochronology, Tenement or Mines, Deposits and Prospects. These ad hoc searches are found on the toolbar but are also in the **I want to...** menu.

Ad hoc searches in the Analysis Tools area of the Tasks tab

Change What You See

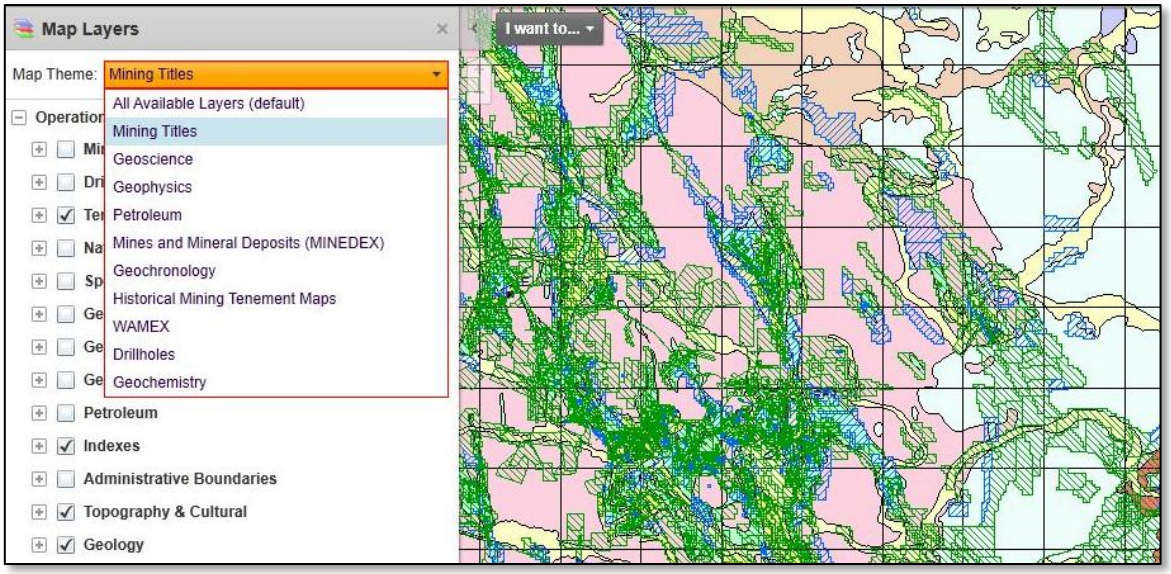
Different Views

Because web-maps are built in layers, it is easy to control what you see in the map. For example, you could change the map layer from a 500K Geology to Magnetic Imagery. The Geology map shows you a traditional Geology map but the Magnetic Imagery map shows an Airborne Survey image of the same area taken from remote sensing satellites.



Change Map Layers

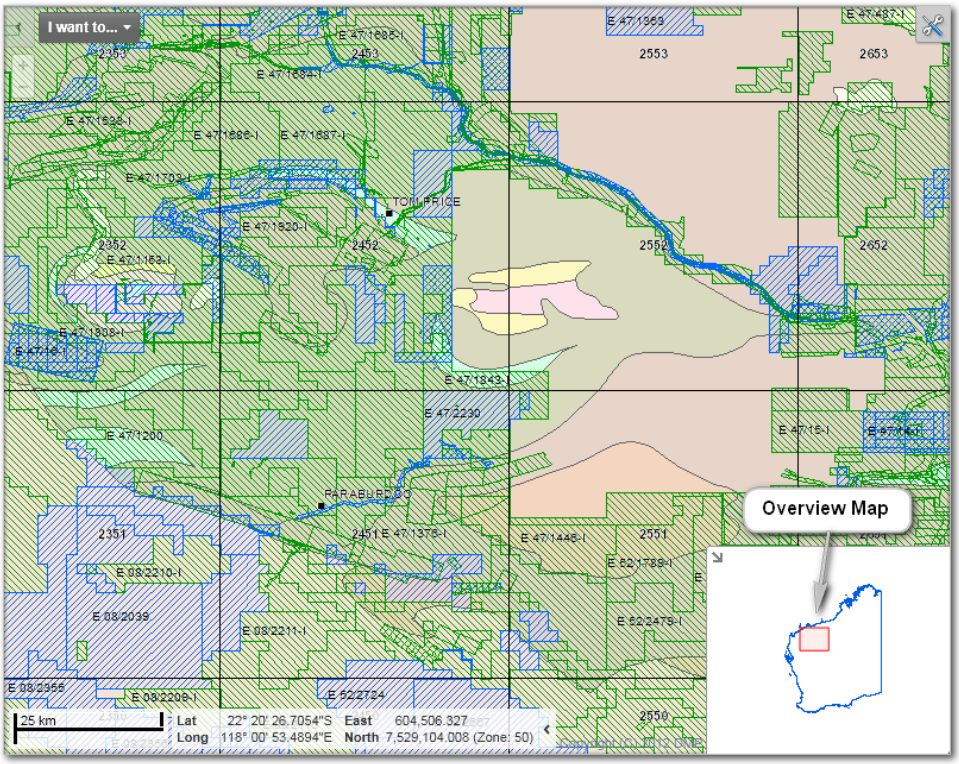
You can also change what you see by switching different layers on or off, or in some maps, by choosing a special map theme, which contains only specific layers, for example, only Live Tenements, Towns and Geology.



Show a Map theme of Mining Titles

Orientation

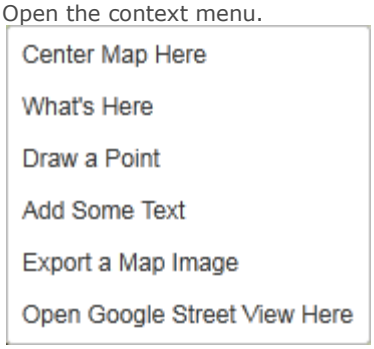
When you are zooming in and out and moving around on a web-based map, it is easy to lose track of where you are. If this happens, you can click the small arrow  in the bottom right corner of the map to open the Overview map, which shows the current view as a blue square on the full map.



The Overview map open

Navigate Around The Map

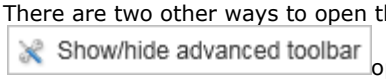
Interactive maps provide many choices for displaying information, searching for more details, and moving around the map. Most navigation uses the mouse but at times you also use a combination of key presses in combination with scrolling using the mouse wheel or dragging across the map.
On the desktop map, you can use the following controls:

To...	Do this...
Pan or move the map.	Click on the map and drag in any direction.
Pan left or right.	Press the **Left**- or **Right-arrow** keys.
Pan up or down.	Press the **Up**- or **Down-arrow** keys.
Pan in or out.	Press the **Plus +** key to **zoom in**. Press the **Minus -** key to **zoom out**.
Zoom in or out.	Scroll the **mouse wheel** away from you to zoom in; towards you to zoom out. or Use the Zoom Slider: • Click the **Plus +** or **Minus -** to zoom in or out.
Zoom in to a specific region on the map.	Press **SHIFT** and drag a **rectangle** around the area you want to zoom in to.
Open/Close the Toolbar. 	Double-click the title bar, or click the **Show/Hide the Toolbar** button.
Open the context menu. 	**Right-click** on the map. This menu changes depending on the map and how the application is configured.

About the Toolbar

The toolbar contains many of the tools that you use to move around, zoom in and out, as well as find and manipulate the information that is stored in the map. Sometimes the Toolbar opens automatically, for example, if you select **Draw on the Map** from the **I Want To menu**, but you can open the Toolbar at any time by clicking the Toolbar button in the top right corner of the map.

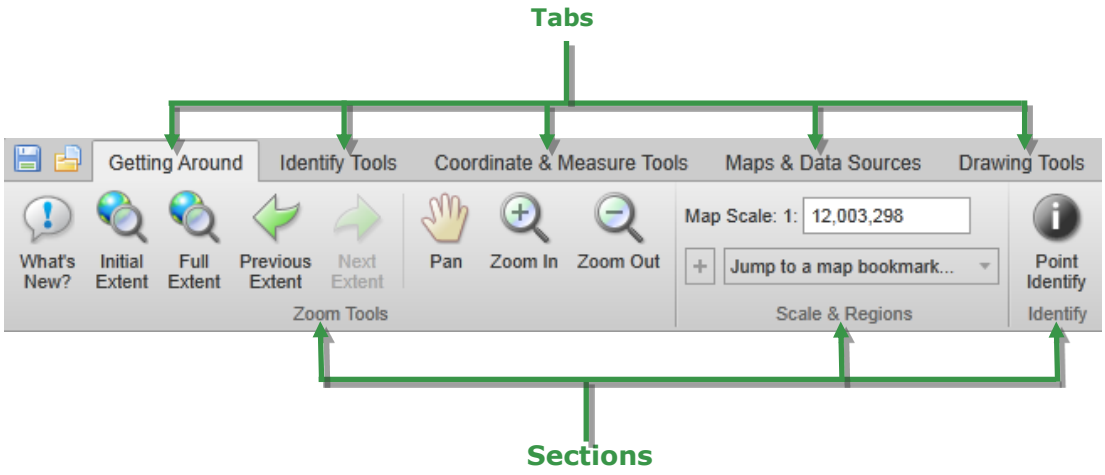
Toolbar button

There are two other ways to open the toolbar: Double-click the title bar of the application or select the  option on the **I Want To menu**.

To make it easier to find a particular tool, they are grouped on the toolbar at two levels:

1. The toolbar is divided into tabs or ribbons that group the tools into high-level functions, for example, **Getting Around**, **Maps & Data Sources**, **Identify Tools**, and **Analysis**.

2. Each tab is divided into sections by function, for example, on the Getting Around tab, there are **Zoom Tools**, **Scale & Regions**, and **Identify** sections.



Getting Around Tab

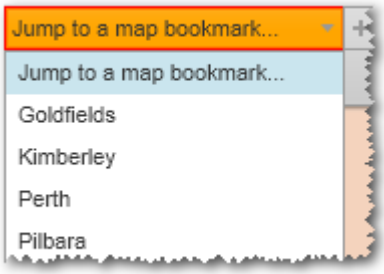
The Getting Around tab of the toolbar contains tools to facilitate navigation. Most of the tools are activated when clicked.

Getting Around tab of the toolbar

The tools in this tab are grouped into these sections:

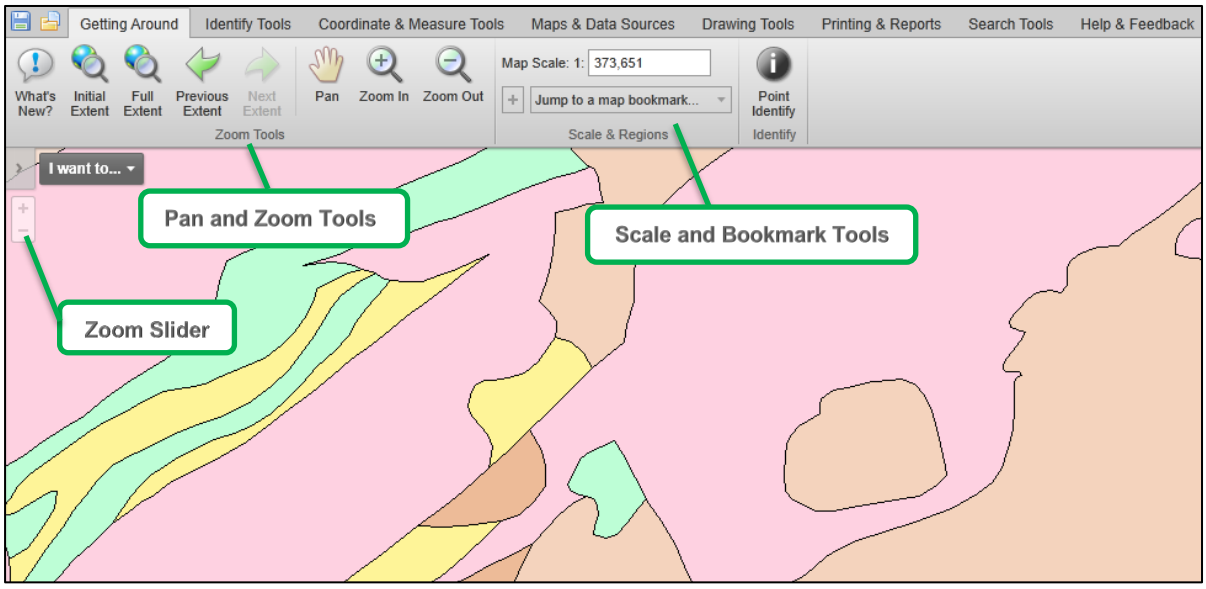
- **Zoom Tools**: Tools for jumping to specific extents, panning and zooming.
- **Scale & Regions**: Move the map quickly to a preset scale or bookmark.
- **Identify**: Find information at a particular point clicked on the map.

Use this tool...	To...
	Lists the new features and layers added in the last 2 updates.
	Return to the extent (scale) that the map was at when it opened.
	Show the full extent of the current map.

Use this tool...	To...
	Jump to the previous extent.
	Jump to the next extent.
	Pan (move) the map in any direction. To pan the map, click on it and drag in any direction. Use the Pan tool to return to panning when you have used other tools.
	Zoom in when you click on the map.
	Zoom out when you click on the map.
	Select a scale to jump to by typing in a scale.
	Jump to a bookmark that was previously added to the map. To add a bookmark for the current extent, click the **plus +**, enter a **name**, and then click **OK**.
	Identify information at the point on the map that is clicked.

Use the Pan and Zoom Tools

The ability to pan and zoom in and out of the map is a key feature of web maps, so it is not surprising that there are many different ways to do this on the map.



Pan, zoom, scale, and bookmark tools make it possible to move quickly to specific areas of a map

Pan Tool

You can use the Pan tool to drag the map in any direction, or use the arrow keys on the keyboard to move in increments up, down, or sideways.

Zoom Tools

Zoom Slider

How to use the zoom slider:

- Click the **Plus +** or **Minus -** to zoom in or out on the map.

Zoom In and Out 

When you click the Zoom In or Out tools, then click the map it zooms to the next scale increment and centers the map. Scrolling with a wheel mouse also enables you to zoom in (roll wheel forward) and zoom out (roll wheel backwards) You can use the Zoom tools more precisely by clicking the tool and dragging a box on the map. Releasing the button zooms to the area defined by the box.

Full Extent Tool 

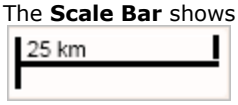
The Full Extent tool is a quick and easy way to zoom out as far as possible on any particular map.

Initial, Previous, and Next Extent Tools 

These tools take you to the **Initial** extent that the map was set when you opened it, or to the **Previous** extent you were on, or the **Next** extent.

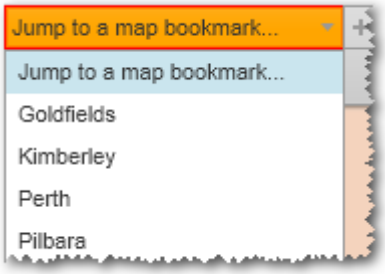
Map Scale Box and Scale Bar

Another method of zooming uses the Map Scale box. The **Map Scale** box shows the current map scale but you can type in a particular scale and then press Enter to jump directly to a particular scale.
The **Scale Bar** shows the estimated scale of the map at any given extent.



Jump to a Map Bookmark

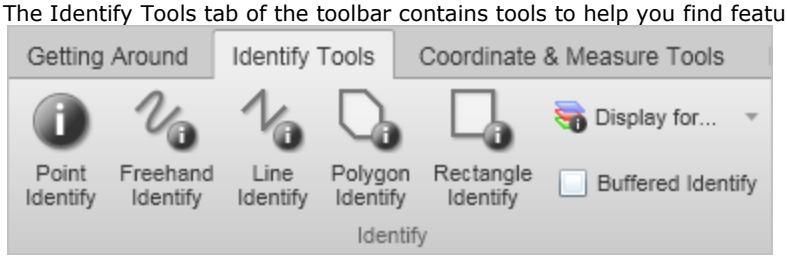
Although it is not strictly a zoom tool, another way to move quickly a given extent and point on the map is to mark it as a bookmark. To do this, you zoom to the point and extent that you want and then click the **+** beside the **Jump to a map bookmark** tool.



Use bookmarks to jump to a place and an extent
Once you have given the bookmark a descriptive name and clicked **OK**, you can then jump to that feature and extent on the map with one click.

Identify Tools Tab

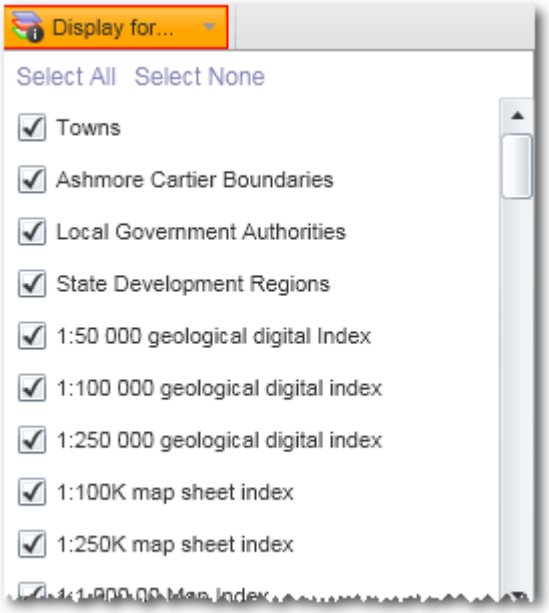
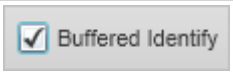
The Identify Tools tab of the toolbar contains tools to help you find feature information.



Identify Tools tab of the toolbar

Identify: Use several Identify tools to find data by layer, including buffered data.

Use this tool...	To...
Point Identify	Identify data at a particular point anywhere on the map. All the features beneath the point you click are listed in the Results List.
Freehand Identify	Identify features by drawing a line in any direction on the map. All the features that intersect with the line you draw are listed in the Results List.
Line Identify	Identify features by dragging a line in any direction on the map. All the features that intersect with the line you draw are listed in the Results List.
Polygon Identify	Identify features by drawing a segmented shape over an area on the map. All the features beneath the shape you draw are listed in the Results List.
Rectangle Identify	Identify features by drawing a rectangle over an area on the map. All the features beneath the shape you draw are listed in the Results List.

Use this tool...	To...
	Define the layers to include or exclude in the identify process.
	Add a measured area around each area you identify.

Use the Identify Tools

The Identify Tools are really another way to search for information in the layers of the map. Instead of typing a word and clicking search, you define an area on the map by drawing a shape. The application then finds all the information about the layers and features in that area and lists them in the Results List. On the Getting Around tab of the toolbar, there is one identify tool - the Point Identify tool. On the Identify tab of the toolbar, the Point Identify tool is also available along with several more tools for identifying the area you want to search. You can exclude layers from the Identify process and also add an additional buffered area around the area you define.

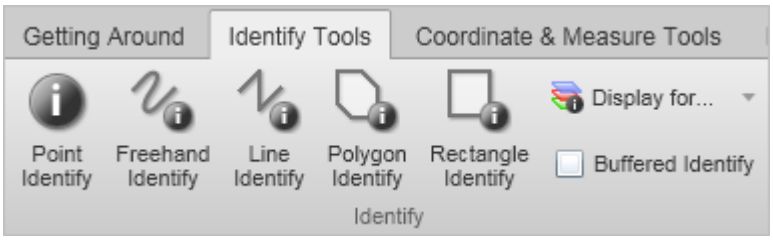
When you use an Identify Tool, it searches multiple layers at the same time. However:

- If a layer is off (not visible), that layer's information will not be included in the Identify process.
- If the layer is not in visible at the current scale (text is gray), that layer's information will not be included in the Identify process.

The results of the identify process are displayed in the Results List in the same way that Search results are displayed. As the application finds features, it begins displaying the results in the Results List immediately. The results are grouped by layer.

To identify features by drawing on the map:

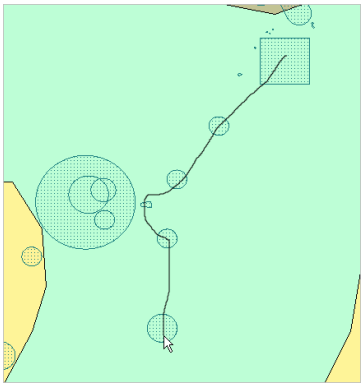
1. If any of the layers you want to include in the search are in gray text, click on that layer and then click **Zoom To Visible Scale**.
2. Click the **Identify Tools** tab of the toolbar to find the identify tools.



Identify tools on the Identify Tools tab of the toolbar

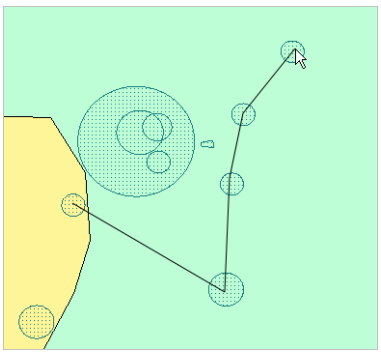
3. To define an area to identify, do any of the following:

- Click **Point Identify**, and then click any point on the map.
  Any features found at that point on the map are included in the identify process.
- Click **Freehand Identify**, and then draw in any direction on the map over any features that you want to include in the identify process. When you release the button, the identify process begins, and all the features that intersect the line are included in the identify process.



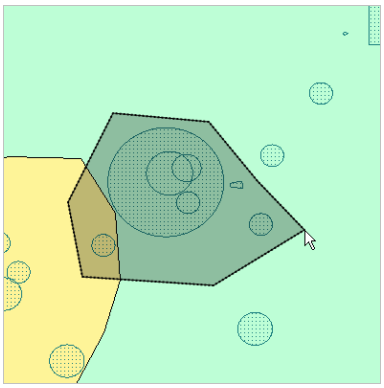
Draw a freehand line to identify features

- Click **Line Identify**, then single click on the map and drag across the map to draw a line.
  To continue the line but change direction, click the map and then drag in the new direction. To end the line, double-click. All the features that intersect with the line are included in the identify process.



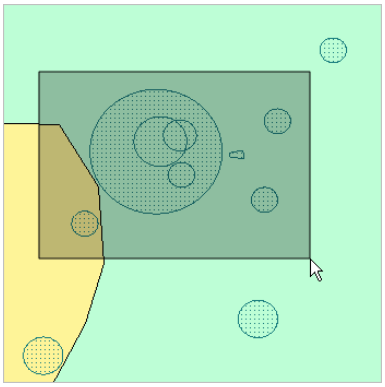
Draw a line to identify features under it.

- Click **Polygon Identify**, and then drag across the map to start a polygon.
  To change direction, click and drag in a new direction. A black shading appears under your cursor to indicate that the polygon is filling in the space of the area.
  Continue to click until the shading has covered the area you want to include in the identify process.
  Double-click to end the polygon. You do not have to complete the shape. As long as the shading covers the area, you can double-click and the line will be completed automatically. All the features beneath the shaded area are included in the identify process.



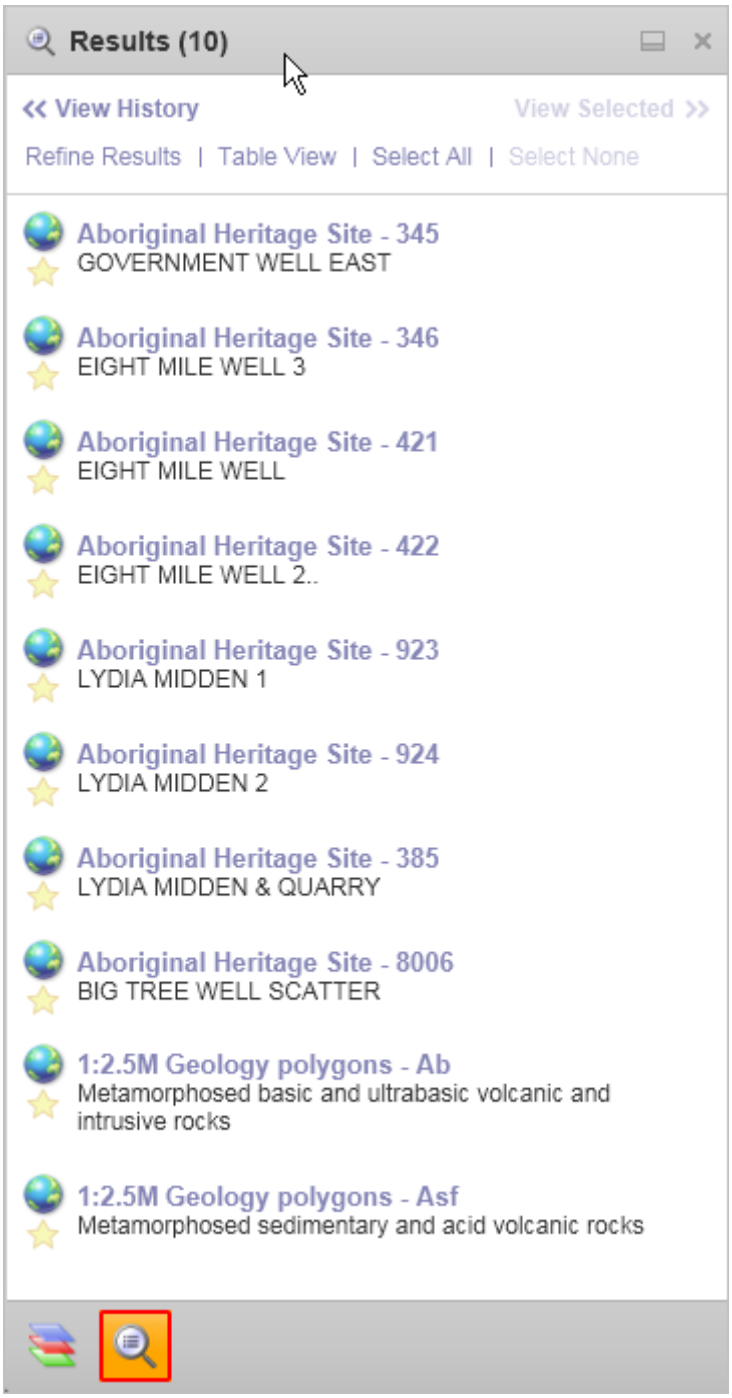
Draw a polygon to identify features under the shaded area

- Click **Rectangle Identify**, and then click on one corner of the area you want to define.
  Drag a square away from the corner you clicked. A black shaded square appears under the cursor. When your area is enclosed in the square, lift you finger from the mouse. All the features covered by the rectangle are included in the identify process.



Draw a rectangle to identify features under the shaded area

When features are listed in the Results List, they are grouped by layer:



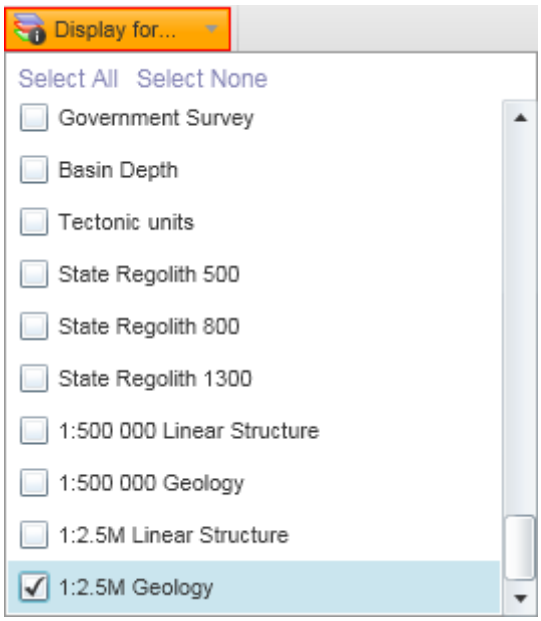
Identify results listed by layer

Exclude layers from the Identify process

To exclude layers from the Identify process:

1. In the Identify Tools tab of the toolbar, click the **Display for** drop-down list.

2. To exclude a single layer, click the checkbox in front of the layer so that it is no longer selected.



Layer excluded from the identify process

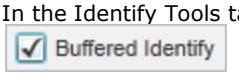
3. To exclude most of the layers, click **Select None**, and then select the one or two layers you want to include.

Add a buffer around an identify area

You can add a buffer — a measured area — around any identify area that you draw. You specify the distance from the edge of your area to add as a buffer before you draw on the map.

To add a buffer around an identify drawing:

1. In the Identify Tools tab of the toolbar, click the **Buffered Identify** checkbox.

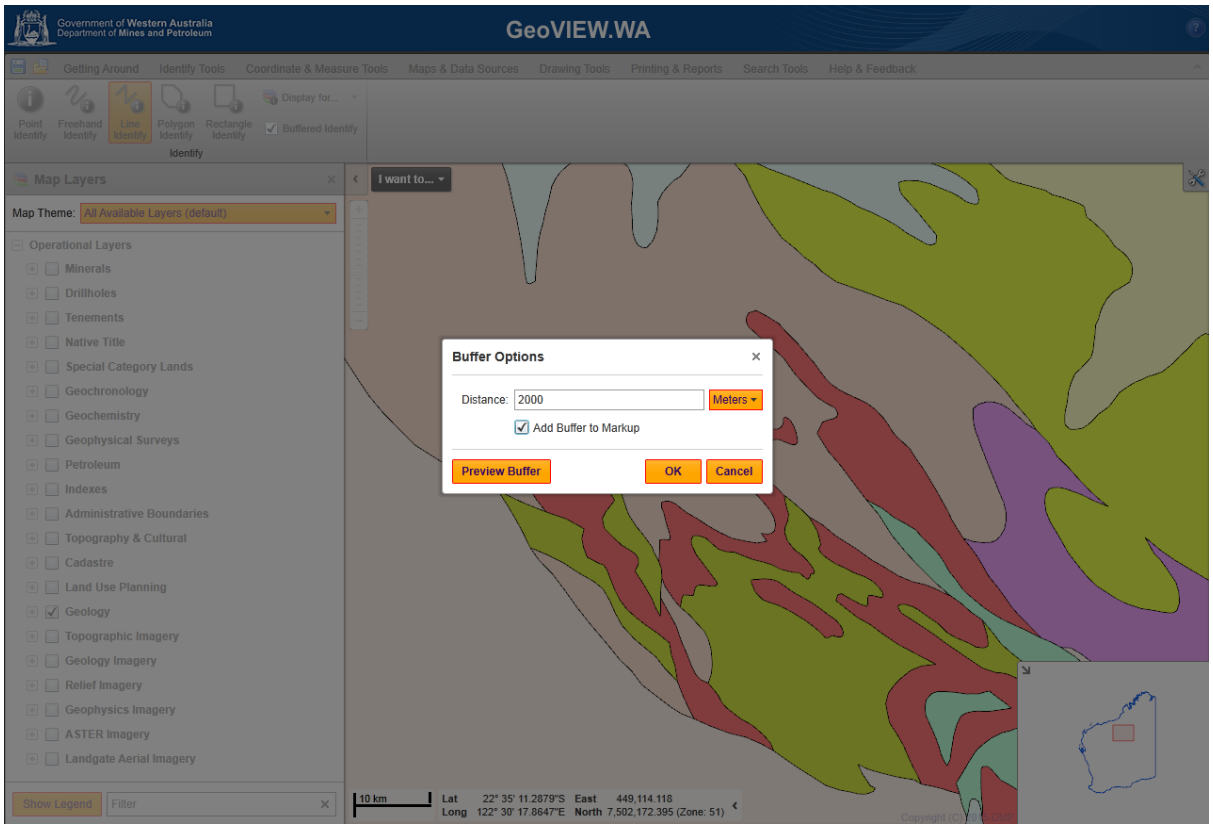


Buffered Identify selected

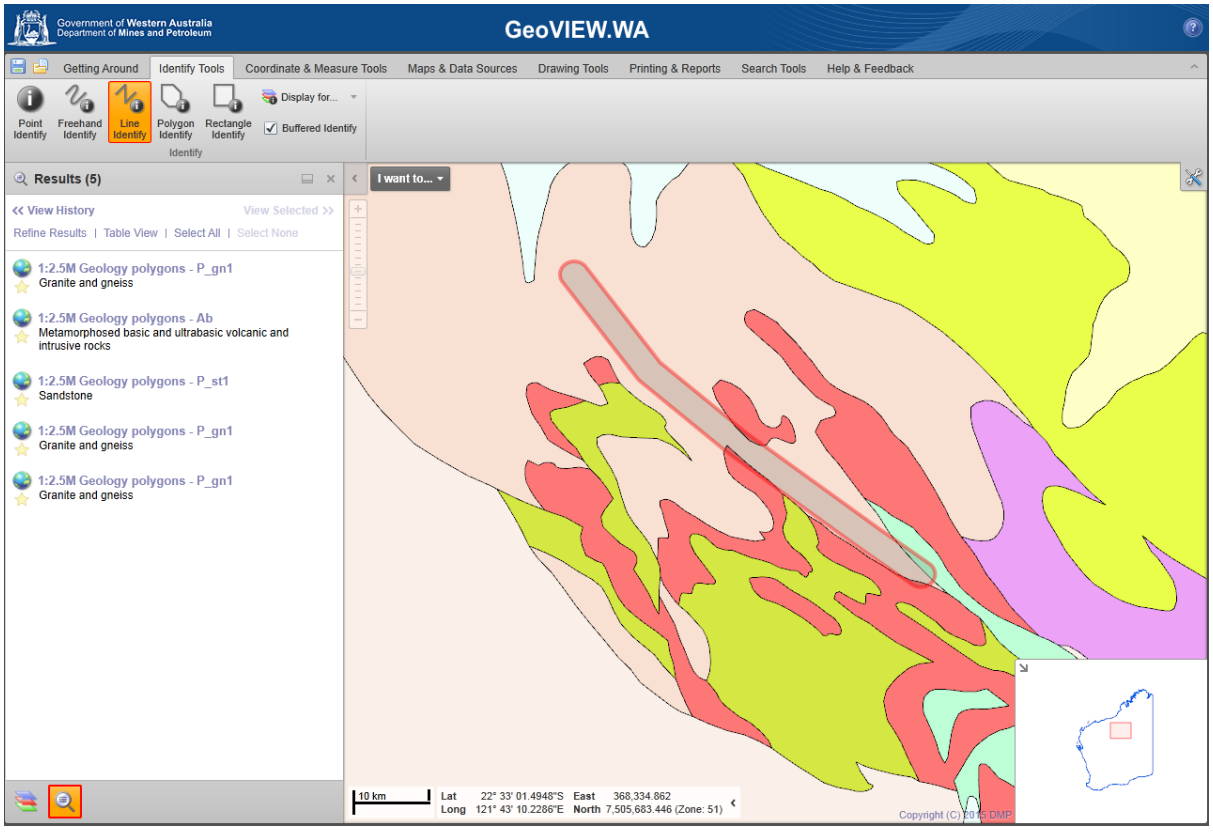
2. Select any of the **Identify** tools and draw over the area you want to identify.
The Buffer Options dialog box opens.

3. Do any of the following:

- **Distance**: Type in the distance from the edge of your drawing to the edge of the buffer.
- **Unit drop-down list**: Specify the distance measurement in Feet, Yards, Meters, Kilometers, Miles or Nautical miles.
- **Add Buffer to Markup**: Add the buffer onto the area or line you draw on the map.
- **Preview Buffer**: View the buffer to see if you need to change the settings.
The preview shows the added buffer on the map in the background behind the Buffer Options dialog box.



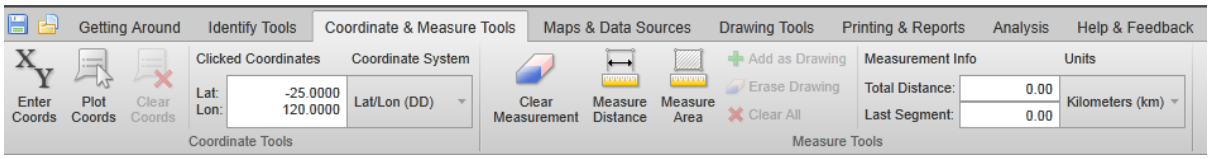
Entering options for a buffered identify



Results of a buffered identify

Coordinate & Measure Tools Tab

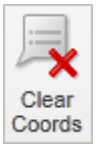
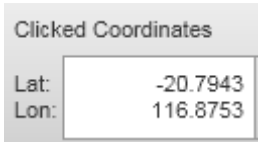
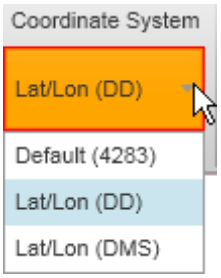
The Coordinate & Measure Tools tab of the toolbar contains tools to help you find coordinate information as well as measure area and distances.

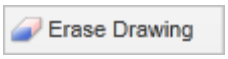
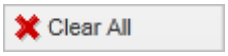
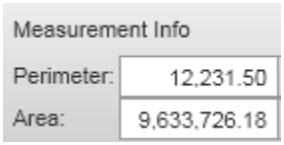
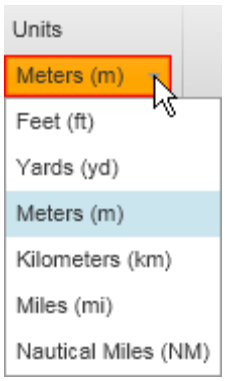


Coordinate & Measure Tools tab of the toolbar

The tools in this tab are grouped into these sections:

- **Coordinate Tools**: Enter and plot coordinates in a variety of coordinate systems.
- **Measurement Tools**: Measure distances or areas that you draw on the map

Use this tool...	To...
	Select a coordinate system and then enter known coordinates to find a feature. You choose whether to add the coordinate to the map as a callout. You can also choose to pan to that coordinate when you click **OK**.
	Place a callout on the map for every point you click.
	Clear any coordinates currently on the map.
	Find the coordinates by clicking anywhere on the map and reading the result in this box. If you click the Plot Coordinates tool and then click the map, the coordinates for each place you click appear on the map.
	Select a different Coordinate System.
	Clears the Measurement drawing on the screen.

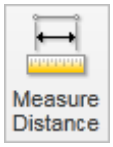
Use this tool...	To...
	Measure distances on the map by drawing a segmented line.
	Measure an area of the map by drawing a shape.
	Add the distance or area measurement to the map as a drawing.
	Erase a drawing by clicking it.
	Clear all the drawings on the current map.
	Shows the final measurement of a drawing. This graphic is indicating the perimeter length and area of a polygon.
	Change the unit of measurement on a drawing to other options like Meters, Kilometres, Nautical Miles etc.

Measure Distance and Area on the Map

It is possible to measure both distance and area on the map and to add both as a drawing so that you can refer to it later. The measurement tools add measurements in increments as you draw on the map so that you have the distance for each segment as well as the overall distance or area. You can change the unit of measurement used for the Total Distance, Last Segment, Perimeter, and Area.

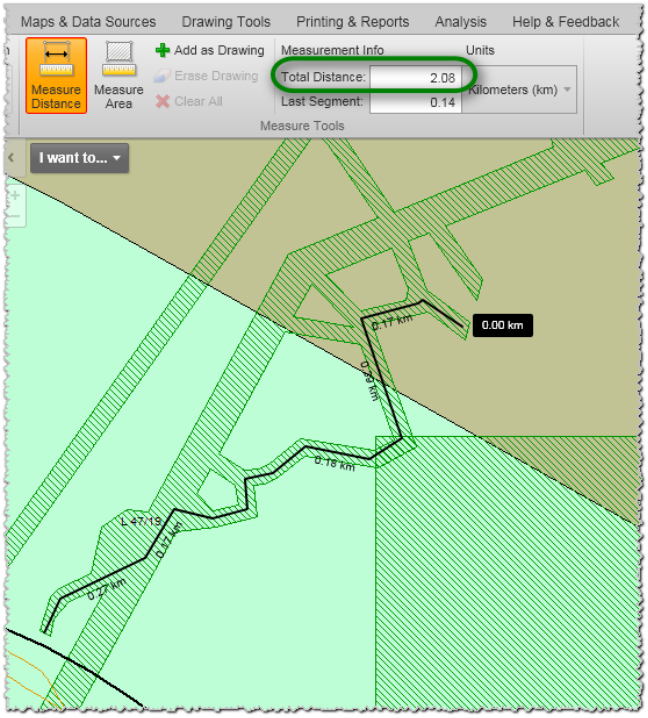
To measure distance on the map:

1. On the Coordinates & Measure Tools tab of the toolbar, click the **Measure Distance** tool, and then click on the map at the start of the distance you want to measure.



Measure Distance tool

2. Drag a line and click each time you want to change direction or to create a measured segment. Whenever you click, the distance of the previous segment appears beside the line and the total distance covered to that point appears in the **Total Distance** box in the **Measurement Info** section of the toolbar.

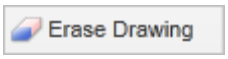


Measurement showing segment and total distances

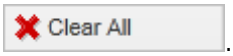
3. To add the measurement as a drawing to the map, click the **Add as Drawing** tool either during or after you use the Measure Distance tool.

Add as Drawing tool

4. To remove a drawing, click the **Erase Drawing** tool, and then click on any part of the drawing.



Erase Drawing tool

5. To remove a collection of measurement drawings, click 

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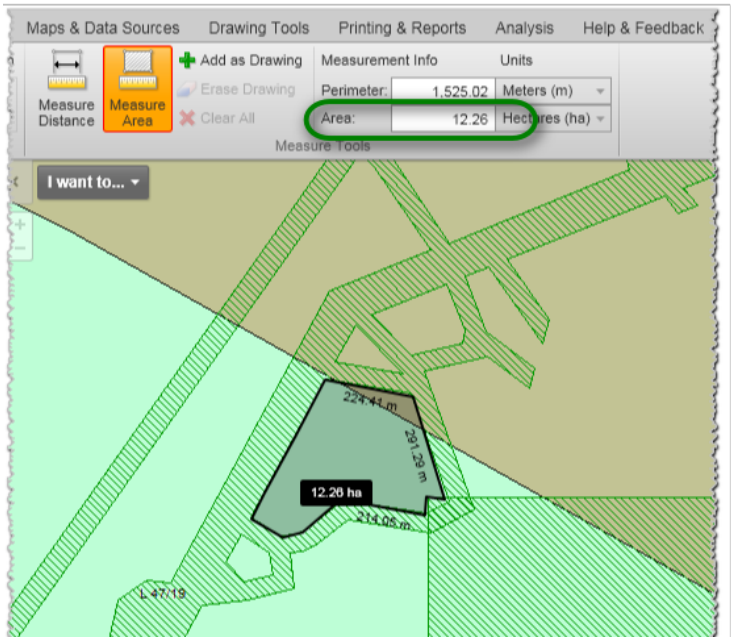
To measure area on the map:

1. On the Coordinates & Measure Tools tab of the toolbar, click the **Measure Area** tool, and then click on the map at the edge of the area you want to measure.

Measure Area tool

2. Drag a line and click each time you want to change direction or create a measured segment of the perimeter.
   Each time you click, the length of the previous segment appears beside the line and the total area and perimeter length display in the **Measurement Info** area.

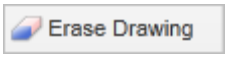


Measurement showing perimeter length, segment lengths, and total area

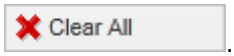
3. To add the measurement as a drawing to the map, click the **Add as Drawing** tool either during or after you use the Measure Area tool.

Add as Drawing tool

4. To remove a drawing, click the **Erase Drawing** tool and then click on any part of the drawing.



Erase Drawing tool

5. To remove a collection of measurement drawings, click 

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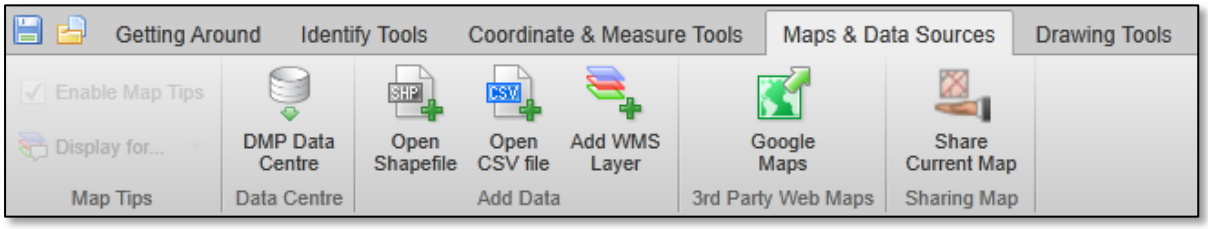
Maps & Data Sources Tab

The Maps & Data Sources tab of the toolbar contains tools to control what data is displayed in the map.



Maps and Data Sources tab of the toolbar

The tools in this tab are grouped into these sections:

- **Map Tips**: Control the display of map tips.
- **DMP Data Centre**: Link to the DMP – Data and Software Centre.
- **Add Data**: Add different types of data to the map.
- **3rd Party Web Maps**: Display external map services and interact with them as part of the existing.
- **Sharing Map**: Share current map with others.

Use this tool...	To...
Enable Map Tips	Turn on the map tips so that they appear when you click features on the map.
Display for... Select All Select None 1:2.5M Geology	Turn map tips on or off for specific layers.
DMP Data Centre	Link to the DMP – Data and Software Centre.
Open Shapefile	Open a navigation window so that you can find and add a shapefile to the map.
Open CSV file	Open a navigation window so that you can find and add a comma-delimited spreadsheet (CSV) with data to the map. Note: latitude and longitude values must be in a field/column in order to display the point features.
Add WMS Layer	Add a Web Map Service (WMS) layer to the map.
Google Maps	Open the current location in Google Maps, where you can use all the Google Maps tools. When you are in Google maps, you can see the original map and the Google map side-by-side. If you move either map, the other map tracks the movement.

Use this tool...	To...
	Share the current map extent with others.

Add a WMS Layer

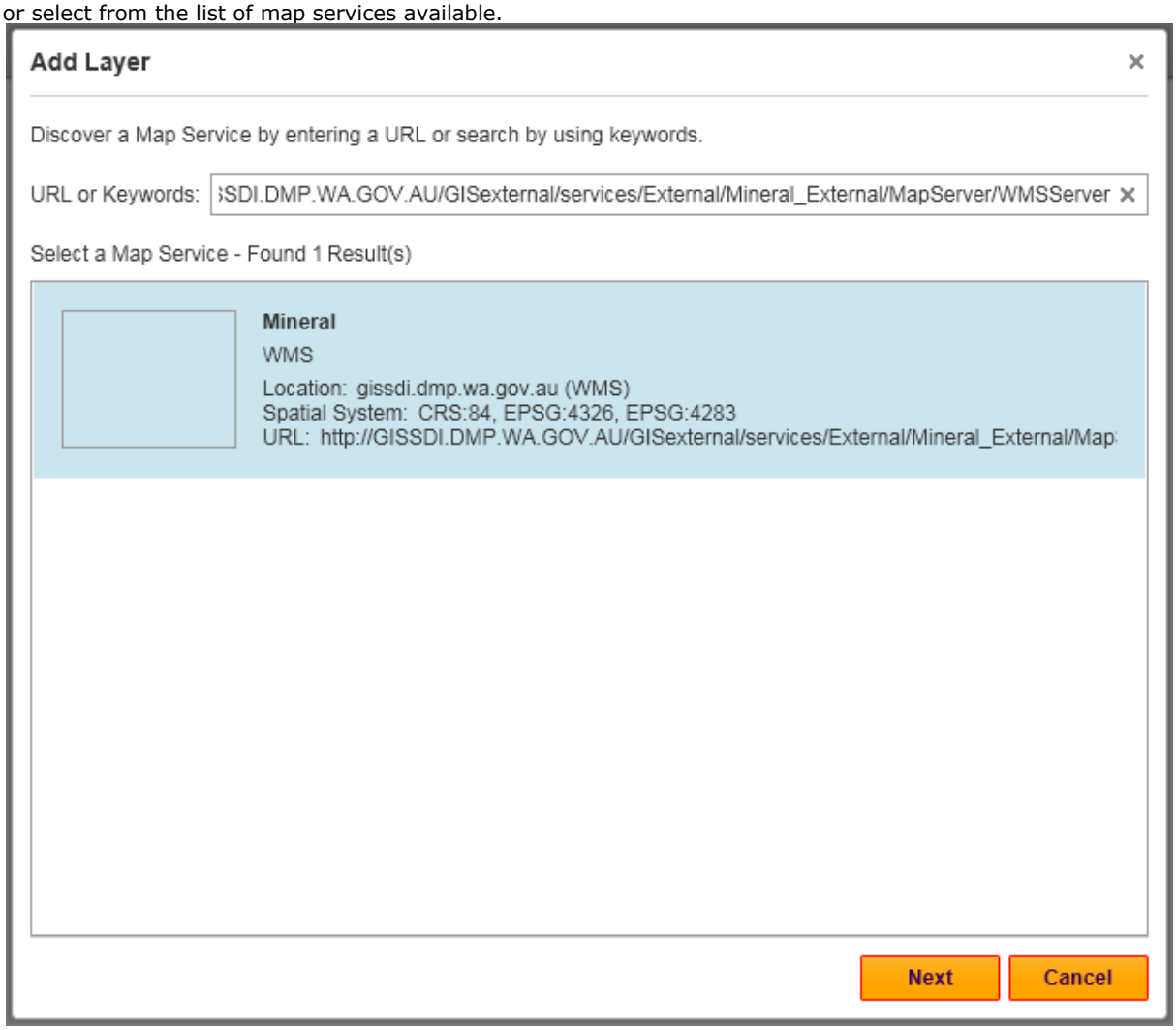
It is possible to add WMS layers to your map from many online map services, for example, the Department of Mines and Petroleum have published a number of map services such as Administration, Airborne Geophysics, Geoscience, Mineral, Petroleum and Image web services. **Note:** only "Non-Authenticated" WMS layers are supported.

To add a map layer:

1. On the **Maps and Data Sources** tab of the toolbar, click the **Add WMS Layer** tool.

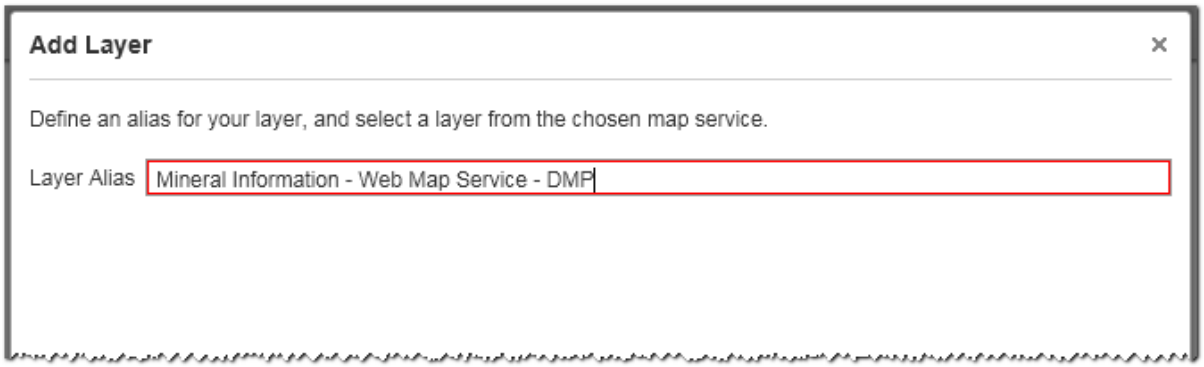
Add WMS Layer tool.

2. In the **Add Layer** dialog box, either paste in the URL of the map service into the **URL or Keywords** box, or select from the list of map services available.



Select a layer from the Add Layer dialog box

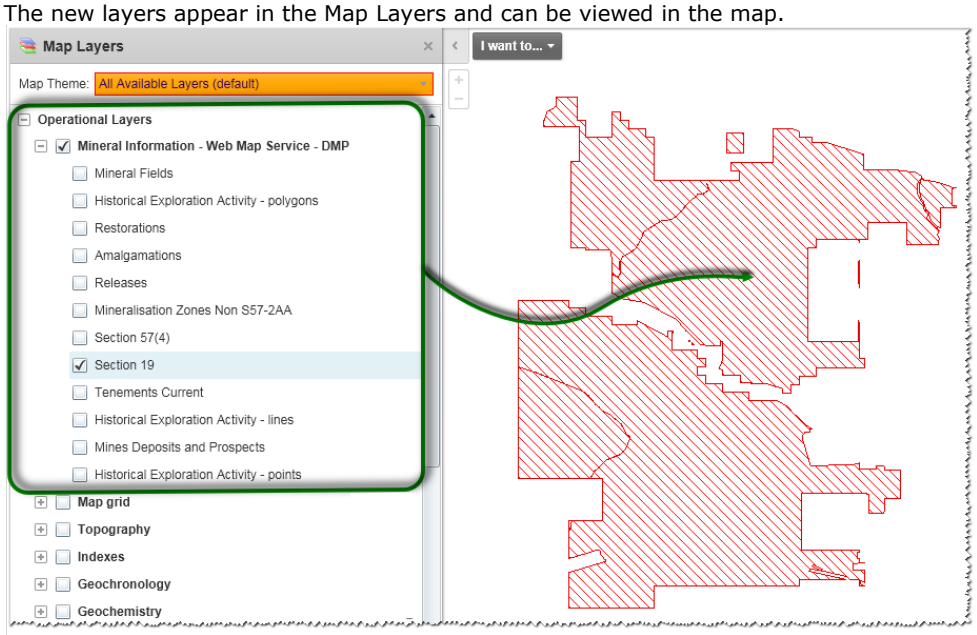
3. Click **Next**, and then in the **Layer Alias** box, type the description you want to use for this layer in your Map Layers list.



Type in a name for the layer to display in Map Layers

4. Click **Next** and then **Finish**.

5. When the message confirms that the layer has been added to the map, click **Add Layer** and close the window.
The new layers appear in the Map Layers and can be viewed in the map.



WMS Layers added to the Map Layers

Share a Map

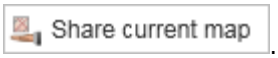
The easiest way to share a map with others is to send the URL of the map you are working with so that they can open the same map in their browser. When you send a URL, the other person can also interact with the map and see all the layers and features that you can see. When you share a map, the following data is visible:

- The current map extent.
- The current visible layers.
- The State of the toolbar (open/closed).
- The state of the information panel (open/closed).
- The state of the overview map (open/closed).

To share a map by sending a URL:

1. Click the 

on the Maps & Data Sources toolbar or go to the **I want to...** menu and select



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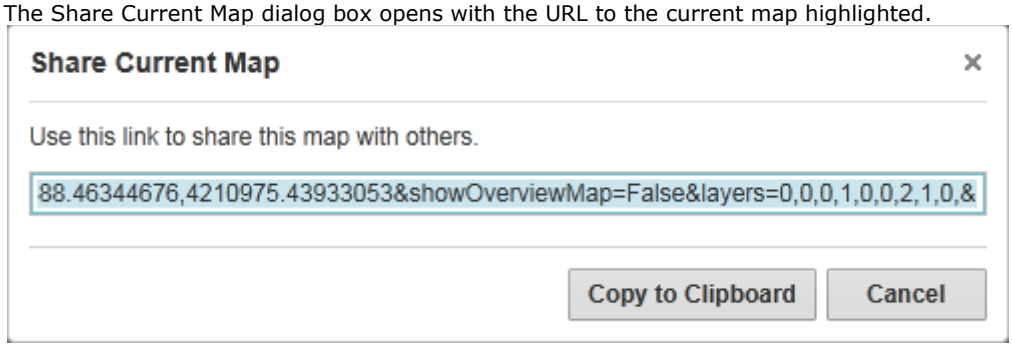
Share current map

The Share Current Map dialog box opens with the URL to the current map highlighted.

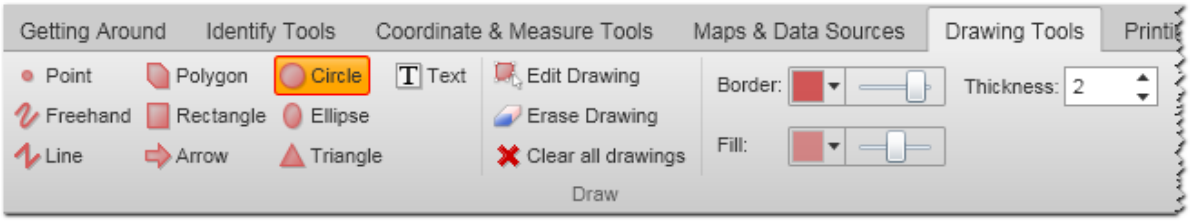


The Share Current Map dialog box

2. Click **Copy to Clipboard** or press **Ctrl+C** on the keyboard.
3. Open the application you want to paste the URL into, for example, email.
4. Press **Crtl+V** on your keyboard or use the **Paste** button in the application to paste the URL into the email. You can now send the URL as part of the email message.

Drawing Tools Tab

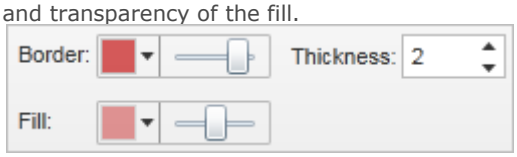
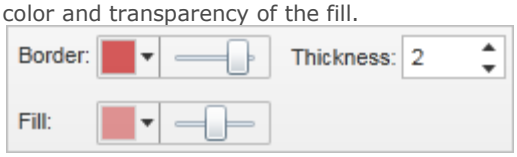
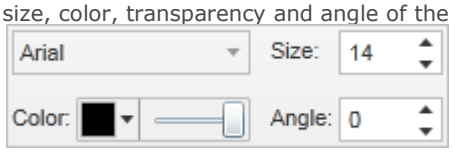
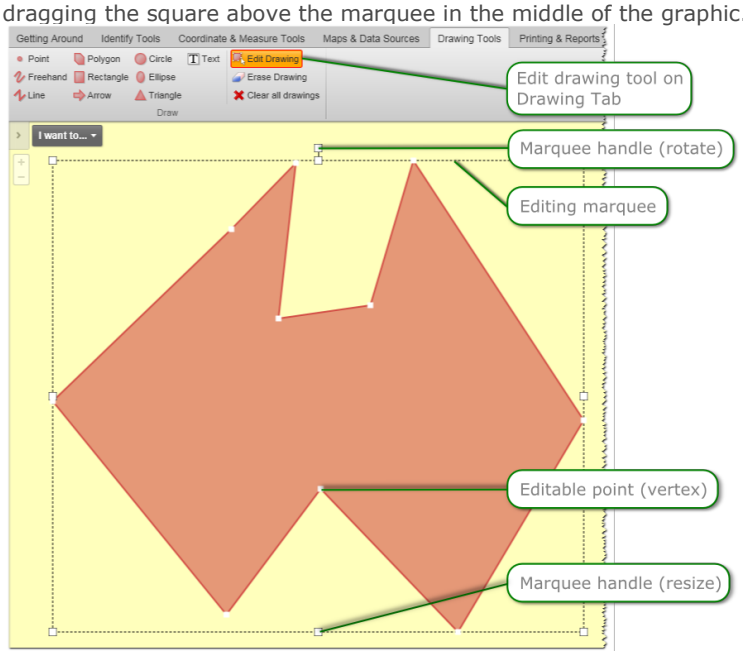
The Drawing Tools tab of the toolbar contains tools for drawing and annotating the map.



Drawing Tools tab of the toolbar

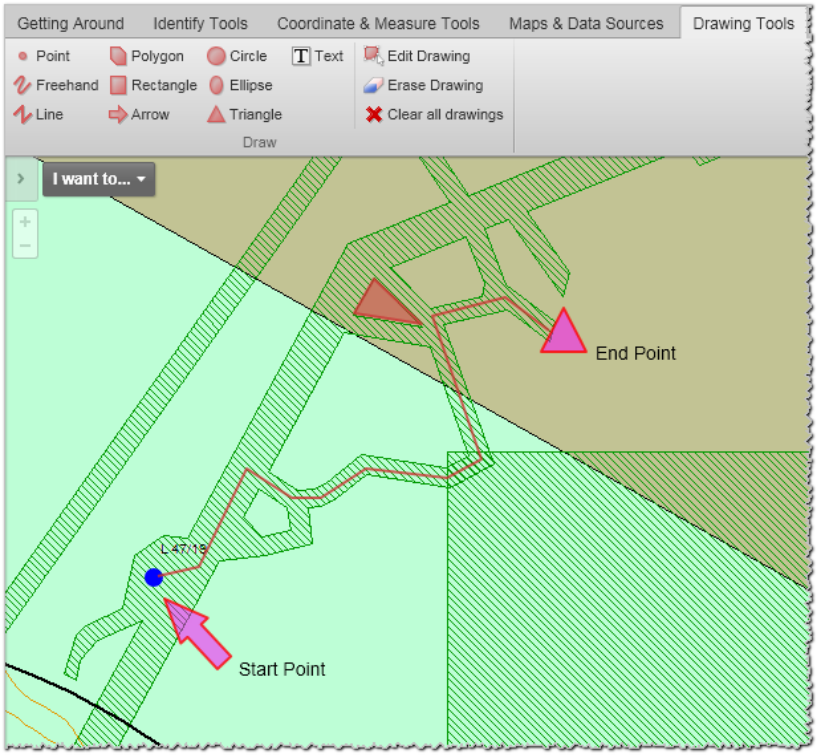
Drawing Tools: Provide tools for creating, formatting, and editing annotations to the map, including shapes and text. Some tools in this section are active only when an annotation on the map exists and is selected.

Use this tool...	To...
Point	Draw a point on the map. The shape, size, colour and transparency of the point can be set using tools that appear on the toolbar when you select one of the drawing tools. These tools change based on which drawing tool you select. Style: Circle Size: 14 Color:
Freehand	Draw freely on the map in any direction. The style, thickness, color, and transparency of the line can be set. Style: Solid Thickness: 2 Color:
Line	Draw a straight line or click to change the line and draw in a new direction. The style, thickness, color, and transparency of the line can be set. Style: Solid Thickness: 2 Color:
Polygon	Draw a polygon on the map, clicking to change direction. Double-click to stop drawing. You can set the thickness, color, and transparency of the border and the color and transparency of the fill. Border: Thickness: 2 Fill:
Rectangle	Draw a rectangle on the map. Click and drag across the map. You can set the thickness, color, and transparency of the border and the color and transparency of the fill. Border: Thickness: 2 Fill:
Arrow	Draw an arrow on the map. Drag in different directions to change the shape and size of the arrow. You can set the thickness, color, and transparency of the border and the color and transparency of the fill. Border: Thickness: 2 Fill:

Use this tool...	To...
Circle	Draw a circle on the map. Drag into the center or outwards to change the size of the circle. You can set the thickness, color, and transparency of the border and the color and transparency of the fill. 
Ellipse	Draw a ellipse on the map. Drag in different directions to change the shape and size of the ellipse. You can set the thickness, color, and transparency of the border and the color and transparency of the fill. 
Triangle	Draw a triangle on the map. Drag in different directions to change the shape, size and direction of the triangle. You can set the thickness, color, and transparency of the border and the color and transparency of the fill. 
Text	Add text to the map. Click on the map and type the text. You can change the font, size, color, transparency and angle of the text. 
Edit Drawing	Edit the points of a drawing on the map. When you click on the drawing you want to edit, the points activate and you can then drag any of the points in any direction to change the shape of your drawing. You can also rotate the drawing by clicking and dragging the square above the marquee in the middle of the graphic. 
Erase Drawing	Remove drawings from the map one at a time by clicking on each one.
Clear All Drawings	Clear all the drawings on the map at the same time.

Add Markup

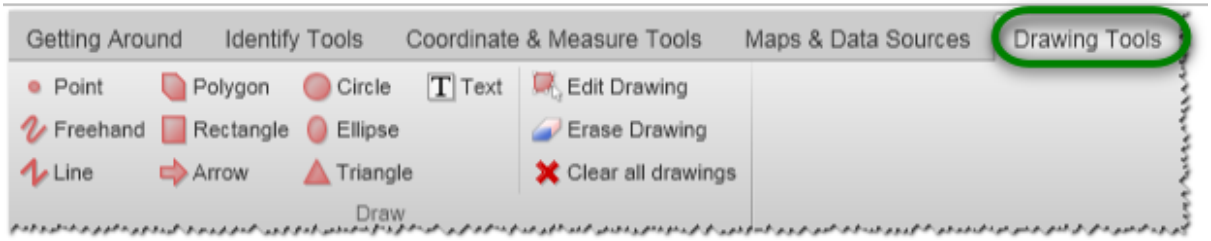
One advantage of web maps is that you can add bookmarks, measurements, shapes, and text to mark important features. When you add markup, it does not affect the original map.



Different shapes and markup on the a map

To add markup to the map:

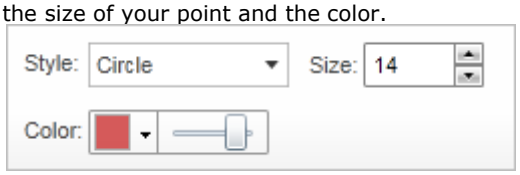
1. Click the **Drawing Tools** tab of the toolbar to find the Drawing tools.



Drawing tools on the Drawing Tools tab of the toolbar

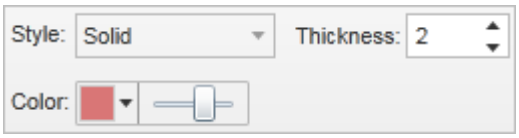
2. To add a drawing to the map, do any of the following:

   - Click **Point**, and then click any point on the map.
     When you select the Point tool, you activate the **Style**, **Size** and **Color** tools. You can use these tools to change the style of your point to a circle, cross, diamond, square, or triangle shape. You can also change the size of your point and the color.



Tools to change the appearance of a point

   - Click **Freehand**, and then draw in any direction on the map.
     When you select the Freehand tool, you activate tools that allow you to change the style of the line to dashes or dots, as well as the thickness and color of the line.

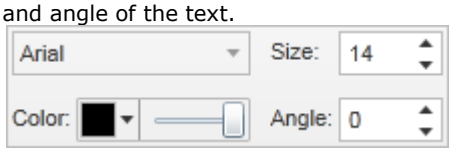


Tools to change the appearance of a freehand line

- Click **Line**, and then drag across the map to draw a line.
  To continue the line but change direction, click and then drag in the new direction. To end the line, double-click. You can change the style of the line using the same set of tools as the Freehand tool; Style, Thickness, and Color.
- Click **Polygon**, and then drag across the map to start a polygon.
  To change direction, click and then drag in a new direction. Shading appears to indicate that the polygon is filling in the space of the area made by your drawing. Double-click to end the polygon. You do not have to complete the shape, as long as the shading covers the area, you can double-click and the application completes the shape for you.
  When you click the Polygon tool, you can change the border color, the fill color and the thickness of the border line.

Tools to change the appearance of a polygon

- Click **Rectangle**, and then click one corner of the rectangle you want to draw. Drag away from the corner and a shaded rectangle forms under your cursor.
  When you click the Rectangle tool, you activate tools that can change the border color, the fill color, and the thickness of the border line.
- Click **Arrow**, and then drag across the map draw an arrow under your cursor.
  An arrow forms under your cursor. To change the shape and size of the arrow, drag it up, down or sideways.
  When you click the Arrow tool, you activate tools that can change the border color, the fill color, and the thickness of the border line.
- Click **Circle**, and then drag away from that point to draw a circle.
  The circle draws from the center out, so the further you drag your cursor, the bigger the circle gets.
  When you click the Circle tool, you activate tools that can change the border color, the fill color, and the thickness of the border line.
- Click **Ellipse**, and then drag across the map to draw an ellipse.
  The ellipse draws from the corner of the shape, so you can change the shape by moving the cursor up and down or sideways.
  When you click the Ellipse tool, you activate tools that can change the border color, the fill color, and the thickness of the border line.
- Click **Triangle**, and drag across the map to draw a triangle.
  The triangle draws from one corner of the triangle, so you can change the shape by moving the cursor up and down or sideways.
  When you click the Triangle tool, you activate tools that can change the border color, the fill color, and the thickness of the border line.
- Click **Text**, and then click on the map where you want the text to begin.
  As you cannot move the text after you have typed it, be sure to select the exact spot where you want the text to be on the map.
  Type the text you want to add to the map.
  When you click on the Text tool, you activate tools that can change the font family, the font size, color, and angle of the text.



Tools to change the appearance of text

Edit a Drawing

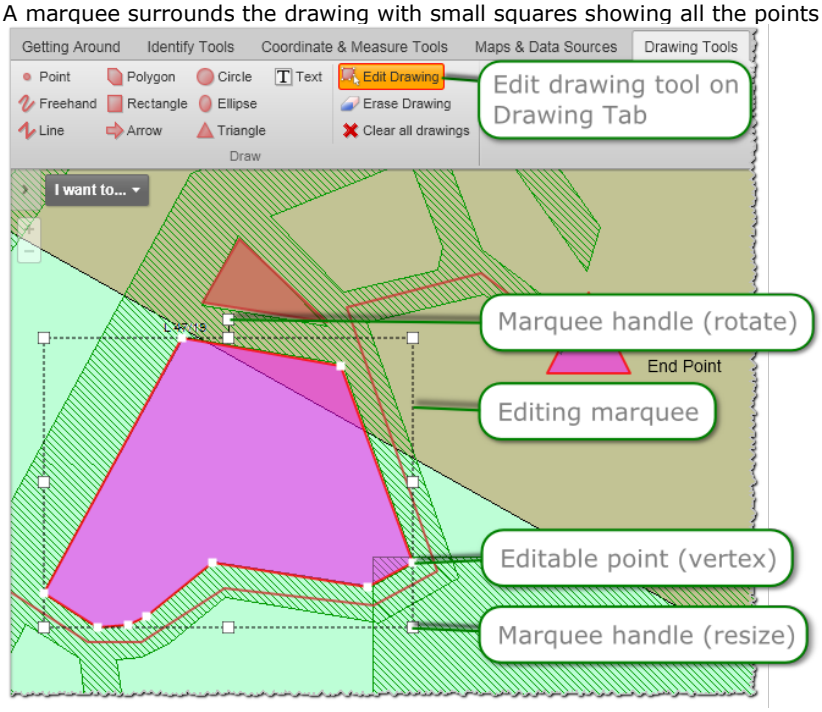
You can edit markup on the map in several ways:

- Rotate the whole drawing or drag it to a new position on the map.
- Resize or reshape the whole drawing.
- Drag individual point (vertices) of the drawing to a new position.
- Erase one or all the drawings on the map.

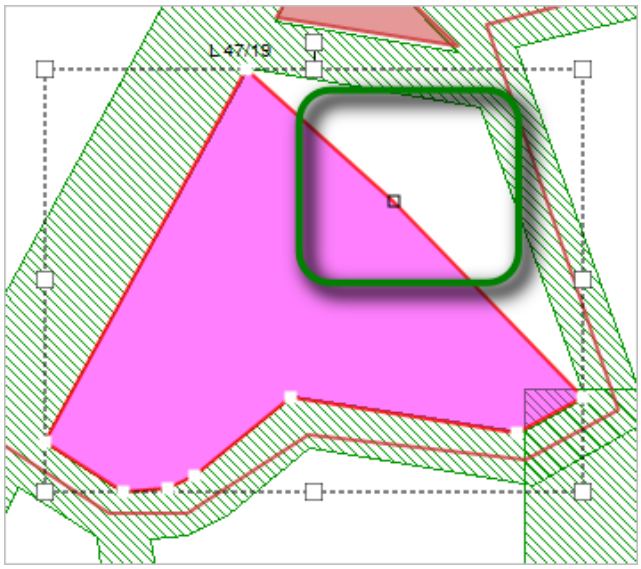
You need to click on the drawing to save any changes you make.

To edit a drawing:

1. On the **Drawing Tools** tab of the toolbar, click the **Edit Drawing** tool, and then click the drawing you want to edit.
   A marquee surrounds the drawing with small squares showing all the points (vertices) that you can edit.

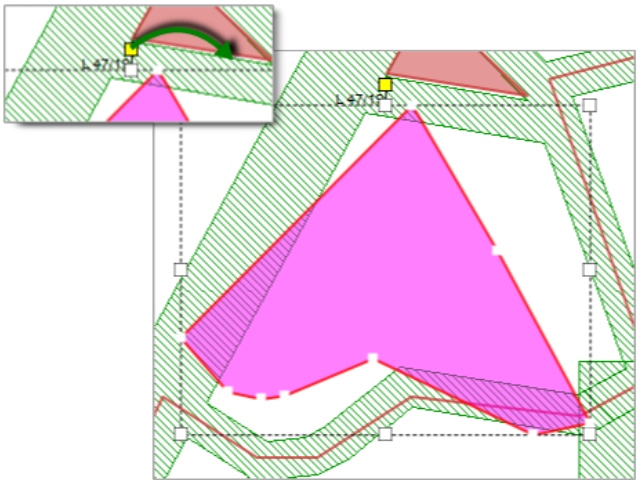


2. To change the shape of the drawing, drag any of the points to a new position.
   As you drag, the point changes to a black square.



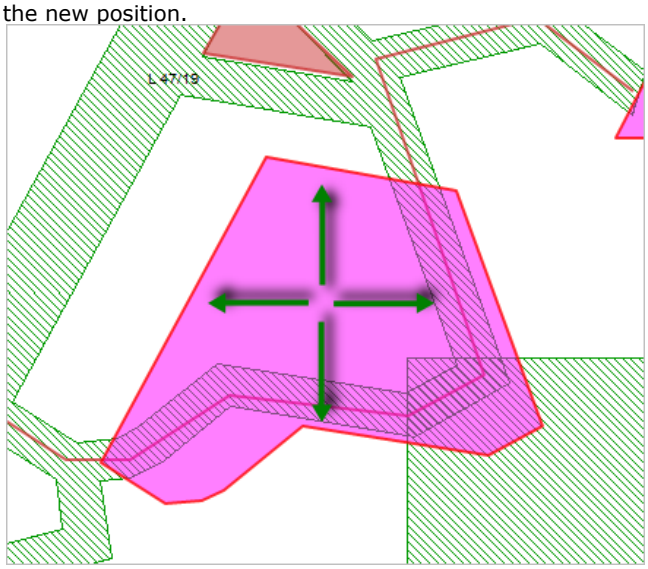
Change the shape by dragging individual points

3. To rotate the whole drawing, click the handle above the marquee and drag it around.



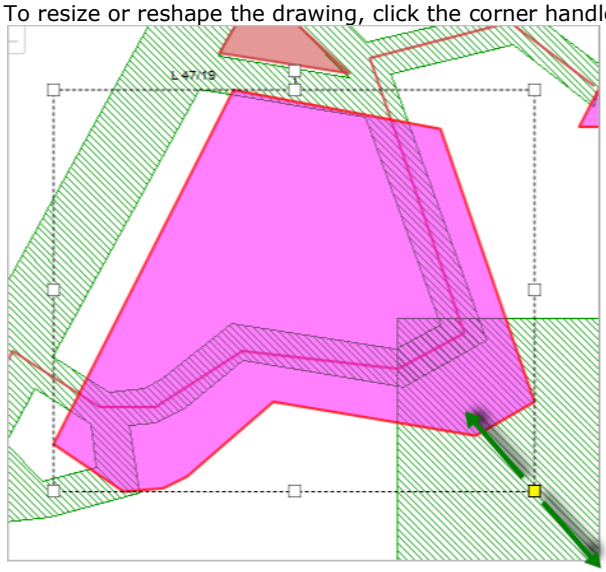
Rotate the drawing

4. To move the whole drawing without changing its shape, place your cursor inside the drawing and drag it to the new position.



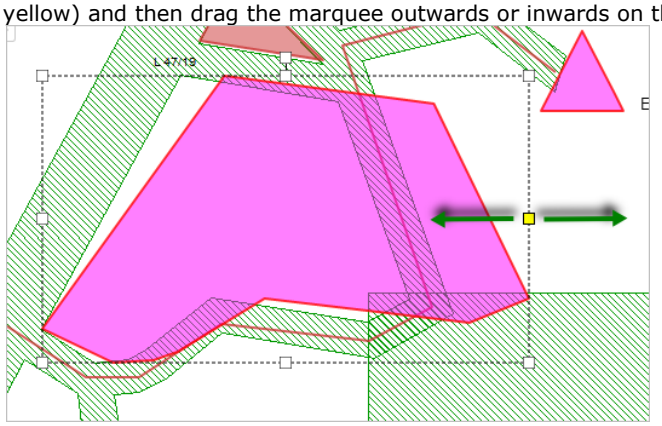
Move drawing by clicking and dragging in any direction

5. To resize or reshape the drawing, click the corner handle of the marquee and drag in any direction.



Resize or reshape the drawing

6. To constrain the drawing to resize along a single axis, click the handle on one side of the marquee (it turns yellow) and then drag the marquee outwards or inwards on that axis.



Resize along one axis

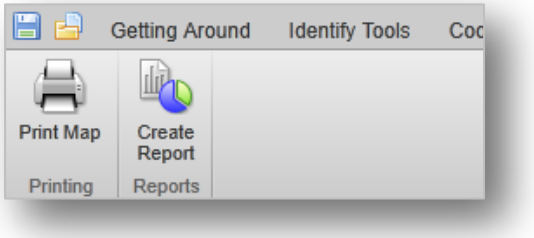
7. To save your changes, click anywhere on the markup.
   If you have drawn a line, click *on* the line.
8. To remove a drawing, click the **Erase Drawing** tool and then click on any part of a drawing.
9. To remove all the drawings on a map, click **Clear All Drawings**.

Save and Open Projects

If you have added measurements, markup, or layers to a map, you can save a map as a project, and then share it with others or continue to work on it later. The project file is saved on your computer. Once you have saved a project, you can open it again by clicking **Open Project File** (on your computer).

To save a project:

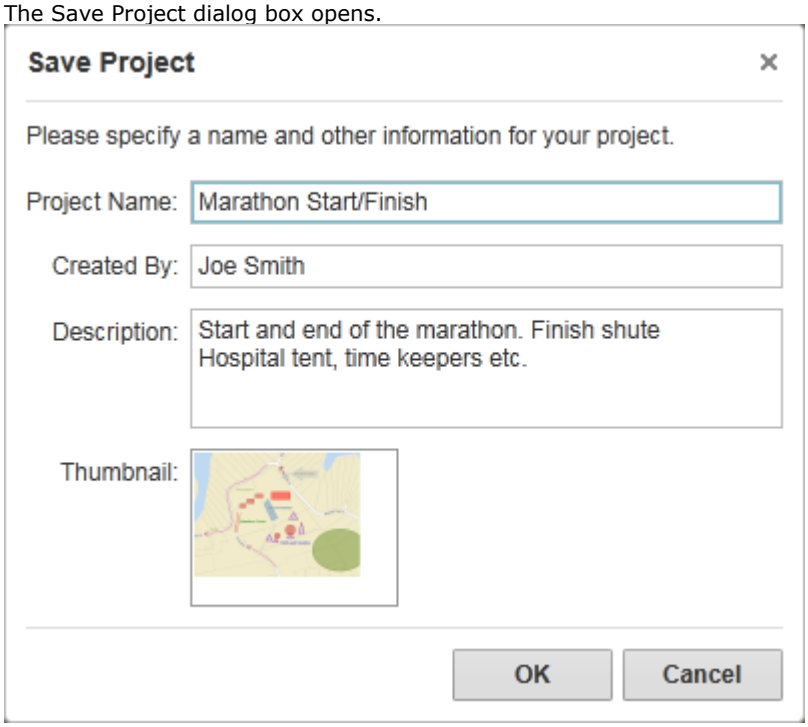
1. Click the **Save Project** icon in the top left corner of the toolbar.
2. From the drop-down menu, click **Save Project File**:



The **Save As** dialog box opens so that you can navigate to the folder on your computer where you want to save the file.

3. Click Save.

4. The Save Project dialog box opens.



Save Project dialog box

5. In the **Save Project** dialog, enter the following:

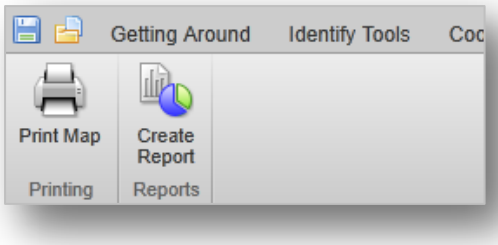
   - **Project Name**: Type a descriptive name for the project.
   - **Created By**: The name of the person who created the project.
   - **Description** (optional): Any additional information to identify the project.

- **Thumbnail**: View a small image of the project that identifies the project.

6. Click **OK** to save the project as a file.

To open a project file saved to your computer:

1. On the toolbar, click the **Open Project** icon .

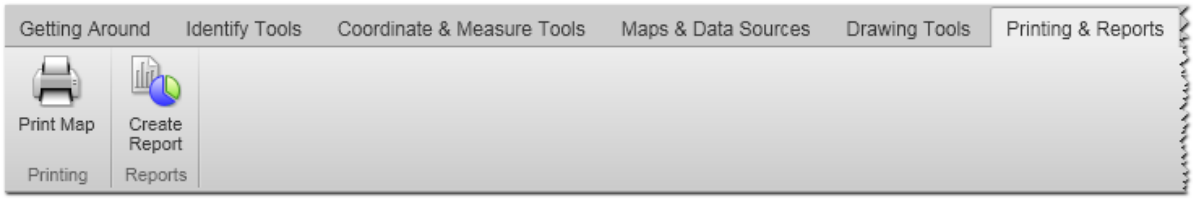


2. Click **Open Project File**.
   A Windows navigation dialog opens so that you can locate the project file on your computer.

3. Select the project and click **Open**.

Printing & Reports Tab

The Printing & Reports tab of the toolbar contains tools for printing and creating a report.



Printing & Reports Tools tab of the toolbar

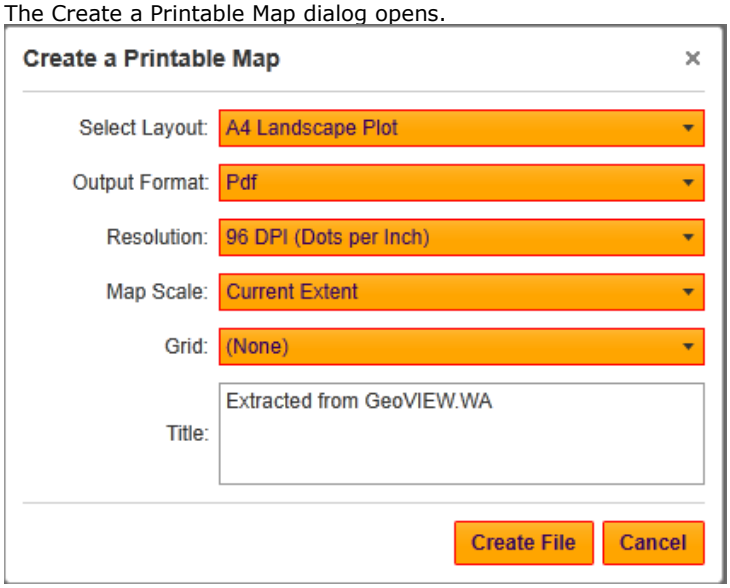
Use this tool...	To...
	Open the **Create a Printable Map** dialog box where you can select the Layout, Output Format, Resolution, and Scale to print the map.
	Open the Reports panel where you can select the Report Type and Output Format of the report. You can also select an area of the current map to report on using Point, Freehand, Polygon, or Rectangle.

Print a Map

When you print a map, you have several options that make it possible to set up precisely how your map should be printed, including the layout, format, resolution, and scale.

To print a map:

1. Do one of the following:
   - On the **Printing & Reports** tab of the toolbar, click **Print Map**.
   - In the **I want to...** menu, click **Create a Printable Map**.
     The Create a Printable Map dialog opens.

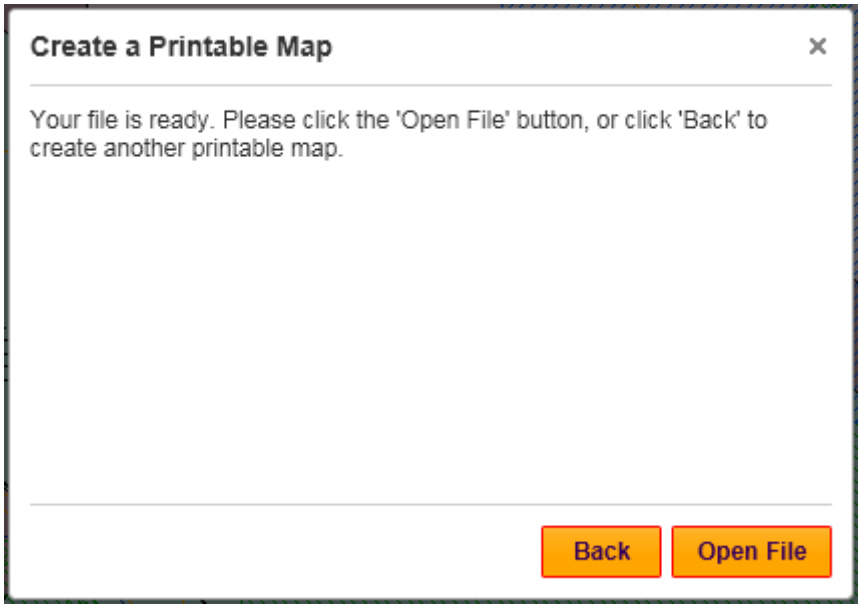


Options for printing the map in the Create a Printable Map dialog box

2. Select from the following options:

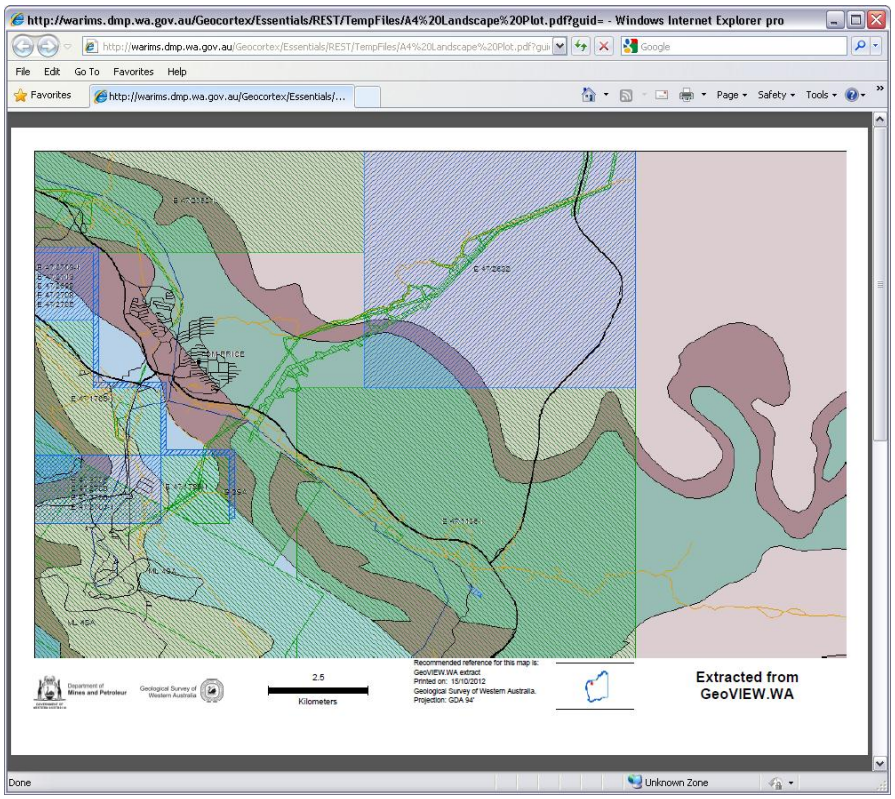
   - **Select Layout**: Options include **A0-A4 Landscape**.
   - **Output Format**: Options include the **Pdf** or **Jpeg** formats.
   - **Resolution**: 96 DPI (Dots per Inch).
   - **Map Scale**: Options include the **Current Extent** or the **Current Scale**.'
   - **Grid**: Add a grid to your map.
   - **Title**: Enter a title for your map.

3. Click **Create File**.
   When your print file is ready, a confirmation message displays.



"Your file is ready" confirmation message

4. Click **Open File**.
   Depending on your choice of file format, the file opens in your PDF Reader or in your Browser window.



PDF print file open in Adobe Reader

5. Do one of the following:

- In Adobe Reader, click the **Print** icon, and then click **OK**;
- In your browser, click **File** | **Print**, and then click **OK**; or
- In a browser with no File menu, right-click the title bar, select **Print** from the title bar, and then click the **Print** button.

About Reports

Web maps contain a great deal of information in the form of layers, features, and attributes. You can also add to this information by adding layers, measurements, markup etc. Once you have searched for and then selected a set of data, you are likely to want to use it for analysis or to share with others. Reports make this possible, as it gives you the tools to reformat and preserve the information you have found on the map.

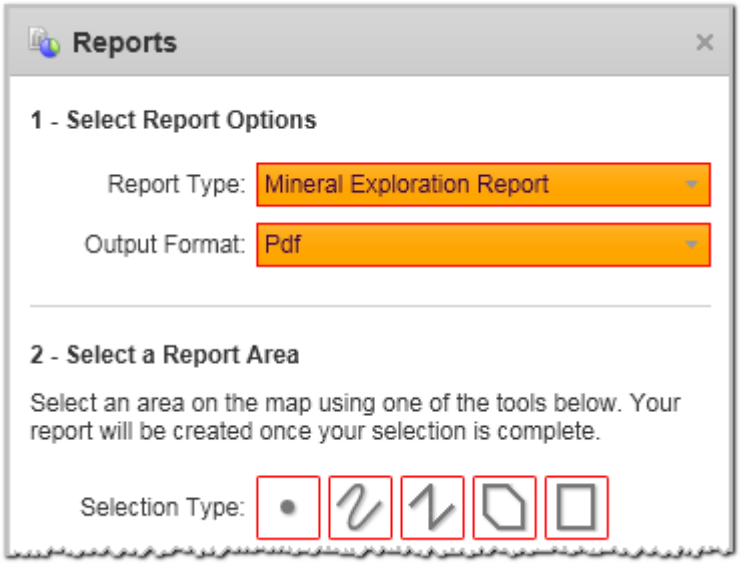
Create a Report

When you create a report, you can select the type of report, its output format and use several tools to define what area of the map to create your report about.

To create a report:

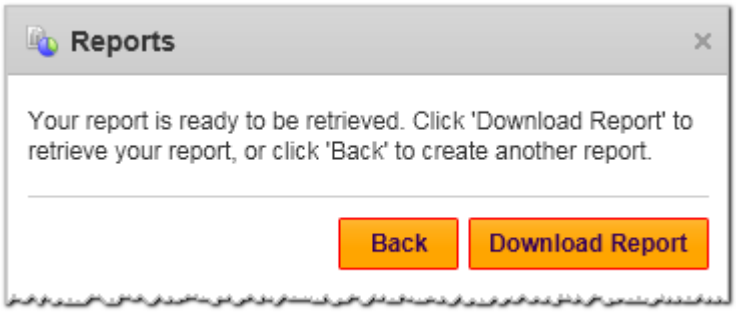
1. On the **Printing & Reports** tab of the toolbar, click **Create Reports** 

. The Reports wizard opens in the information panel.



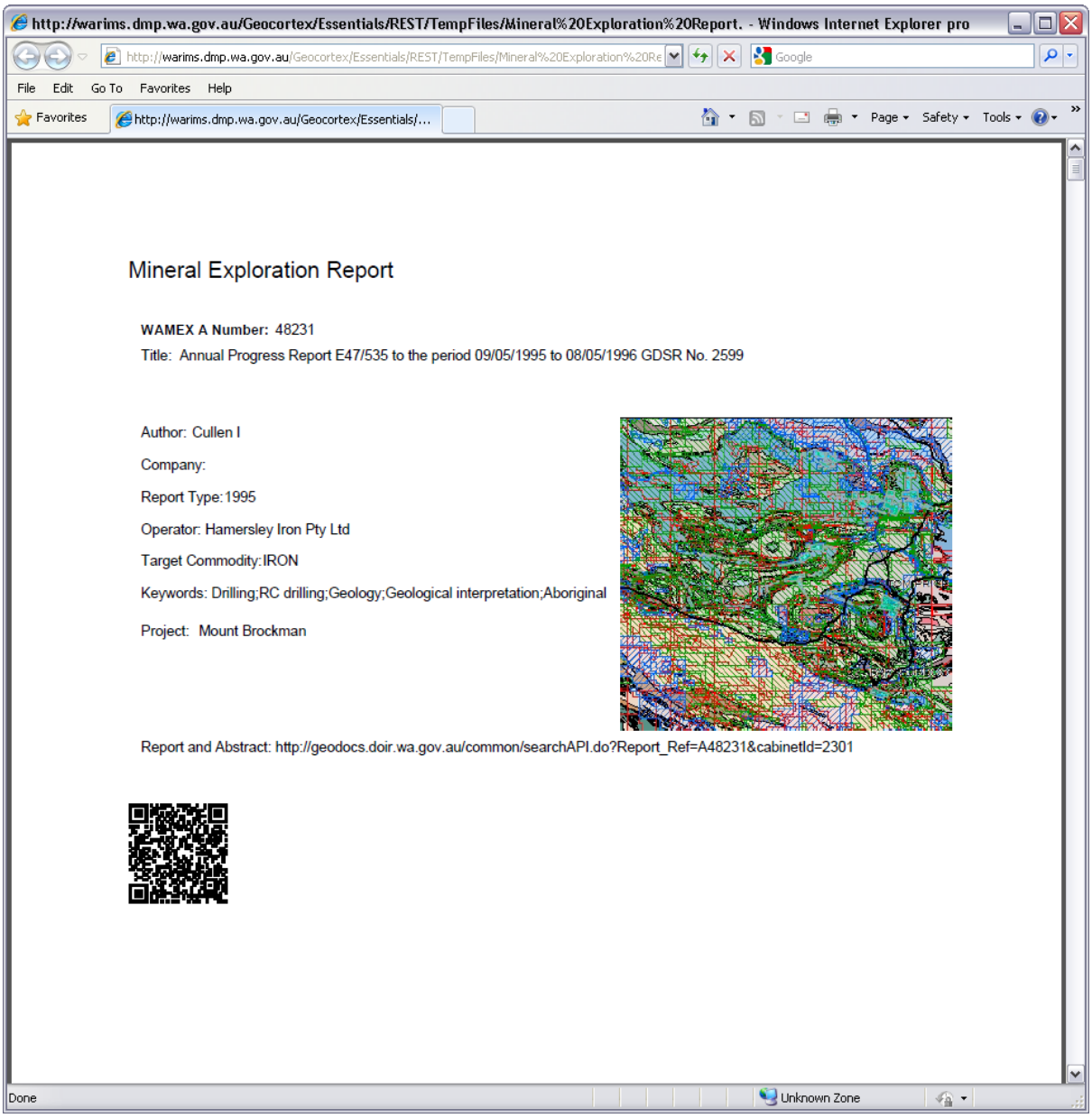
Reports open in the information panel

2. Select from the following options:
   - **Report Type**: Currently, Mineral Exploration Reports are the only type of report available.
   - **Output Format**: Currently, the only format available is PDF.
   - **Selection Type**: Select the tool you want to use to draw on the map in order to define the area that you want your report to be about.
     Once you have made a selection, a confirmation message displays to indicate that your report is ready to download.



Report is ready confirmation message

3. Click **Download Report**.
   The report opens in your PDF reader (e.g., Adobe Reader), from where you can print or save the report.

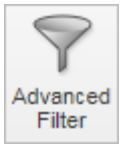


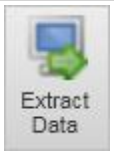
Mineral Exploration Report example

Search tab

The Search tab of the toolbar contains tools for querying, extracting and searching map data.

Analysis Tools tab of the toolbar

Use this tool...	To...
	Open the Advanced Query Builder in the Information Pane. The Advanced Query Builder makes it possible to create SQL statements in order to create complex queries of the layers, fields and field values on the map.
	Open the Simple Query Builder in the Information Pane. The Simple Query builder makes it possible to specify a search by layer, field, and values. It is also possible to add multiple conditions to a search.
	The Advanced Filter Builder opens in the information pane. The Advanced Filter tool allows the user to exclude data that they are not interested in on a particular layer.
	Open a wizard in the information panel so that you can search GSWA's catalogue of publications.
	Opens a specialized form to search the WAMEX database. Searches can be filtered by attributes or spatially.
	Opens a specialized form to search the drillholes database. Searches can be filtered by attributes or spatially.
	Opens a specialized from to search the GSWA geochemistry database or the company geochemistry. The searches can be filtered by attributes or spatially.
	Open a specialized search tool to find Geochronology sites by map sheets at 1:100 000, 1:250 000 or 1:1 000 000 scales
	Open a specialized search tool to find Mines, Deposits and Prospects by Local Government Authorities (LGA), State Development Regions, Tenements, Mining Inspectorates or Mineral Fields.

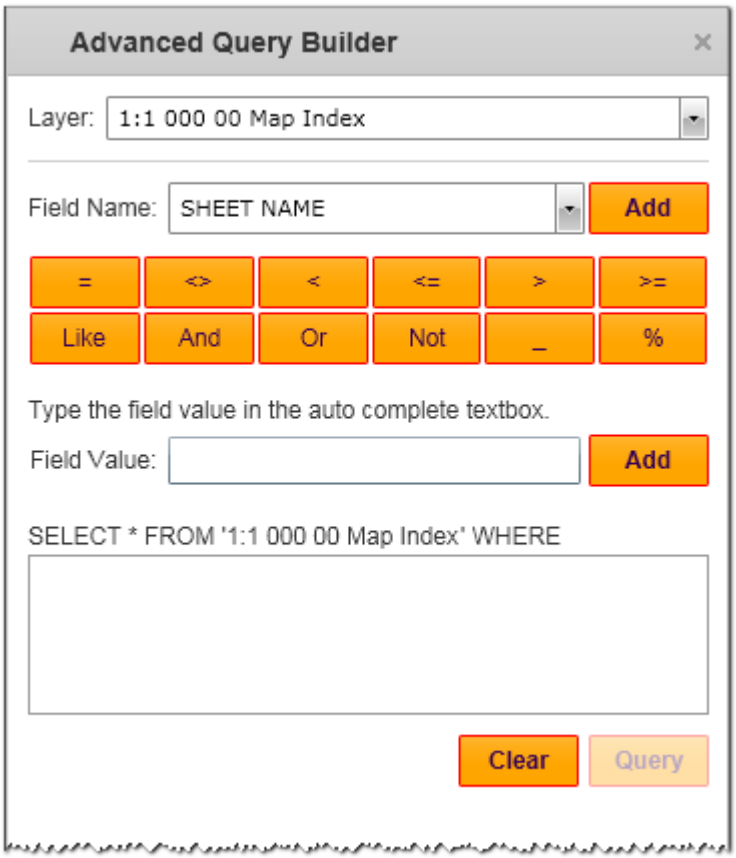
Use this tool...	To...
	Opens a specialized search tool to spatially find a historical tenement map.
	Open a specialized search tool to find Live and Pending Tenements by holder.
	Open a global search tool by specifying a keyword.
	Clear selection of any queries or searches currently active.
	Open a wizard in the information panel so that you can first select the layers, then the area, and then the format into which to output the data.

Use the Advanced Query Builder

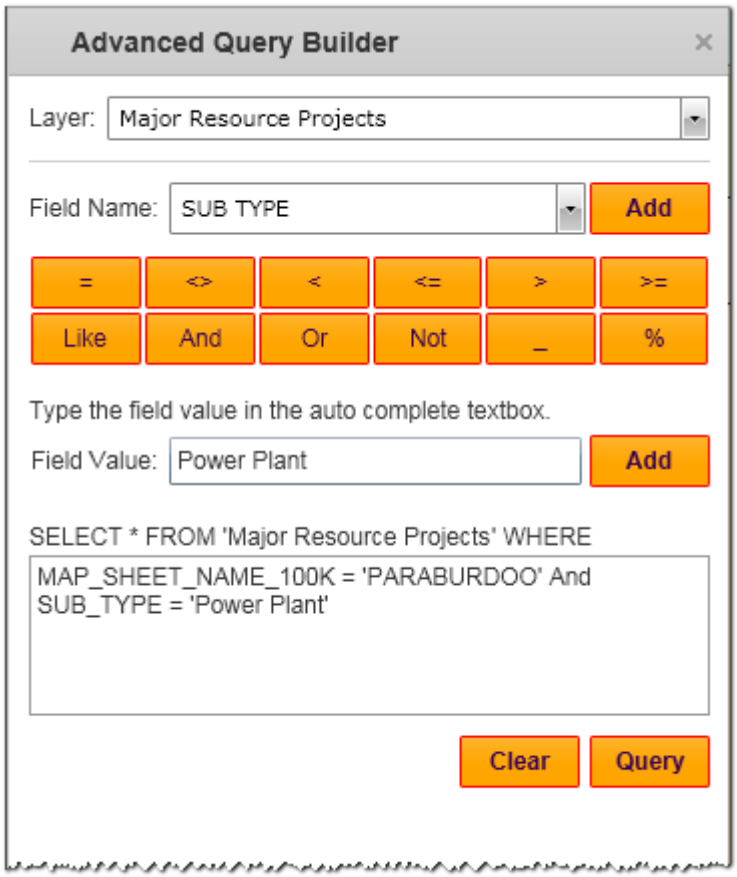
The Advanced Query Builder tool make it possible for you build or type in advanced SQL statements.

1. On the **Search tab** of the toolbar, click **Advanced Query**.

The Advanced Query Builder opens in the information pane.



2. From the **Layer** drop-down list, select the layer that you want to query.
3. From the **Field Name** drop-down list, select field to add to your query statement and then click **Add**. Each time you click **Add**, that element is added to the end of your query statement in the box.
4. From the **Operators**, select the operator to use, or type it into the box.
5. In the **Field Value** box, type in the value you want to add to your query, and then click **Add**.



n

6. When your query is complete, click **Run**.
   The results of the query display in the Results List.

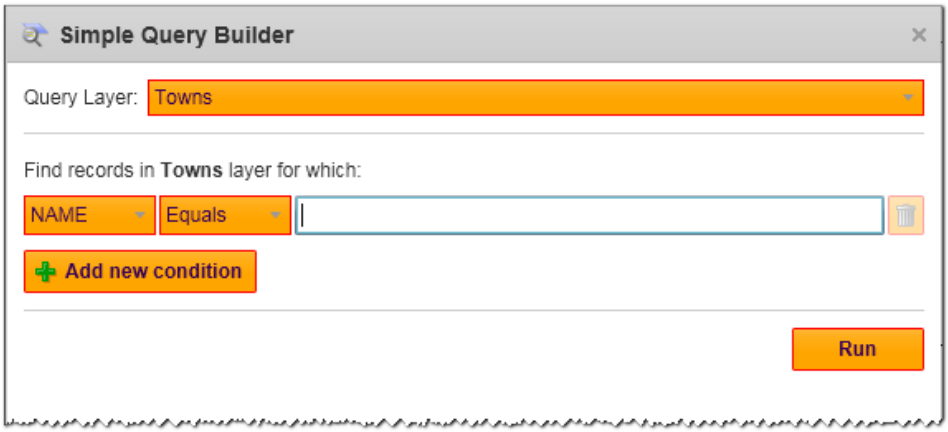
Use the Simple Query Builder

The Simple Query Builder tool makes it possible for you build complex queries without knowing how to write SQL statements. First you select the layer you want to query, and then you select the records or fields that you wish to query as well as the operator and the value. You can also add multiple conditions to the query. When you run the query, the results display in the Results List like all other searches.

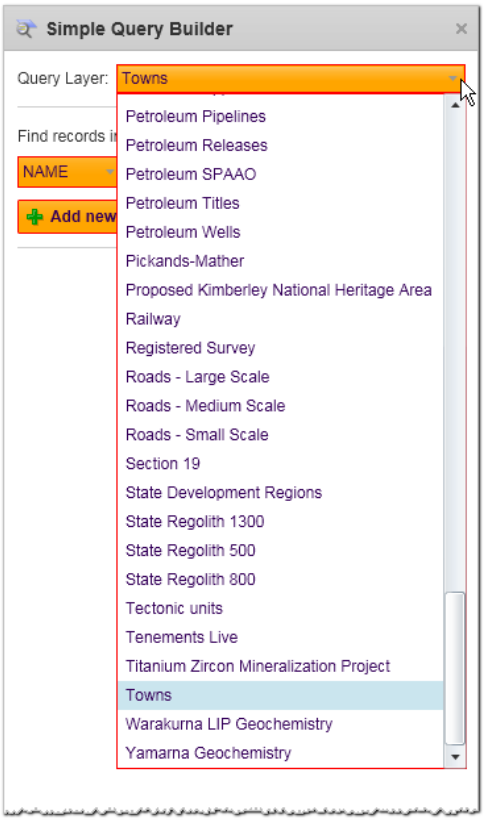
To build a query using the Simple Query Builder:

1. On the **Search tab** of the toolbar, click **Simple Query**.

   The Simple Query Builder opens in the information pane.

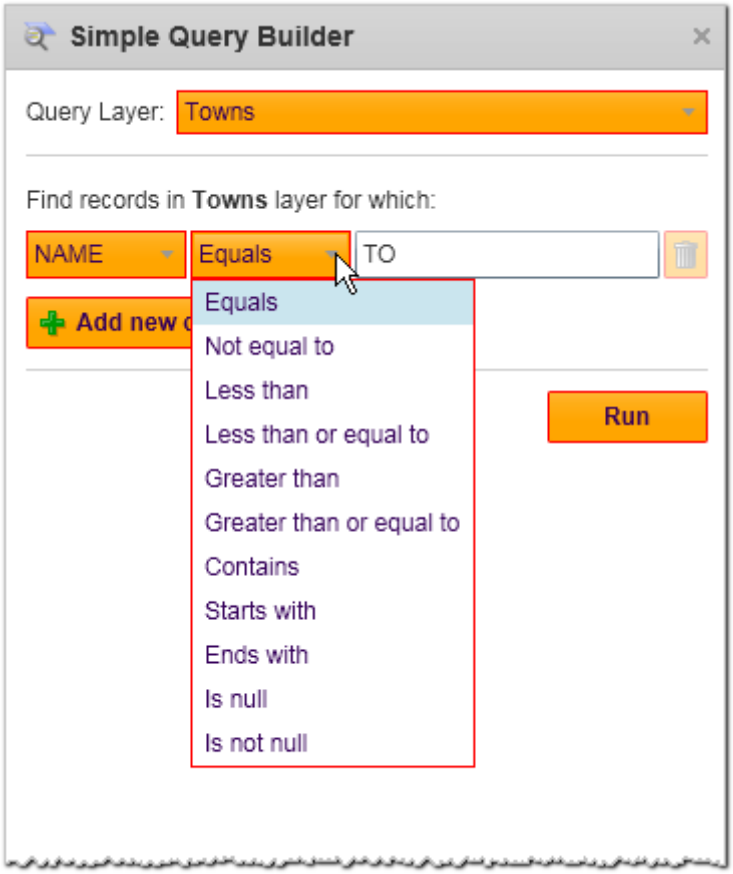


2. From the **Query Layer** drop-down list, select the layer that you want to query.



3. From the Field drop-down list, select the field that you want to be in the first part of your query statement, for example, **NAME**.

4. From the Operator drop-down list, select the operator, for example, **Equals**.

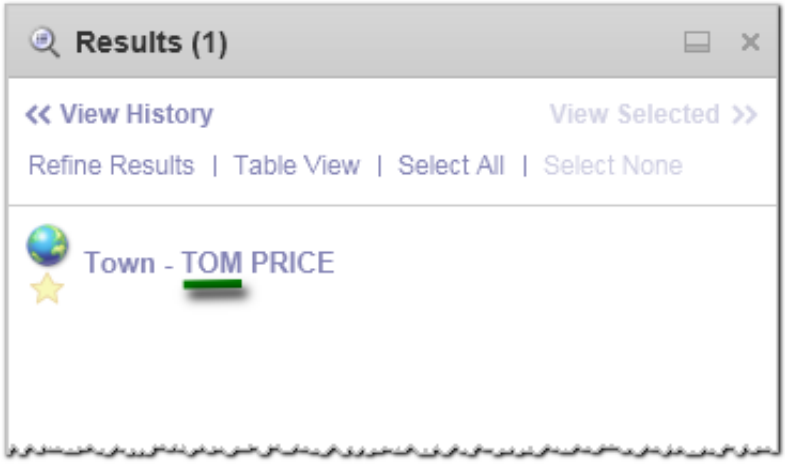


5. In the Value field, type in the value you want to query, for example **"TOM"**.
   As you type, a list of possible options for this value displays.

6. If you want to make the statement more specific, click **Add new condition** and define another set of parameters.

7. To remove a condition, click the **Remove Query Condition** icon  .

8. Click **Run**.
   The results of the query display in the Results List.

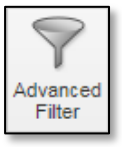


Use the Advanced Filter builder

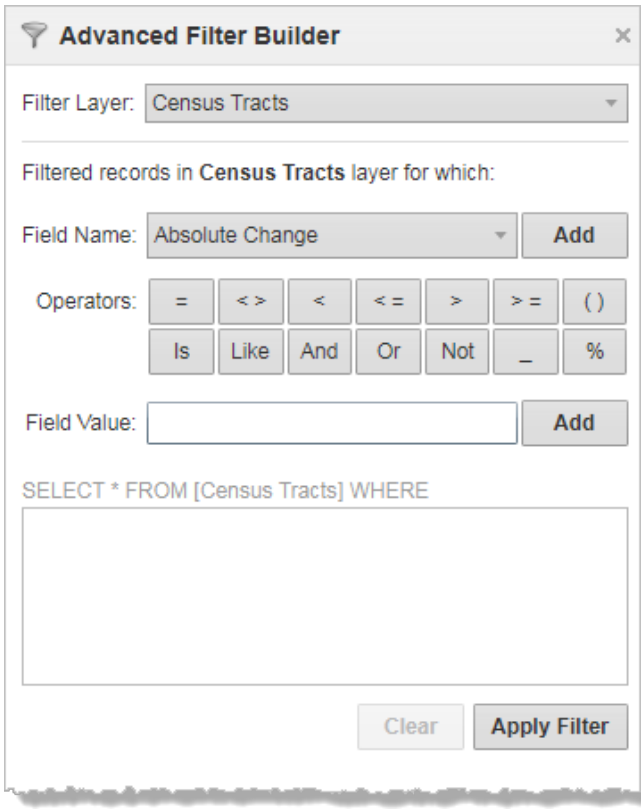
Some maps contain multiple layers and complex data. Sometimes you need to reduce the amount of data in order to focus on what is most important. You can use the Advanced Filter tool to exclude data that you are not interested in on a particular layer.

To build a filter using the Advanced Filter Builder:

1. On the **Maps & Data Sources** tab of the Toolbar, click **Advanced Filter**.



The Advanced Filter Builder opens in the information pane.



2. From the **Filter Layer** drop-down list, select the layer that you want to filter on.

3. From the **Field Name** drop-down list, select the fields that you want to include in the filter, and then click **Add**.
   You can add multiple fields to the filter.

4. From the **Operators**, select the operator you want to use, or type it into the box.

5. In the **Field Value** box, type in the value you want to add to your query, and then click **Add**

6. When the filter is complete, click **Apply Filter**.
   The map updates to show the results of the filter.

7. If you want to clear the box and start a new filter, click **Clear**.

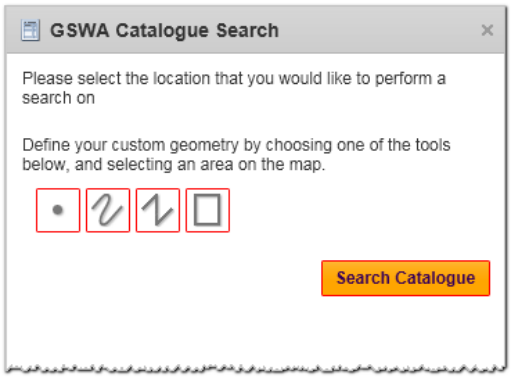
GSWA Catalogue

The GSWA Catalogue search tool allows you to find GSWA publications associated with a geographic region in WA. Draw a rectangle over the area of interest and a list of products over lapping that area will be returned. Search results will provide a hyperlink to Digital Paper allowing you to view, print or download the publication.

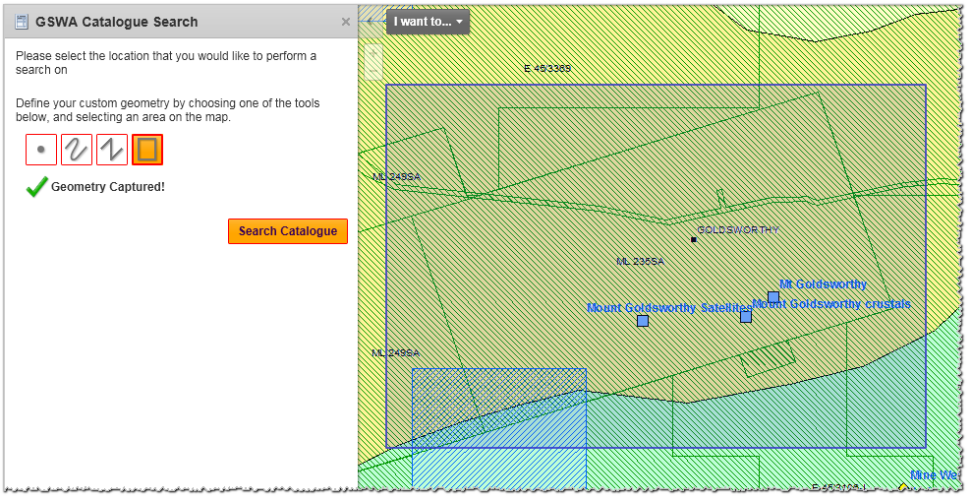
To search GSWA Catalogue:

1. On the **Search tab** of the toolbar, click **GSWA Catalogue**.

The GSWA Catalogue Search wizard opens in the information panel.

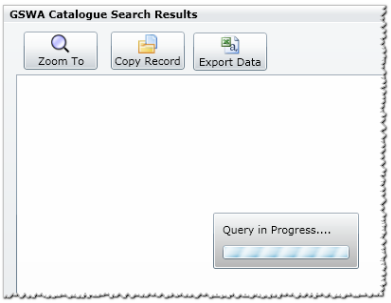


2. Select the geometry tool you wish to search with. When you have completed the shape, a **Geometry Captured!** message appears.

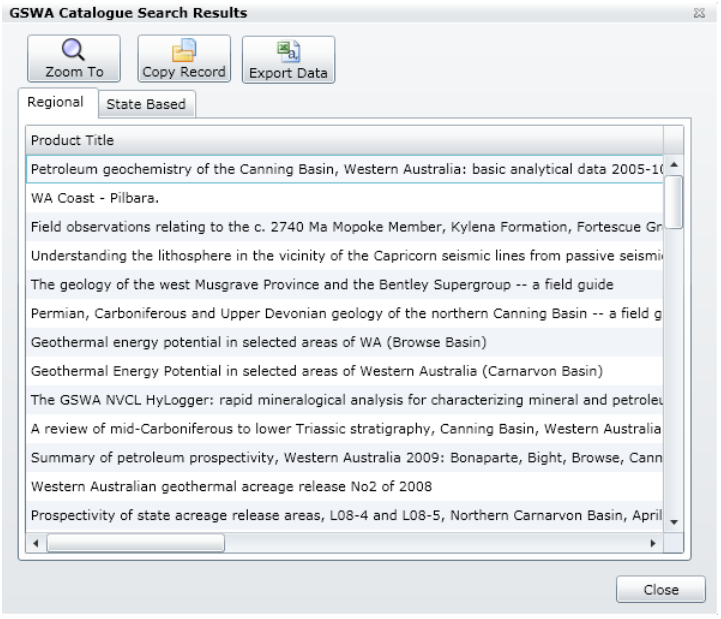


Shape completed during the search process

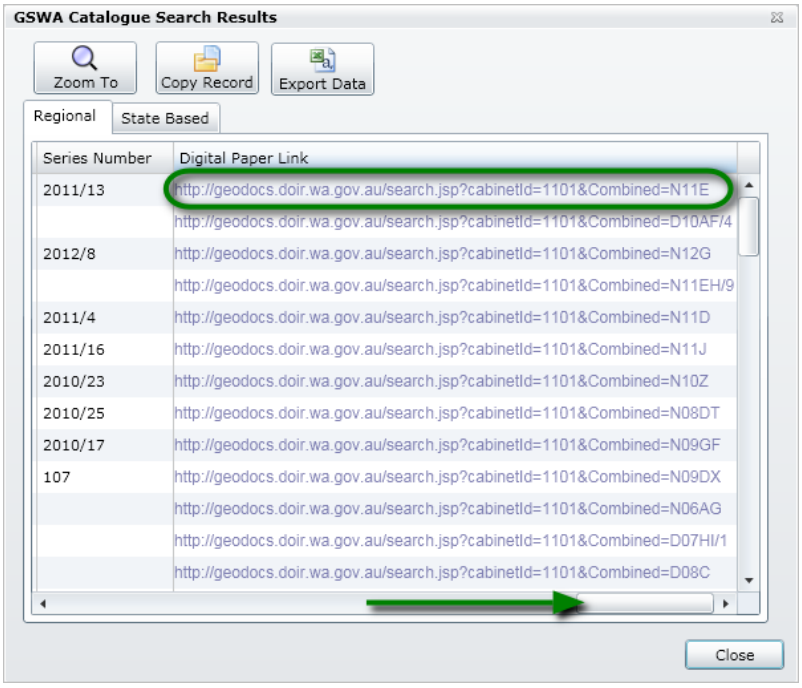
3. Click **Search Catalogue** to start search. The GSWA Catalogue Search Results dialog box should display whilst the query is in progress.

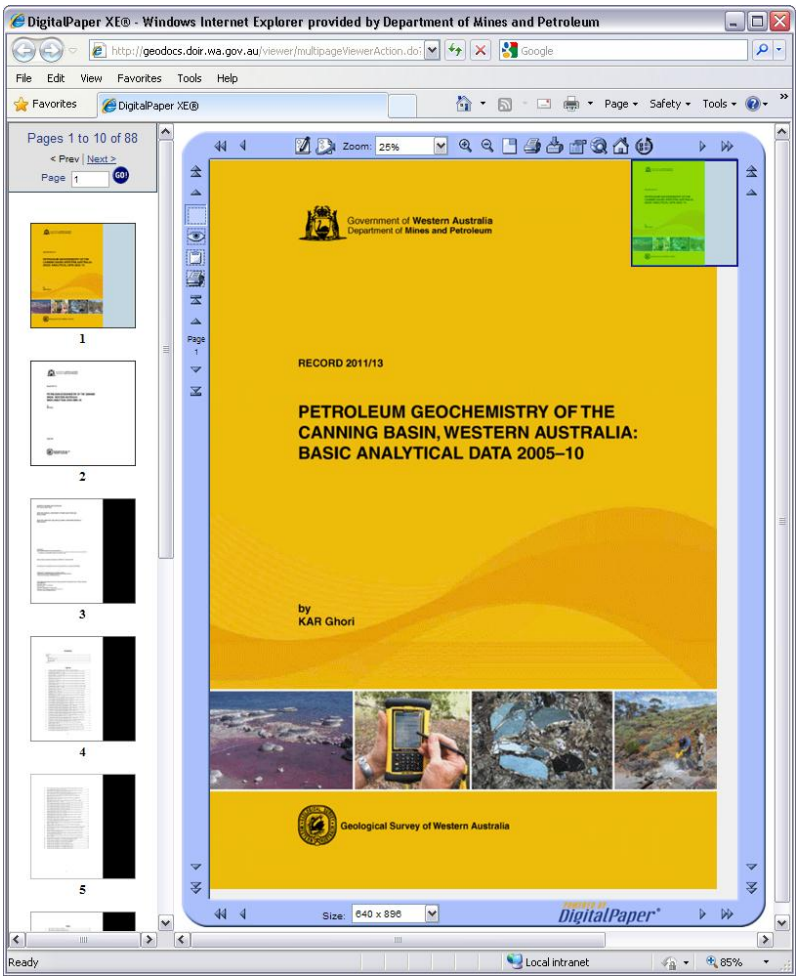


4. When the query finishes results will be displayed under the Regional or State Based tabs. The results can then be exported to a CSV table, copied to the clip board of zoomed to the spatial extent of the selected Product Title.



5. Scroll the GSWA Catalogue Search Results to the far right and click on the Digital Paper Link to display the document, map or report.





An example of a Geoscience Publication provided by the above link to Digital Paper

WAMEX Search

The WAMEX search tool is a specialized tool which enables you to search both spatially and textually for open-file (public) mineral exploration reports conducted over Western Australia.

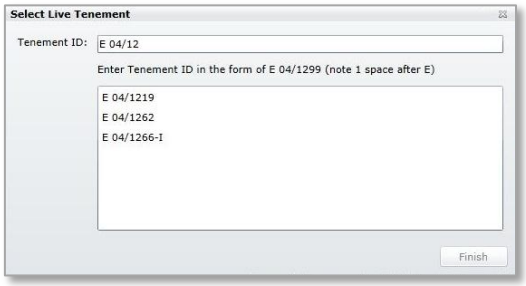
To search for mineral exploration reports:

1. On the **Search tab** of the toolbar, click **WAMEX Search.**

The search for WAMEX reports dialog box will display.

2. From the WAMEX Search dialog box you can now enter the relevant spatial or textual search criteria. For example to perform a spatial search which will intersect the selected 'Live and Pending Tenements' with WAMEX reports. Select the 'Live/Pending Tenement' button in the spatial search section of the WAMEX Search dialog box. 

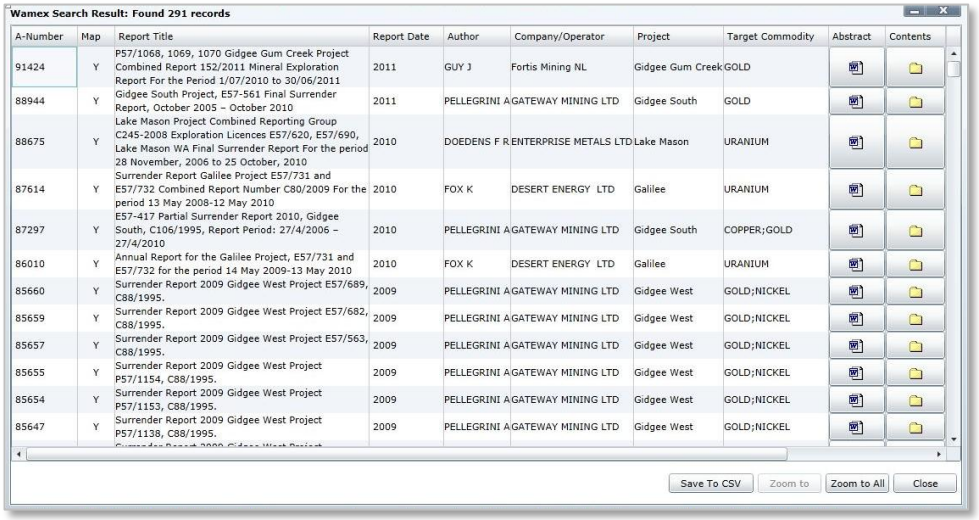
3. Start typing the Tenement ID into the text box. *NOTE: as you type the Tenement ID a list will appear this list will be refined as you enter more of the Tenement ID*.



Select the tenement you wish to do a search over from the list and select the finish button.

4. Next select the 'Search' button from the main WAMEX Search dialog box. 

5. When the result window appears, it is possible to view the report abstract or the contents of the report by selecting the 'Abstract' or 'Contents' button displayed in the results window. It is also possible to 'Zoom to all' results, 'Zoom to' a selected record or save the search results as a csv file by selecting the 'Save to CSV' button.



Drillholes search

The Drillholes search tool is a specialized tool which enables you to search both spatially and textually for the mineral exploration Drillholes sourced from open-file (public) mineral exploration reports conducted over Western Australia.

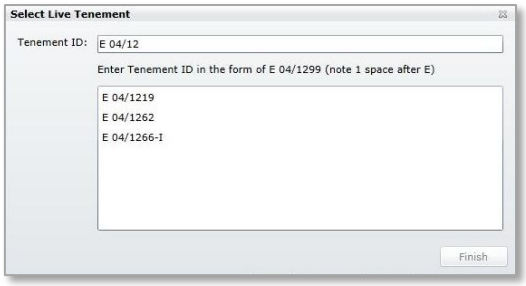
To search for Drillholes:

1. On the **Search tab** of the toolbar, click **Drillholes Search.**

The search for Drill holes dialog box will display.

2. From the Drillholes Search dialog box you can now enter the relevant spatial or textual search criteria. For example to perform a spatial search which will intersect the selected 'Live and Pending Tenements' with Drillholes. Select the 'Live/Pending Tenement' button in the spatial search section of the Drillholes Search dialog box. 

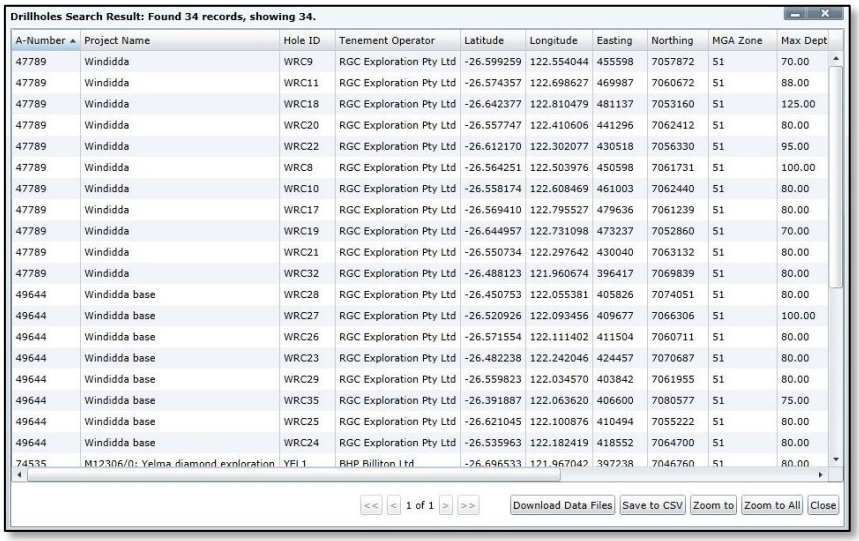
3. Start typing the Tenement ID into the text box. *NOTE: as you type the Tenement ID a list will appear this list will be refined as you enter more of the Tenement ID*.



Select the tenement you wish to do a search over from the list and select the finish button.

4. Next select the 'Search' button from the main Drillholes Search dialog box. 

5. When the result window appears, you can save the results to a csv file and you can also download the data files containing the collar file, down hole geology, geochemistry, and other data submitted.



Geochemistry search

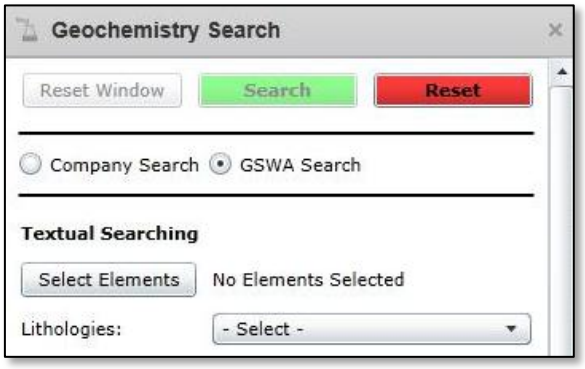
The geochemistry search tool is a specialized search tool that has been predefined to perform a search of Company and GSWA geochemistry sites that fall within a spatial area. The tool can also filter results according to attributes.

To search for GSWA Geochemistry Sites:

1. On the **Search tab** of the toolbar, click **Geochemistry.**

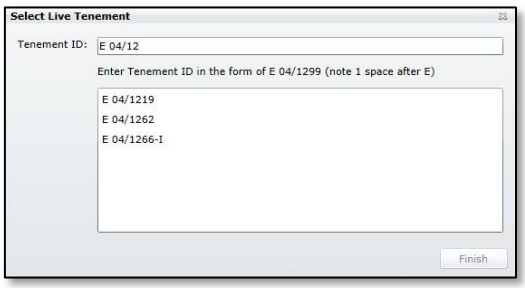
The Search Geochemistry dialog box will display.

2. Select the GSWA Search radio button.



3. From the Geochemistry Search dialog box you can now enter the relevant spatial or textual search criteria. For example to perform a spatial search which will intersect the selected 'Live and Pending Tenements' with Geochemistry. Select the 'Live/Pending Tenement' button in the spatial search section of the Geochemistry Search dialog box.

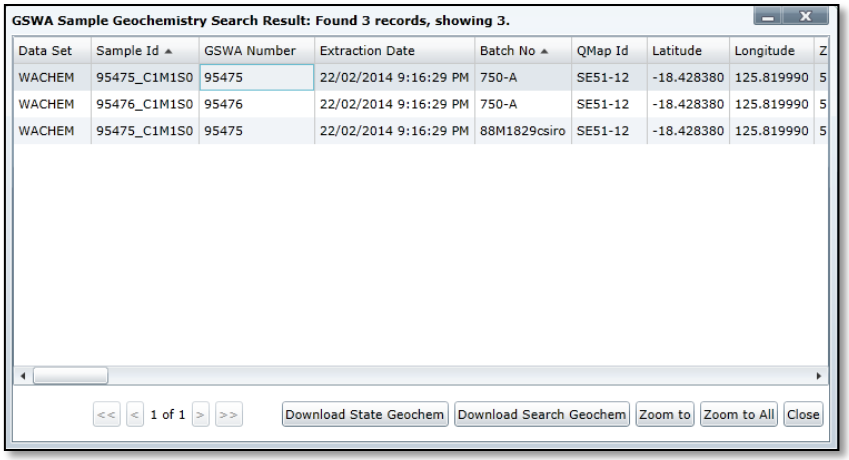
4. Start typing the Tenement ID into the text box. *NOTE: as you type the Tenement ID a list will appear this list will be refined as you enter more of the Tenement ID*.



Select the tenement you wish to do a search over from the list and select the finish button.

5. Next select the 'Search' button from the main Geochemistry Search dialog box. 

6. When the result window appears, you can choose to download the entire state or just the search area as defined.



To search for Company Geochemistry Sites:

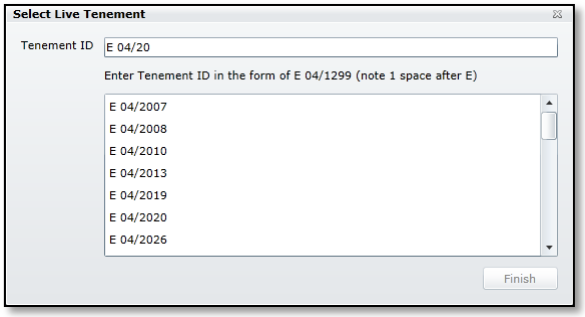
1. On the **Search tab** of the toolbar, click **Geochemistry.**

The Search Geochemistry dialog box will display.

2. Select the Company Search radio button.

3. From the Geochemistry Search dialog box you can now enter the relevant spatial or textual search criteria. For example to perform a spatial search which will intersect the selected 'Live and Pending Tenements' with Geochemistry. Select the 'Live/Pending Tenement' button in the spatial search section of the Geochemistry Search dialog box.

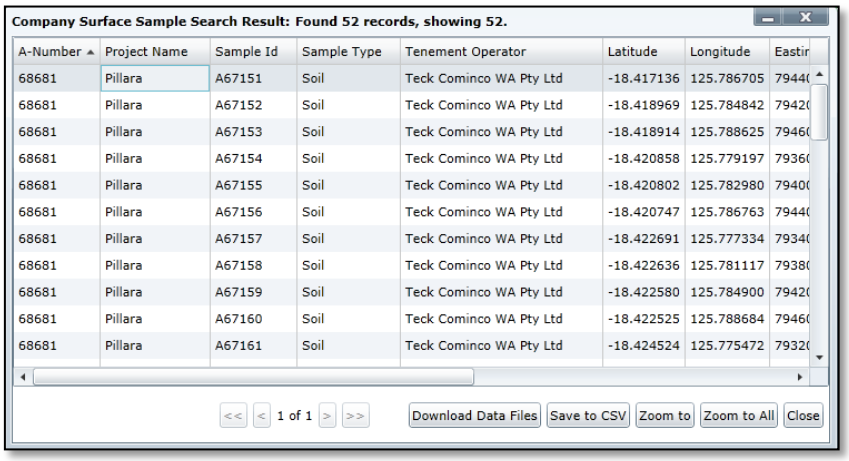
4. Start typing the Tenement ID into the text box. *NOTE: as you type the Tenement ID a list will appear, this list will be refined as you enter more of the Tenement ID*.



Select the tenement you wish to do a search over from the list and select the finish button.

5. Next select the 'Search' button from the main Geochemistry Search dialog box. 

6. When the result window appears, you can save the results to a csv file and you can also download the surface geochemistry data as selected from the search results.



Explanatory Notes System(ENS) search

The Explanatory Notes System (ENS) search tools are specialized search tools that allow users to perform a search of the Explanatory Notes database that integrates stratigraphic relationships with links to all tectonic units and events recognized in Western Australia.

Spatial and textual query interfaces allow customers to produce geoscience reports by selecting a unit, a generalised parameter (e.g. age, rank, etc.), or an area of interest (by map name or rectangle). If a selected unit is represented in GeoVIEW.WA, the layer(s) in which it appears are highlighted in a dedicated window. Reports are available in two formats:

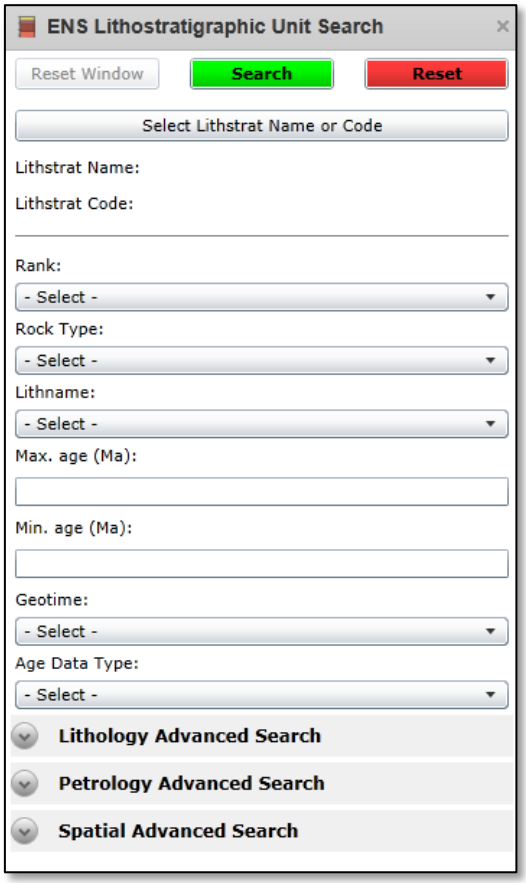
•Unit — for a single unit; colour-coding indicates whether the unit is complete (green tick) or only basic information is available (red tick)

•Overview — provides a stratigraphically sorted list of the selected unit/event and all its associated child units. Overview reports are available as a table of contents or as fully expanded reports.

To perform a Lithostratigraphic search of the Explanatory Notes System

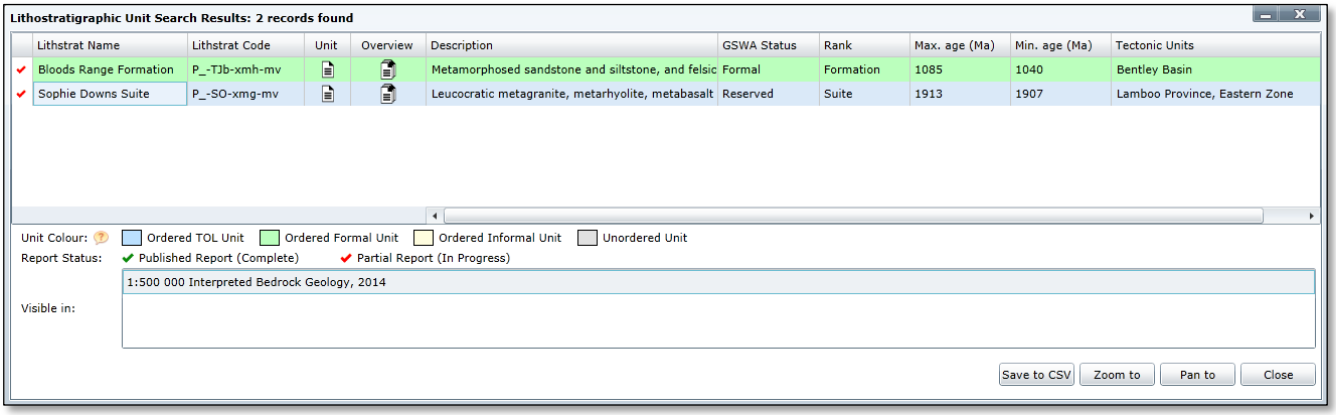
1. On the **Search tab** of the toolbar, click the ENS Lithstrat Search Tool.

2. The ENS Lithostratigraphic Unit Search dialog box will display.



3. From this dialog box you can now enter the relevant spatial or textual search criteria.
4. For example to perform a search for a particular rock type select the required 'Rock Type' eg 'meta-igneous volcanic' from the dropdown list and then select Search

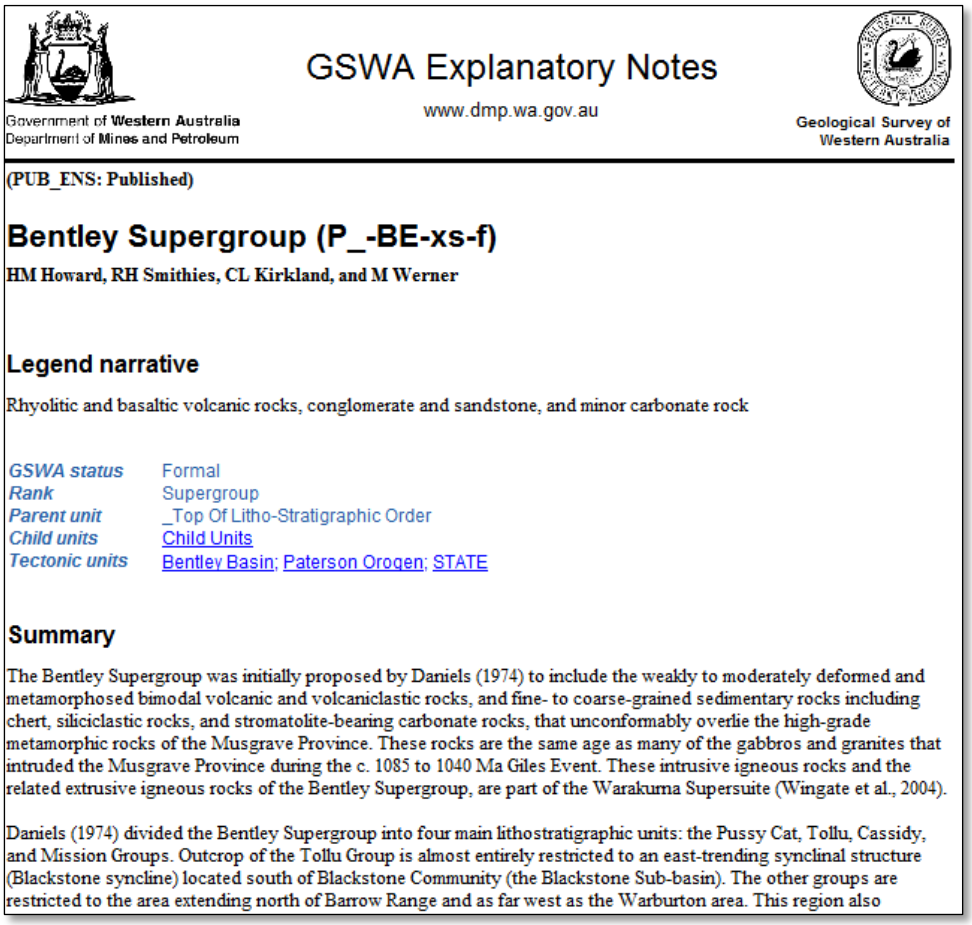
5. The results window will then provide a summary of the Lithostratigraphic units which meet the search criteria



Lithostratigraphic Unit Search Results Window

6. The results window will display information such as unit name, unit code minimum and maximum age plus information relating to which spatial layer in GeoVIEW.WA the unit exists in. The user also has the option to zoom to, or pan to the selected unit, or save the results to a csv file.

7. The Report for the particular unit can be displayed by selecting the 'unit report' icon  and the 'overview report can be displayed by selecting the 'overview report'  icon.



Government of Western Australia
Department of Mines and Petroleum

GSWA Explanatory Notes

www.dmp.wa.gov.au

Geological Survey of Western Australia

(PUB_ENS: Published)

Bentley Supergroup (P_-BE-xs-f)

HM Howard, RH Smithies, CL Kirkland, and M Werner

Legend narrative

Rhyolitic and basaltic volcanic rocks, conglomerate and sandstone, and minor carbonate rock

GSWA status	Formal
Rank	Supergroup
Parent unit	_Top Of Litho-Stratigraphic Order
Child units	Child Units
Tectonic units	Bentley Basin; Paterson Orogen; STATE

Summary

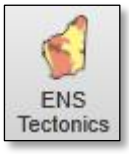
The Bentley Supergroup was initially proposed by Daniels (1974) to include the weakly to moderately deformed and metamorphosed bimodal volcanic and volcaniclastic rocks, and fine- to coarse-grained sedimentary rocks including chert, siliciclastic rocks, and stromatolite-bearing carbonate rocks, that unconformably overlie the high-grade metamorphic rocks of the Musgrave Province. These rocks are the same age as many of the gabbros and granites that intruded the Musgrave Province during the c. 1085 to 1040 Ma Giles Event. These intrusive igneous rocks and the related extrusive igneous rocks of the Bentley Supergroup, are part of the Warakurna Supersuite (Wingate et al., 2004).

Daniels (1974) divided the Bentley Supergroup into four main lithostratigraphic units: the Pussy Cat, Tollu, Cassidy, and Mission Groups. Outcrop of the Tollu Group is almost entirely restricted to an east-trending synclinal structure (Blackstone syncline) located south of Blackstone Community (the Blackstone Sub-basin). The other groups are restricted to the area extending north of Barrow Range and as far west as the Warburton area. This region also

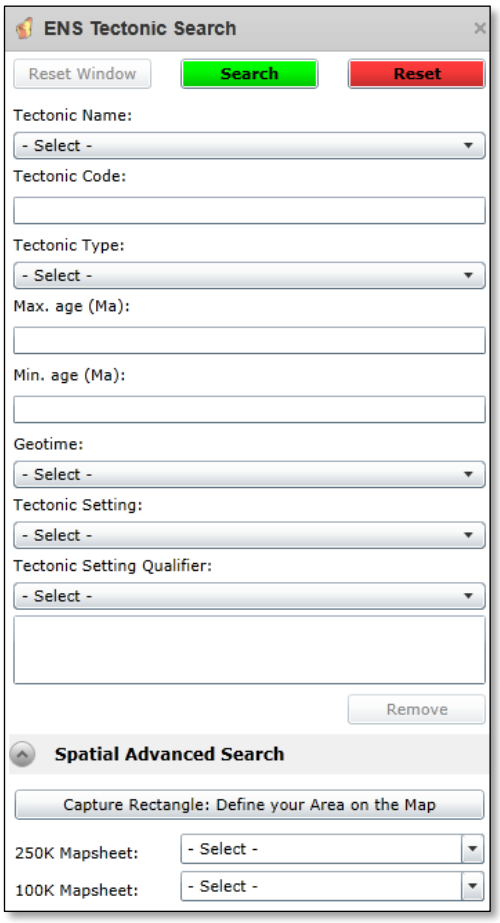
Example of a Lithostratigraphic Unit Report

To perform a Tectonic Unit search of the Explanatory Notes System

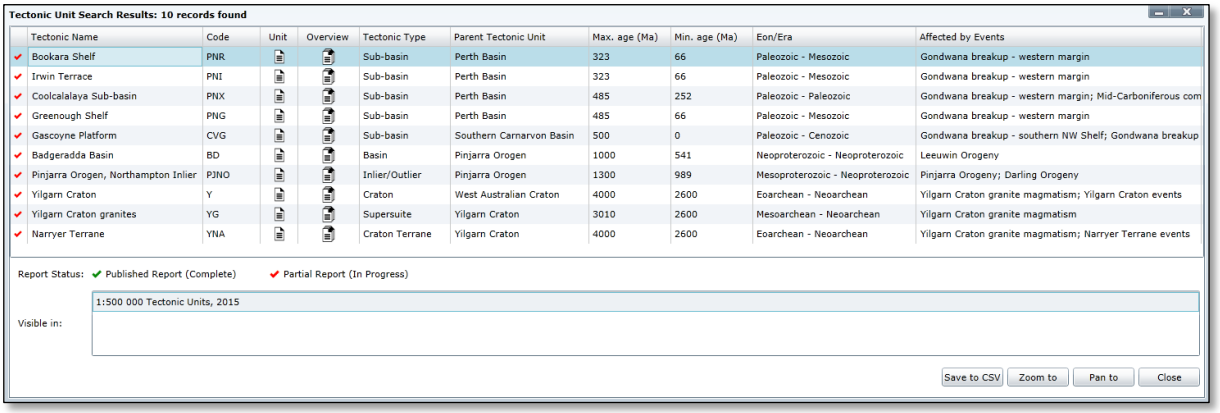
1. On the **Search tab** of the toolbar, click the ENS Tectonics Search Tool.



2. The ENS Tectonic Search dialog box will display.



3. From this dialog box you can now enter the relevant spatial or textual search criteria.
4. For example to perform a spatial search for which Tectonic Units occur on a particular 1:250 000 mapsheet select the required mapsheet eg 'Ajana' from the '250K Mapsheet' dropdown list and then select Search
5. The results window will then provide a summary of the Tectonic units which meet the search criteria ie those which occur on the 1:250 000 Ajana map sheet.



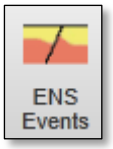
Tectonic Unit Search Results Window

6. The results window will display information such as tectonic unit name, tectonic code, parent tectonic unit, minimum and maximum age, eon/era details and which events have affected the tectonic units. It also identifies which spatial layer in GeoVIEW.WA the tectonic unit exists in. The user also has the option to zoom to, or pan to the selected unit, or save the results to a csv file.

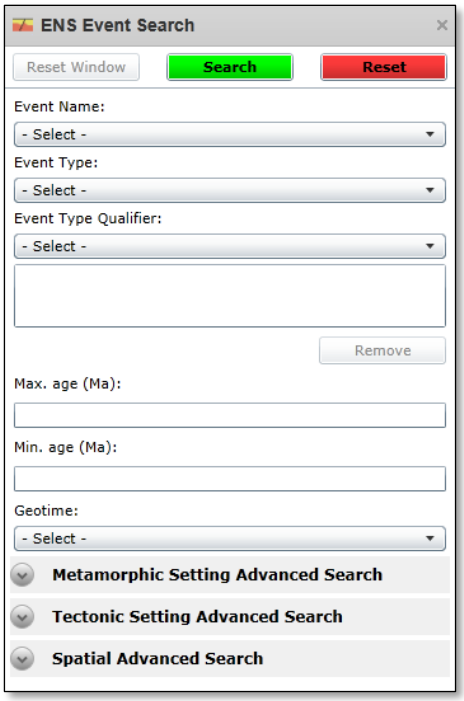
7. The report for the particular unit can be displayed by selecting the 'unit report' icon and the 'overview report can be displayed by selecting the 'overview report' icon.

To perform an Events search of the Explanatory Notes System

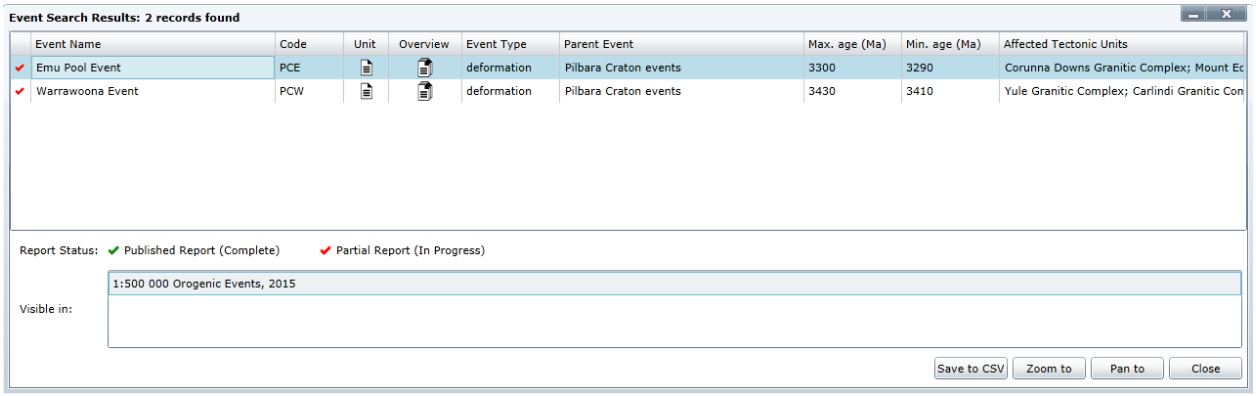
1. On the **Search tab** of the toolbar, click the ENS Events Search Tool.



2. The ENS Event Search dialog box will display.



3. From this dialog box you can now enter the relevant spatial or textual search criteria.
4. For example to perform a search for which Events occured in a particular eon/era select the required eon/era from the Geotime dropdown list eg 'Paleoarchean' and then select Search
5. The results window will then provide a summary of the Events which meet the search criteria ie those which occurred in the Paleoarchean era.



Event Search Results Window

6. The results window will display information such as event name, code, event type, parent event, minimum and maximum age, and affected tectonic units. It also identifies which spatial layer in GeoVIEW.WA the particular Event exists in. The user also has the option to zoom to, or pan to the selected unit, or save the results to a csv file.

GSWA Geochronology

The Search Geochronology tool is a specialized search tool that has been predefined to perform a search of Geochronology sites that fall within a map sheet region.

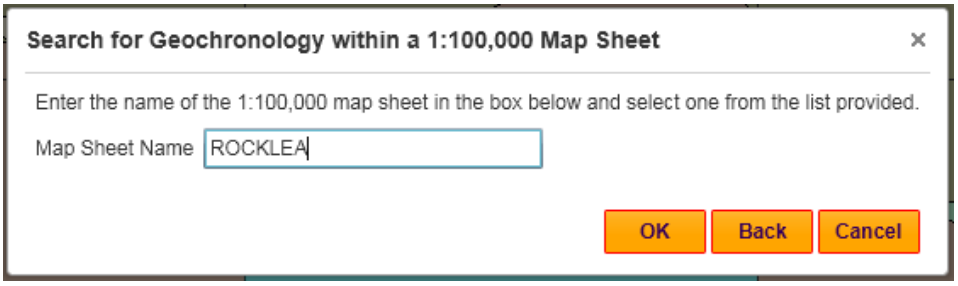
To search for Geochronology Sites:

1. On the **Search tab** of the toolbar, click **Search Geochronology**.

The Search for Geochronology dialog box will display

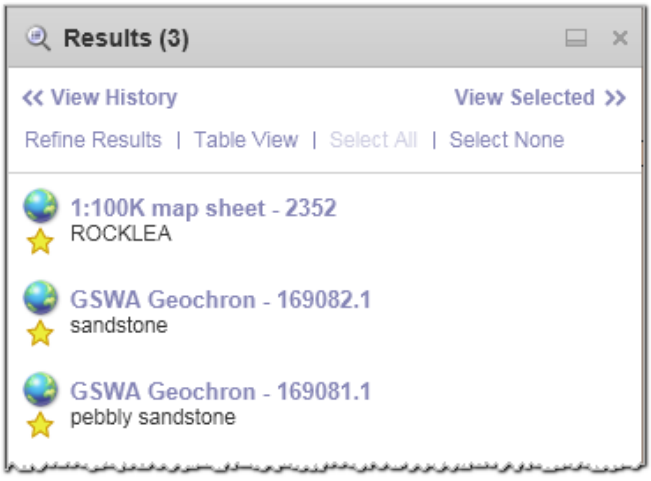
2. From the Search for Geochronology dialog box, select the Map Sheet region you wish to search on, for example **1:100,000 Map Sheet** and click the **OK**.

3. Enter the Map sheet name, for example "**ROCKLEA**". As you type, a list of possible options for this value displays.



4. Click **OK.**

The results of the Geochronology search display in the Results List.



Tenements by holder

The Search Tenements tool is a specialized search tool that has been predefined to perform a search of Live and Pending Tenements by Tenement Holder.

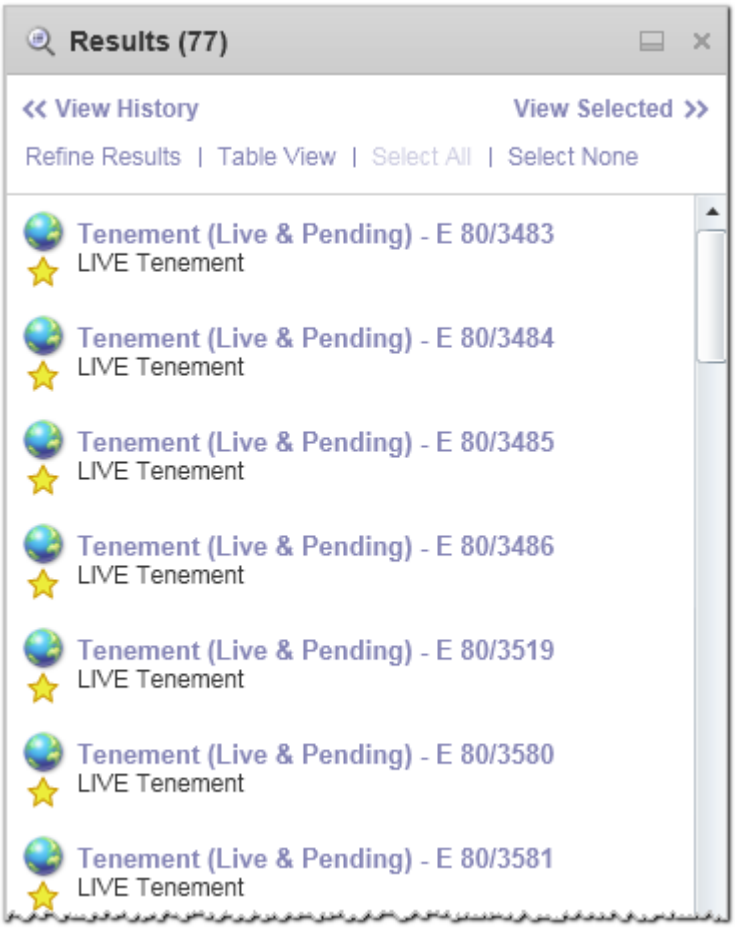
To search for Tenements by holder:

1. On the **Search tab** of the toolbar, click **Tenements by holder**.

   The Searching for a tenement via holder dialog box will display

2. From the Searching for a tenement via holder dialog box, type in the holder name you wish to search on, for example "**Nova**".
3. Click the **OK.**

   The results of the Tenement search display in the Results List.



Mines, Deposits and Prospects by region

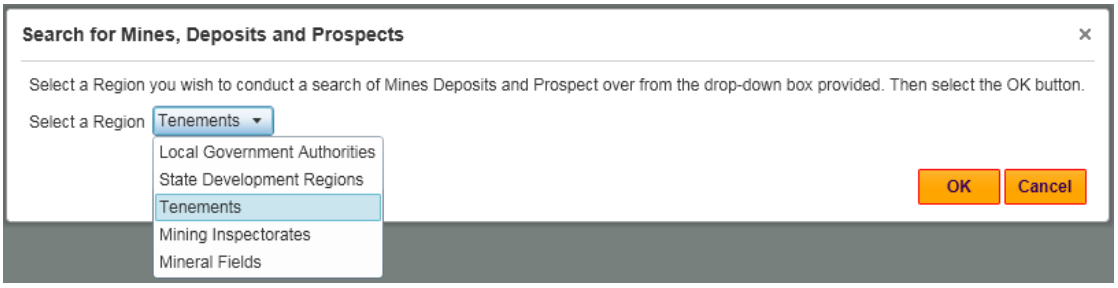
The Mines, Deposits and Prospects by region tool is a specialized search tool that has been predefined to perform a search of Mines, Deposits and Prospects (MINEDEX) by Local Government Authorities, State Development Regions, Tenements, Mining Inspectorates or Mineral Fields.

To search for Mines, Deposits and Prospects by region:

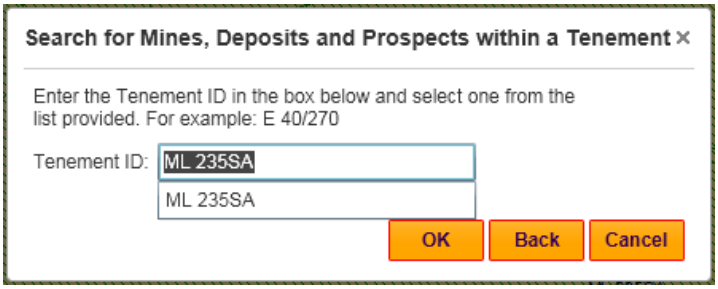
1. On the **Search tab** of the toolbar, click **Minedex Search by region**.

The Search Mines, Deposits and Prospects dialog box will display

2. From the Search for Mines, Deposits and Prospects dialog box, select a region you wish to search from the drop down list, for example "**Tenements**".



3. Click **OK** and the Search for Mines, Deposits and Prospects within a Tenement dialog box should appear. Type in a Tenement ID, for example "**ML 235SA**" (**note:** there is a space between the **ML** and **235A**). As you type, a list of possible options for this value displays.



4. Click the **OK.**

   The results of the Search for Mines, Deposits and Prospects within a Tenement display in the Results List and the map should highlight and pan to the search region.

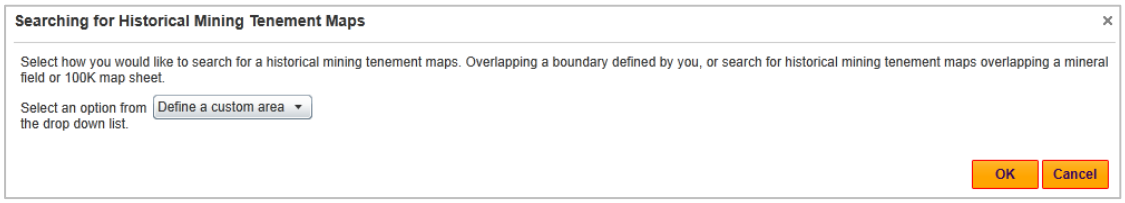
Historical Mining Tenement Map

The Historical Mining Tenement Map search allows you to find Historical Mining Tenement Maps within a custom area or geographic region.

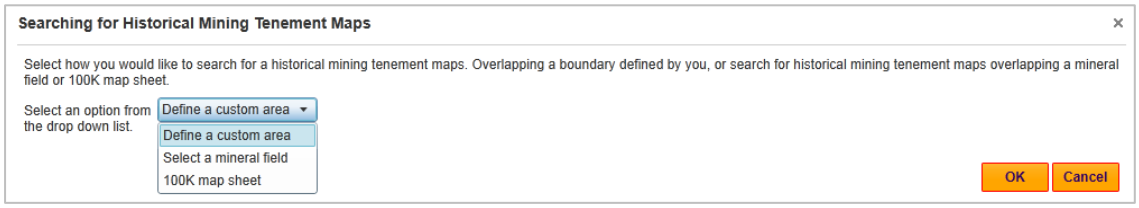
To Search for a Historical Mining Tenement Map:

1. On the **Search Tools** tab of the toolbar, click **Historical Tenement Maps.**

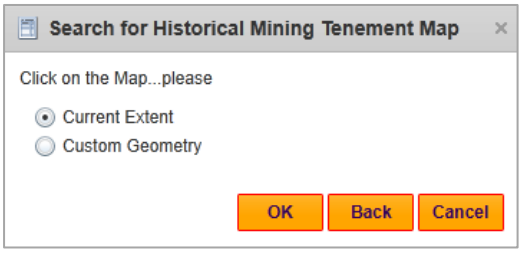
The Historical Mining Tenement Map Wizard opens on the screen.



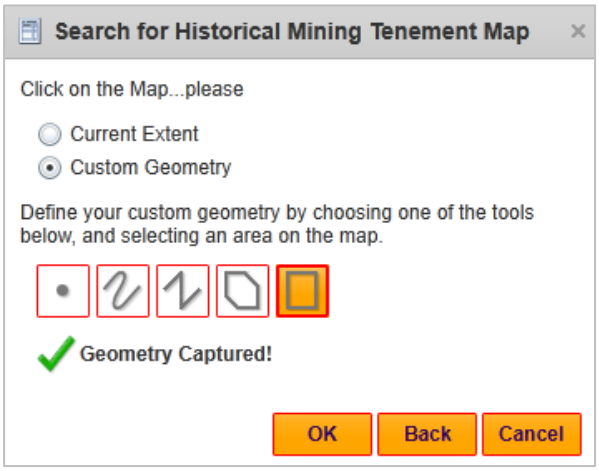
2. Select the type of search method. For example "**Define a custom area**".



3. Select "**Current Extent**" or "**Custom Geometry**". Current Extent is the map area currently on your screen. Custom Geometry means you can choice a point, line of polygon to search for Historical Mining Tenement Maps.



4. Select the tool you want to use to draw on the map in order to define the area you want to search. You should get a "Geometry Captured!" message, then select "ok".



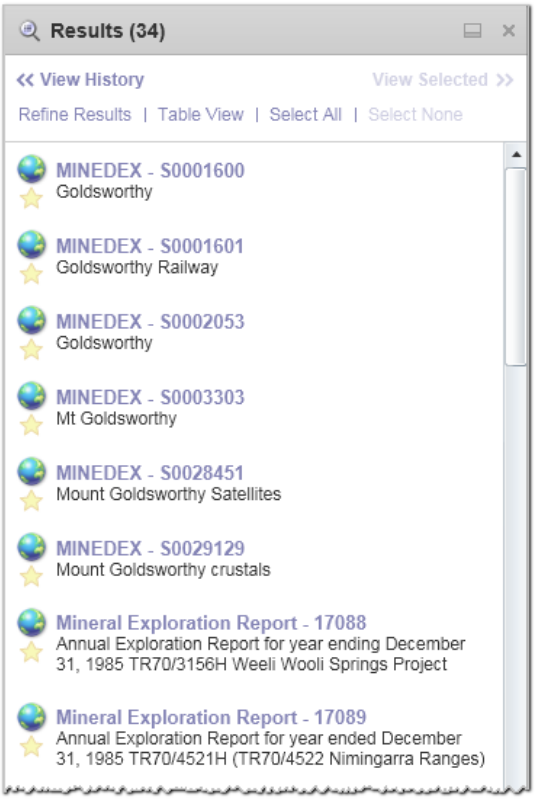
The results will be displayed in the left hand side of the screen.

Global Search

The Global Search box allows you to search for features from the following map layers.

- Abandoned Mines
- Mines, Deposits and Prospects (MINEDEX)
- Live Tenements
- Core Library Drill Holes and
- Mineral Exploration Reports

When you type a word into the Search box and click the **Global Search** icon, the results start to display in The Results List immediately, even though the search is continuing in the background. More items display in the Results List as they are found.



A sample of features from the Results List

When you are searching a map with more than one layer, the results of the search are grouped by layer in the Results List, for example, Mineral Exploration Report information will be following MINEDEX information.

Clear Selection

The clear Selection button will unselect or clear all currently selected features. This tool will only function if there are features selected.

To clear selection features:

On the **Search tab** of the toolbar, click **Clear Selection**.

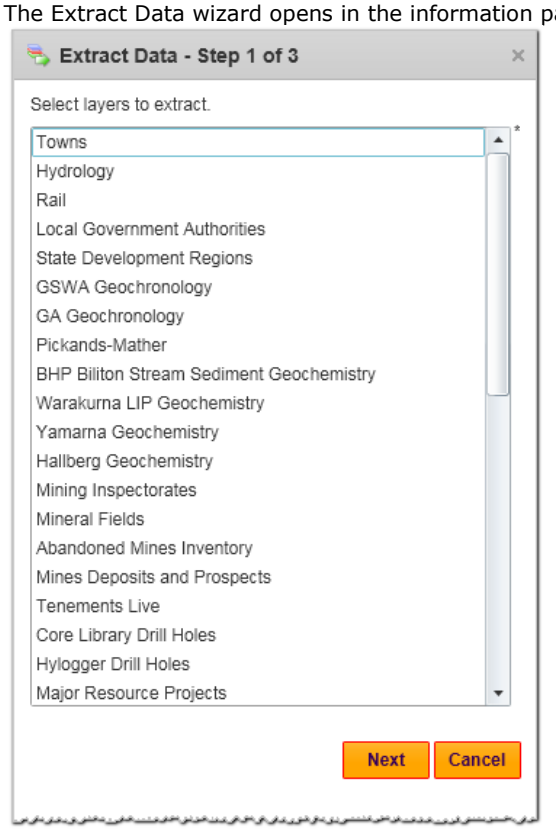
Extract Data

The Extract Data tool makes it possible for you to extract layer data from a particular area on the map. First you select the layers you want to include, and then define an area of the map from which to extract the data. During the extract process, you can also define the format of the data you want to use. The data is then extracted from the map and zipped into a file.

To extract map layer data:

1. On the **Search tab** of the toolbar, click **Extract Data**.

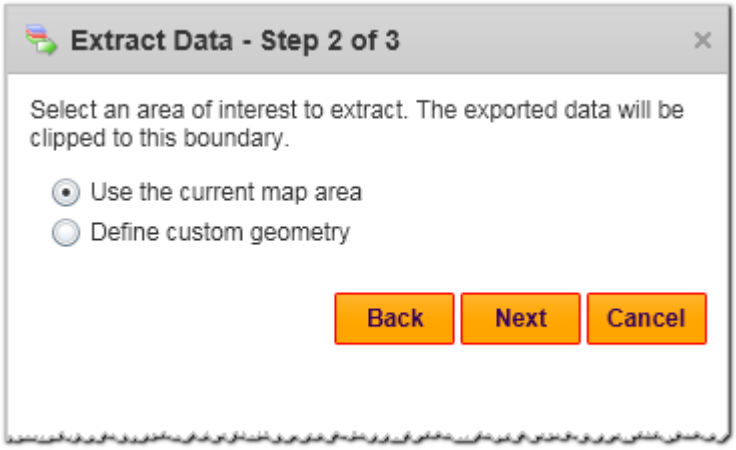
The Extract Data wizard opens in the information panel.



Layers listed for you to select

2. From the list in the box, select the layers you want to include.
   Use **Shift+click** or **Ctrl+click** to select more than one layer.

3. Click **Next**.
   In this step of the wizard, you select the current map area to extract the data from, or define a custom area.

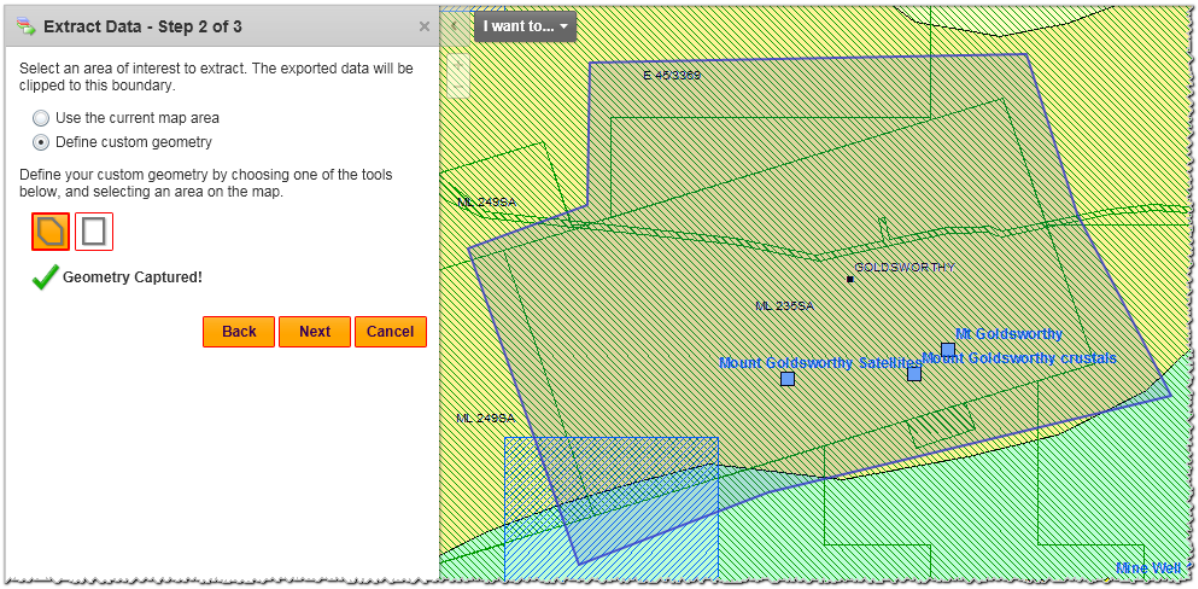


Options to select the map area

4. Click either the polygon or the rectangle icon and then do the following:

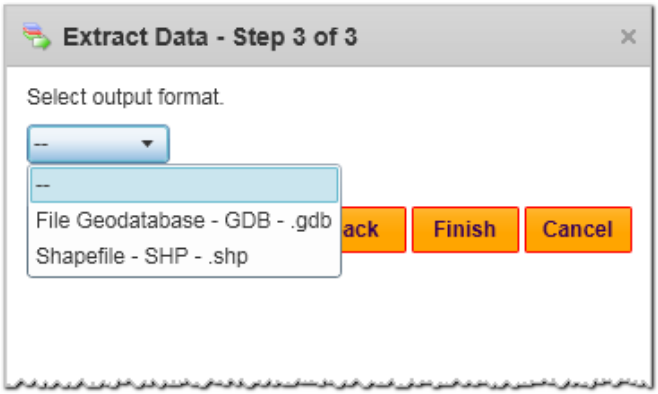
- If you selected the polygon, drag across the map to start a polygon.
  To change direction, click and then drag in a new direction. Shading appears to indicate that the polygon is filling in the space of the area. Double-click to end the polygon. You do not have to complete the shape, as long as the shading covers the area, you can double-click and the application completes the shape for you.

- If you selected the rectangle, click the map where you want one corner of the area to begin, and then drag a rectangle to cover the area. Lift your finger off the mouse button to complete the rectangle. When you have completed the shape, a **Geometry Captured!** message appears.



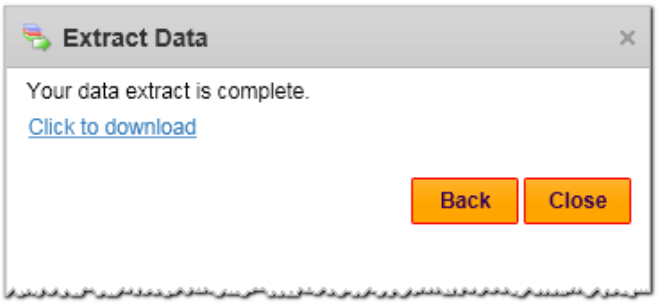
Shape completed during the extract process

5. Click **Next**.
   The application presents Step 3 of the wizard, where you can select the format for your data.



Select the format for the extracted data

6. Select the format and then click **Finish**.
   Once the data has been extracted, a confirmation message presents a link for you to download the data.



Link to download the extracted data

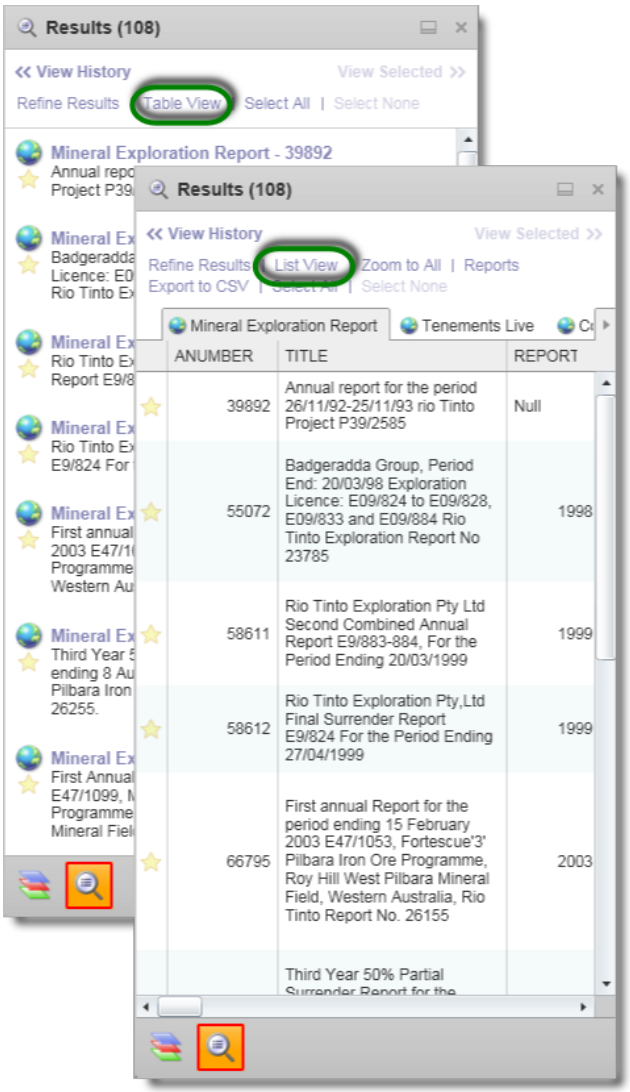
When you click on the **Click to download** link, a zip file is downloaded to your computer. You may see different dialogs depending on your Windows download settings and your browser settings.

Use the Results List

Once you have a set of search results in the Results List, there are many tools that you can use to work with these results. You can change the way the results are displayed and show them as a table, or move the whole panel to the bottom of the map, or select some of the items and put them into a separate list to deal with later.

The list of search results is just the beginning. Each item in the Results List can be used to find out more information about that feature and its attributes.

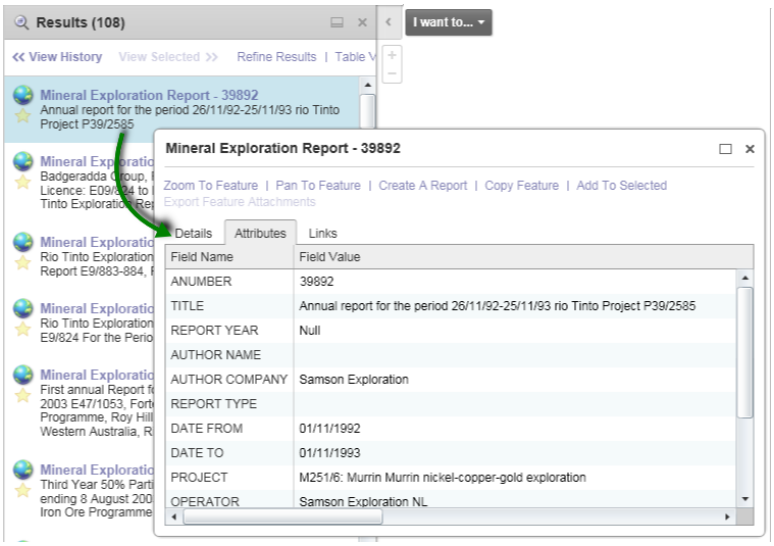
You can display the items in the Results List in two Views:



Toggle between Table View and List View in the Results List

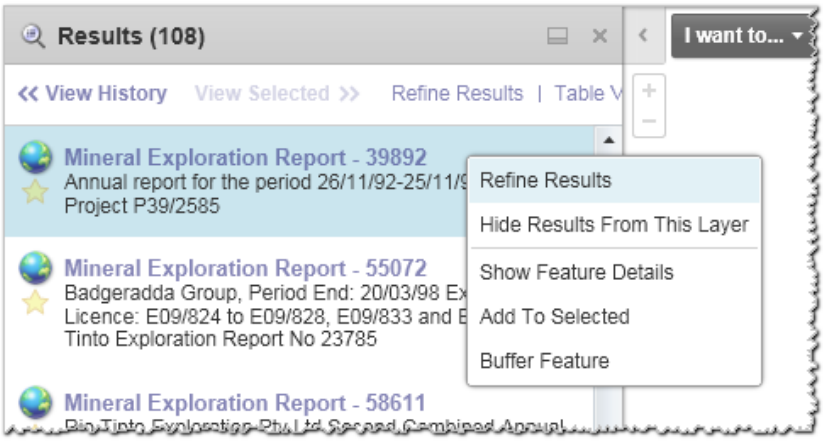
You can use the Results List in the following ways:

- To find a feature's attributes, select the feature in the Results List.
  The window displays a list of details and attributes about the feature, with links to more information.



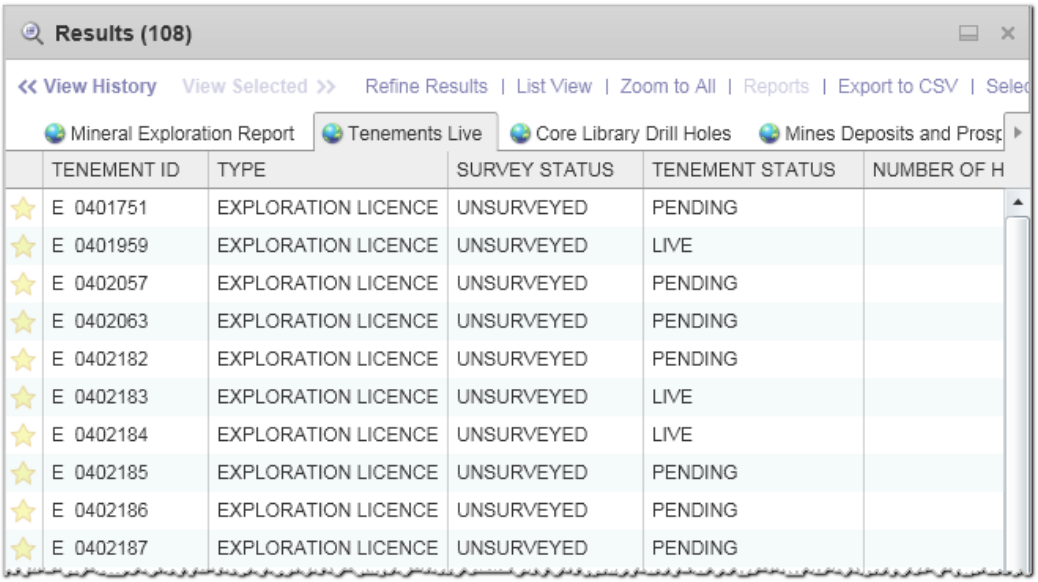
Feature attributes of an item in the Results List

- To display a menu with shortcuts to common tasks, right-click a feature in the Results List.



Right-click to show the Feature Action Menu

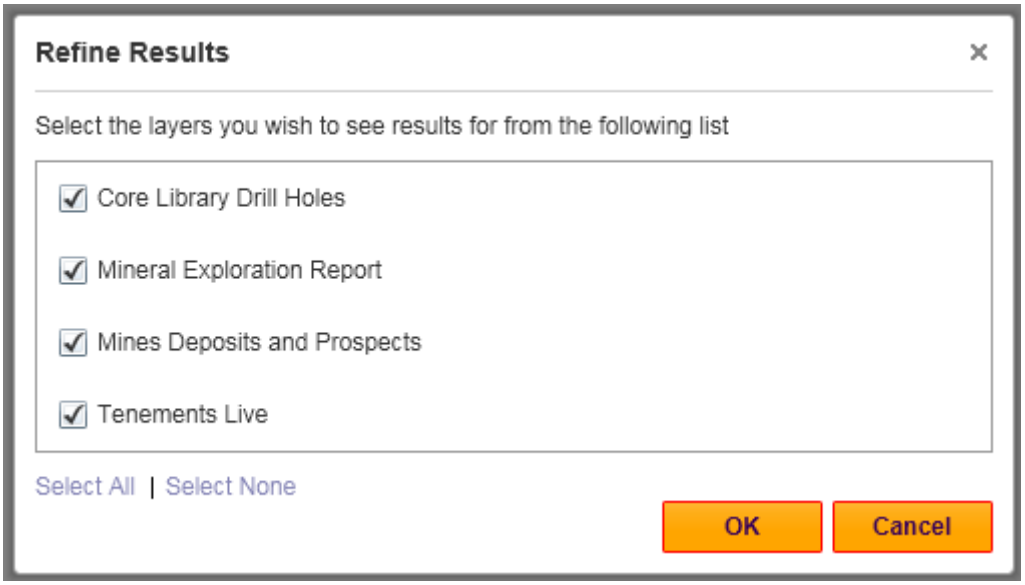
- To display the results in a table, click **Table View**.
  In Table View, all the results from a particular layer are grouped on a tab with their icon and a label. The Table View displays both the feature name and attributes so that you can compare features.
  When you click on a feature in Table View, the map zooms to that feature on the map.



TENEMENT ID	TYPE	SURVEY STATUS	TENEMENT STATUS	NUMBER OF H
E 0401751	EXPLORATION LICENCE	UNSURVEYED	PENDING	
E 0401959	EXPLORATION LICENCE	UNSURVEYED	LIVE	
E 0402057	EXPLORATION LICENCE	UNSURVEYED	PENDING	
E 0402063	EXPLORATION LICENCE	UNSURVEYED	PENDING	
E 0402182	EXPLORATION LICENCE	UNSURVEYED	PENDING	
E 0402183	EXPLORATION LICENCE	UNSURVEYED	LIVE	
E 0402184	EXPLORATION LICENCE	UNSURVEYED	LIVE	
E 0402185	EXPLORATION LICENCE	UNSURVEYED	PENDING	
E 0402186	EXPLORATION LICENCE	UNSURVEYED	PENDING	
E 0402187	EXPLORATION LICENCE	UNSURVEYED	PENDING	

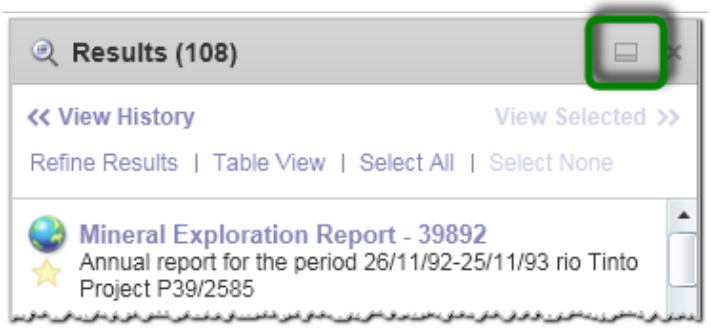
Results shown in Table View with tabs for each layer

- To export the results of your search to a CSV-formatted file (spreadsheet), click **Export to CSV**.
- To narrow your search results, click **Refine Results** and uncheck any layers you want to exclude from the Results List.



Refine Results dialog box listing layers to uncheck

- To display a menu with shortcuts to common tasks, right-click a feature in the Results List.
- To select several items from the Results and add them to a separate list so that you can review them, click the star icon ★ beside that feature in either List or Table View. Each item you select is added to a separate list.
- To see the list of results that you have selected, click **View Selected**.
- To change the position of the Results List to below the map, click the **Wide** icon at the top of the Information Panel.



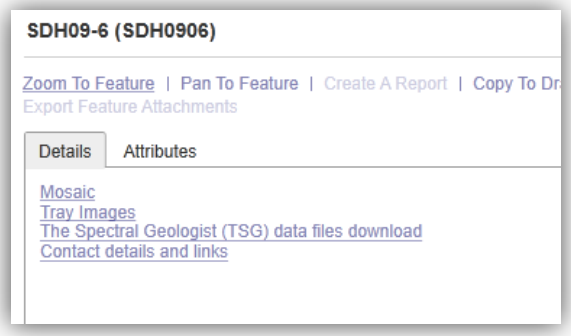
Click the Wide icon to reposition the Results List below the map

Map Feature – Links Tab: Opens a tab with links to download or access to other systems such as Tengraph.
Note: not all map layers provide links to downloads or access to other systems. The Links tab will only be available where applicable.

A map feature (Geophysics Surveys & Tenement) showing Links tab

National Virtual Core Library (NVCL) data

The Hylogger Drillholes layer displays the locations of company holes drilled in Western Australia and released by the company for public viewing. Currently being captured, the dataset will grow as new core becomes available publicly and core images are subsequently scanned using the Hylogger core scanner.
When the information tool returns an NVCL record in the result pane it can be used to open the same tabbed form as all others with Details and Attributes tabs. The Details tab will show four available hypertext links.



Tabbed information window of selected NVCL drill hole

Mosaic
This image service will return a mosaic image(s) stored within the NVCL database of the selected borehole.

Mosaic Image of all trays for one bore hole

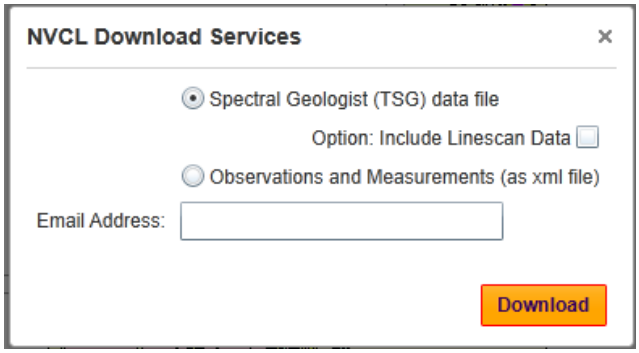
Tray Images

This image service will return the actual tray images stored within the NVCL database from a Mosaic Tray Thumbnail image. The first opening window will open similar to the mosaic image but each tray can be clicked to open a high resolution image of that tray.

Tray image for one a section of bore hole

The Spectral Geologist (TSG) data files download

This data download service when initiated will prepare TSG files from the NVCL database and makes them available for download. The user must provide a valid email address and will be presented with the option to include Linescan data (imagery) or whether Observations and Measurements (XML data) are provided in the download. By not selecting Linescan data this will significantly reduce the size of the download but will not make available the highest resolution images.

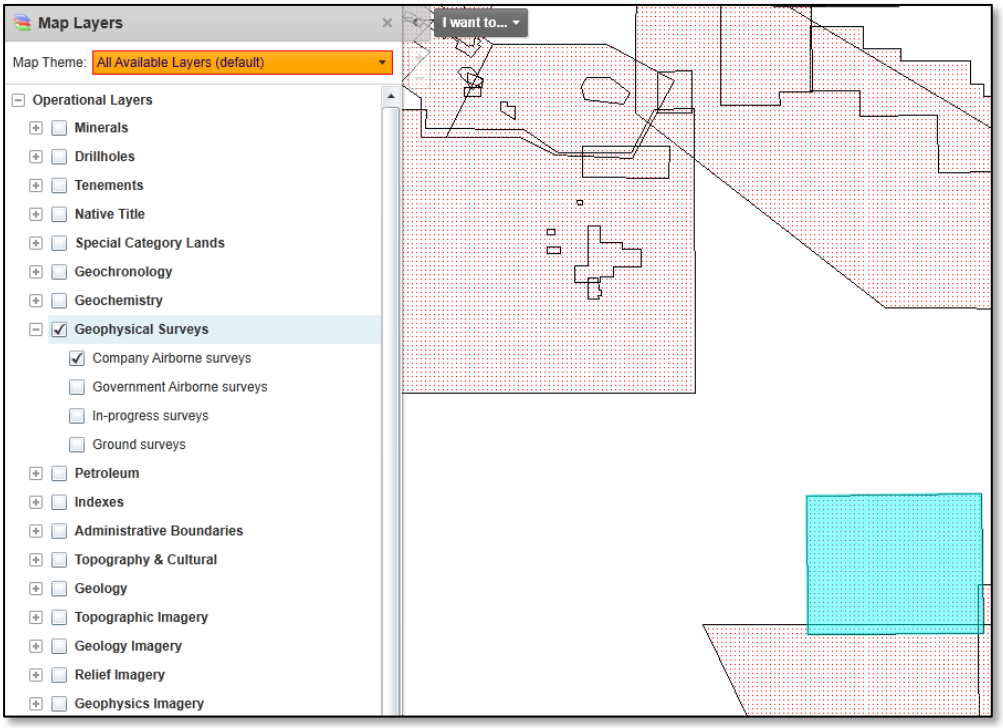


TSG data files download screen

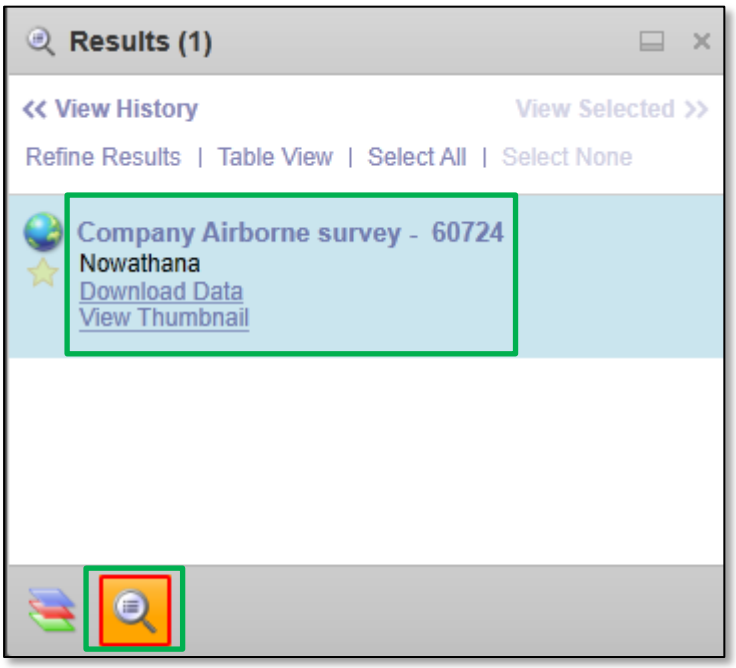
How to download Airborne Geophysics Surveys

It is possible to download Geophysics data from "Open Files" in the Registered Survey map layer under the Airborne Geophysics group.

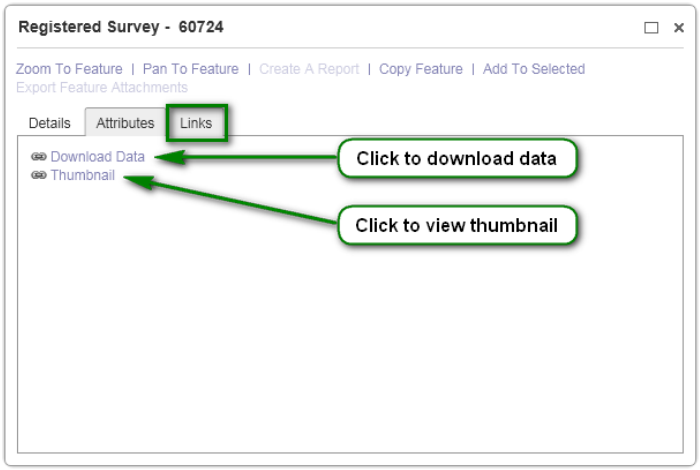
1. Select your area of interest from the Registered Survey Layer under the Airborne Geophysics Surveys group. This can be done by using any of the **Identify Tools** or using either the **Simple Query** or **Advanced Query Builder**.



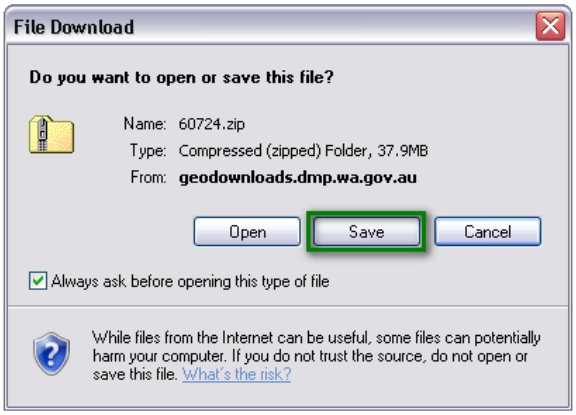
2. Switch on the Results panel if not in view and click on a survey from the list in the panel.



3. The Feature Details window should now display, select the **Links** tab and click **Thumbnail** to get a preview of the survey area or click on the **Download Data** hyperlink.



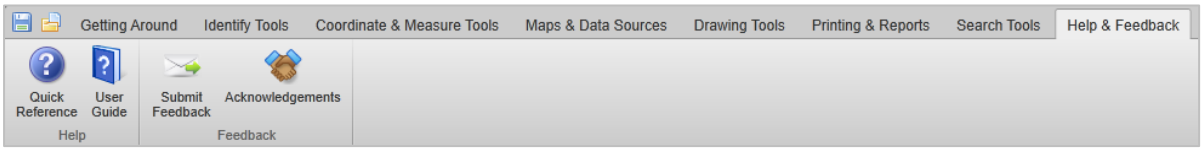
4. If you clicked on the **Download Data** link you should be presented with a **File Download** dialog. Click on the **Save** button to save the compressed zip file to a location of your choice.



5. Navigate to where you saved this zip file and unzip the file to extract and view the contents.

Help & Feedback Tab

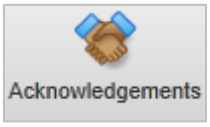
The Help & Feedback tab of the toolbar contains tools to provide a link to the Quick Reference document, a link to the User Guide document and to submit a feedback email for any queries, problems and suggestions relating to GeoVIEW.WA.



Help & Feedback tab of the toolbar

The tools in this tab are grouped into these sections:

- **Help:** Quick Reference and User Guide tools
- **Feedback:** Feedback tools

Use this tool...	To...
	Open the quick reference document. A printer friendly document with diagrams of each tool and a brief description of the function.
	Open the User Guide document for more detailed descriptions and functionality of the tool tabs and tools. Also provides step by step guides on how to perform common tasks.
	Submit an email in relation to any queries, data and software issues or any suggestions to the GeoVIEW.WA support staff.
	Open the Acknowledgment document to view the layers supplied by other agencies.

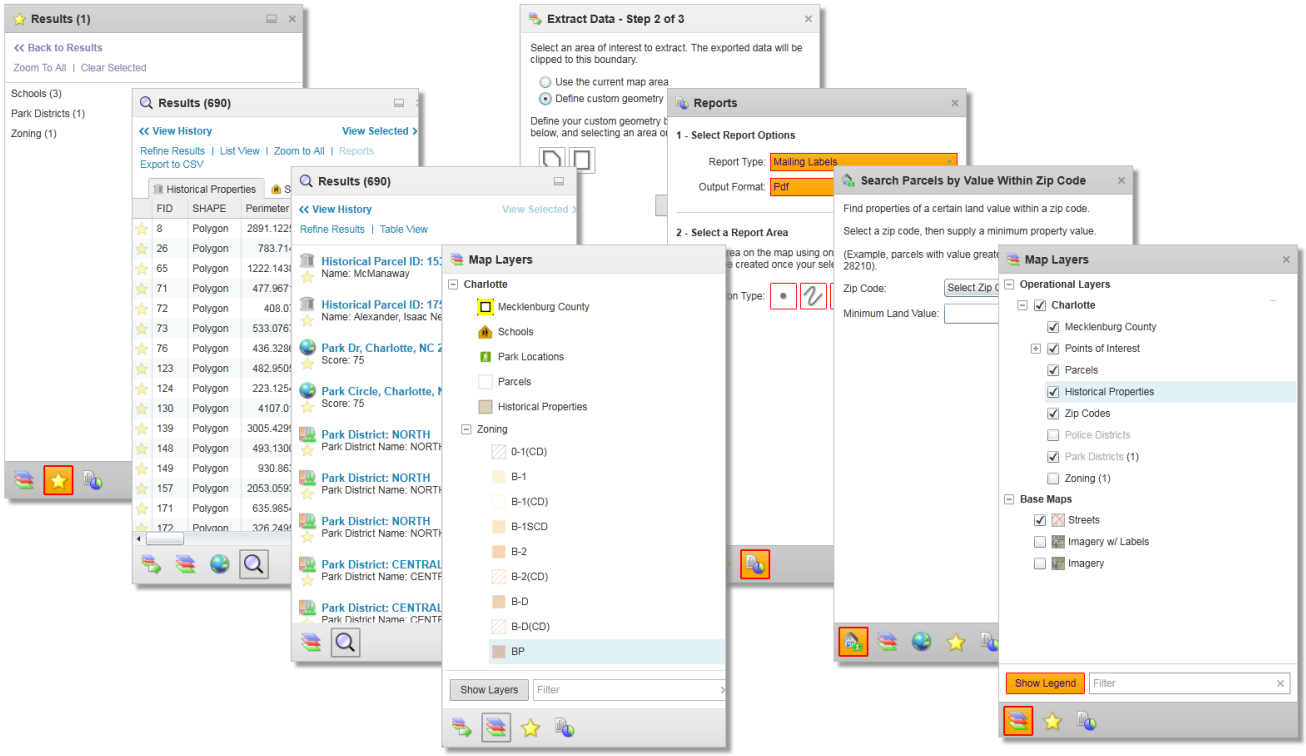
The Information Pane

The information pane is a multi-use panel that displays many kinds of data. At times, for example when using the Extract Layer tools, it turns into a wizard that steps you through multiple pages. When you do a search or use the Identify tools, the results of the search or selection display in the information pane and it is then referred to as the Results List. When you activate map layers, the panel is referred to as the Map Layers list or the Layer List.

To resize the information pane, hover over the divider until your cursor changes to a double arrow and then drag left or right.

Cursor changes to a double arrow

Each tool that uses the information panel has an icon. As you work with a map and use different tools, their icons remain in the toolbar at the bottom of the pane so that you can quickly return to that tool by clicking its icon.



Information panel with multiple kinds of data displayed

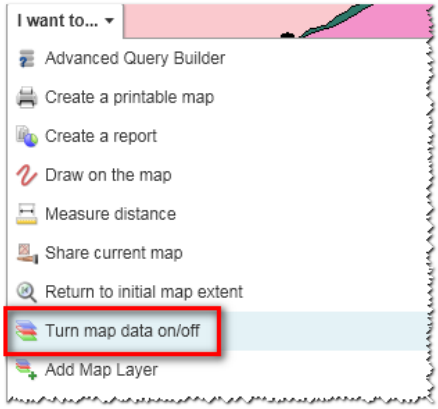
The Results List

One of the main functions of the information panel is to display search results, or list selected features when you use an Identify tool. When you use these tools, any results are listed in the information panel and the title bar changes to **Results**. In this mode, the panel is referred as the Results List.

Map Layers/Layer List

Another important list that appears in the information panel is Map Layers, which is sometimes referred to as the Layer List.

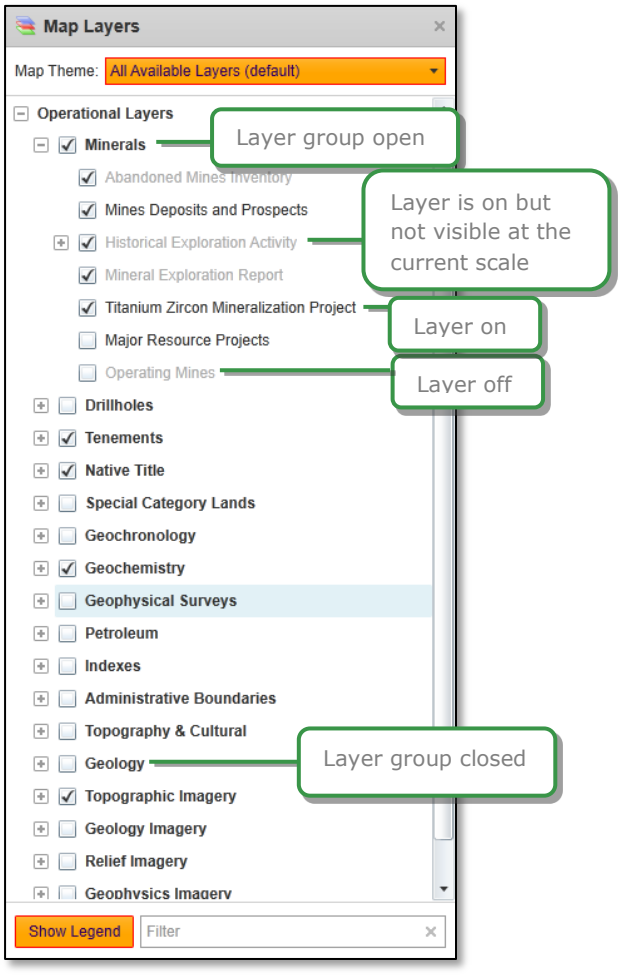
Map Layers open when you click the arrow  beside the **I Want To menu** or select **Turn map data on/off** from the **I Want To menu**.



Show layers from the I want to... menu

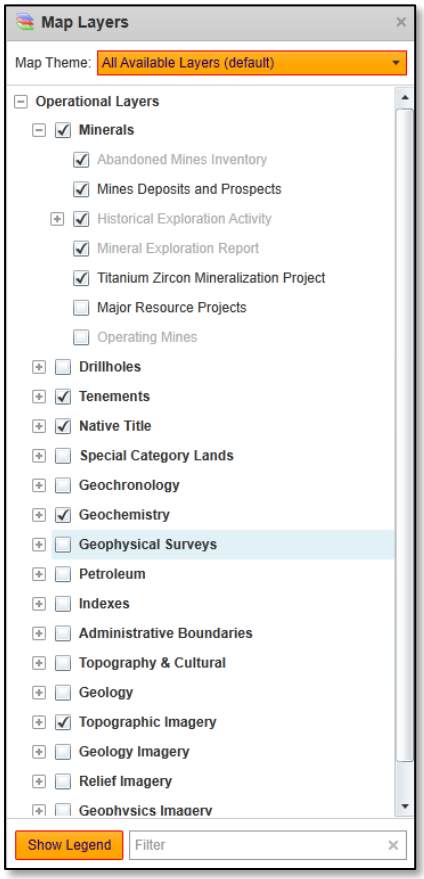
Show Layers tool

Because maps often have many layers, the layers in Map Layers are organized into groups that you can collapse and expand. When you first open the Map Layer, some groups may be open while others are closed. Similarly, some layers may be visible on the map while others are not. Beside each layer or layer group, there is a checkbox that is used to turn a layer on ☑ or off ☐. Beside layer group, there is a Plus icon ⊞ or Minus icon ⊟ that you use to expand or collapse the layers inside the group. Expanding and collapsing groups does not change which layers are visible on the map; it simply helps you stay organized. The transparency slider beside some layers makes it possible to make that layer transparent so that you can see other layers through them.



Use Layers

Layers contain all the data in a web map, so knowing how layers function is essential.

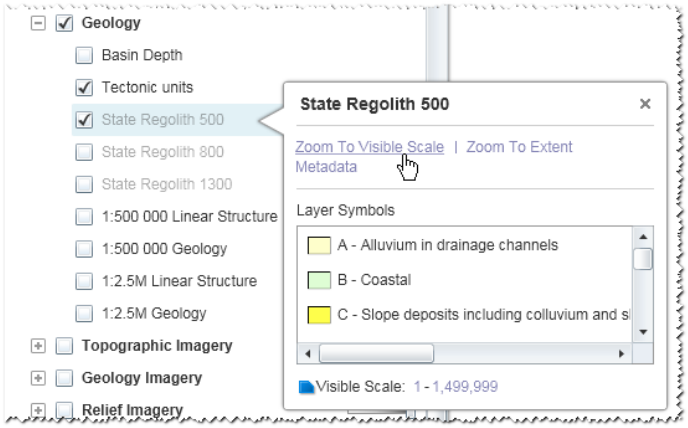


Map Layers in the information panel

To change the visibility of layers on the map:

1. To turn a layer on ☑ or off ☐, click the checkbox in front of that layer.
   Layers with text that is pale gray are not visible at the current scale.

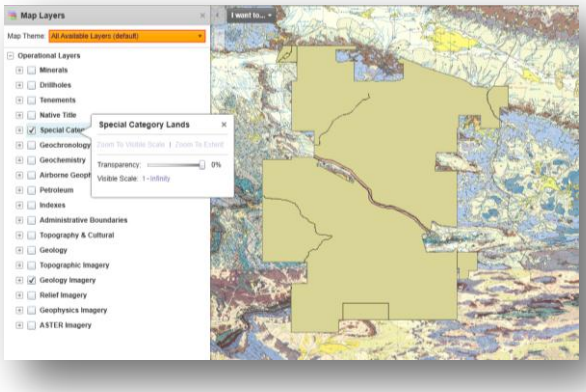
2. To zoom directly to where a layer is visible, click that layer in the list, and then click **Zoom To Visible Scale**.



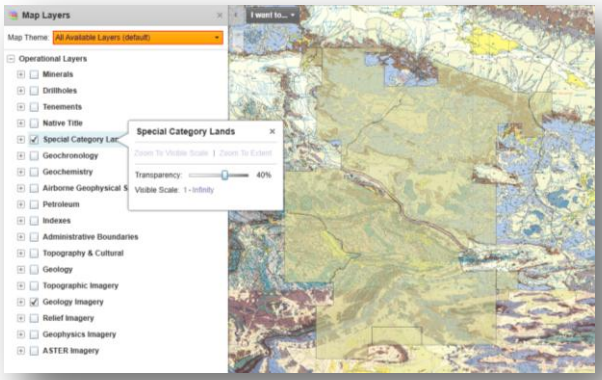
Click Zoom To Visible Scale in the Layer Actions menu

3. To zoom to an extent that is just large enough to include all the layer's features, click the layer to open the **Layer Actions** menu, and then click **Zoom to Extent**.
   This is different from the **Zoom to *Full* Extent** tool in the Getting Around tab of the toolbar, which zooms out as far as possible.

4. To make a layer transparent,
   Right click the layer, there will be a slider bar..

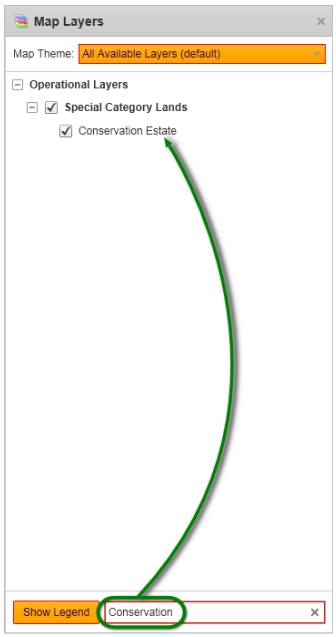


   Drag the transparency slider to the left.



   In the example above the Special Category Lands layer changed to 40% transparency

5. To quickly filter the list of layers to show only the one you want to see, start to type the name into the Filter box.
   The Map Layers list updates as you type to show only the layers that match your filter word.



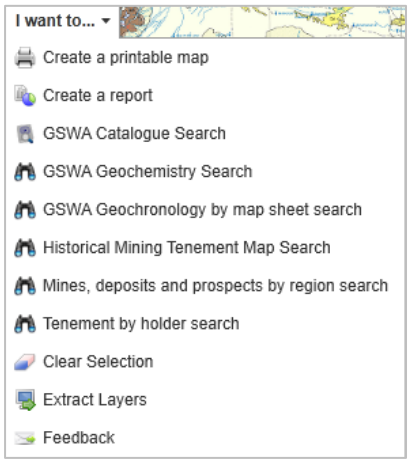
Use the Filter box to list only layers you want to see

Filtering the layers in the Map Layers panel does not affect the visibility of the layers on the map, but it does make it easier to find a particular layer or reduce the number of layers if you are working with a long list of layers.

I want to… Menu

When the map first opens, this menu is a button on the map 

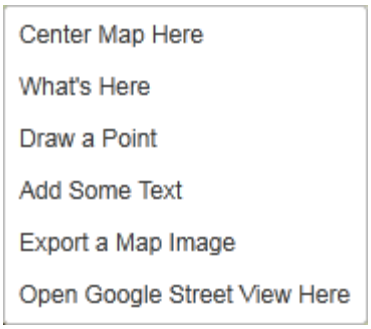
. When you click the down arrow, the **I want to…** menu displays a list of tools that are used often. Essentially, this menu is a shortcut to the tasks that you are likely to want to do more often than others.



I Want To menu - open

The Context Menu

The context menu opens when you right-click on the map. The options you see in the context menu may change depending on the map you are using or where on the screen you click.



Context menu options

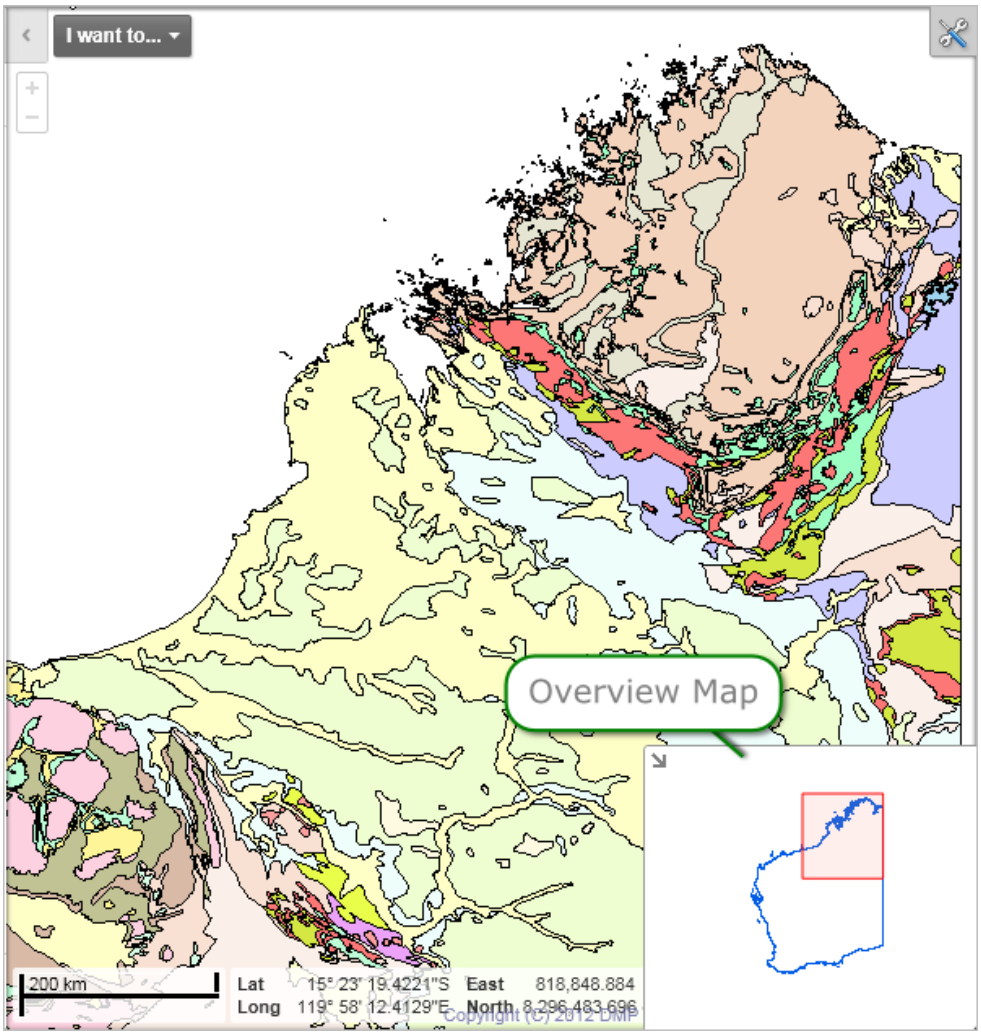
The default options in the context menu include:

- **Center Map Here**: Centers the current view of the map at the point that you right-clicked.
- **What's Here**: Lists all the features at the point on the map that you clicked.
- **Draw a Point**: Draws a point where you clicked.
- **Add Some Text**: Opens a text box at the place you right-clicked so that you can type in the text you want to add.
- **Export a Map Image**: Opens the Export a Map Image dialog box for you to choose the format that you want to use when you export the map.
- **Open Google Street View Here**: Opens the Google Street View image of the point on the map where you right-clicked.

Google Street View opened at the point on the map that was clicked

The Overview Map

The Overview map is a small view of the full map showing the current view as a blue square. Seeing the current view in relation to the whole map helps you orient yourself on the overall map.



Overview map open in the bottom right corner of the map

To open the Overview map:

1. Click the arrow icon in the bottom right corner of the map.

To close the Overview map:

1. Click the arrow in the top left corner of the Overview map.

Open and Close the Information Panel

The information panel displays many different sets of information depending on what you have selected on the map. It displays the results of searches or the list of layers on the map and it is often a gateway to finding more information about the features on the map.

To open the information panel:

Click the arrow to the left of the **I want to...** menu  .

To close or hide the information panel:

Click the arrow  to the left of the **I want to...** menu.

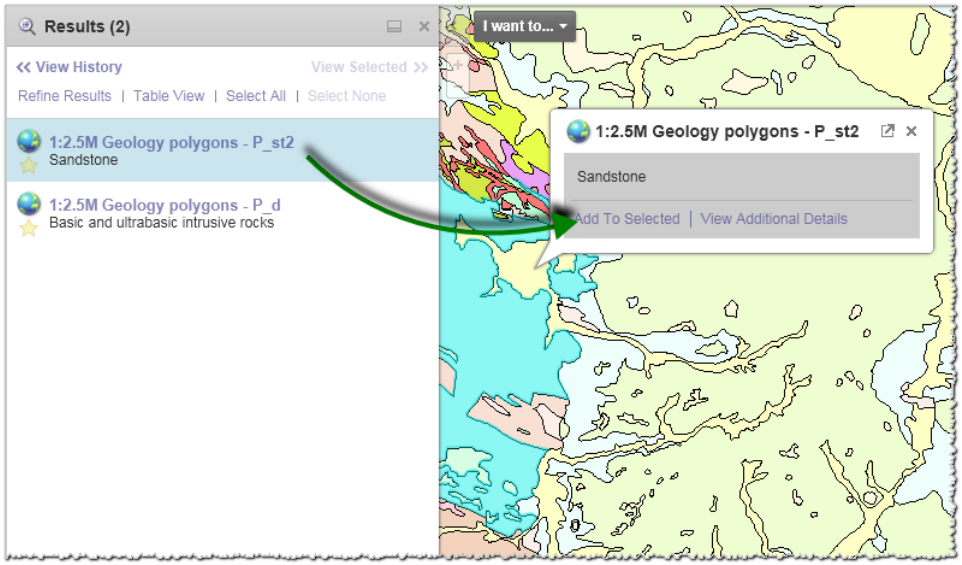
When you hide the information panel, the data displayed is not deleted so you can refer to it again when you open the panel. When you exit the application completely, the data is cleared from the information panel.

View Features and Attributes

Because web maps contain so much information, it is important to know how to display it. For example, you may want to find what Geological information is available for a particular Tenement area.

To see information about a feature:

1. Do one of the following:
   - Right-click the feature and select **What's Here**.
     or
   - Click **Point Identify** on the Toolbar, and then click a feature on the map.
     A list of features at that location displays in the **Results** panel.
2. Click a feature in the Results list to display a map tip with details about that feature.

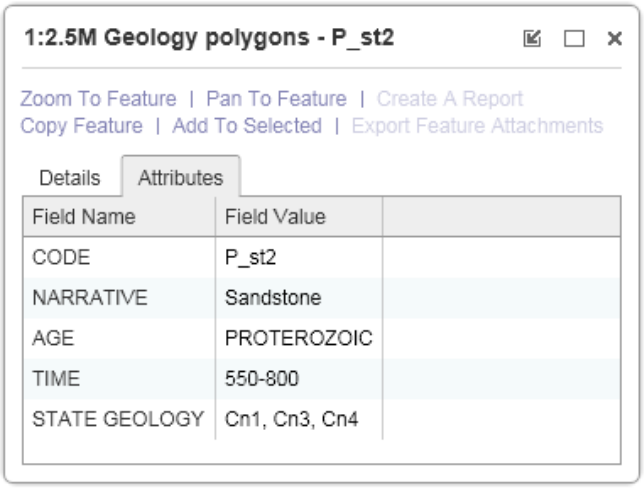


Point Identify used to find information about a feature on the map

The map tip contains the following links:

- **Add To Selected**: Selects this feature and adds it to the list in the Results panel so that you can return to it later.

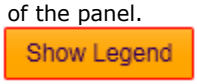
- **View Additional Details**: Opens a window with more detailed information on this feature including links that allow you to zoom or pan to the feature, create a report, copy the feature and add it to the Results list.



View Additional Details window with detailed information and links

View the Map Legend

When the Map Layers are open in the Information panel, you can quickly toggle between the map legend and the Map Layers by clicking the button at the bottom of the panel.

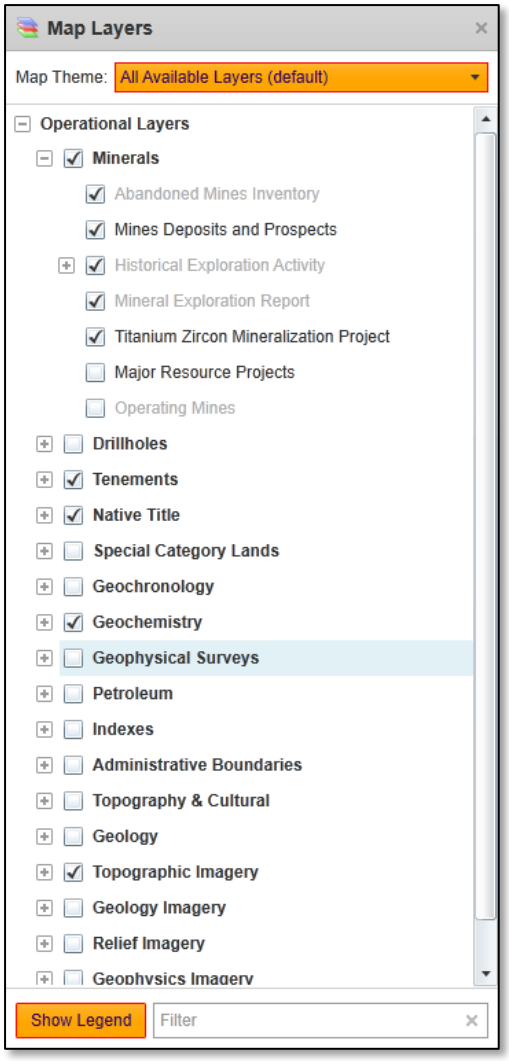
When Map Layers are listed, the button displays as 

.

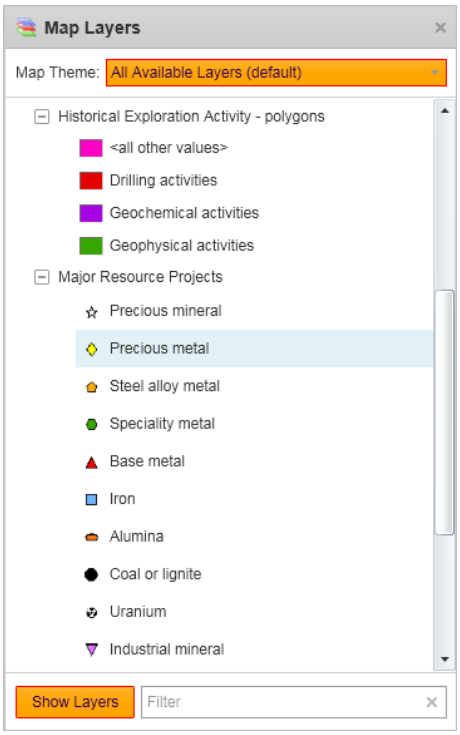
When the Map Legend is listed, the button displays as 

.

What you see in the Legend list depends on the map and the layers that are available, as well as what extent you are zoomed into.



Map Layers displayed in the Map Layers panel



Map Legend displayed in the Map Layers panel

Appendix

About GIS and Computerized Maps

What is GIS?

A Geographic Information System (GIS) integrates hardware, software, and data to capture, manage, analyze, and display geographic information. Many organizations use GIS to examine data, answer questions, solve problems and most importantly, make informed decisions in thousands of different situations. For example, government organizations such as DMP (Department of Mines and Petroleum) use GIS to track a host of different data from Geological boundaries, Mineral Exploration data to Mining and Petroleum Tenement information and situate this information on maps. One very large benefit of computerized maps is that they can quickly combine information from different sources or layers and display them on the same map.

Example
Let's imagine a Prospector would like to locate his/her Tenement and would like to view all Abandoned Mines, Mines, Deposits and Prospects and some Geology over the area. He/she could create a map with the following layers:

- Tenements Live.
- Abandoned Mines Inventory.
- Mines, Deposits and Prospects.
- 1:500 000 Geology.
- Topography (Towns & Roads).

With this information, it would be possible to quickly locate the Tenement, if there any Abandoned Mines and the location of all existing Mines, Deposits and Prospects. These layers can also be supplemented with the 1:500 000 Interpreted Bedrock Geology of the state and some Topography.

Information in Computerized Maps

The key to understanding how computerized maps work, is to understand how the information in the map is structured.

Layers, Features and Attributes

Information in web-based maps is separated into layers. Each layer can have a different set of information. For example, if you were wanting to keep track of Geological data, you could have one layer that showed Bedrock Geology, and another layer for Linear Structures, and yet another for Tectonic Units.
Each layer of the map has features on it, for example the Linear Structures on the Linear Structures layer and Tectonics on the Tectonics layer. Each single feature (Tectonics) has information about it in the form of **attributes**, for example, what is the name of the Tectonic Unit, it's Lithology, age range, etc. So, although any one unit may be only a polygon on the map, that polygon contains information about all the attributes of that Tectonic Unit. If you think about all the Geology on any map, plus the Geology types, Structures, Bedrock and all their attributes, that is a lot of information.
How is all this information stored in a map? Actually, the information is stored in a database but because this is a computerized map, it can access information from multiple databases if it needs to.
Let's return to the single Tectonic unit and its attributes. If we had to track all the information about a unit, we would enter it in a spreadsheet or database as a single **record**. Each category of information, for example "TECTONIC NAME", is called a **Field**.

Single Record in a Database

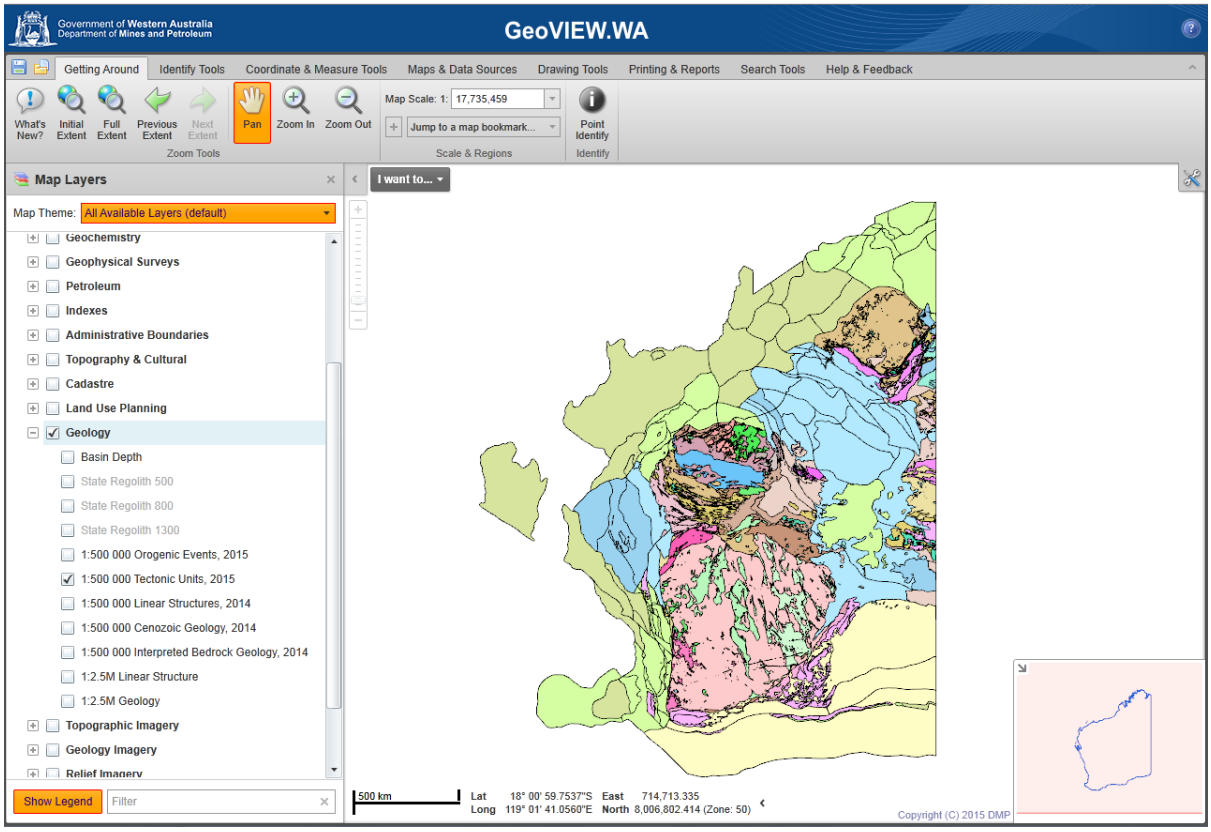
TECTONIC CODE	TECTONIC NAME	LITHOLOGY	PARENT NAME
IP-xs-b-PNC	Cadda Terrace	Sedimentary and volcanic rocks	Perth Basin

The attributes for a number of Tectonic Units would look like this in the database:

Multiple Records in a Database

TECTONIC CODE	TECTONIC NAME	LITHOLOGY	PARENT NAME
IP-xs-b-PNC	Cadda Terrace	Sedimentary and volcanic rocks	Perth Basin
P_M-xs-b-MO	Moora Group	Sedimentary and volcanic rocks	Pinjarra Orogen
APN-xm-g-YSW	South West Terrane	Igneous and metamorphic rocks	Yilgarn Craton
IP-xs-b-PEE	Beermullah Trough	Sedimentary and volcanic rocks	Perth Basin
IP-xs-b-PND	Dandaragan Trough	Sedimentary and volcanic rocks	Perth Basin

The entire Tectonic units for the state, would look something like this:



Mapping Locations

This ability to add spatial data and information (attributes) is the foundation of GIS. A GIS tells us not just where something is but also *what* it is. Computers make GIS possible as a computer can link maps to a database of information. By using a computer, we can have hundreds of fields (different attributes) for millions of records.

About Web-Based Maps

Paper maps tell you a few things about something on the map but web-based maps are far more powerful, as they allow you to interact with them.
Some of the ways you can interact with a web-based map include:

- Pan and zoom to areas of interest.
- Search for specific features on a map.
- Display additional information about the features shown on a map.
- Measure the length and area of features.
- Make annotations on a map.
- Save a specific map with annotations to use later.
- Print and create reports on features and information contained within the map.
- Share your map with others.

As different as this is from a paper-based map, it is just the beginning. Because a web-based map is a computerized map, it is possible to perform complex tasks using the information inside them. Previously, these complex tasks were only possible for people trained to use geographic information systems (GIS) but the arrival of web-based maps like Google and Bing maps has brought this information into the mainstream. So now, instead of using a paper-based map that only tells you a few things about each feature on a map, a GIS can tell you hundreds.

About Layers

Web maps separate information into layers. This means that you can show or hide information on the map by activating or deactivating layers. It also means that you can have multiple layers of information on a single web map.

A map layer is really a category of information like Operating Mines, Linear Structures or Bedrock Geology. Any information can be represented on a layer but to make it easier to read, the information is represented in simplified abstract ways. For example an Operating Mine would be represented as a point, a Linear Structure as a line and Bedrock Geology as polygons. Like any computerized image, the features on a layer can be represented in two ways - Vector or Raster.

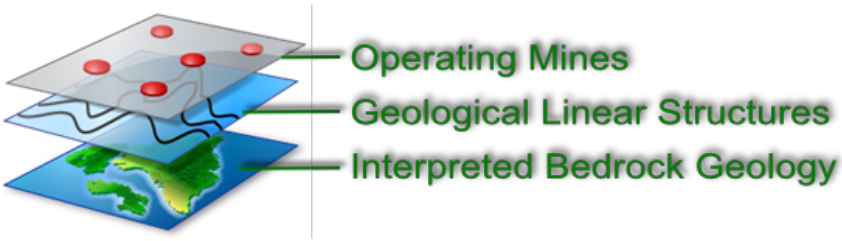
Vector Layers

In vector layers, features are usually represented as points, lines, and polygons.

Points: Points are used to show where a feature is when its physical shape is not important (for example, Operating Mines).

Lines: Lines are used to represent features that are continuous (for example, the Linear Structures in a Structures layer).

Polygon: A polygon is a solid, multi-sided shape. Polygons are used to represent features that occupy an area. Everything inside the boundary of the polygon is one record and has the attributes of that record (for example, Bedrock Geology in the 1:500 000 Geology layer).

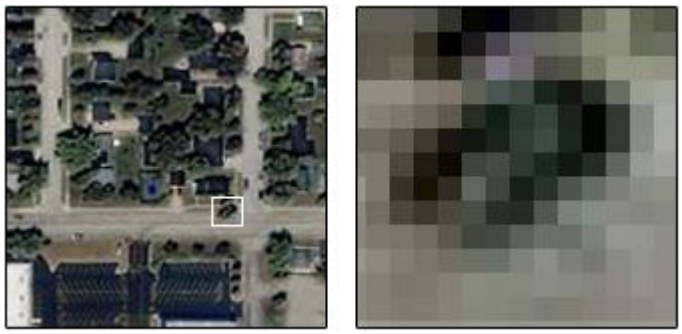


Vector layers using points, lines and polygons

Some other layers terms are coverages, themes, or shapefiles, which are simply names for a types of layer.

Raster layers

Raster layers are made up of pixels in a grid. Web maps that are images, often have a raster layer, as this is how digital photos are stored. Raster images do not have attributes attached to their features although a pixel can contain a single value like the color of a roof tile, or the measure of hurricane force at a particular location.



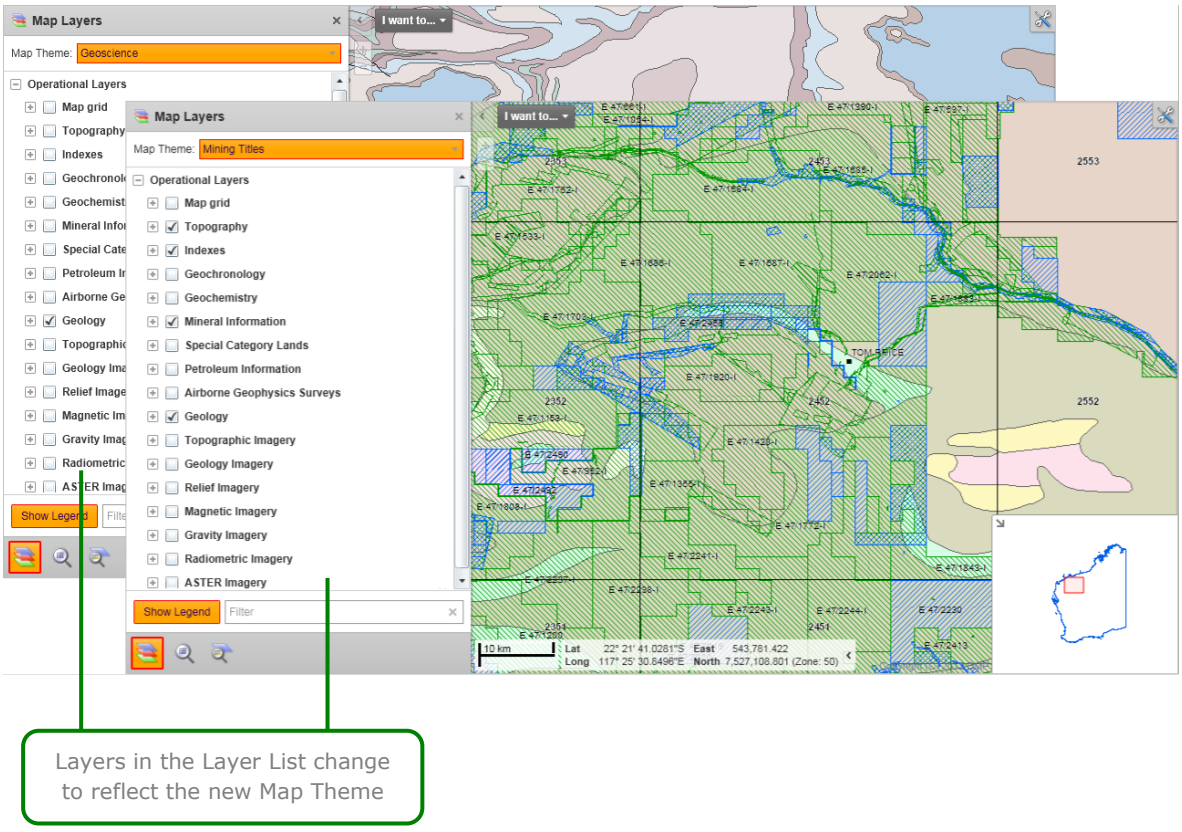
Raster layer made up of pixels

Some base maps look like vector layers but are actually tiled raster images. Tiled images are used because they display faster and deliver a good combination of layers for providing context and orientation. If your base map has raster layers, you cannot turn the layers off and on.

About Map Themes

In some maps, layers that contain similar information are grouped into a specific theme of related data. For example, all the layers that involve Petroleum including Petroleum Titles, Pipelines and Applications could be grouped into a map theme called Petroleum Information. You could also have a Map Theme that shows mostly layers about Geology and Geoscience. As each map theme may contain a complex set of layers, it saves you the effort of selecting the layers manually, making it possible to quickly switch between very different sets of data.

When you select a map theme, the layers in the Map Layers panel also change. You can still turn layers in a Map Theme on or off as you normally would.

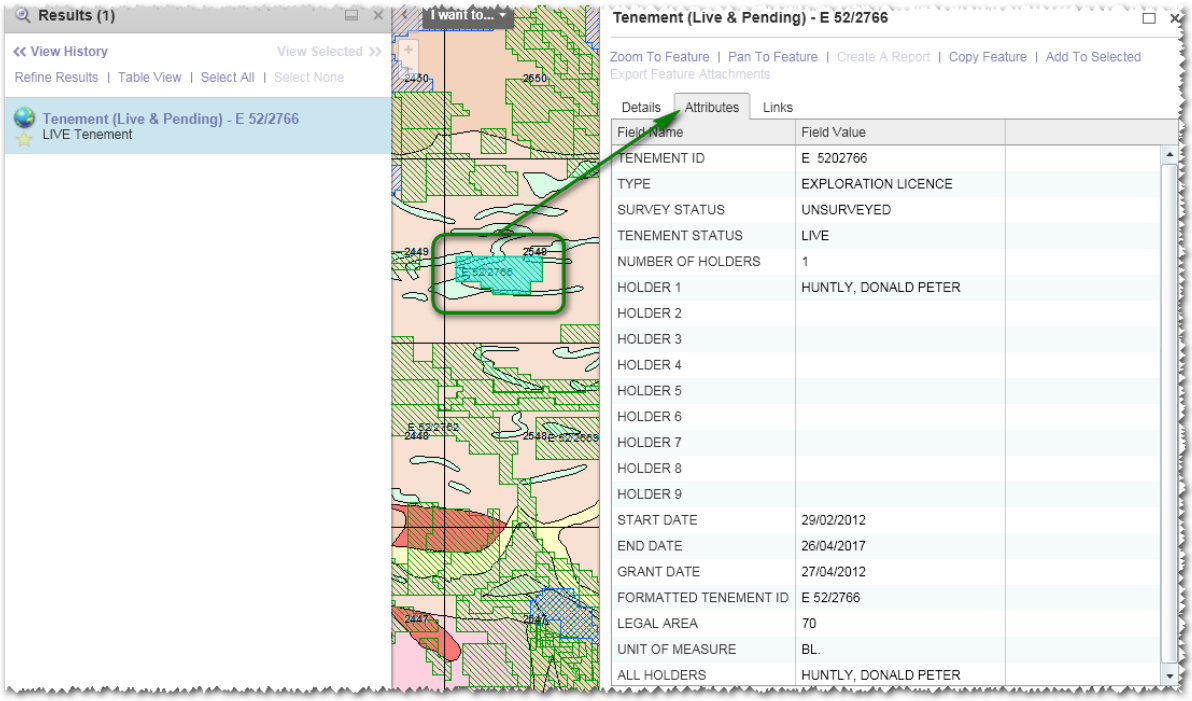


Map Themes make it possible to quickly flip between different predefined layer sets

About Map Features

Features are the collection of items found on one map layer. Each feature has a number of information attributes. For example, if you were looking at a Tenement layer that shows current Mining Tenement data, each Tenement is a feature. Attributes of a Tenement feature may include:

- The ID number of the tenement;
- The type of tenement;
- The survey status of the tenement;
- The status of the tenement;
- The number and name of tenement holders;
- The start and end date of the tenement;
- The grant date of the tenement; or
- The area of the tenement.



A map feature (Tenement) with its attributes

Map Feature – Links Tab: Opens a tab with links to download or access to other systems such as Tengraph. **Note**: not all map layers provide links to downloads or access to other systems. The Links tab will only be available where applicable.

A map feature (Geophysics Surveys & Tenement) showing Links tab

About Map Scales

The Map Scale box and Scale Bar are for navigation only, and may not be completely accurate. Without information about the size of your monitor or device, it is impossible to accurately provide a ratio scale. Any scale error is more pronounced if you have a large monitor or a projector with a very low resolution, or if you have a small monitor at a very high resolution. A 17" monitor running at a resolution of 800x600 or 1024x768 represents the scale more accurately.

Some maps have limits on the scales at which you can view the data, and some layers and map labels may only appear at certain scales. If the layer you need is unavailable at your current map scale, zoom in until the layer becomes available.

How Scale Works

When you zoom in, the scale of the map gets larger. A large-scale map covers a smaller land area than a small scale map. A map that is zoomed in to a small town is large scale, whereas a map of Western Australia is small scale.

The reason is that scale is a ratio. In other words, 1:10 means that one unit on the map represents ten units in the real world. In this case - 1:10 - the map is one-tenth the size of the real world. Because it is a ratio, it doesn't matter if the units are centimeters, metres, or any other units. If you have a 1:100 000 map, the map is 1/100 000 the size of the actual place and 1/100 000 is a much smaller fraction (or ratio, or scale) than 1/10.

A larger scale equals greater detail.