

# User Guide | Geological Survey of NSW

## Using Web Services (WMS & WFS)

Instructions are provided here for three common open source or commercial GIS applications. The general principles of connecting to, and displaying, a WMS/WFS service are similar for all applications.

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The following examples use the service URLs below and focus on the NSW Mineral Occurrences (METINDEX) layer:

#### WMS SERVICE

<https://gs.geoscience.nsw.gov.au/geoserver/ows?service=wms&version=1.3.0&request=GetCapabilities>

#### WFS SERVICE

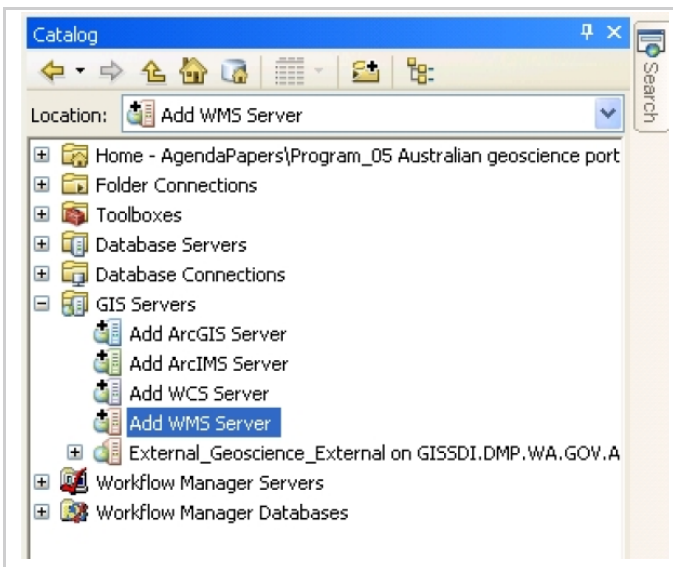
<https://gs.geoscience.nsw.gov.au/geoserver/ows?service=wfs&version=2.0.0&request=GetCapabilities>

# 1 ArcGIS

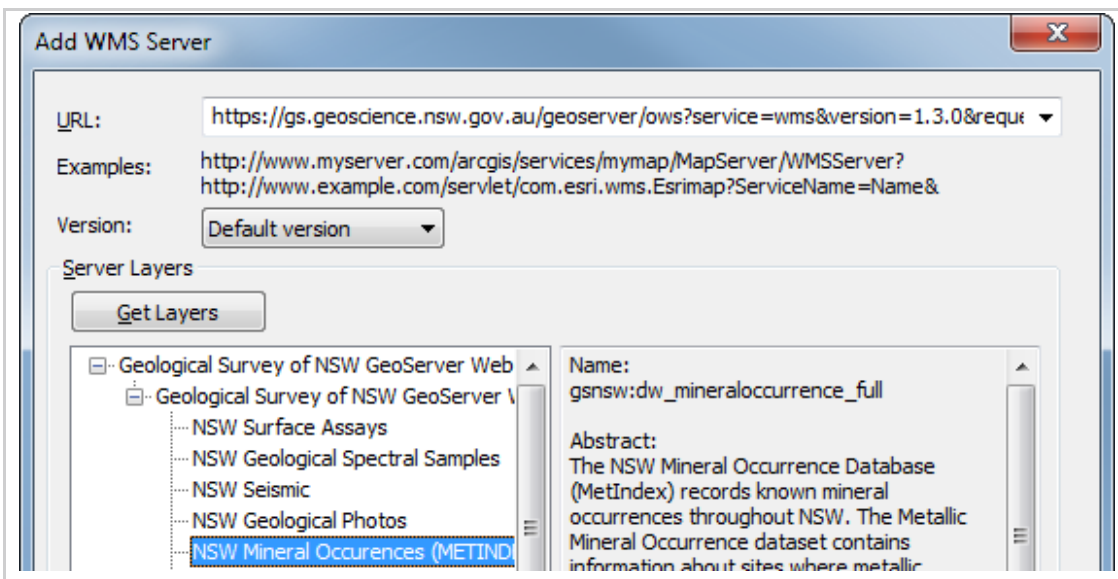
These instructions are for ArcGIS version 10.x

## 1.1 Web Mapping Services (WMS)

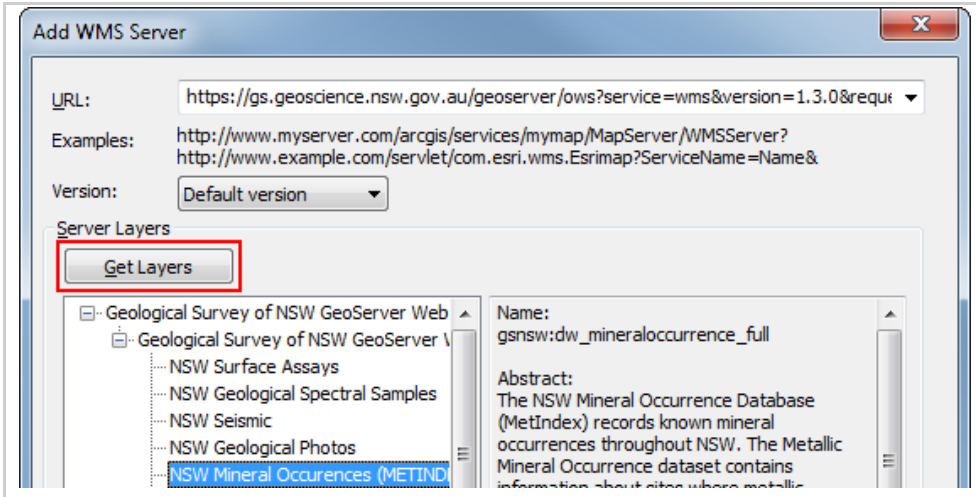
1. Start ArcCatalog. Open the GIS Services folder and **Add WMS Server**.



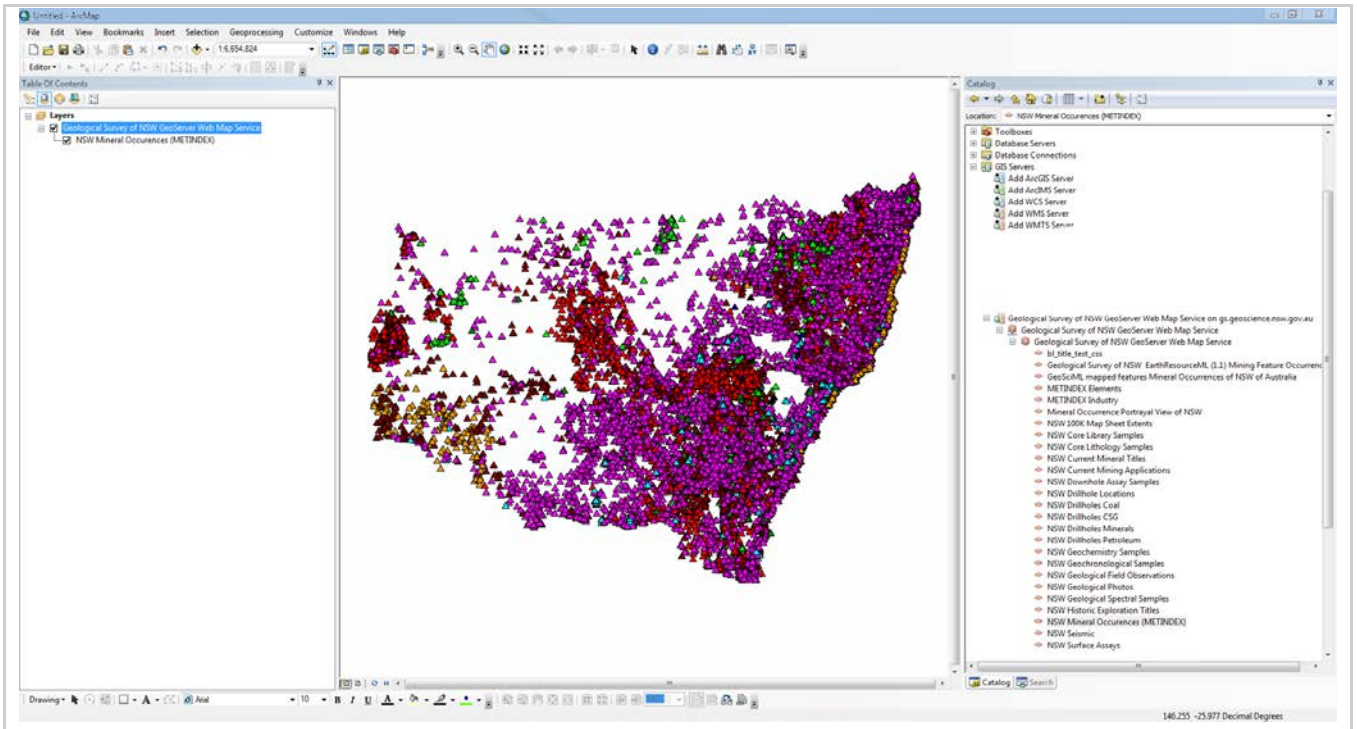
2. In the **Add WMS Server** dialog, enter the **URL** of the WMS Service (see Contents page). Leave version as **Default Version**, unless you wish to specify the WMS version to connect to (1.1.1 or 1.3.0).



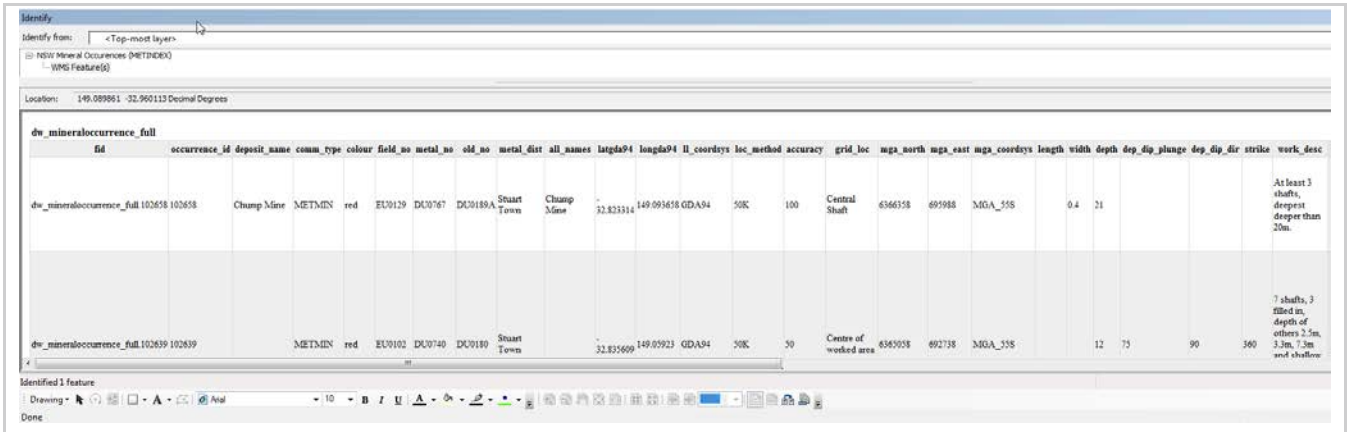
3. Click **Get Layers** to display a list of map layers available from the WMS service. Click on each layer to see coordinate systems and extents information.



4. Click OK at the bottom of the dialog box.
5. The new WMS Server “Geological Survey of NSW GeoServer Web Map Service on gs.geoscience.nsw.gov.au” will be added to ArcCatalog.
6. Open the WMS service in ArcMap. Do this either by clicking the “Add Data” button and navigating to the WMS service you just set up, or click and drag a WMS map layer from an ArcCatalog window into an ArcMap map window. Here the NSW Mineral Occurrences (METINDEX) layer has been added:

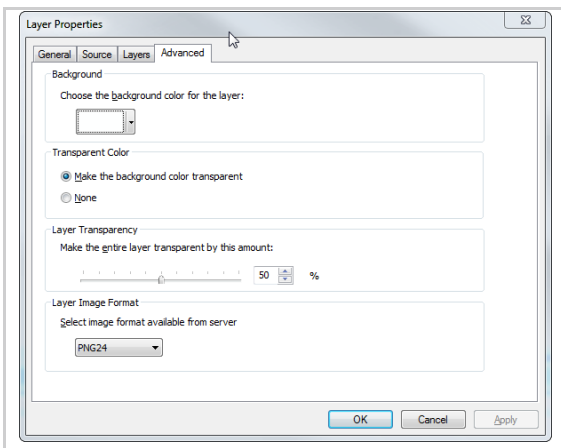


7. You can query the WMS map using the Identify tool. The format of the identify result is embedded in each WMS service, so the formatting may not appear like a standard ArcMap identify. For example;

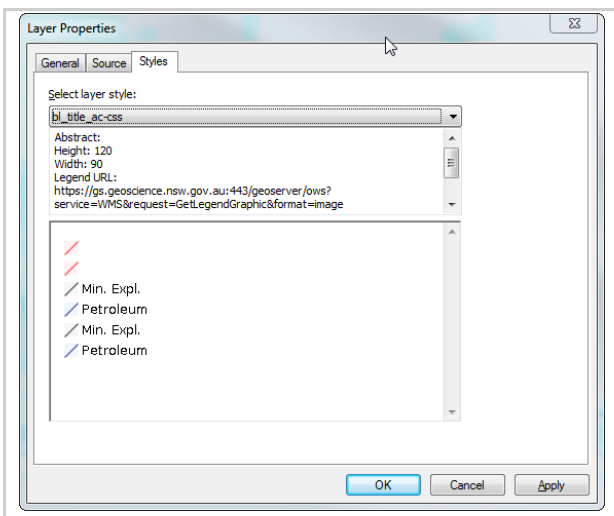


dw_mineraloccurrence_full	occurrence_id	deposit_name	com_m_type	colour	field_no	metal_no	old_no	metal_dist	all_names	latgda94	longgda94	ll_coordsys	loc_method	accuracy	grid_loc	mpa_north	mpa_east	mpa_coordsys	length	width	depth	dep_dip plunge	dep_dip_dir	strike	work_desc
dw_mineraloccurrence_full.102658	102658	Champ Mine	METMIN	red	EU0129	DU0767	DU0189A	Stuart Town	Champ Mine	32.823314	149.093658	GDA94	50K	100	Central Shaft	6366358	691988	MGA_55S			0.4	21			At least 3 shafts, deepest deeper than 20m.
dw_mineraloccurrence_full.102659	102659		METMIN	red	EU0102	DU0740	DU0180	Stuart Town		32.823609	149.05923	GDA94	50K	50	Centre of worked area	6363038	692738	MGA_55S			12	75	90	360	7 shafts, 3 filled in, depths of others 2.5m, 3.5m, 7.5m and shallow

8. You can alter the transparency of the WMS by going to Layer Properties for the whole service (e.g. Geological Survey of NSW GeoServer Web Map Service) and altering the transparency slider.



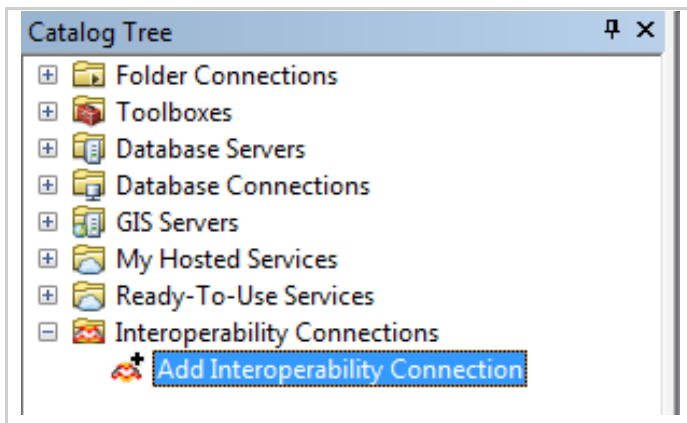
9. If an alternate style (.sld) is available you may alter the symbology by going to Layer Properties for the individual map layer (e.g. NSW Current Mineral Titles) and selecting Styles



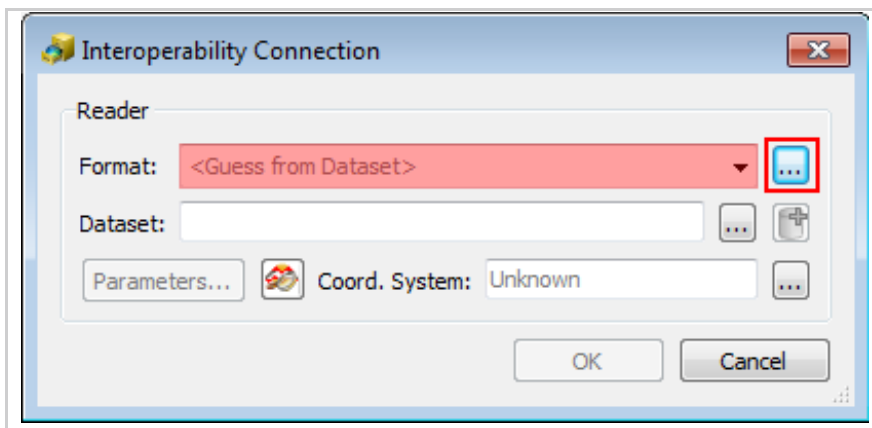
## 1.2 Web Feature Services (WFS)

To read WFS in ArcGIS Map you must have the data interoperability extension installed and licenced.

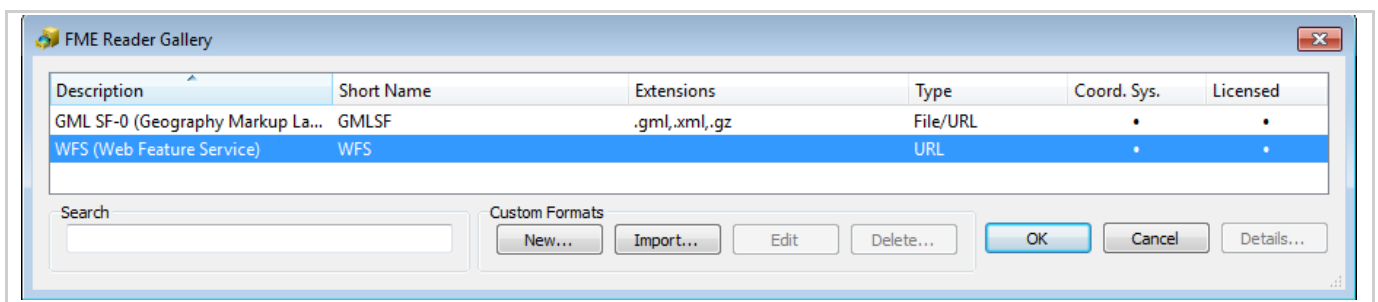
1. Start ArcCatalog. Open the **Interoperability Connections** folder and **Add Interoperability connection**.



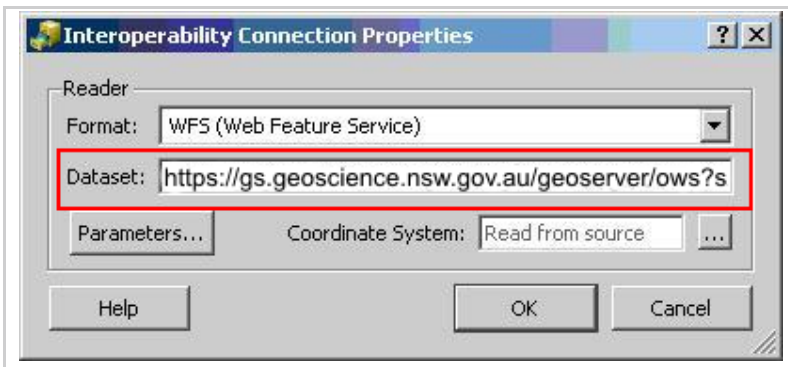
2. Click the ellipsis (...) button next to Format in the FME Reader Gallery



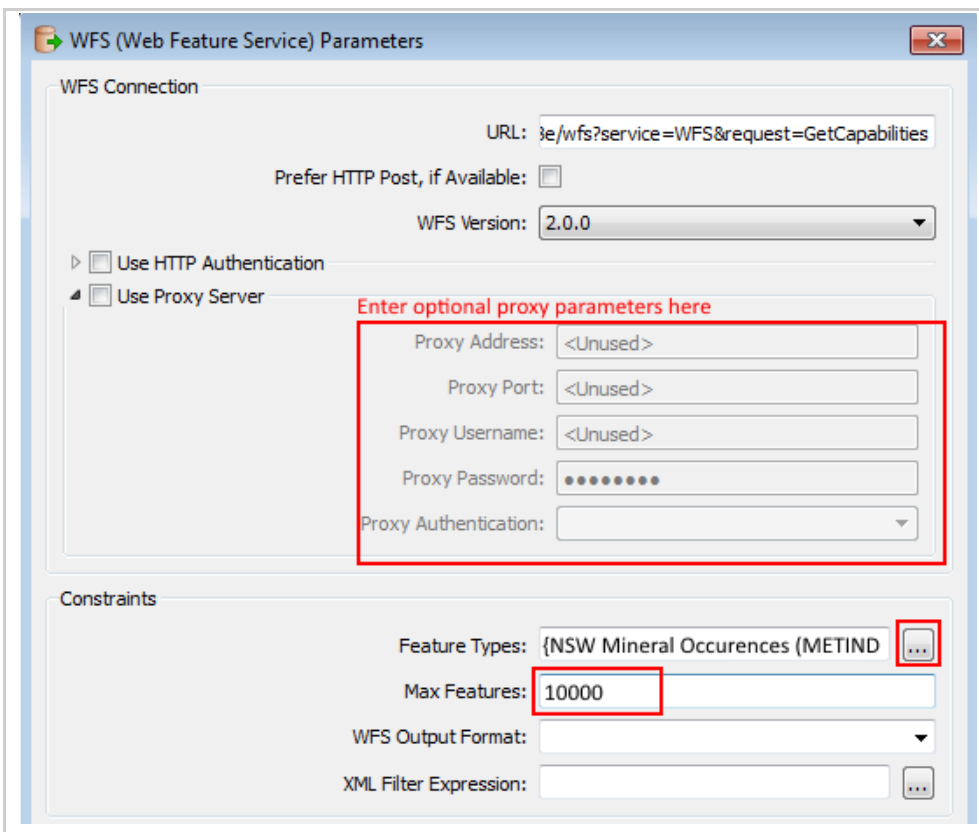
3. Select WFS as the **Format** and Click "OK"



- Copy the WFS URL (See Contents page) into the **Dataset** dialog box and click **OK**.



- Depending on your internet connection, you may have to enter additional proxy parameters.



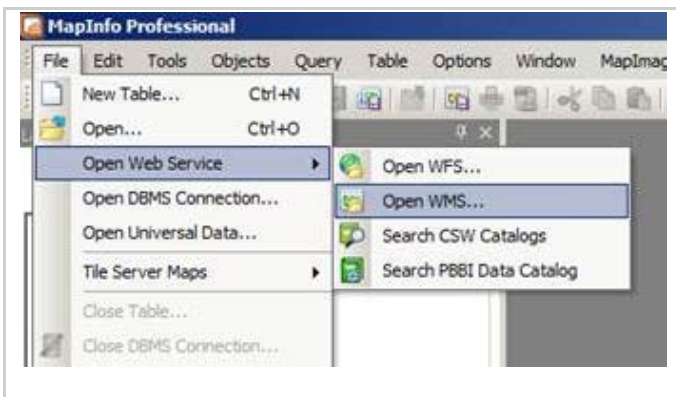
- Under **Constraints**, click the ellipsis (...) button and choose the layer you want to connect to. Under **Max Features** select 10000 (for good performance) or leave blank to receive all features.
- Click **OK** at the bottom of the dialog box.
- The connection appears in ArcCatalog under **Interoperability Connections**; drag the layer onto the map window to add it to the Table of Contents (note: the layer will not be symbolised like the WMS).
- You can query the WFS map using the **Identify** tool in the same way you can query a WMS map.

## 2 MapInfo

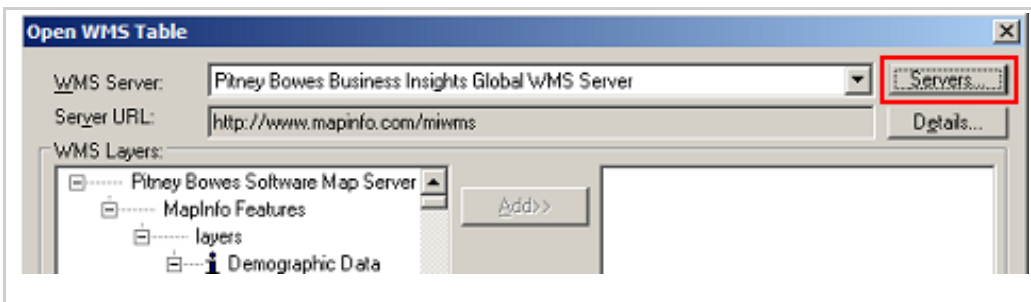
These instructions are for MapInfo 12.x

### 2.1 Web Mapping Services (WMS)

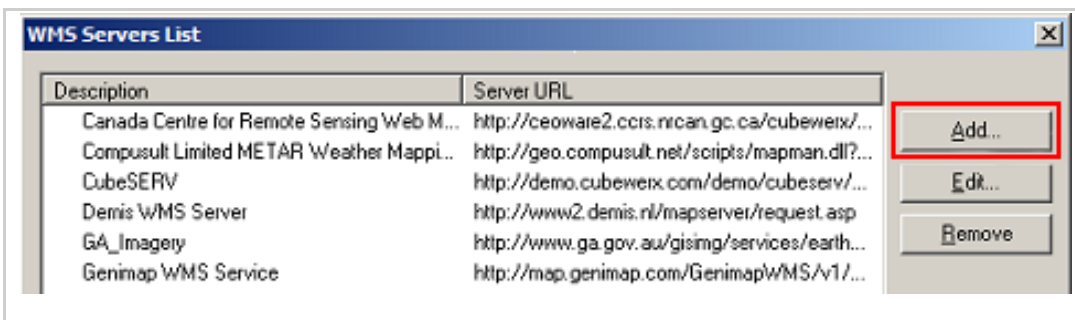
1. In MapInfo, select **File**, then **Open Web Service**, then **Open WMS...**



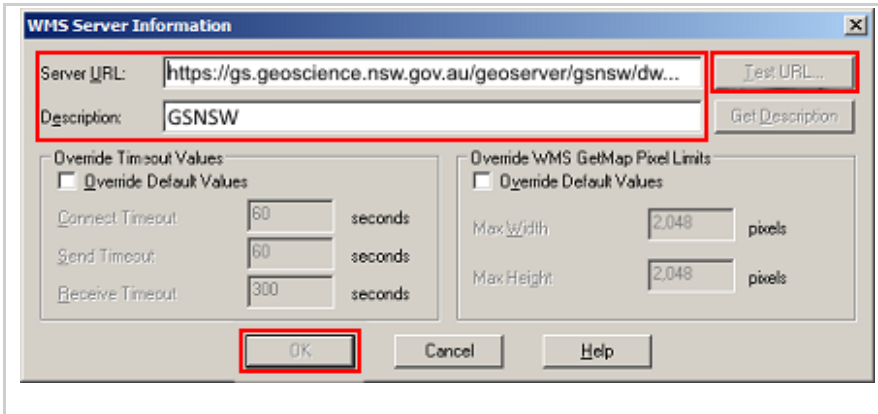
2. From the dialog, select the **Servers** button in the top right.



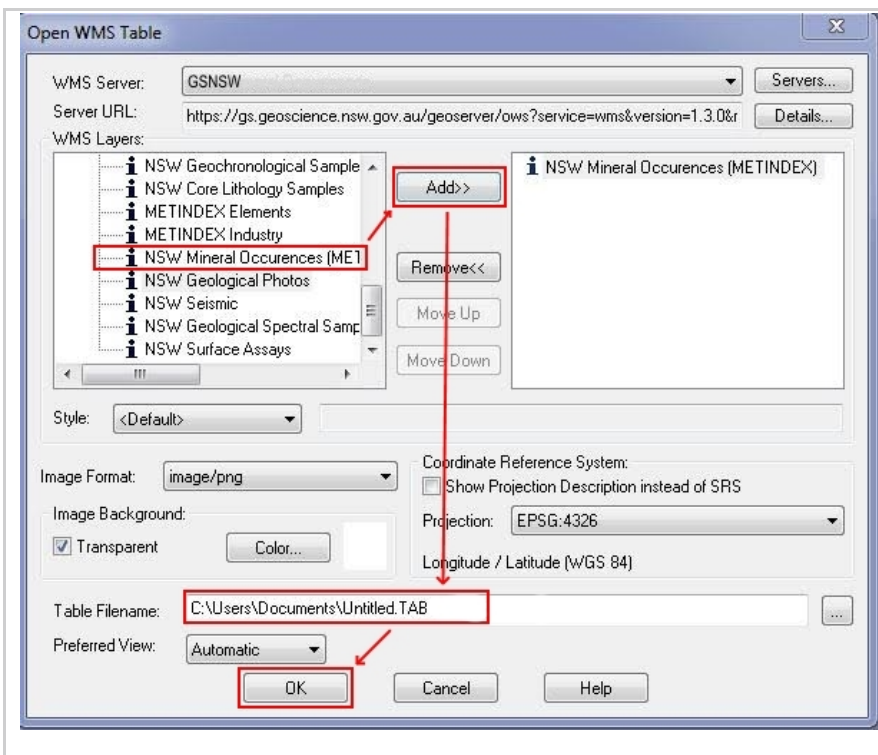
3. In the **WMS Servers List** dialog, click the **Add** button.



- In the **WMS Server Information** window, enter the **WMS Service Link** (see Contents page) into the **Server URL** field. You can also enter an optional description, as well as test the URL to ensure it is entered correctly.



- Click **OK** at the bottom of the dialog box.
- The WMS should now appear in the **WMS Servers List**, select the WMS and click **OK**.
- You should now see a list of available **WMS Layers**, select the layer(s), click **Add>>** to move it to the right-hand column. Choose where to save your TAB file and what to name it, and then click OK. This will load the WMS layer into the Map Window.

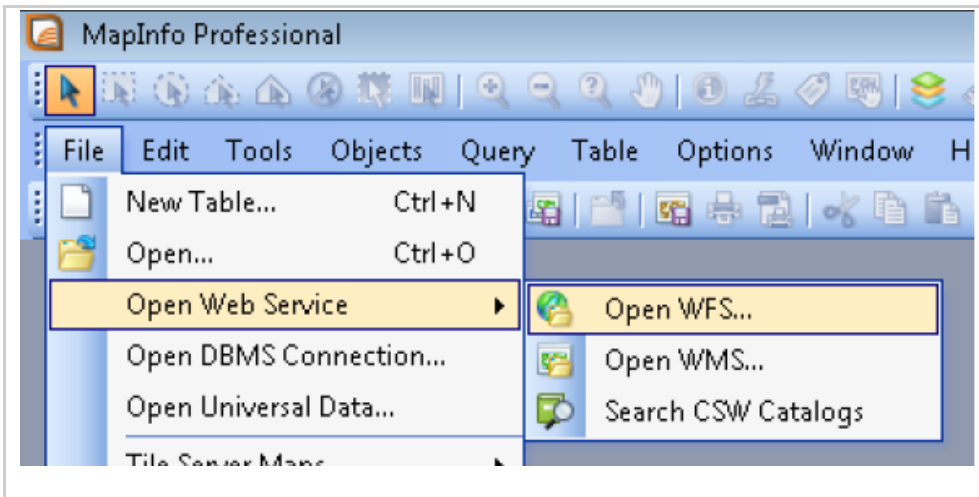


- The WMS will now appear in the **WMS Servers List**. You can query the WMS using the **Info Tool**

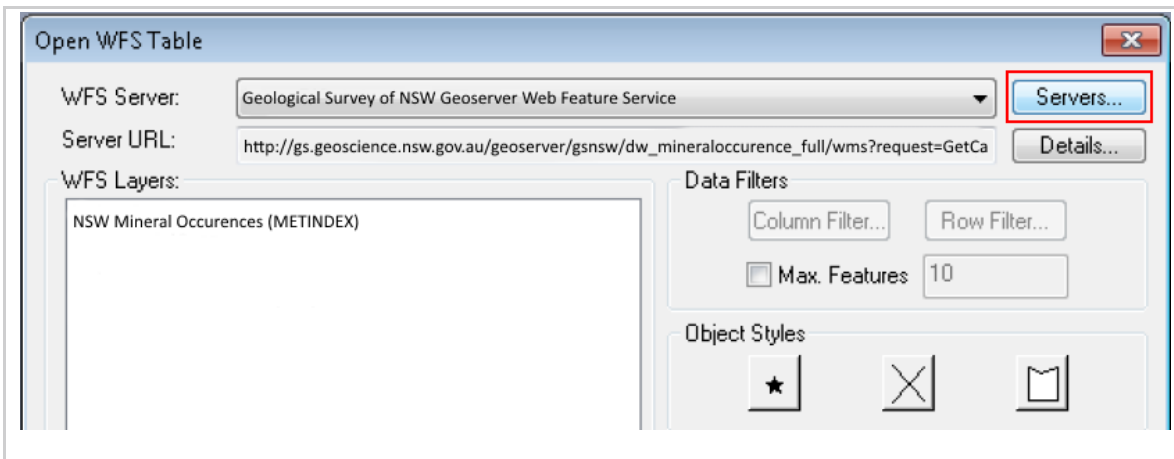


## 2.2 Web Feature Services (WFS)

1. In MapInfo, select **File**, then **Open Web Service**, then **Open WMS...**



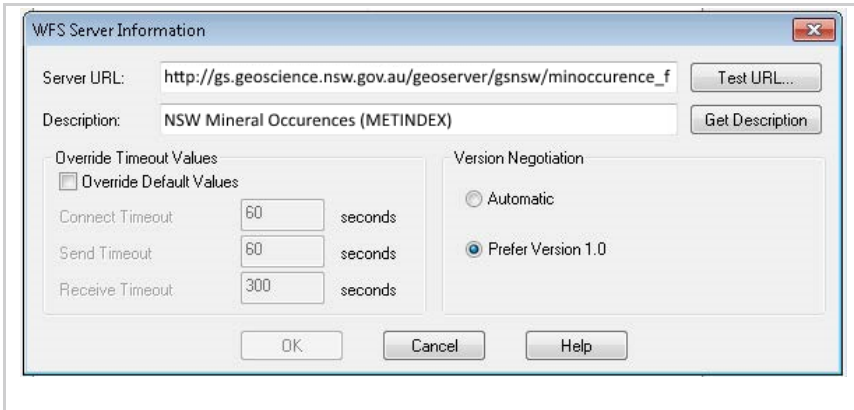
2. From the dialog, select the **Servers** button in the top right.



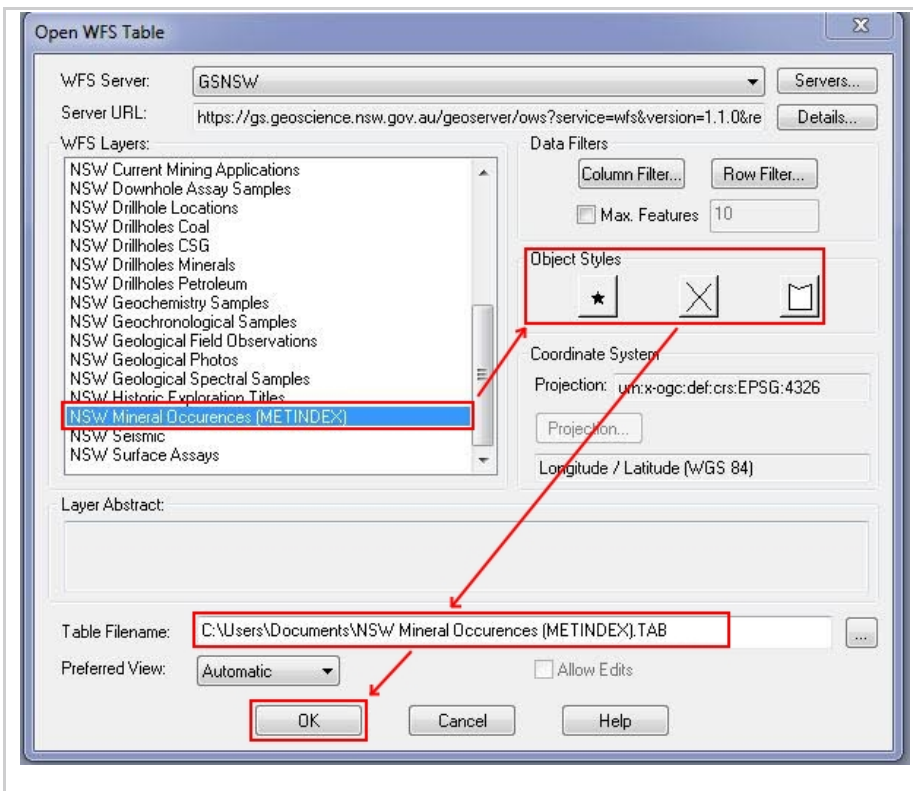
3. In the **Server List dialog**, click the **Add** button.



- In the **WFS Server Information** window, enter the **WFS Service Link** (see Contents page) into the **Server URL** field. You can also enter an optional description, as well as test the URL to ensure it is entered correctly.



- Click **OK**.



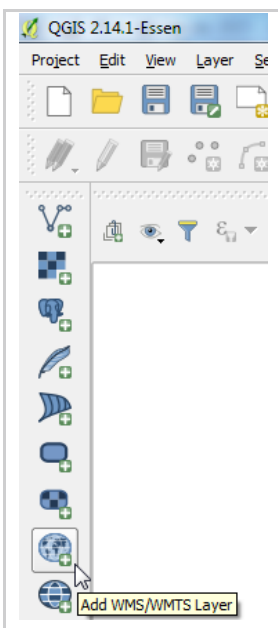
- In the **WFS Layers List** select a layer to add e.g. NSW Mineral Occurrences (METINDEX) and then select the object styles to theme the layer in MapInfo (point, line or polygon).
- Click **OK**.
- You can query the WFS using the **Info Tool**.

## 3 Quantum GIS (QGIS)

Quantum GIS (QGIS) is a free, open source GIS application that is available [here](#). These instructions are for version 2.x

### 3.1 Web Mapping Services (WMS)

1. Open QGIS. If you are using a proxy server (e.g., in a large agency or company), make sure your proxy settings are correct for internet access. Click **Settings**, then **Options**, then **Network** and **Use proxy for web access**. Enter your proxy details. Click **OK**.
2. From the **Manage Layers** toolbar select the **Add WMS/WMTS Layer** icon.



3. Select **New** in the **Add Layer(s) from a WM(T)S Server** dialog box.

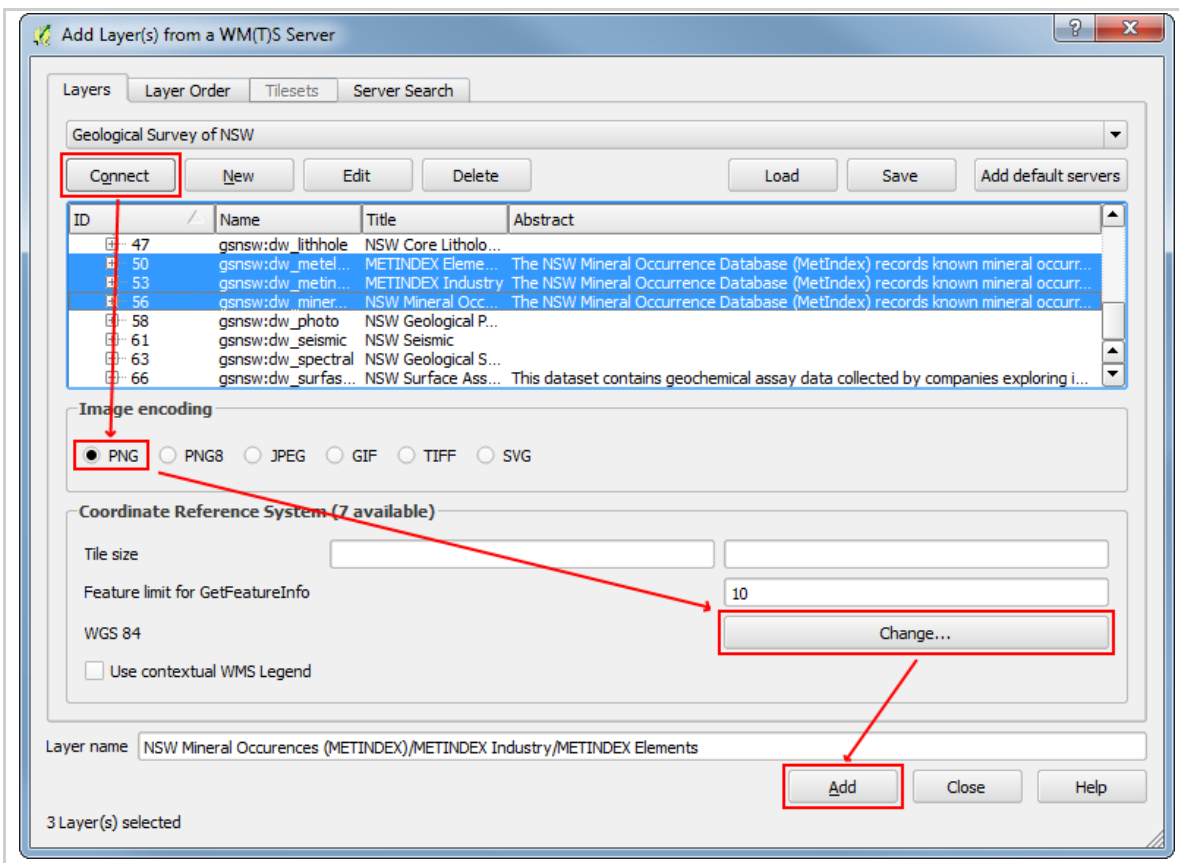


- In the **Create a new WMS connection** dialog box, enter a name for the connection and the WMS URL (see Contents Page).



- Click **OK**.

- In the **Add Layer(s) from a Server** dialog box, click **Connect**. Then:



- select the WMS layer that you want to add (hold Ctrl to select multiple layers)
- select the **Image encoding** format that you want your WMS to use. (PNG allows for transparency, JPG does not, other formats may not be available in the service).
- select the **Coordinate Reference System** that you want to display your WMS in.
- click **Add**
- repeat for any other layers that you want to add.

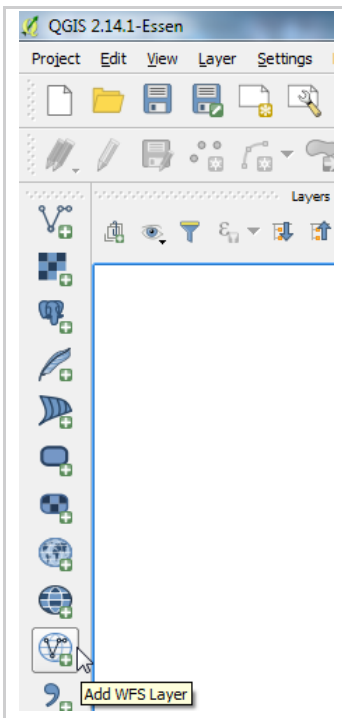
7. Click **Close**. The chosen WMS layers will appear in the list of layers in the map window.
8. You can query the WMS layers using the **Identify Features** tool.

Identify Results

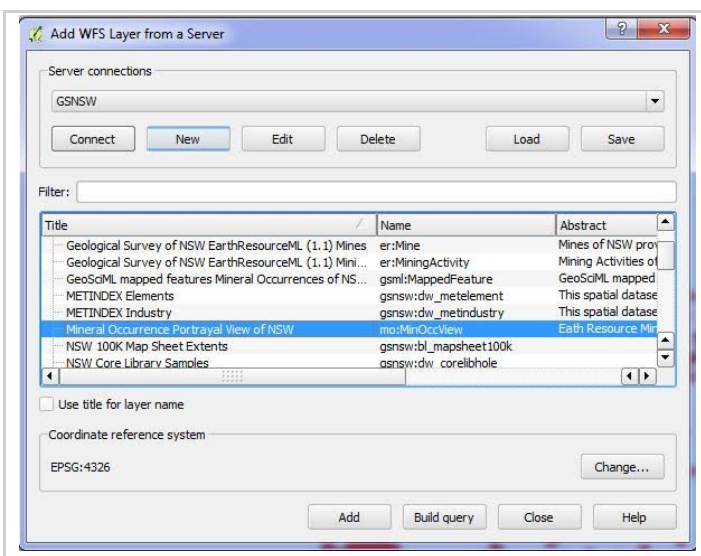
Feature	Value											
0	NSW Mineral Occurences (METINDEX)											
Format	Html											
gsnsw:dw_mineraloccurrence_full												
<b>dw_mineraloccurrence_full</b>												
fid	occurrence_id	deposit_name	comm_type	colour	field_no	metal_no	old_no	metal_dist	all_names	latgda94	longda94	ll_coordsys
dw_mineraloccurrence_full.201185	201185	Poison Point Tank Gypsum	INDMIN	maroon				not assigned	Poison Point Tank Gypsum	30.007991	145.212659	GDA94
dw_mineraloccurrence_full.218961	218961	Poison Point Pit	CONSTR	fuchsia				not assigned	Poison Point Pit	30.009205	145.220881	GDA94

## 3.2 Web Feature Services (WFS)

1. Open QGIS. If you are using a proxy server (e.g., in a large agency or company), make sure your proxy settings are correct for internet access. Click **Settings**, then **Options**, then **Network** and **Use proxy for web access**. Enter your proxy details. Click **OK**.
2. From the **Manage Layers** toolbar select the **Add WFS Layer** icon.



3. Follow steps 3 – 7 from Section 3.1 QGIS Web Mapping Services (WMS), but enter the URL for the WFS (see Contents page)



4. You can query the WFS layer using the **Identify Features** tool.