

Shapefile guide for tenure applications

Introduction

Applicants for mining claims, mining leases and pipeline licences need to describe the area they are applying for with sufficient certainty for the department to assess their application. The department requires these descriptions to take the form of a *shapefile* that can be lodged with MyMinesOnline.

What is a Shapefile?

A *shapefile* (.shp) is a simple geospatial format regulated by the *Environmental Systems Research Institute* (ESRI). A *shapefile* is used for digitally storing the geometric location and attribute information of a feature. *Shapefiles* are the Department's preferred spatial format for permit area descriptions, for resource authority applications.

As the name suggests, the geometry of a feature or object is stored as a *shape*, with points, lines or areas delineated by GPS coordinates, which plot the permit area or access.

Key information

A *shapefile* is created by inputting coordinates (latitude + longitude) into a corresponding mapping Geographic Information System (GIS) program, which converts spatial information into a graphical representation, such as a map with plotted GPS points.

The geometry and location of each feature or '*shape*' is plotted, stored as a set of coordinates and represented as points, lines or polygons (areas). *Shapefiles* can be used to represent geographic data such as permit areas, property boundaries, or to delineate features such as roads, rivers or general topography.

The Department uses *shapefiles* to ensure the accuracy and integrity of the proposed permit area. Many customers already use *shapefiles* to describe their permit areas when submitting their applications to the Department of Resources. The main advantage is *shapefiles* now record coordinates in the modern format for digital GPS, which is far less labour intensive and less prone to user or data entry error.

Types of shapefiles

There are three different types of *shapefiles*: points, polylines and polygons. The permit application you are submitting will determine the correct shapefile type you should submit:

1. **Points:** each point is defined by a single x, y coordinate. This type of shapefile would be useful for showing the location of features within a resource authority area, such as the location of restricted land.
2. **Polylines:** lines are composed of many (at least two) points that are connected which may or may not connect or intersect. These shapefiles are used for petroleum pipelines and mining lease, mining claim and mineral development licence access routes.
3. **Polygons:** consists of three or more vertices that are connected and closed forming a non-intersecting loop. These shapefiles are used for mining lease, mining lease surface area,

mining claim, mineral development licence and non-subblock based petroleum licence and petroleum facility licence permits.

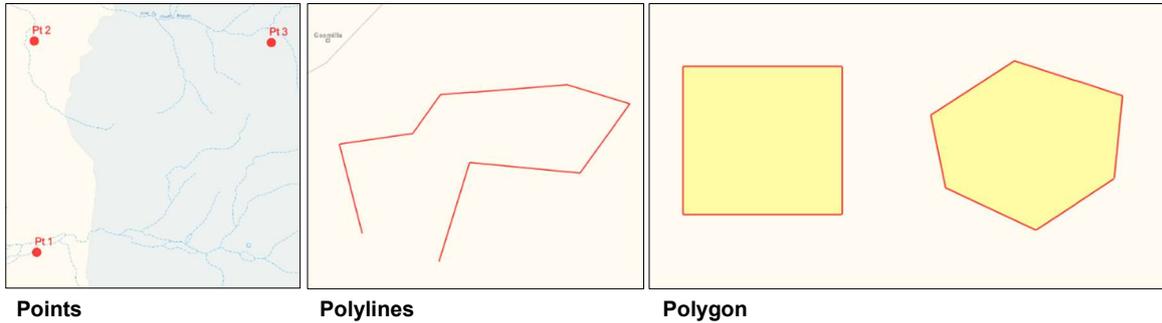


Figure 1: Points, polylines, and polygon shapefiles

The table below outlines what type of shapefile to use with which permit application:

Exploration	Point	Line	Polygon	Sub-block based
Exploration permit mineral or coal				✓
Authority to Prospect (ATP)				✓
Potential Commercial Area (PCA)				✓
Exploration permit geothermal				✓
Exploration permit greenhouse gas				✓
Mineral development licence area			✓	
Mineral development licence access		✓		
Production	Point	Line	Polygon	Sub-block based
Mining claim area			✓	
Mining claim access		✓		
Mining lease area			✓	
Mining lease surface area			✓	
Mining lease access		✓		
Petroleum lease			✓	
Infrastructure	Point	Line	Polygon	Sub-block based
Mining lease infrastructure area			✓	
Mining lease infrastructure surface area			✓	
Mining lease infrastructure access		✓		
Pipeline licence area				✓
Pipeline licence centre line		✓		
Petroleum facility licence			✓	
Information	Point	Line	Polygon	Sub-block based
Petroleum survey licence				✓
Data acquisition authority				✓

*Sub-block based relate to the Block Identification Map series for the Department of Resources

Tips to ensure accuracy of your shapefile

- Ensure coordinates are captured in GDA2020
- One second of latitude or longitude is approximately 30 metres

- Use the permit and satellite information held in [GeoResGlobe](#) as a reference to confirm your application's location
- For access to tenure, use [GeoResGlobe](#) to assist in locating positions along tracks on the satellite imagery
- The number of points used to define an access should be relative to the number of twists and turns.

Key items to identify in a sketch or diagram and attach with your shapefile

- The technique used to capture point locations, for example, mobile phone GPS, differential GPS, scaling from a map.
- If any part of the permit aligns or abuts with other mining or exploration permits
- If the permit excludes other mining permits
- If any part of the permit aligns or abuts with cadastral boundaries
- If the permit excludes any cadastral parcels
- If any part of the permit aligns with the block and sub-block grid
- If the permit includes or excludes any natural features such as creeks, ridges, hills
- If the permit includes or excludes infrastructure such as roads, rail, buildings, dams or pipelines
- If any part of the access follows an access visible on satellite imagery used in GeoResGlobe (see tip above)
- Location of the datum post to reinforce descriptions of small claims and leases
- If any part of the permit aligns with information on a survey plan.

How to create a shapefile

Following these steps will allow you to create a shapefile that can be lodged with your application on MyMinesOnline. If you have latitude and longitude coordinates, you can create a shapefile using one of two CSV templates.

Step 1: download one of the two templates:

The [Area Coordinates Generator \(decimal degrees\)](#)¹ is used for location values in decimal degree longitude and latitude coordinates. The [Area Coordinates Generator \(degree-min-sec\)](#)² is used for location values in degree, minute and second longitude and latitude coordinates.

Both templates create csv files which can be used in GeoResGlobe to generate points, polylines or polygons, the only difference is the way the coordinates are entered i.e., decimal degrees vs degrees, minutes and seconds.

Step 2: Enter your coordinates into the correct Area coordinates generator

1. Open the .xlsx file in a compatible program, such as Microsoft Excel.
2. If you see an Enable Content button at the top of the screen, click to enable you to

¹ https://www.resources.qld.gov.au/_data/assets/file/0013/218011/Area-CSV-generator-single.xls

² https://www.resources.qld.gov.au/_data/assets/file/0014/218012/area-csv-generator-degree-min-sec.xlsm

add and save your coordinates.

3. Enter your coordinates in the right format. For the Area Coordinates Generator (decimal degrees) enter the Y and X coordinates. For the Area Coordinates Generator (degree-min-sec) enter the values as per each column heading in the template.
4. Click to save the file as a .csv file.

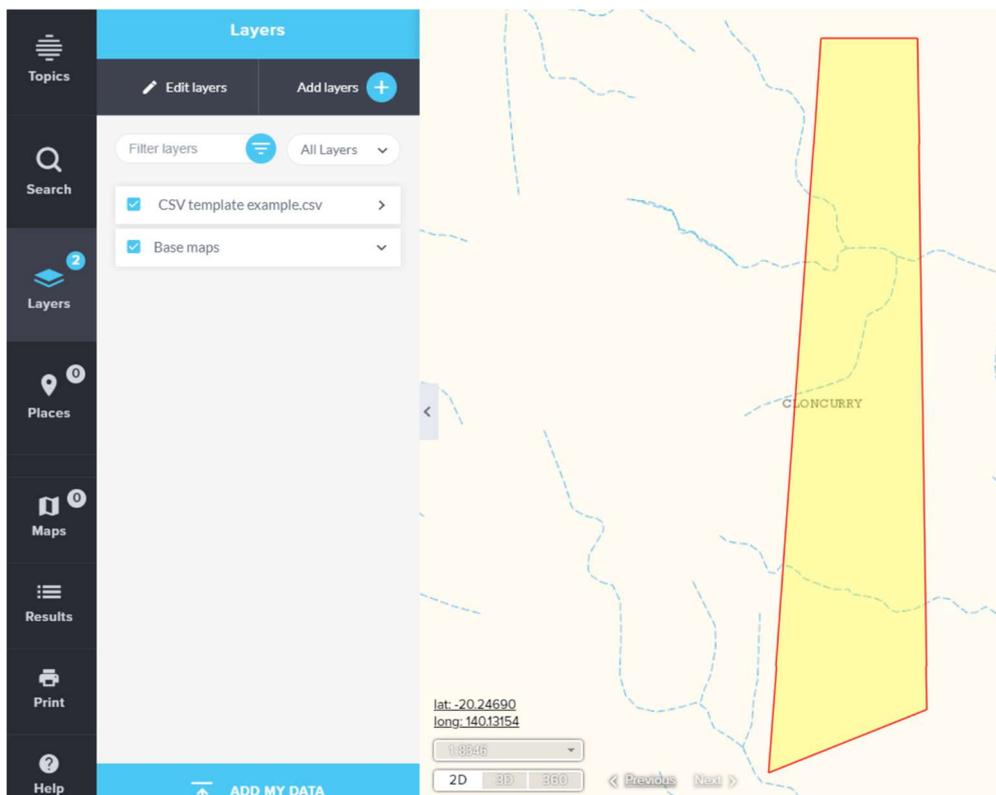
Sample coordinates entry for the Area Coordinates Generator (decimal degrees):

Area coordinates generator
Latitude/Longitude (Decimal degrees)

Enter relevant coordinates specific to the permit area being described in this worksheet
Example: (Y: -20.25421051, X: 140.1415475)

y	x
-20.25274567	140.1415475
-20.25398657	140.1382361
-20.23948669	140.139337
-20.23948678	140.1413383

Sample result in GeoResGlobe:



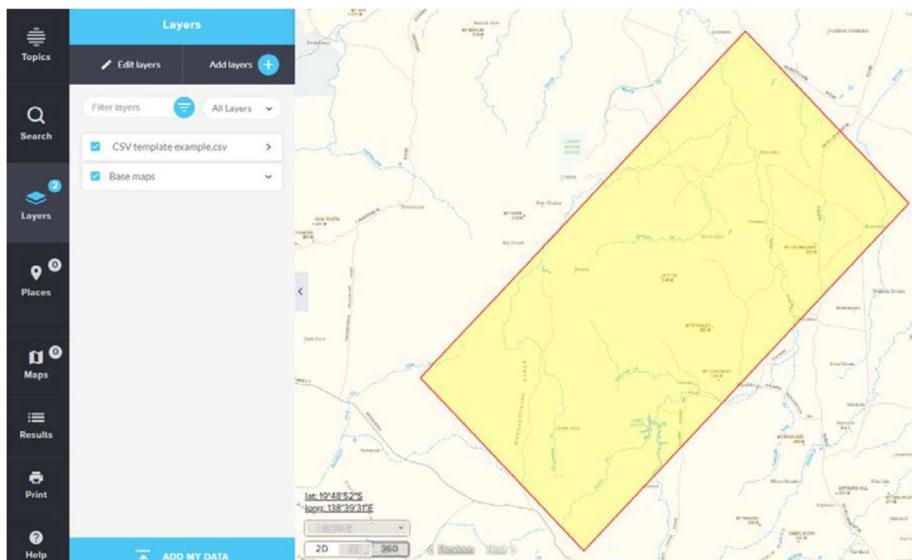
Sample coordinates entry for the Area Coordinates Generator (degree-min-sec):

Area coordinates generator
Latitude/Longitude (Degrees, minutes, seconds)

Enter relevant coordinates specific to the permit area being described in this worksheet
Example: (LonDegrees: 139, LonMinutes: 29, LonSeconds: 30.09, LatDegrees: 20, LatMinutes: 43, LatSeconds: 28.83)

LonDegrees	LonMinutes	LonSeconds	LatDegrees	LatMinutes	LatSeconds
139	0	20.47	20	0	20
140	0	0.66	19	0	0.47
140	30	0.59	19	30	0.88
139	30	20	20	30	20

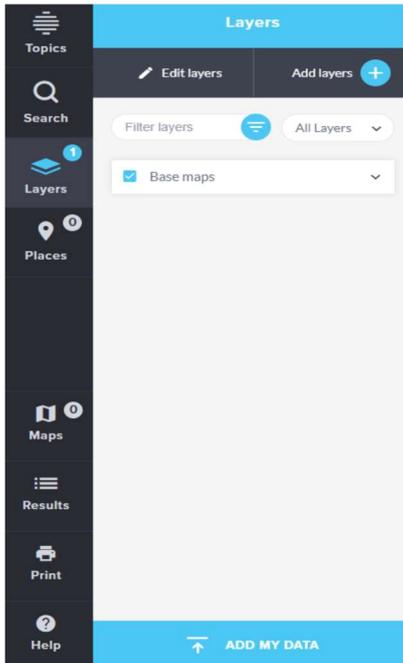
Sample result in GeoResGlobe:



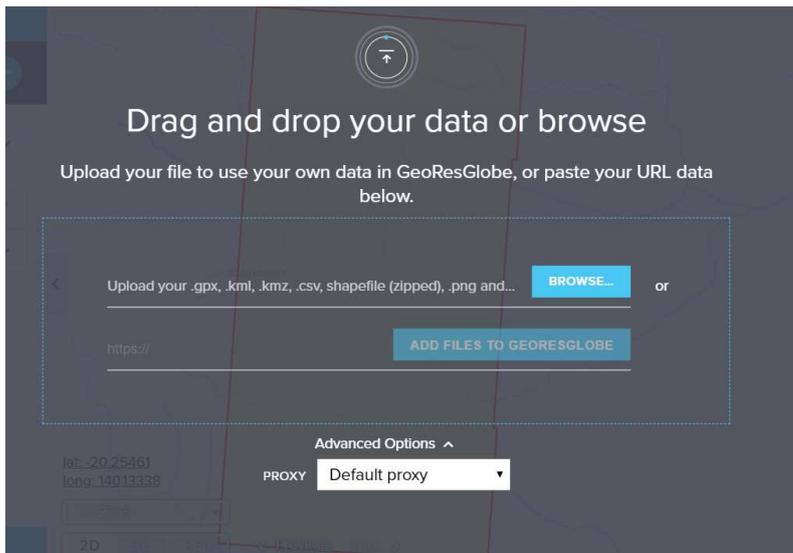
Step 3: Converting a CSV to a Shapefile using GeoResGlobe

Once you have saved your .csv file you can open it in GeoResGlobe.

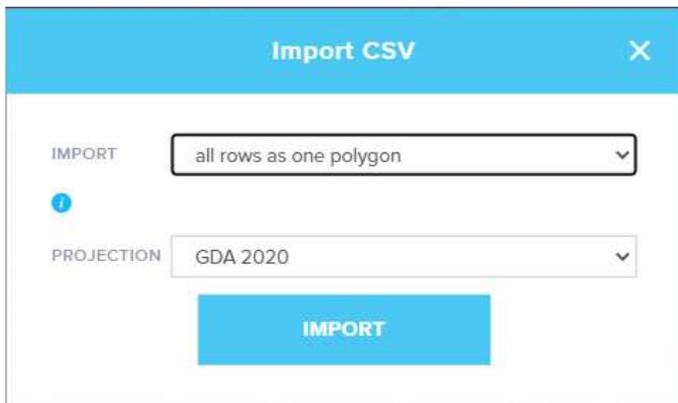
1. Open GeoResGlobe with the link <https://georesglobe.information.qld.gov.au/>
2. Follow the sign-in procedure
3. Open the Layers tool and select the ADD MY DATA button at the bottom of the layer panel (see next page):



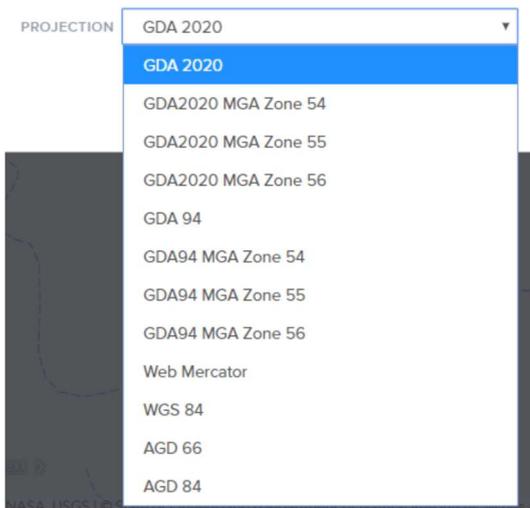
4. Add your CSV file by following the on-screen instructions:



5. Change the IMPORT dropdown to the last option – all rows as one polygon.



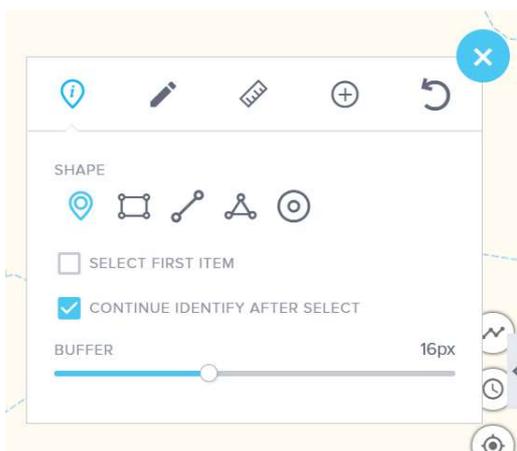
6. A menu will come up to choose the PROJECTION of your data from the drop-down list. Select GDA2020:



7. Click the IMPORT button:
8. Open the Tools menu in the top right-hand corner.

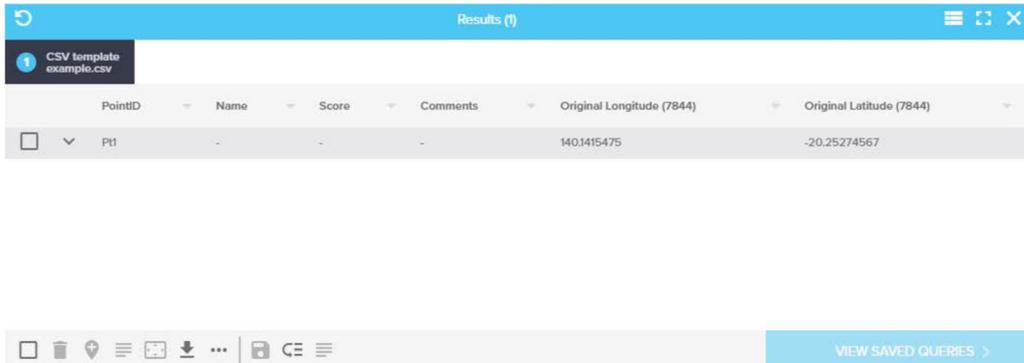


9. On the menu that opens, select the Identify point tool 

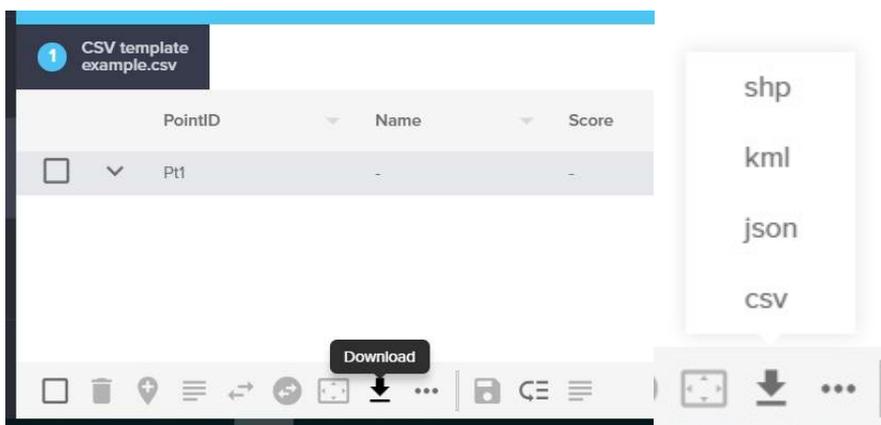


10. Click somewhere in the newly created shape. This will open a Results tab at the bottom of the window.

11. Click on the Tab to display the data:



12. Select the Download button from the bottom of the window and select the **shp** option



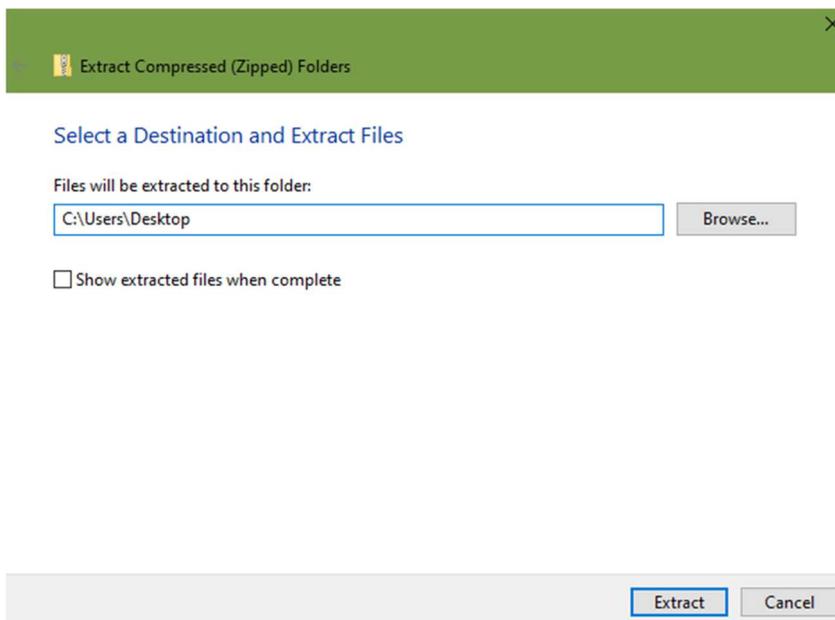
13. Leave the projection as GDA2020 and click the SUBMIT button



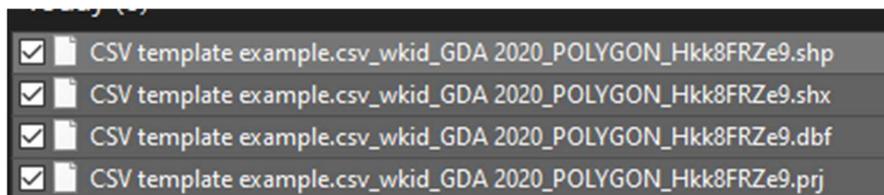
14. This will download a zip file containing a shapefile. This zip file will **not** load into GeoResGlobe or MyMinesOnline until you complete the steps below.

Step 4: Saving your zip file to load into MyMinesOnline

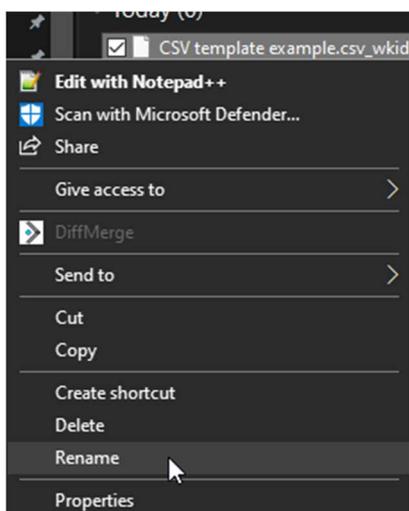
1. To create a zip file suitable for loading into GeoResGlobe or MyMinesOnline, right click on the zipped shapefile and select “Extract All” and save the files to an appropriate area for example your Desktop or Downloads folder.



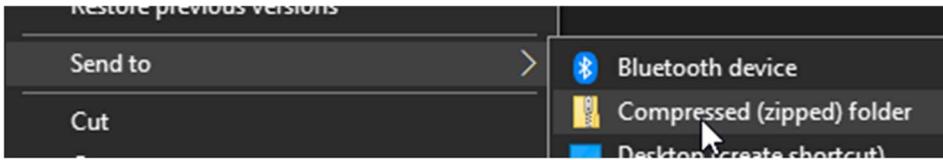
2. Select the four files which you have just extracted by ticking the boxes which appear to the left of each one.



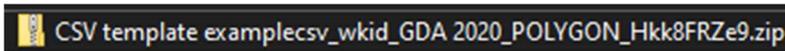
3. Right click on the four selected files and select “Rename”. Remove the full stop that has been created within the name of the files.



4. Create a new zip/compressed file containing these files. This can be done by right clicking on the selected files and hovering over 'Send to' and selecting 'Compressed (zipped) folder'.



The only full stop you should now see will be in front of the letters “zip”.



5. This .zip file will load into GeoResGlobe or MyMinesOnline.

MyMinesOnline Shapefile Error Messaging

If there is an issue with your shapefile when logging in MyMinesOnline an error messages will display. Below outlines the error and resolution. For more information, please contact the relevant [assessment hub](#).

Shape file Issue	Shape File Error Message Displayed
Missing prj file	The shape file uploaded is missing a projection file. The Shapefile must contain the following files: <ul style="list-style-type: none"> • DBF • PRJ • SHP • SHX Please correct your shapefile and re-upload.
Missing shp or dbf	The shape file uploaded is missing one or more required files. The Shapefile must contain the following files: <ul style="list-style-type: none"> • DBF • PRJ • SHP • SHX Please correct your shapefile and re-upload.
Multiple Lines	The shape file uploaded contains more than one row of data. The shape file must only contain a single row of data. Please correct your shapefile and re-upload.
Incorrect projection	The shapefile uploaded is not in the correct projections (GDA94 or GDA2020). MMOL does not accept a GDA Zone. Please correct your shapefile and re-upload.
Broken connection between MMOL and GeoResGlobe	There is currently a technical issue with the system. Please contact the relevant assessment hub .

Geometry errors	The shapefile contains geometry errors. MMOL will display the relevant geometry error. Please correct your shapefile and re-upload.
Area file uploaded for access file	Access file is the wrong geometry type. Please upload a polyline shapefile zip. You can not have points and lines for your access, only lines should be included. Please correct your shapefile and re-upload.
Multi Polygon	The shapefile uploaded must only contain one polygon file. Please correct your shapefile and re-upload.
Non Zip File	Please upload a Zip file containing shp, prj, shx, and dbf with the projection set to GDA2020. The shapefiles need to be in 1 zip file not a folder within a folder. Please correct your shapefile and re-upload.
Full stop in name and files	The Shapefile must not contain any full stops in the name or shapefiles. MMOL doesn't accept an extra full stop in the zip folder name. Please correct your shapefile and re-upload.

Document information

Availability and location: External – Business Industry Portal

Owner and approver: Georesources Division

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Contacts: For technical support for GeoResGlobe, email opendata@resources.qld.gov.au

For technical support for MyMinesOnline contact the MyMinesOnline Helpdesk on +61 7 3199 8133 or email MyMinesOnline@resources.qld.gov.au.

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