

Mines Act Permit Application iMapBC Maps and Data Creation Reference Guide

**Ministry of Energy, Mines and Low Carbon Innovation
April 2020**

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1. Introduction

1.1 Objective

To guide Notice of Work (NOW) mining applicants through creating maps and data to supplement their Mines Act applications using the publicly accessible government web mapping application, iMapBC, and the pre-loaded print templates. This guide is intended to be used in conjunction with the [Mineral and Coal Exploration Notice of Work Application Companion guidance document](#). This reference guide specifically relates to Section 1.4 Mapping Requirements and Tools from pages 20 to 31.

1.2 Mapping Standards and Requirements

Why were mapping and data standards developed for the application package?

- To standardise mapping and data requirements, eliminate variability between the application and reporting, allow map generation through publicly available mapping platforms, and to compile a provincial permitting geospatial dataset.
- Standardised maps and data allow increased efficiency for Ministry staff to process permit applications.
 - Faster approval of permits with a clear understanding of exactly where and how mining activity will take place
 - Improved data management and ability for effective regulation
- It will help government:
 - Qualify, quantify and analyse mining data
 - Visualise mining activity and reclamation
 - Supplement decision making
 - Build robust and accurate databases
 - Make efficiencies in the permitting process
 - Supply more direction on the Ministry's expectations

Required mapping for your Notice of Work application

Mines Act applications must be submitted with maps that meet the mapping standards described in this document as well as in the Companion Guide in order for staff to make the most timely decision on your application. Below is a list of all the maps required with a sublisting of the items required on each map. Each of the map headings below are linked to more detailed instructions on how to create your maps specifically in iMapBC. Please also ensure all of the contents included on the maps are clearly labelled.

Location Map:

- a. An appropriate basemap for understanding where the general location of the mine is in relation to communities/highways/landmarks
- b. A labelled point location of the mine with its coordinates
- c. A labelled polygon representing the proposed or permitted mine area
- d. A labelled access route highlighting the exact directions to the site
- e. The nearest service community (with hospital) labelled

Title (Tenure) Map - For Mineral & Coal Exploration, Industrial Mineral Quarries, and Placer Permits:

- a. Mineral, placer or coal title(s)
- b. Proposed and/or existing permitted mine area
- c. Geographic coordinates of mine

Land Title (or Licence of Occupation) Map - For Sand and Gravel Permits Map:

- a. Proposed and/or existing permitted mine area
- b. Geographic coordinates of mine
- c. All land title(s) and/or licence(s) of occupation in and surrounding the site
- d. Additional map feature layers, (e.g., wells, land uses)

Proposed and/or Permitted Mine Area Map – For Mineral & Coal Exploration, and Placer:

- a. Proposed and/or existing permitted mine area
- b. Proposed disturbance and reclamation activities
- c. Existing disturbance and reclamation activities

Proposed and/or Permitted Mine Area Map – For Sand & Gravel, and Industrial Mineral Quarries:

- a. Proposed or existing permitted mine area
- b. Proposed disturbance and reclamation activities
- c. Existing disturbance and reclamation activities
- d. Excavation set back
- e. Cross/long section location

Overview Map(s) (if required):

- a. Basemap features
- b. Map dependent elements
- c. Location and extent of the larger scale maps included in the map submission

1.3 iMapBC Web Mapping Platform

What is iMapBC and why do we recommend using it?

- iMapBC is a publicly available government web mapping platform for “view and analyze hundreds of map data layers compiled from across the B.C. Government and other public sector agencies”.
- iMapBC gives users the capability to create data and maps quickly, all in one platform and to the standards the Ministry requires in Mines Act permit applications.
- iMapBC helps fulfill the following required map template elements and map content elements needed on your submission maps:
 - Be computer generated
 - Have an appropriate digital file size (under 100mb)
 - Include the page size it was created on
 - Be clear and legible
 - Include the coordinate system
 - Include a map graticule or grid
 - Be in metric units
 - Include a north arrow
 - Include a scale bar and scale ratio
 - Be drawn at an appropriate map scale to ensure everything is clearly visible
 - Include a map title and map metadata
 - Include a map legend
 - Include base mapping
 - Include an imagery capture date or source
 - Include labels for surrounding landmarks
 - Include any additional labels needed
 - Have consistent mapping symbology
 - Have consistent mapping information
 - Have consistent mapping content
- Follow this link to access the iMapBC homepage:
<https://www2.gov.bc.ca/gov/content/data/geographic-data-services/web-based-mapping/imapbc>
 - From there, either select **Launch iMapBC** to access the publicly-accessible iMapBC application (<http://maps.gov.bc.ca/ess/hm/imap4m/>);
 - Or select **Launch iMapBC (username required)** if you have a BC government IDIR or BCeID account.
 - The iMapBC Training Manual for more iMapBC guidance can be found here:
https://www2.gov.bc.ca/assets/gov/data/geographic/web-based-mapping/imapbc/imapbc_user_manual_2023.pdf

2. How to Get Started

This section walks the user through the steps of accessing iMapBC and loading a template project file before creating any maps:

2.1 [Open iMapBC](#)

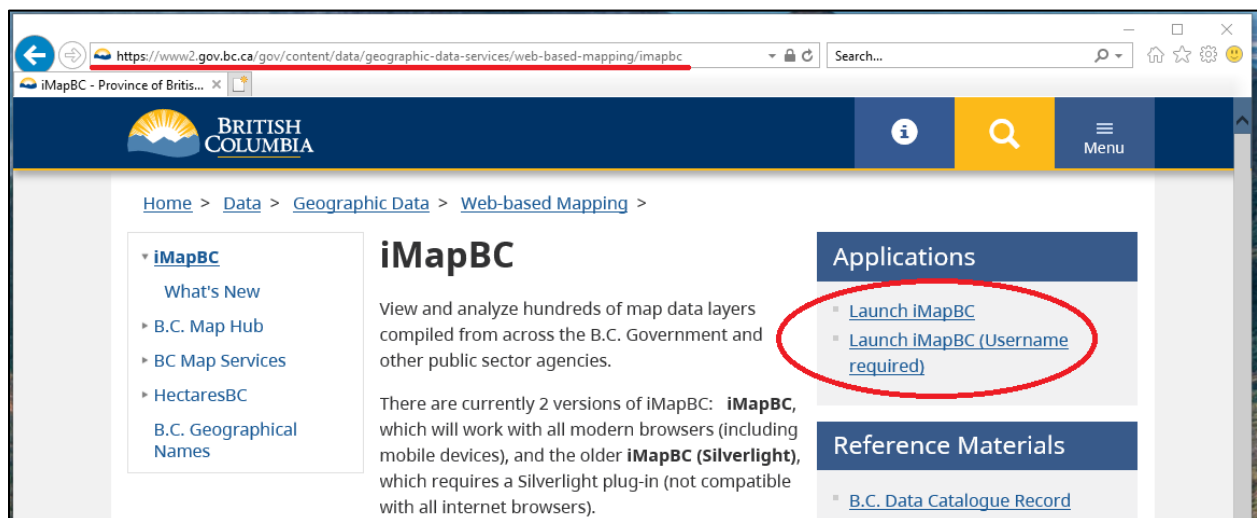
2.2 [Download the Mines Act Permit Application - iMapBC Project File Template](#)

2.3 [Load the Template Project File](#)

2.1 Open iMapBC

After loading the iMapBC URL in your web browser via the link below, access iMapBC as a public user (no log-on required), or enter in your BCeID to log-on.

iMapBC home page URL: <https://www2.gov.bc.ca/gov/content/data/geographic-data-services/web-based-mapping/imapbc>



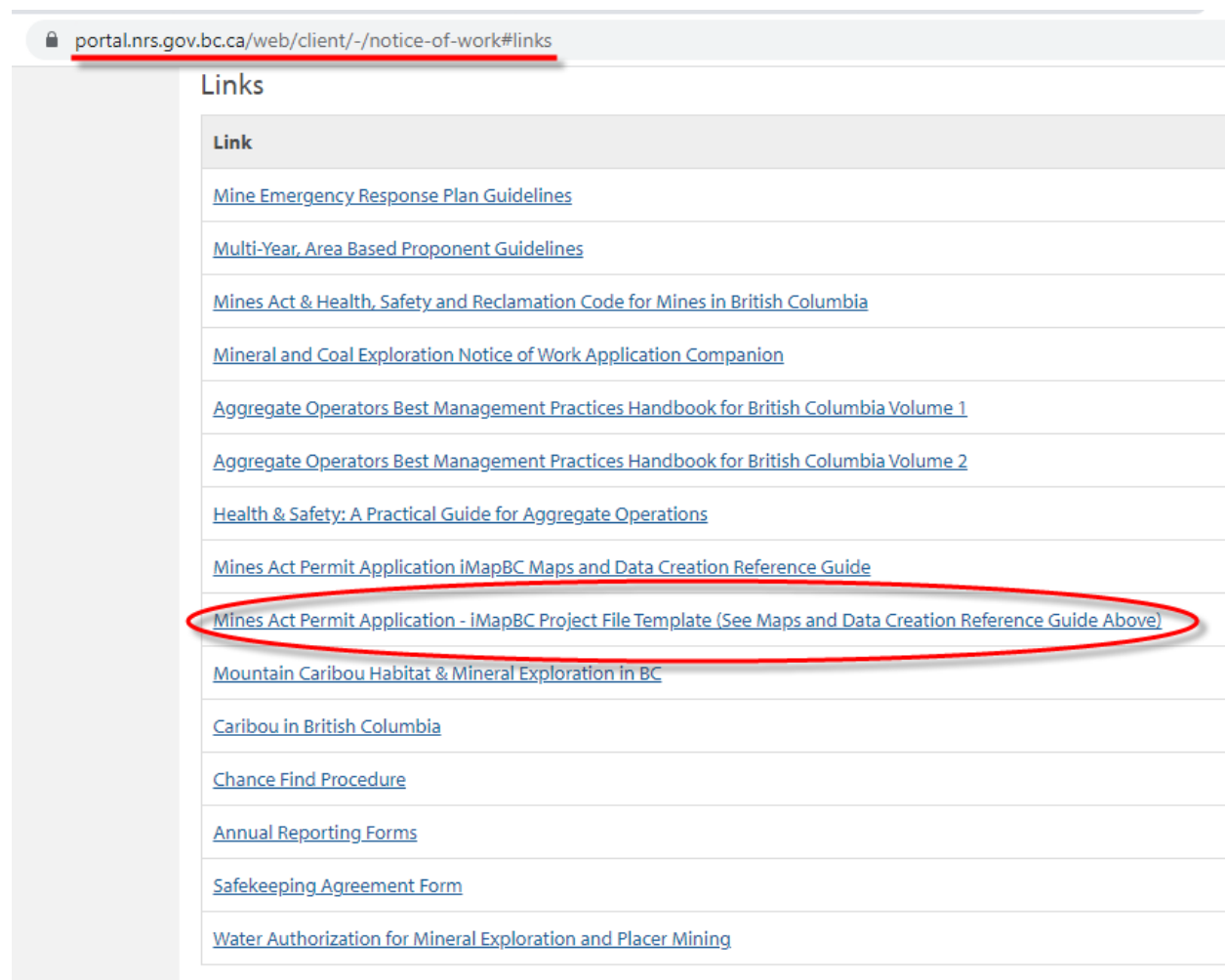
2.2 Download the Mines Act Permit Application - iMapBC Project File Template

An iMapBC project file (or saved session) allows the user to save work completed in a current mapping session. This saved session can be opened later or even emailed as an attachment for someone else to open.

A Mines-specific project template file called “Mines Act Permit Application - iMapBC Project File Template” (.gvhp) is available for download and can be opened in iMapBC for Mines Act permit applicants to edit and create their own maps to accompany their Notice of

Work application submissions. All required spatial data layers are pre-loaded into this template project file and these layers will show up in the map view and in the **My Layers** list. These layers are displayed in the correct drawing order and custom symbologies have been set to save the user time when creating their maps.

1. Download the template project file to your local drive from the Natural Resource Online Services Notice of Work web page: <https://portal.nrs.gov.bc.ca/web/client/-/notice-of-work#links>

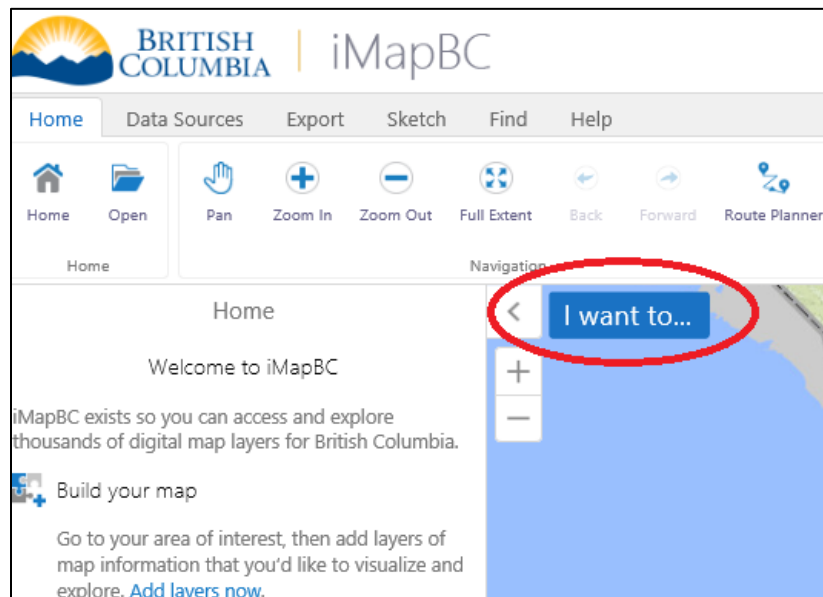


2.3 Load the Template Project File

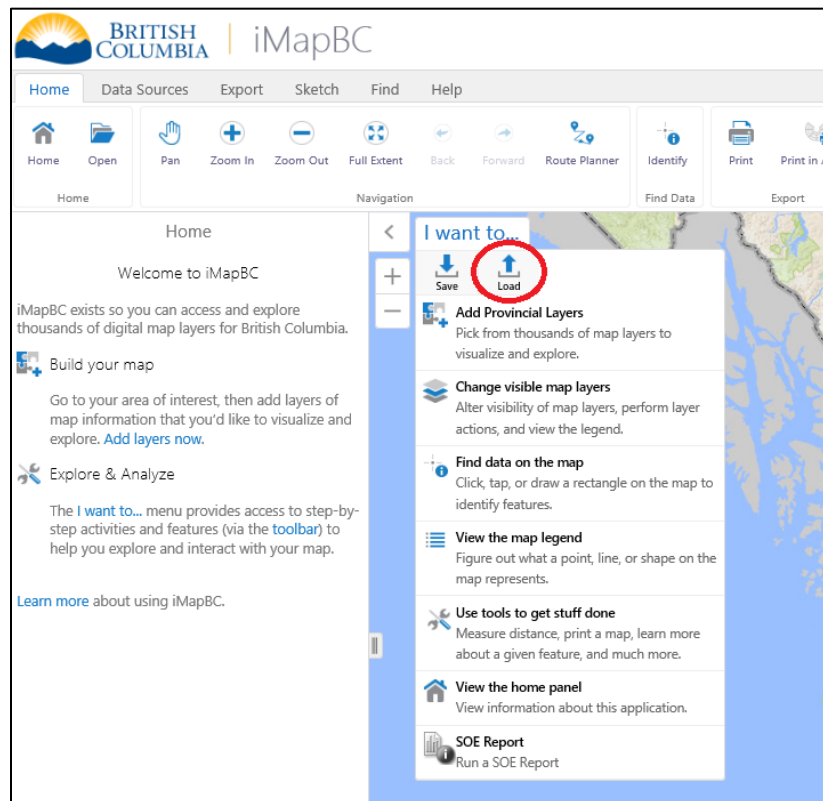
If you have opened iMapBC and may have changed any layer or markup settings previously, then it would be best to clear your browser history and caches before loading this project file to ensure all the layer symbologies are set to their default.

Open the template project file in iMapBC

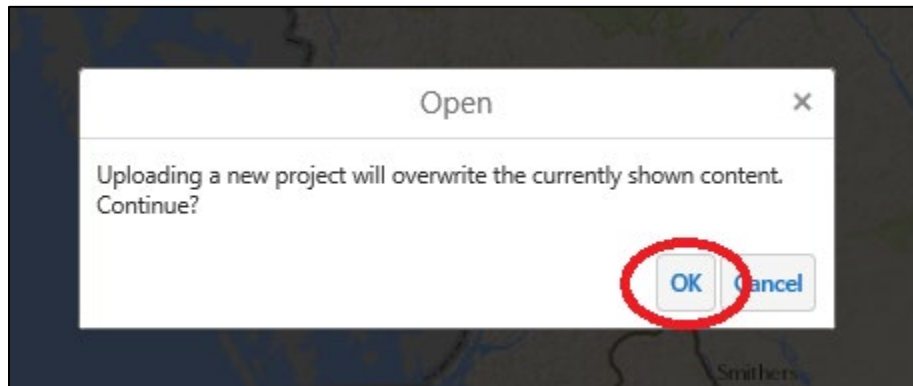
1. Click the **I want to...** menu button located in the upper left side of the map.



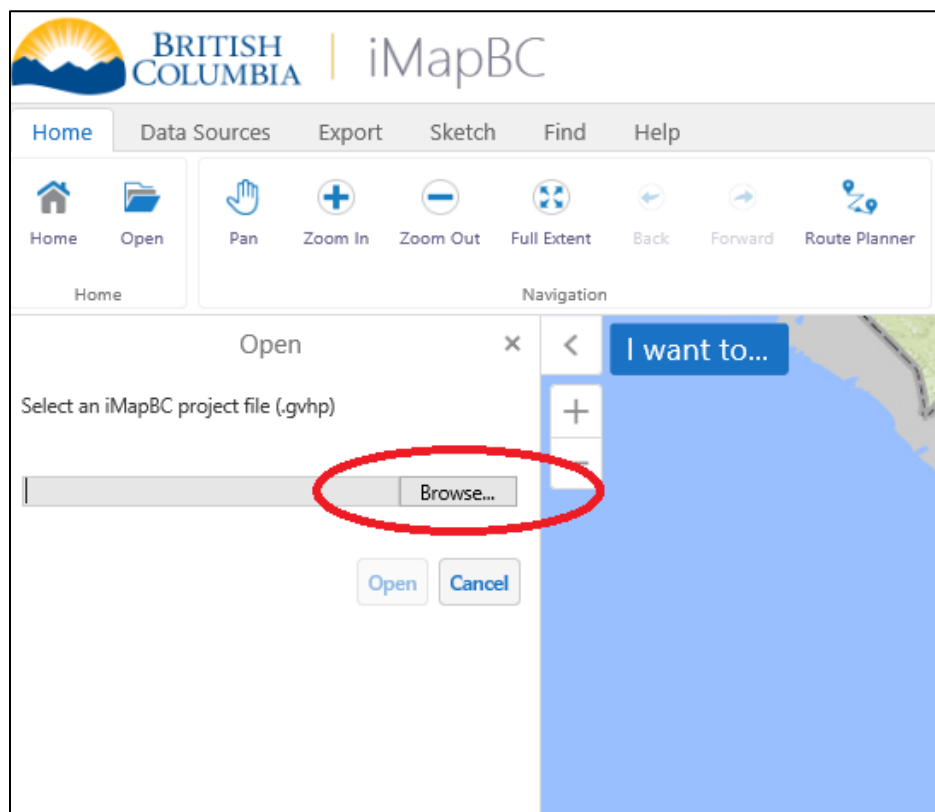
2. Click **Open** or **Load** button at the top of the list.



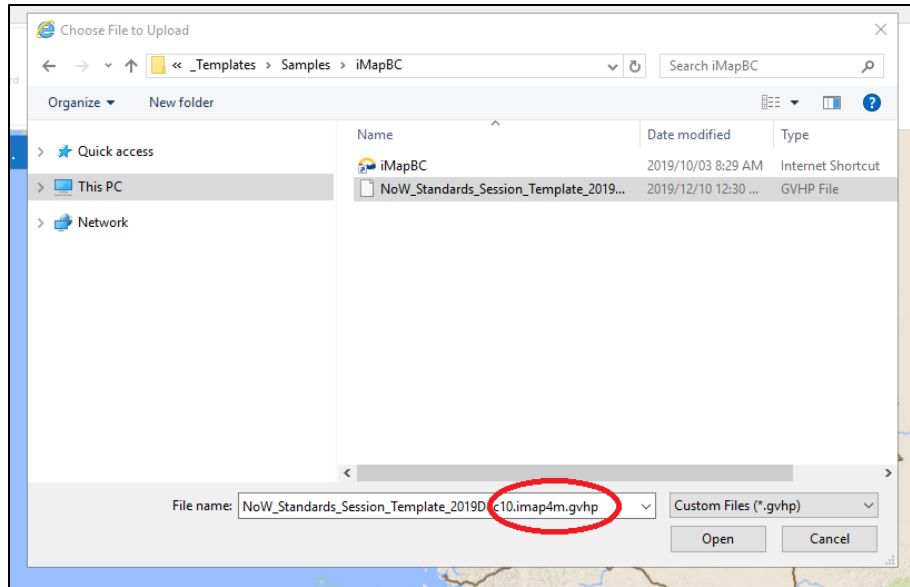
3. Select **OK** if you wish to open the project (note: this will overwrite existing work in the current session).



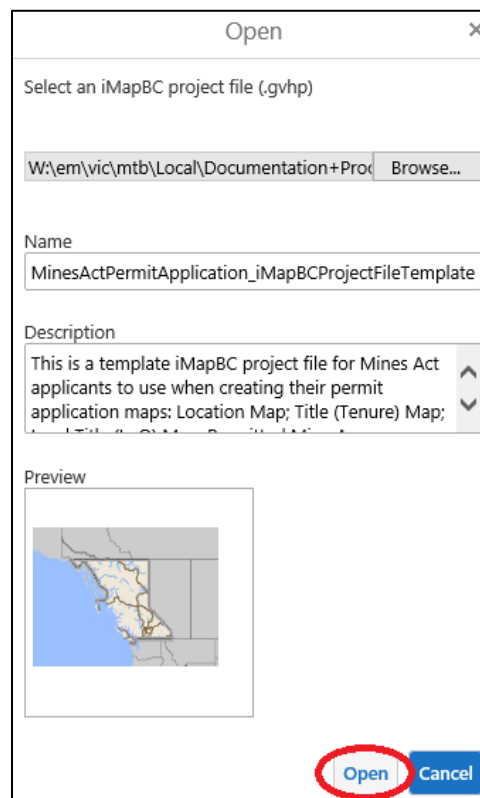
4. Click the **Browse** button to locate on your local drive the template you saved from the website.



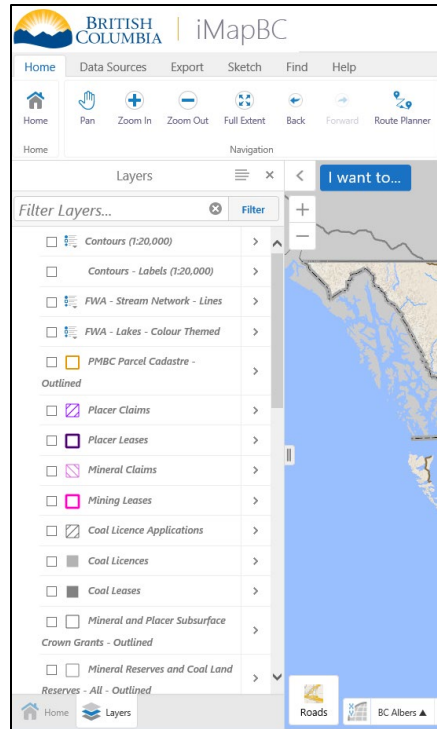
5. Once located, click **Open**.



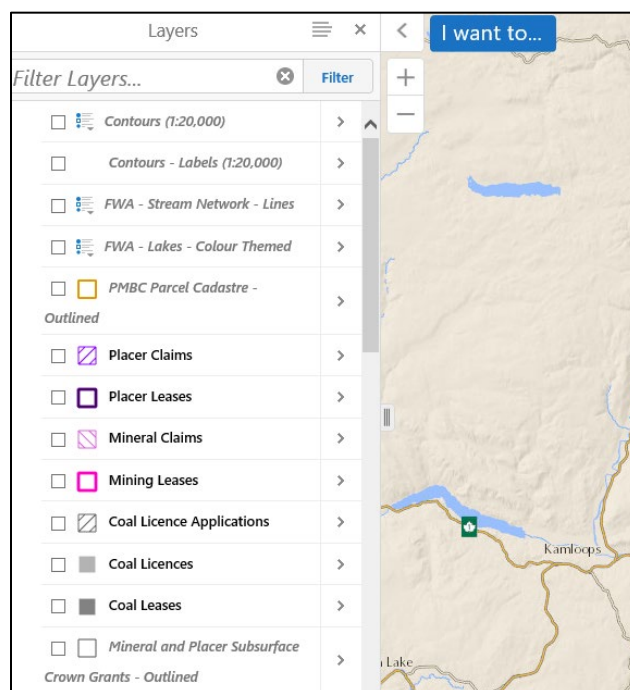
6. Review the **Name** and **Description** for more information about this specific project file and click **Open**.



7. Your session with the uploaded template loaded should look like this:



As you zoom in and out in the map view, you will see the layer names change from *greyed out italic text* to **bold regular** text. This change means those specific layers will now be visible at the scale your map is zoomed in to. Click inside the box to the left of the layer name to turn the layer on and off.



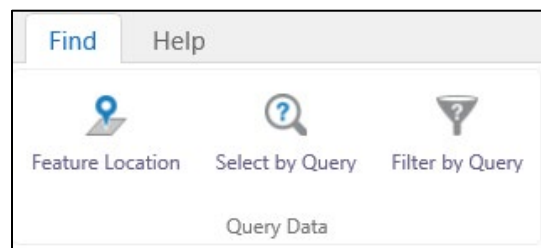
2.4 Navigate the Map View to the Mine Site

iMapBC has a few tools to help you find your mine location if you need help navigating the map view to it. These tools are found in the **Zoom To** toolbar on the **Home** toolbar tab and the **Query Data** toolbar in the **Find** toolbar tab.

The map view will zoom in and centre on coordinates entered into the **Zoom To** tools. The map can also zoom into a specific District Lot if the PIN number, location information, Parcel Short Description or other search keywords are entered in the **District Lot** tool.



If the template project file is already loaded or other layers are already loaded into the current map session, the tools in the **Query Data** can be used to zoom the map view to certain locations you search for. The query you enter will search for the feature within the layer specified, much like you're searching in a database search engine.



3. Create Your Location Map

This section will guide the user to create a Location Map from scratch in iMapBC. It will guide the user step-by-step through:

[3.1 Map content required on a Location Map](#)

[3.2 Choose a Basemap](#)

[3.3 Create or Load Spatial Data](#)

[3.3.1 Add a Mine Location Point and Label](#)

[3.3.2 Add a Proposed or Permitted Mine Area Polygon](#)

- [Upload Existing Spatial Data](#)
- [Create Spatial Data](#)

[3.3.3 Add an Access Route](#)

[3.3.4 Add a Label for the Nearest Community](#)

[3.4 Save Markup to Shapefile](#)

[3.5 Export the Location Map to PDF](#)

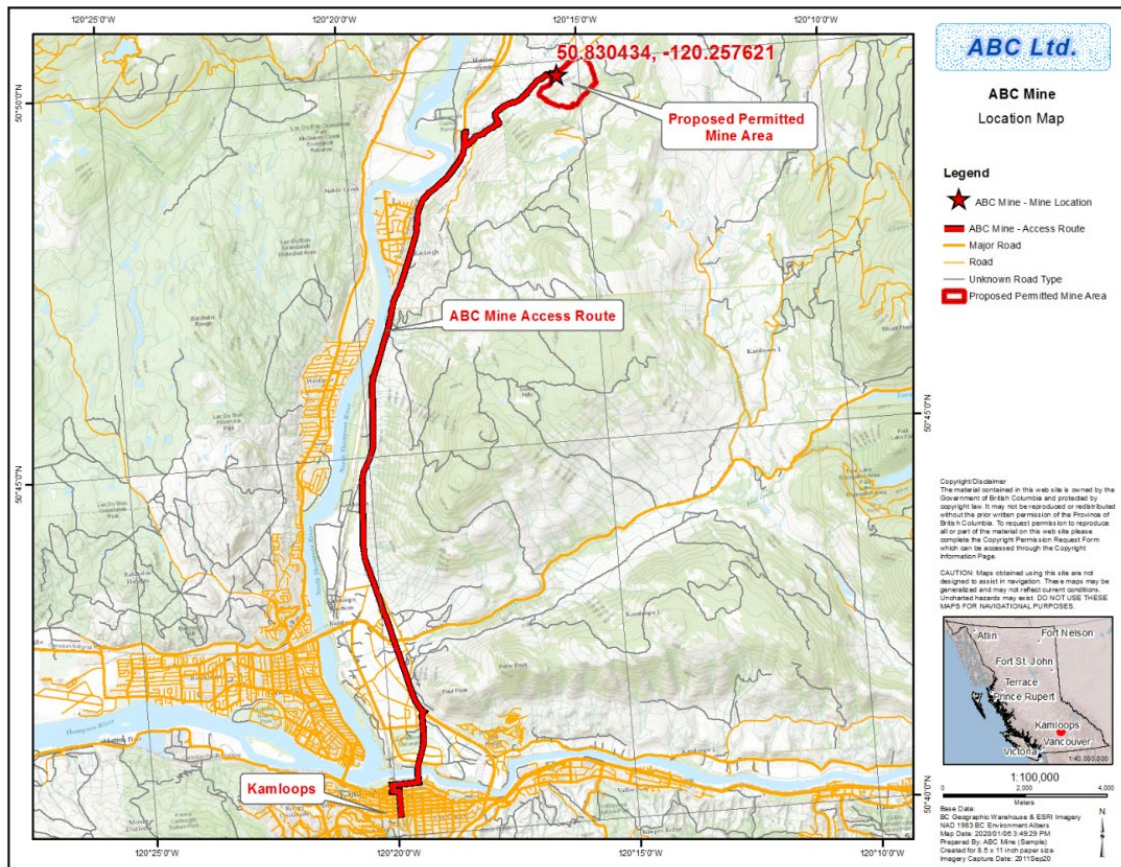
[3.6 Save this iMapBC Session](#)

3.1 Map content required on a Mines Act Permit Location Map

The Location Map requires:

- An appropriate basemap for understanding where the general location of the mine is in relation to communities/highways/landmarks
- A labelled point location of the mine with its coordinates
- A labelled polygon representing the proposed or permitted mine area
- A labelled access route highlighting the exact directions to the site
- The nearest service community (with hospital) labelled

Figure 1. Sample Location Map



3.2 Choose a Basemap

1. On the bottom of the map view, locate the basemap selection box and select the **Roads** basemap if it is not already selected. The roads basemap is required on the Location Map submission to highlight the access route to the site. If the map scale allows adequate representation of the road network and access route with a different basemap, then that is acceptable too.

Note: the user may need to switch between the different basemaps throughout the map/data creation process.

2. Click on the basemap selector and a horizontal pop-up will appear. Scroll over and select Roads.



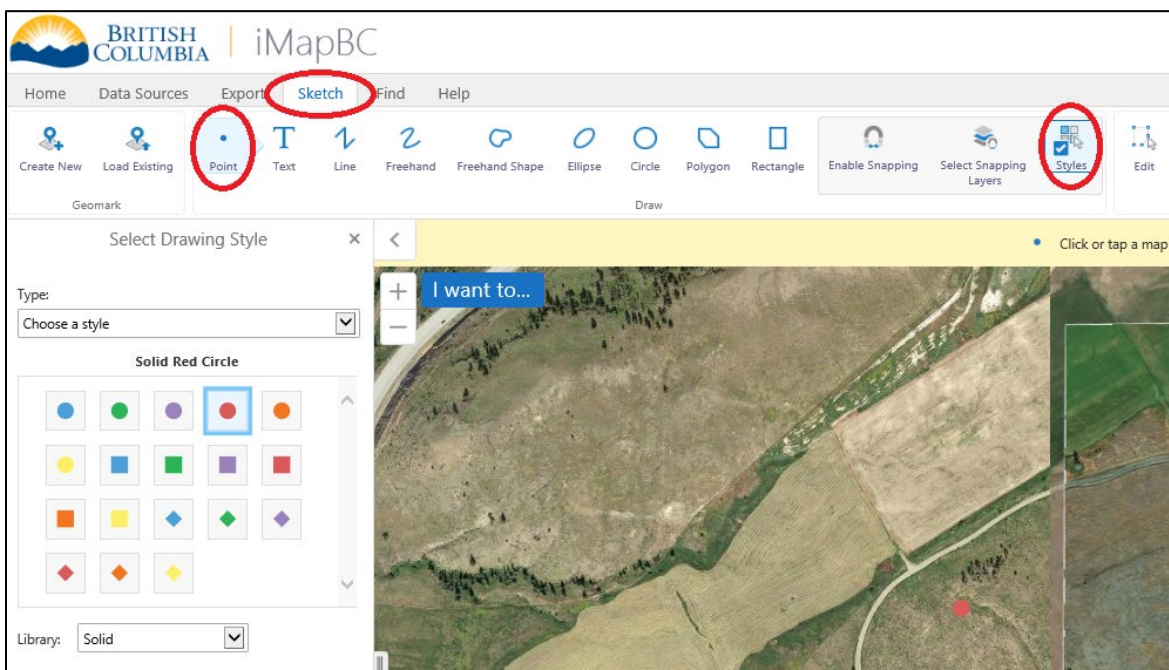
3.3 Create or Load Spatial Data

This section guides the reader in creating or loading existing data to show where the mining activity is located.

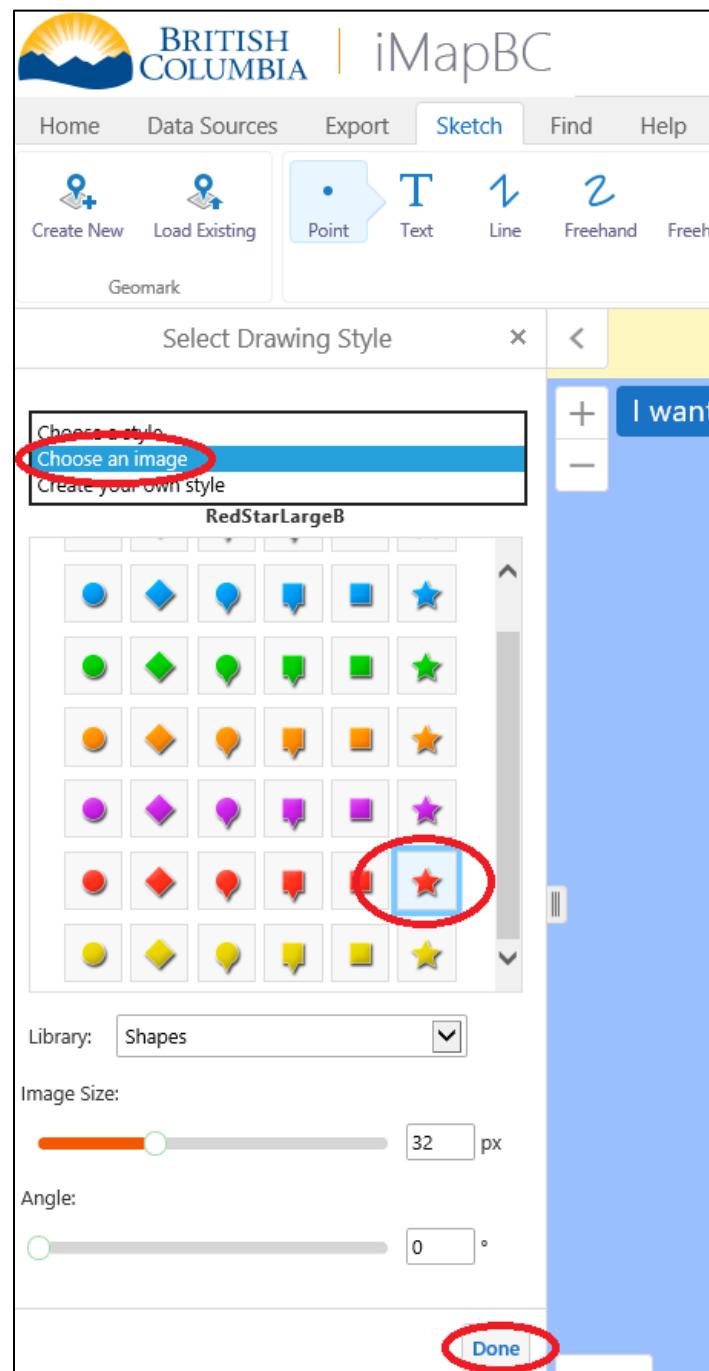
3.3.1 Add a Mine Location Point and Label

The Location Map requires a point location labelled with coordinates of where mining will take place. A markup point can be created with the sketch tools and labelled with its coordinates. Preferably, the placement of the point will identify either the site office, administration building, or mine site entrance.

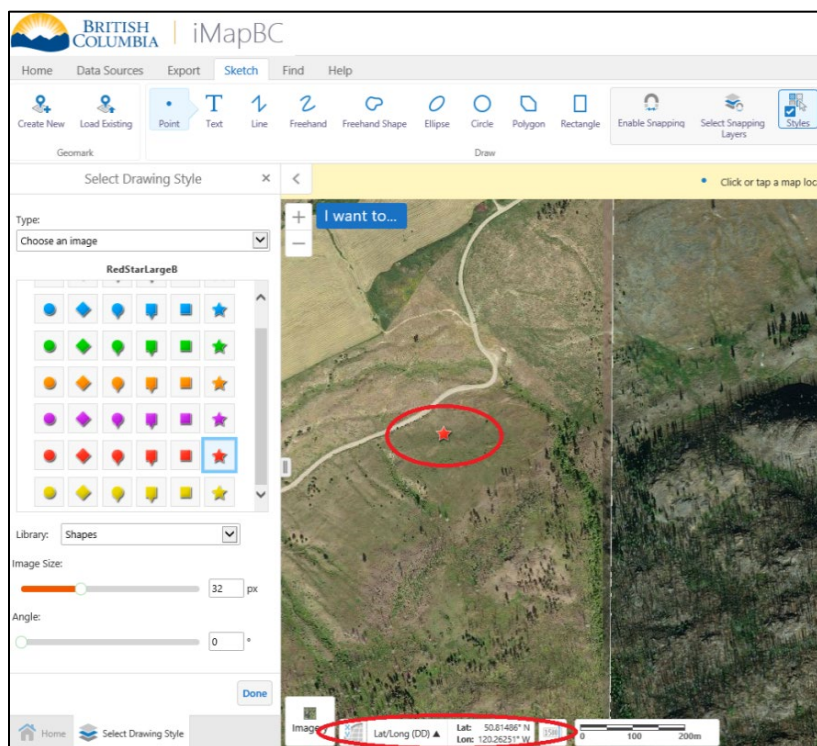
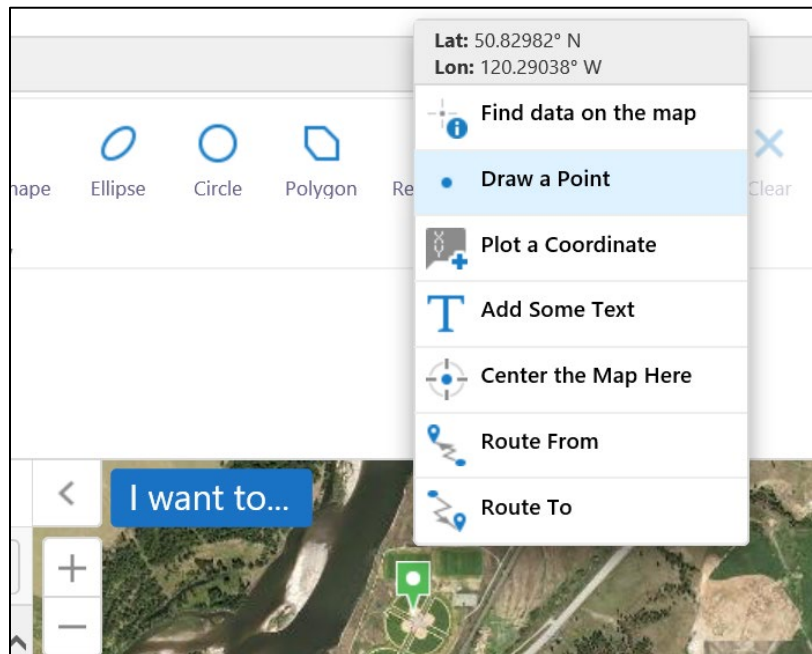
1. Select the **Sketch** toolbar tab.
2. Choose **Point** from the **Draw** toolbar, and then click **Styles** to have the drawing style panel appear.



3. As we will be using a map template with the legend already defined, please select the symbology outlined in this guide. For the Mine Location Point, select the red star image for the symbol before placing the point on the map.
 - a. From the **Type** drop-down menu, select **Choose an Image**.
 - b. Scroll and select the **Red Star**, leave other options as default.
 - c. Click **Done**.

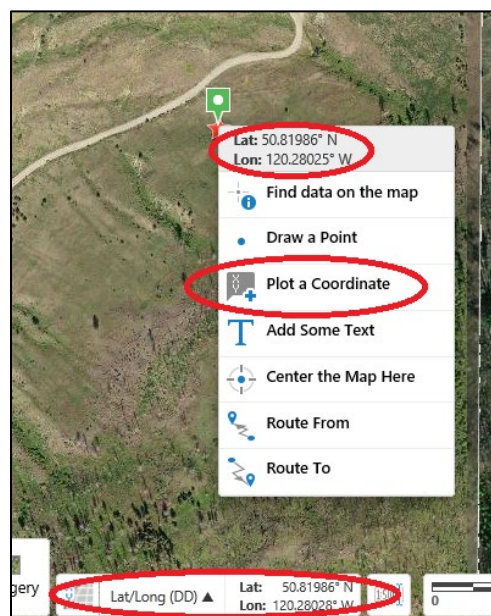


4. Locate either the site office/administration building/exact mine location on the map and **right-click**, a green flag will temporarily be placed in that location, from there select **Draw a Point** from the pop-up menu. This places the red star on the exact location.



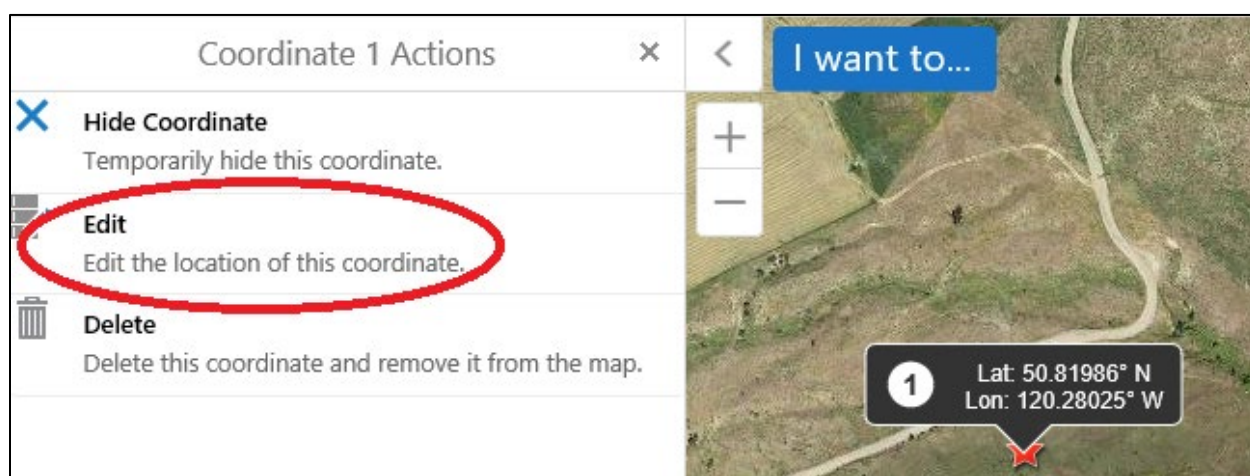
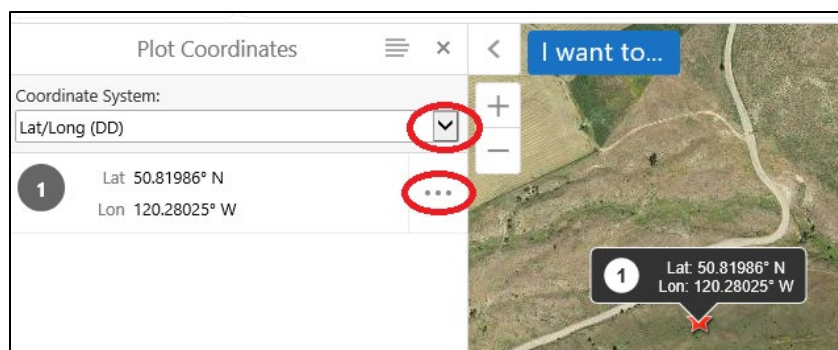
5. Next, add the coordinate label.

- a. First, review the coordinate system displayed on the bottom of the map screen. Keep it as either a **Lat/Long (DD)** format (shown as decimal degrees) or choose the **BC Albers** for BC Albers X/Y grid coordinates. Please note down these coordinates for future reference. These coordinates should match the Latitude and Longitude in the Notice of Work application.
- b. Right-click directly over the red star point you just placed. On the pop-up, select **Plot a Coordinate**.

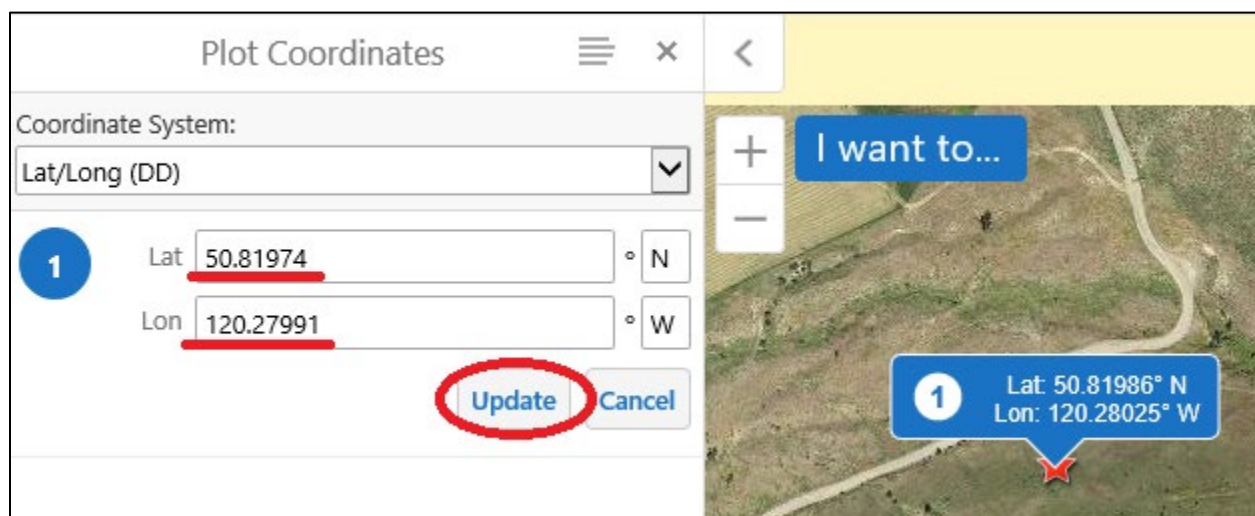


Note the **Plot Coordinates** panel that appeared on the left-hand side of the map window.

- Users can immediately change the coordinate system of all labels by clicking on the **Coordinate System** drop down menu and selecting a different option. All coordinate labels will be changed to the selected coordinate system.
- Users can also click on the ellipsis (...), and then **Edit** to change the location of the coordinate label or update the coordinate system.
- If you find this coordinate label interferes with your ability to create your own spatial data in the following section of the guide, then you can hide or remove it and add it back afterwards. If you find the Plot a Coordinate label excessively overlaps your spatial data in your final map, then a text label containing the coordinates is acceptable too.



If you wish to update the location of the label, simply click in the correct location of the map. If you wish to change the coordinate system, select the appropriate item from the drop-down menu. Alternatively, you can edit the coordinate text manually. Click **Update** once complete.

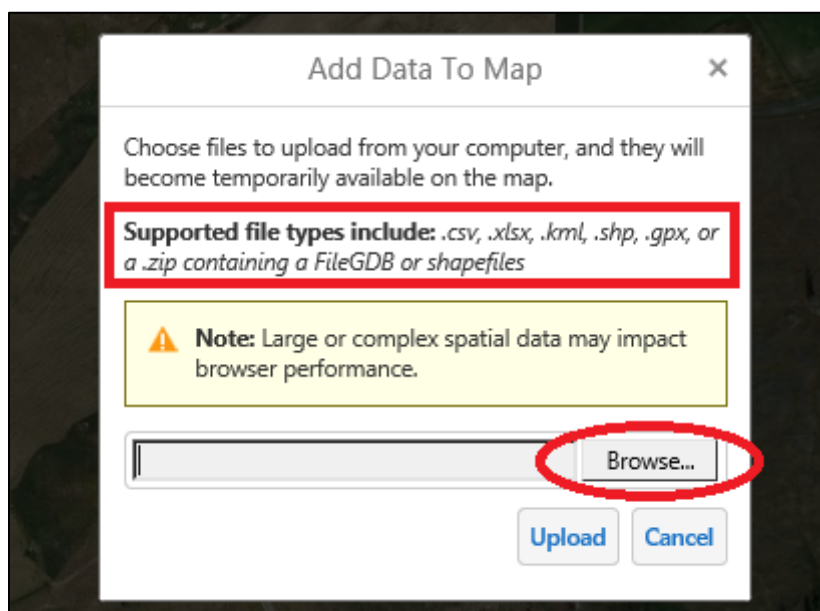
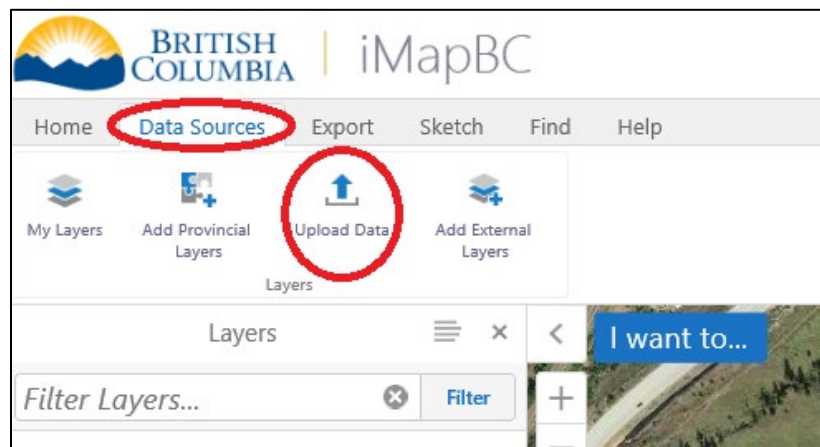


3.3.2 Add a Proposed or Permitted Mine Area Polygon

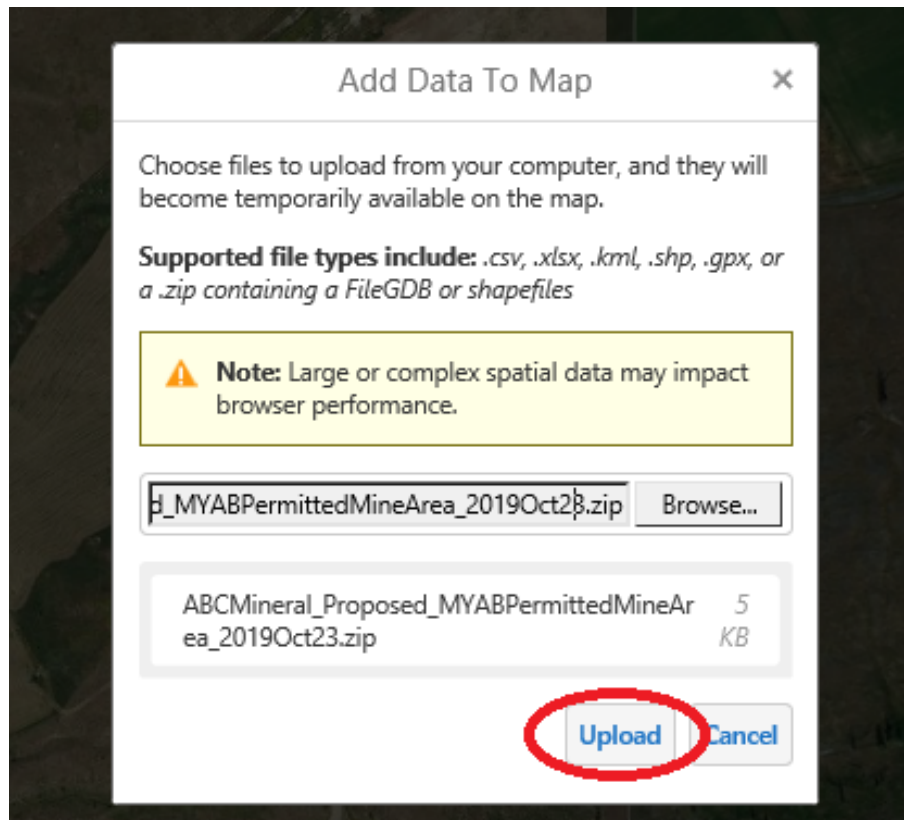
There are two methods to represent the permitted mine area (proposed/existing) on the map. These methods are (1) to either to upload existing spatial data that has been created in a different platform or sourced from somewhere else, or (2) to digitise the polygon shape through the **Sketch** tools available in iMapBC.

OPTION 1: Upload Existing Spatial Data

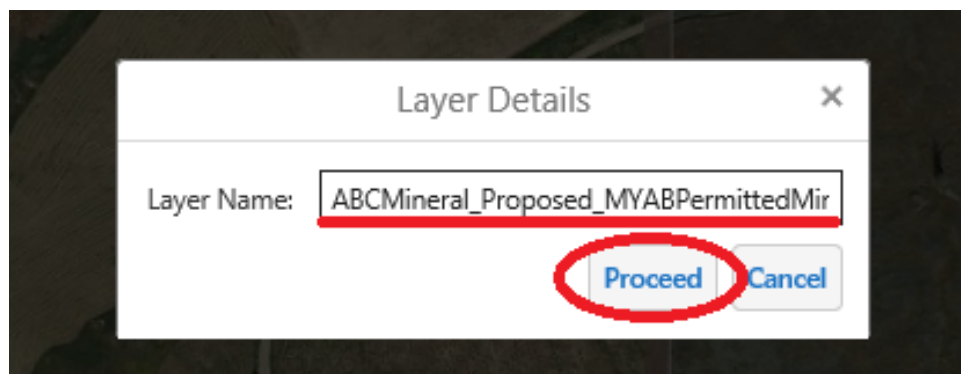
1. To load your own data, click the **Data Sources** toolbar tab, then click the **Upload Data** tool, and then **Browse** to the location of your spatial files. Note, shapefiles could be zipped into a singular file to upload into iMapBC or you may select all components of the shapefile to load. Shapefiles must contain, at minimum, the following file components (i.e., file extensions) to work in iMapBC: .shp, .shx, .dbf and .prj or .sbn.



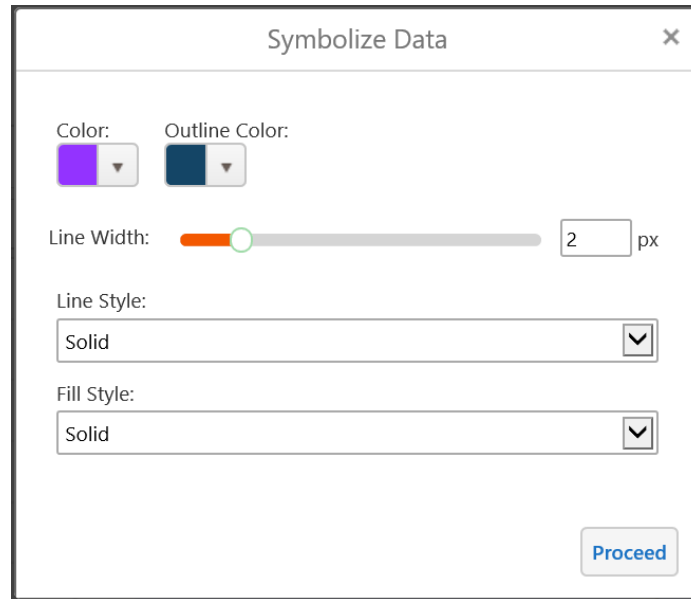
2. Click the **Upload** button.



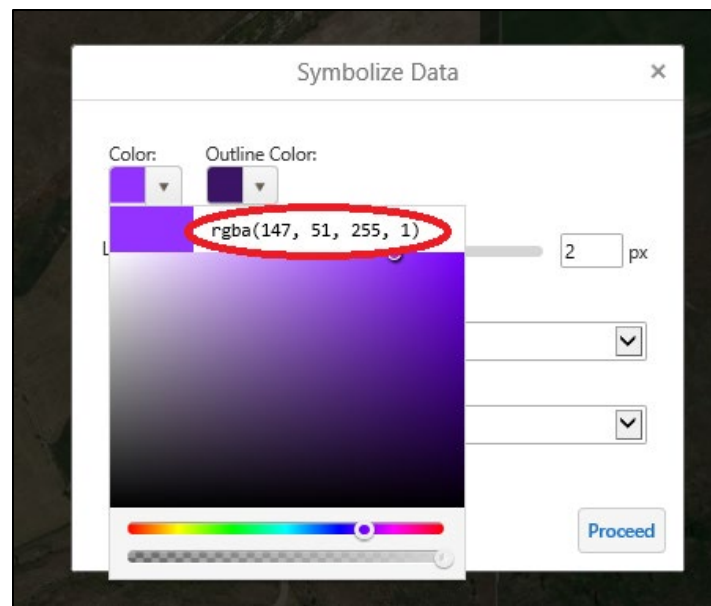
3. Name your layer with an appropriate name depending on what it represents. This layer name will appear in the **Layers** panel.
4. Click **Proceed** once the Layer Name is updated.



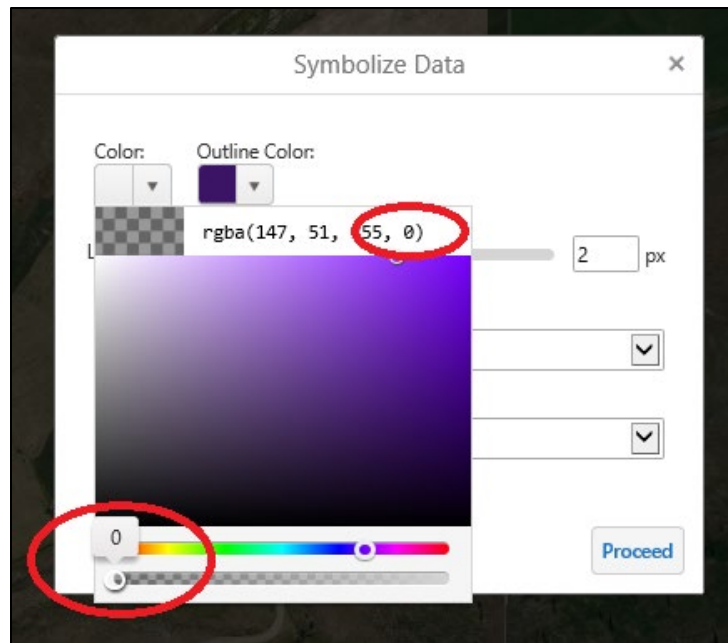
5. Now the user needs to symbolize the data. The pre-set legend in the template identifies the Proposed/Approved Permitted Mine Area as a red outline.



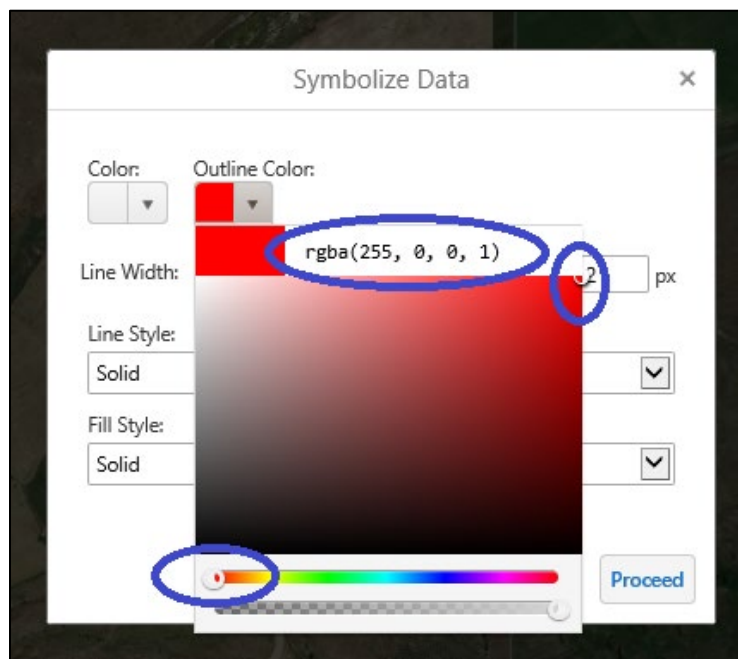
- a. The default symbology that gets selected is random and will change with each dataset uploaded. In this example a purple fill and outline were randomly selected.
- b. Click the down arrow next to the (fill) color. Note the values **rgba (147, 51, 255, 1)**. The “a” in rgba is the alpha parameter for opacity. A 0.0 value is fully transparent and a 1.0 is fully opaque.



- c. Change the last value to 0 by either typing it or sliding the lower ramp to the left. This will make it completely transparent.

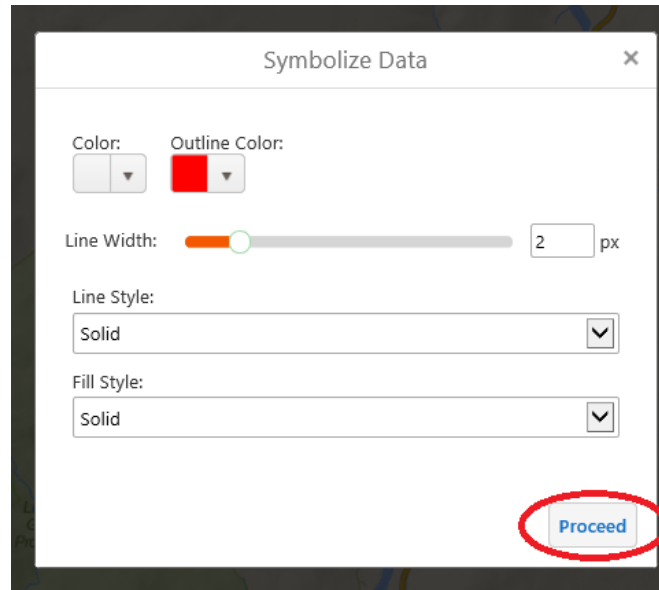


- d. To change the outline colour to red, click on the down arrow under **Outline Colour** and drag the colour ramp to the very left. Then drag the colour selector to the top-right corner. Or, change the values by typing **255, 0, 0, 1**.

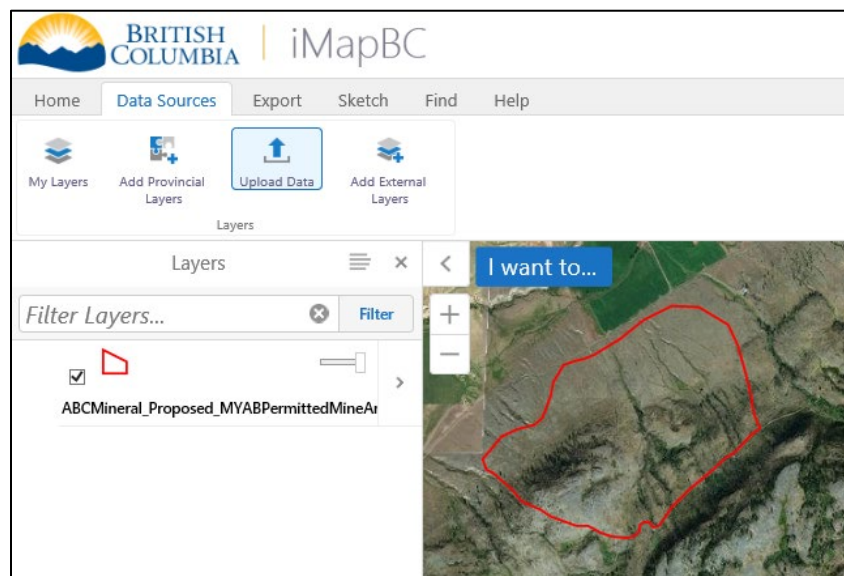


- e. Leave the **Line Width** at a minimum of 2 points, larger widths are accepted if preferred by the user.

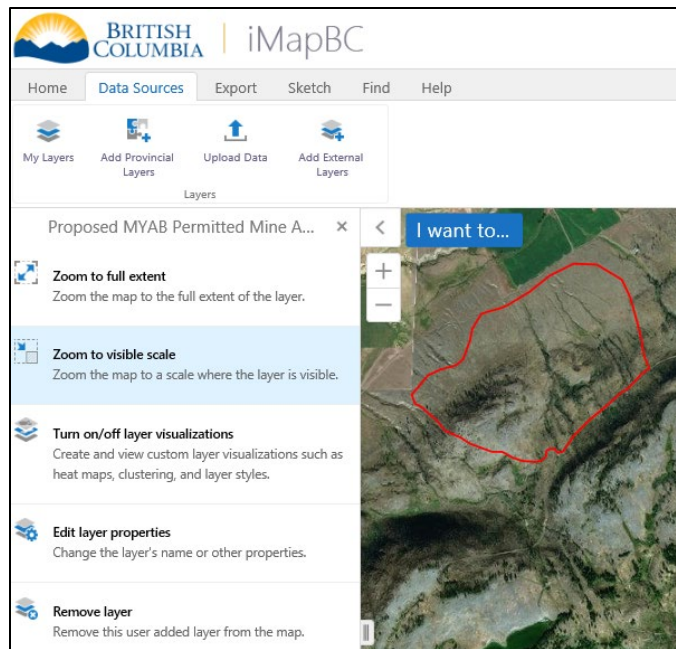
- f. Click **Proceed** and the layer will now be included in the layer list.



- g. The symbology for your permitted mine area should look like this:



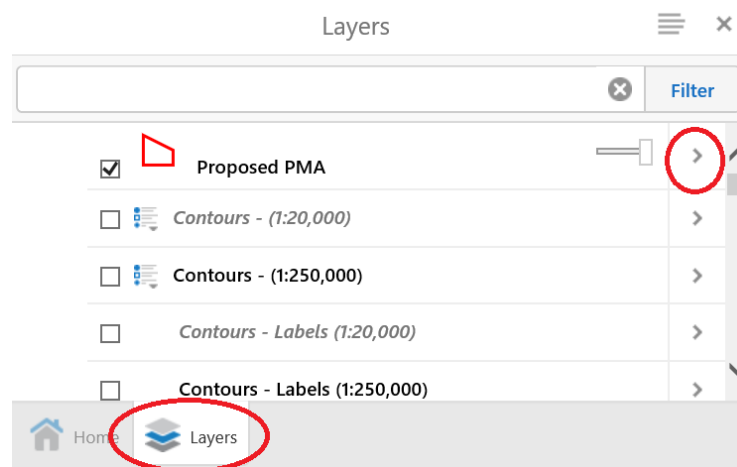
6. To edit the layer name or symbology or to zoom to the layer, click the layer actions icon (>) to the right of the layer name and select one of the options you would like to edit. The layer name can be changed through the layer properties if needed. Note, the name of the layer will not be seen on the legend on the map later and changing the name would just be for user reference.



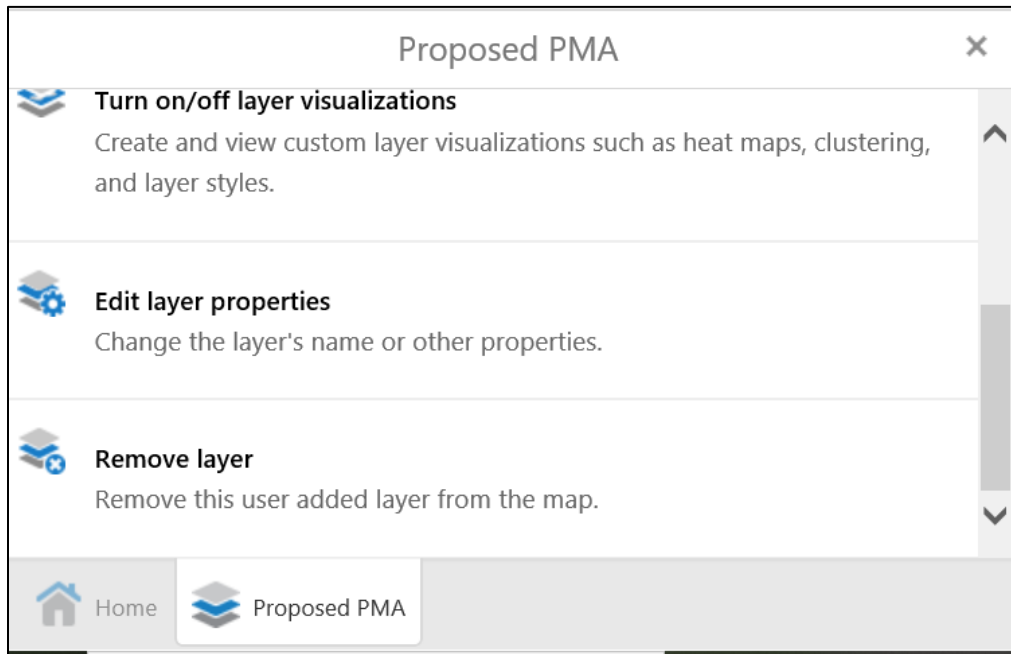
- a. Locate the layer on the **Layers** panel. To open the Layers panel click the **My Layers** tool in the **Data Sources** toolbar tab



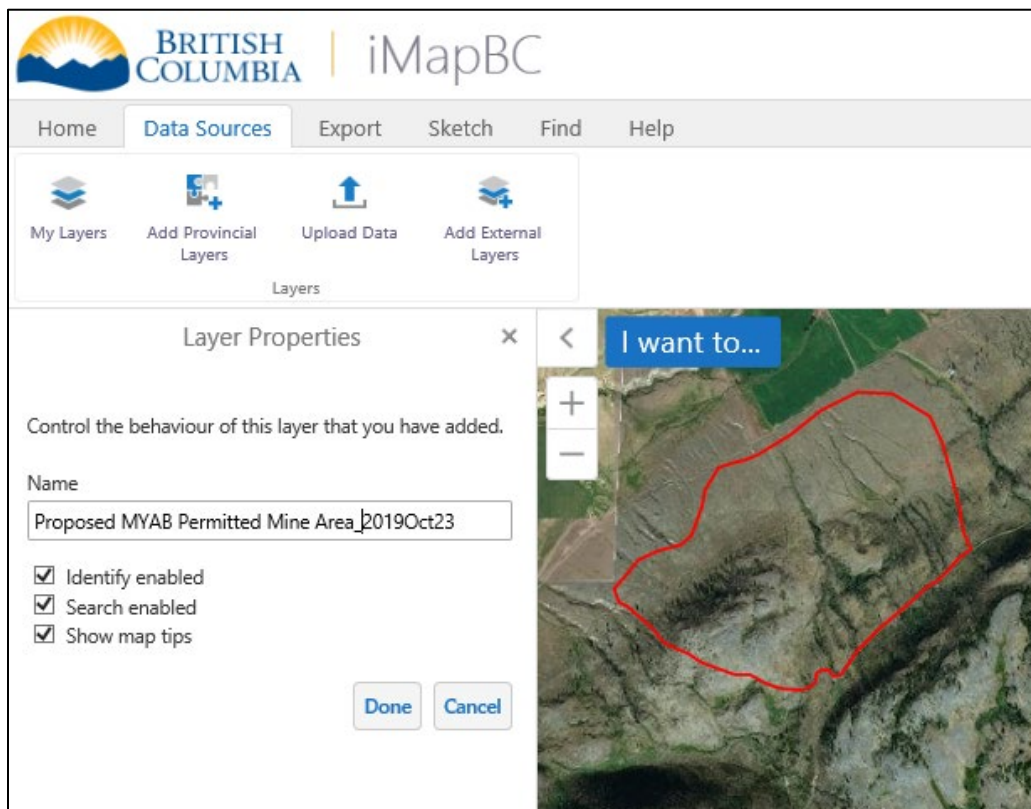
- b. Click the layer actions icon (>) to open the layers actions available for the layer.



- c. Use the scroll bar to scroll down to select **Edit Layer Properties**.



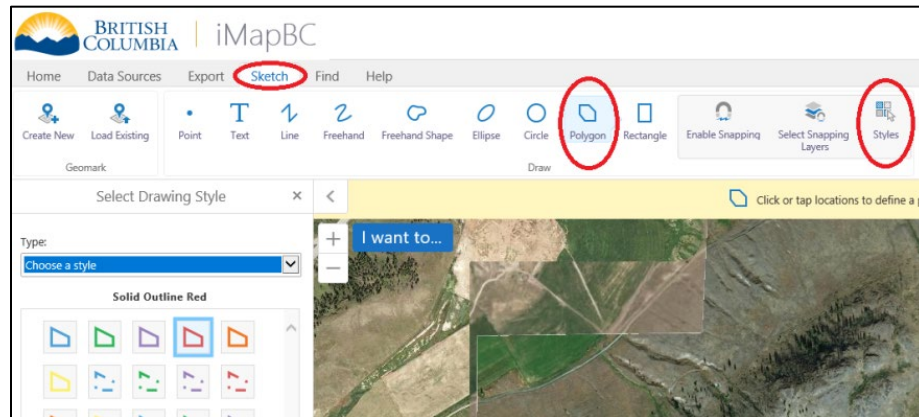
- d. Update the **Name** of the layer, click **Done** when finished



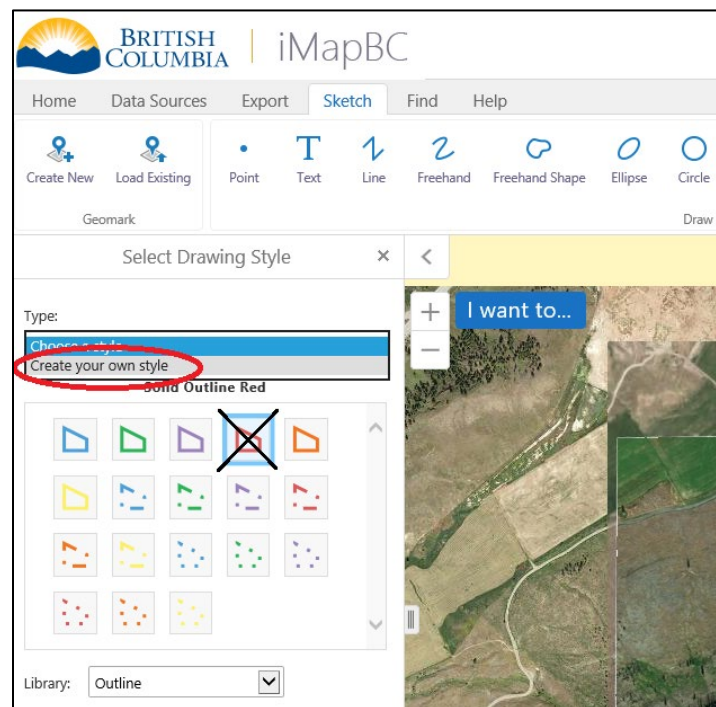
OPTION 2: Create Spatial Data

Draw your polygon with the sketch tools available

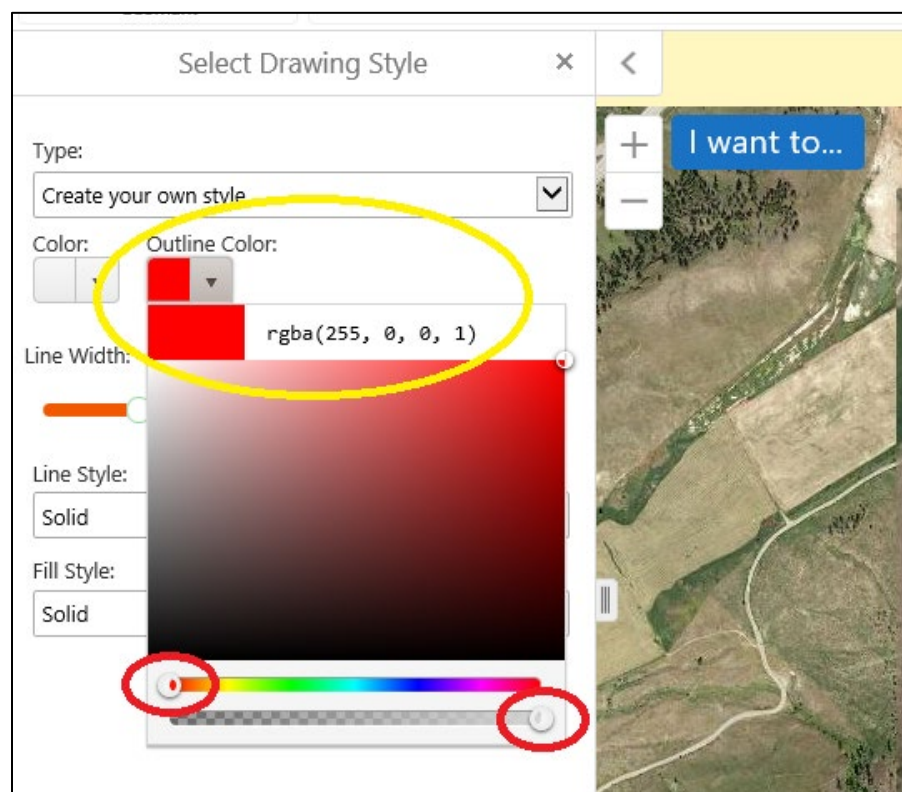
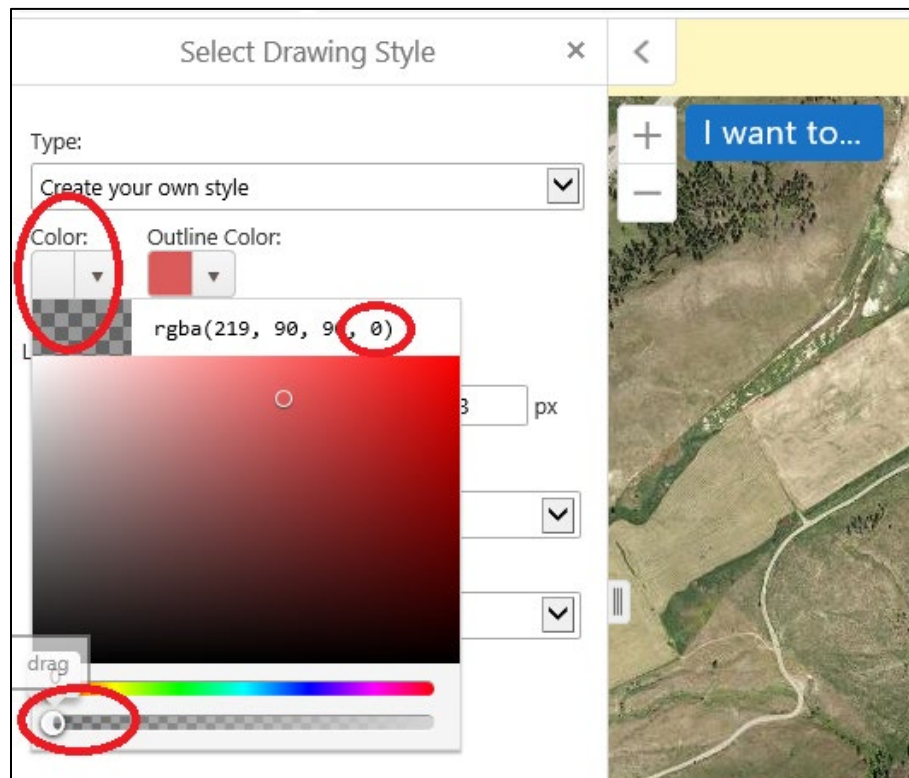
1. From the **Sketch** toolbar tab, select **Polygon** in the **Draw** toolbar, and then select **Styles**.

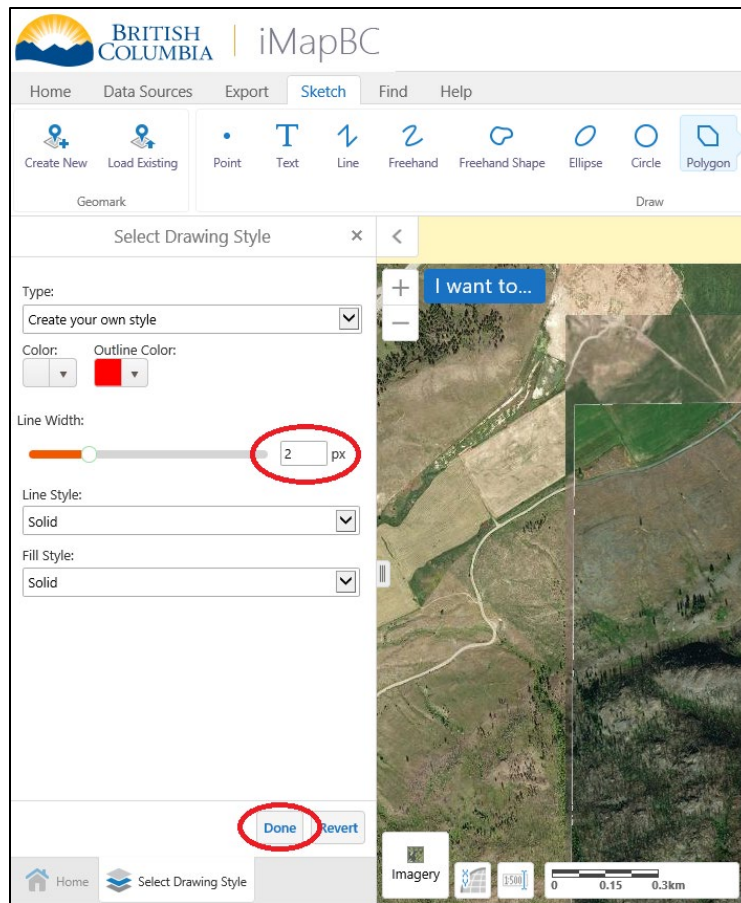


2. In the **Select Drawing Style** panel select **Choose your own style** from the dropdown menu.

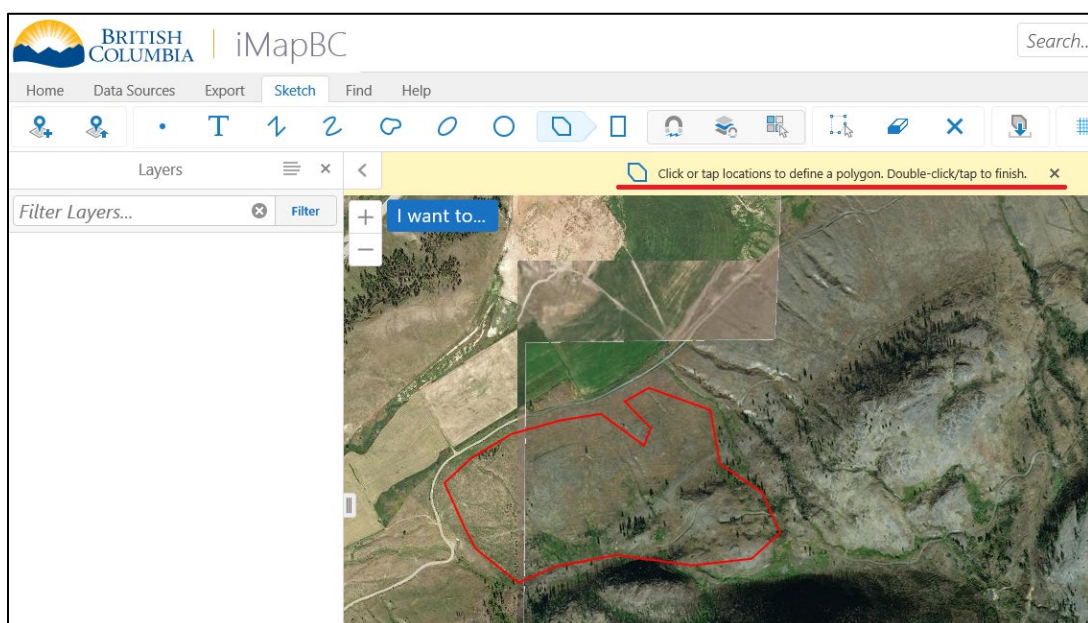


3. Use the method of selecting the red outline symbology outlined in the screenshots below.

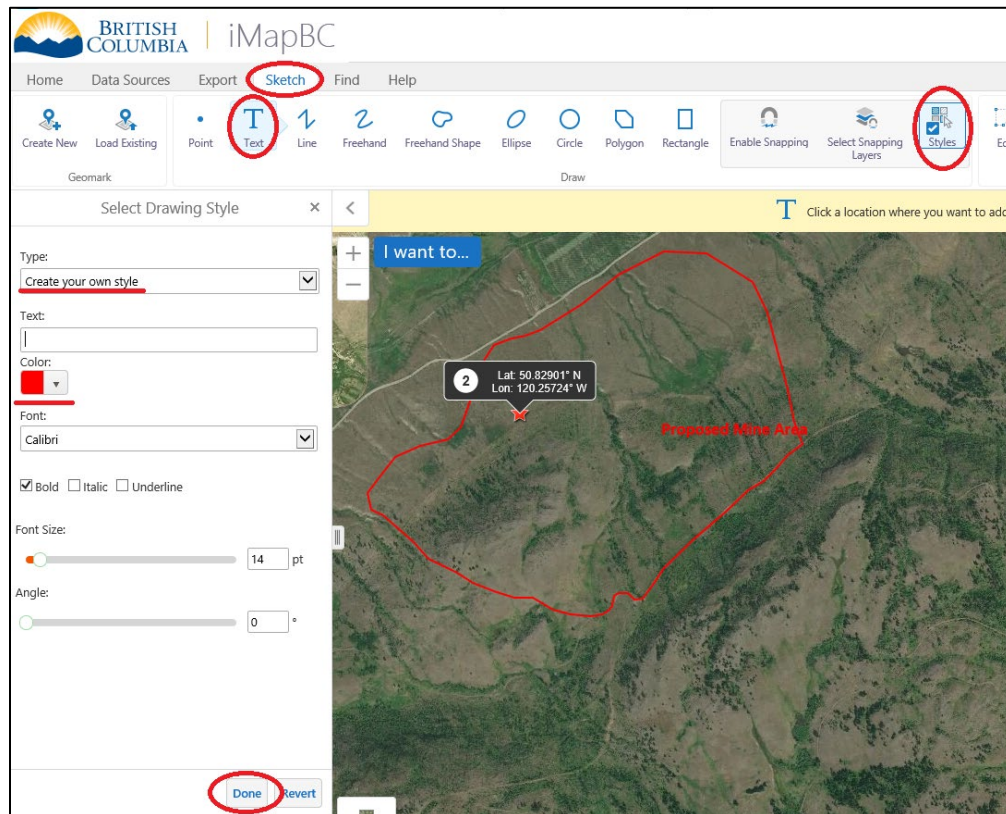




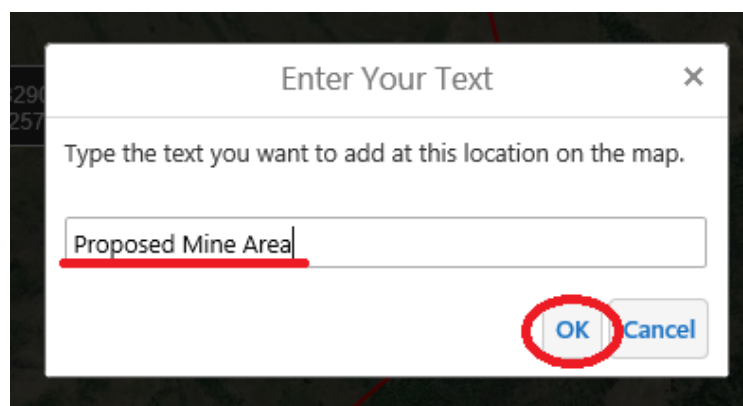
4. On the map, draw your shape by clicking the mouse to draw the outline of the shape, double-click to finish.



5. Add the label to identify the Proposed or Approved Permitted Mine Area.
 - a) In the **Sketch** toolbar tab, select **Text** mark up tool, select **Styles** and select a red colour from the **Create your own style**. Click **Done**.

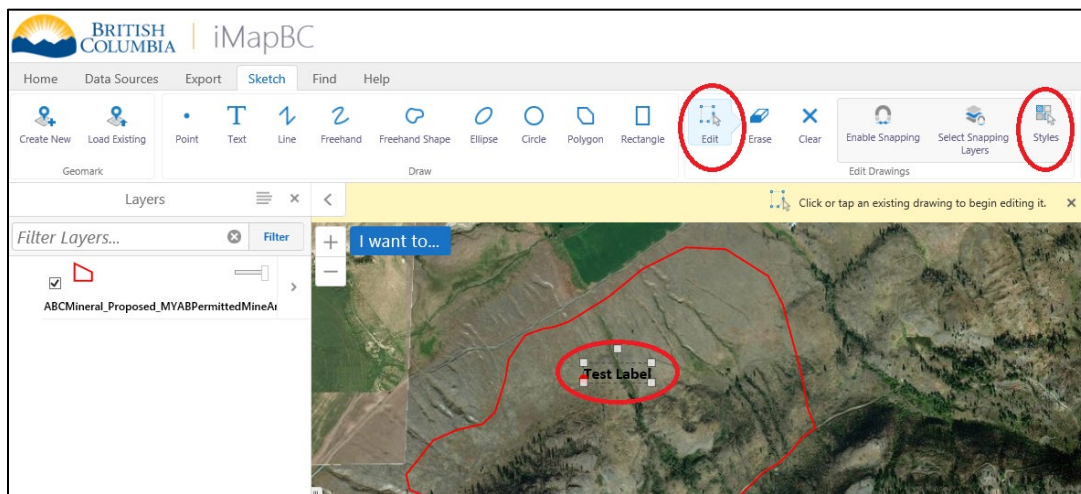


- b) Next, click a location on the map where the label will clearly identify the mine location, without overlapping any important information already visible.
 - c) Enter the name of the mine or the text "Permitted Mine Area" or "Mine Location" in the pop-up and select **OK**.

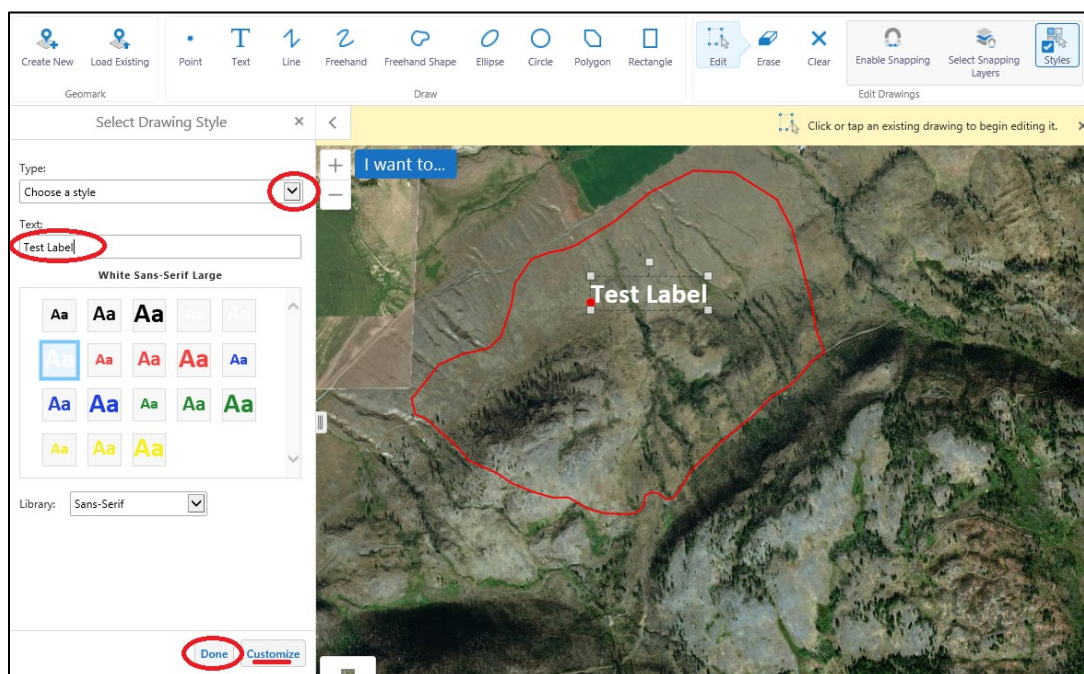


The label text, as well as the text colour, typeface/font, size, and angle can all be changed from the **Styles** toolbar tab.

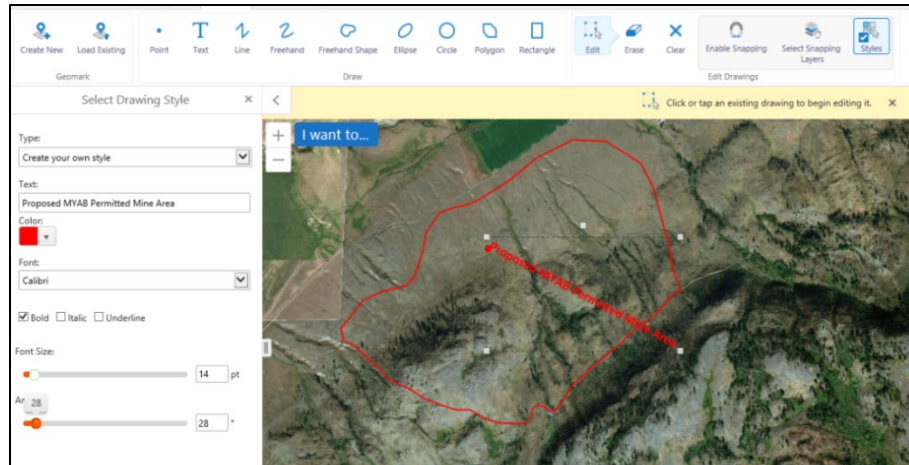
- d) Click the **Edit** tool in the **Edit Drawing** toolbar
- e) Click on the label, and then click the **Styles** tool.



- Users can choose a serif or sans serif style with basic color and size options



- Or, users can create their own style (color, font, angle, underline, italic)



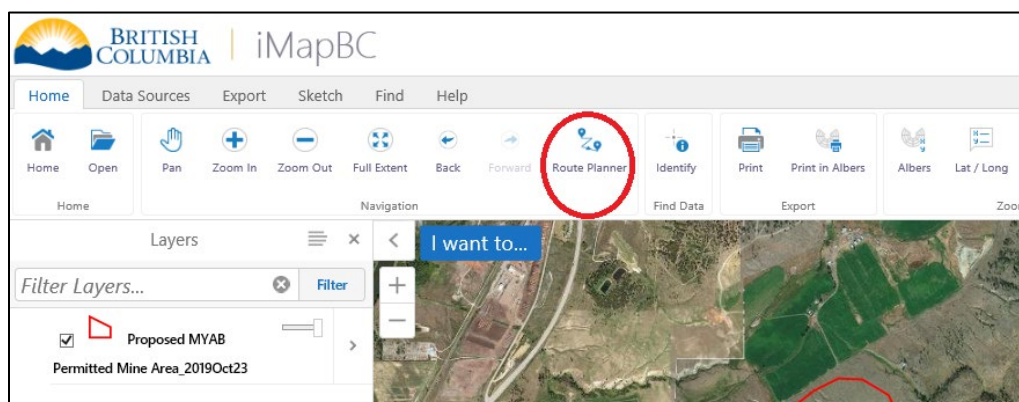
3.3.3 Add an Access Route

There are a few methods that can be used to represent the access route on your map. An existing dataset created outside of this iMapBC session can be uploaded with the layer name "Access Route". Or, an access route can be created with the Route Planner Tool and supplemented with extra markup lines with the Line Sketch tool.

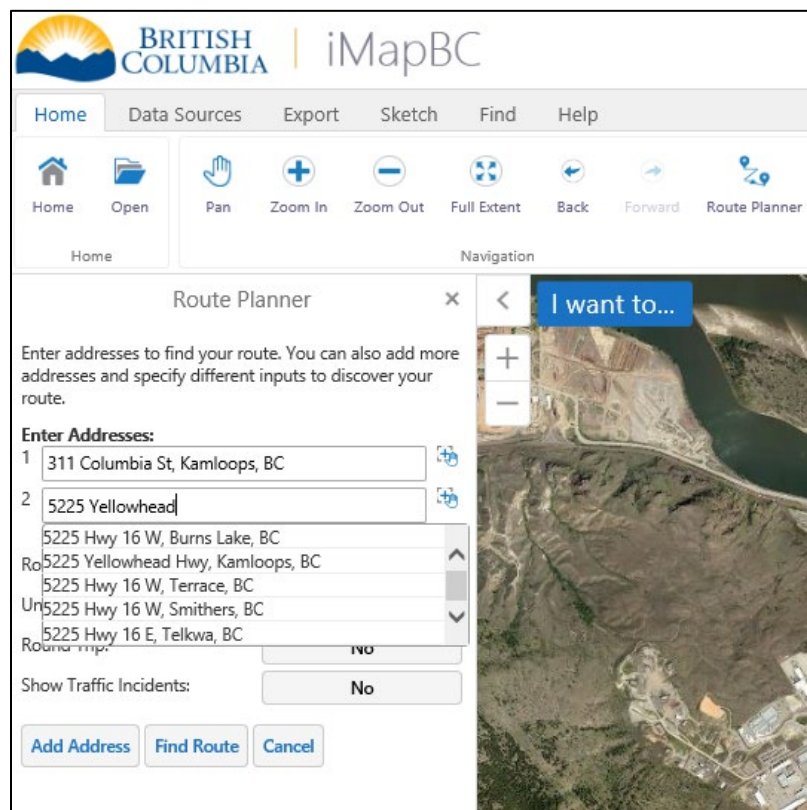
Route Planner Tool

The Route Planner Tool requires two known addresses in BC as your start and end points for it to work. The best way to do this is to find the addresses using Google Maps (if necessary) and then enter them into the tool.

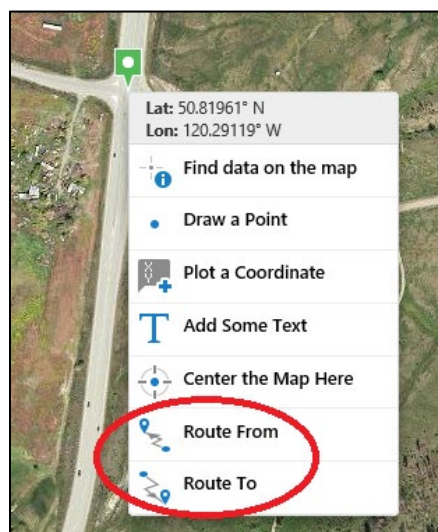
As the mine site will most likely not have a known address, the user will need to supplement the resulting Route Planner line work by using the Sketch tools and drawing a line that follows existing or proposed roads on the map. It may be useful to copy the route directions found by the Route Planner to use in the access description in the application too.



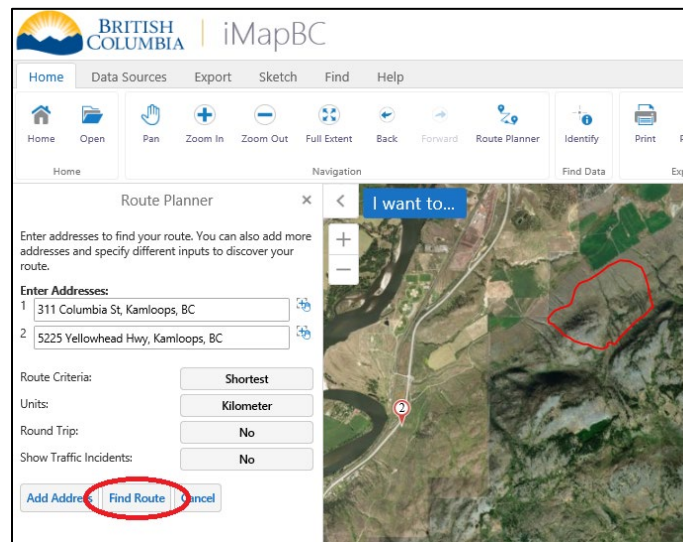
1. Using the **Route Planner** tool found in the **Navigation** toolbar, enter the address of the start location in box #1 and enter the end location address in box #2.



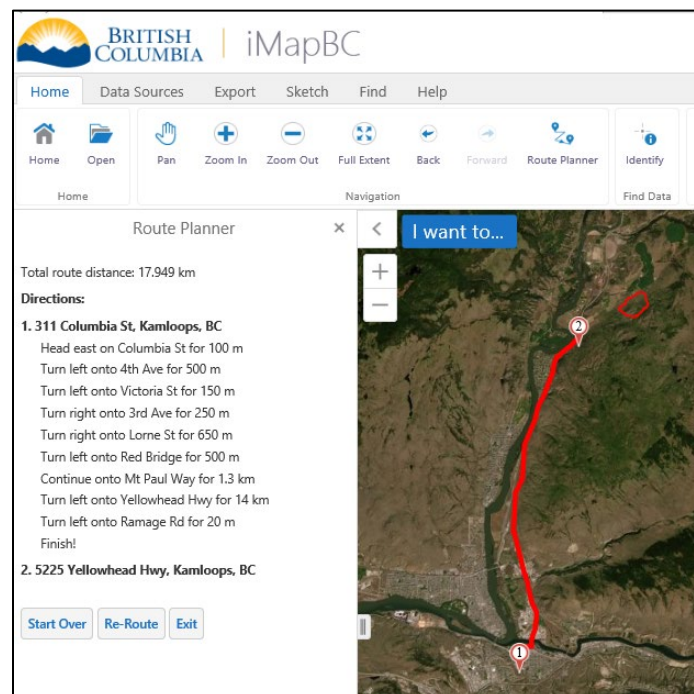
- This can also be completed by right clicking on the location and selecting **Route From** or **Route To** as long as the system recognises the location as a known address.



2. Adjust the route criteria, units, round trip option and traffic incidents option, as needed and click the **Find Route** button

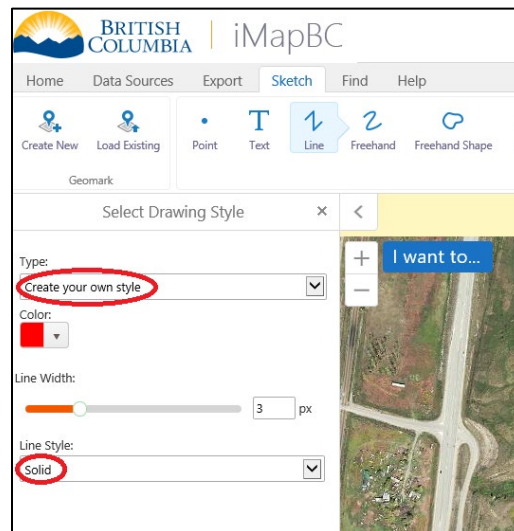


- iMapBC will display the route on the map and the driving instructions in the left-hand window.

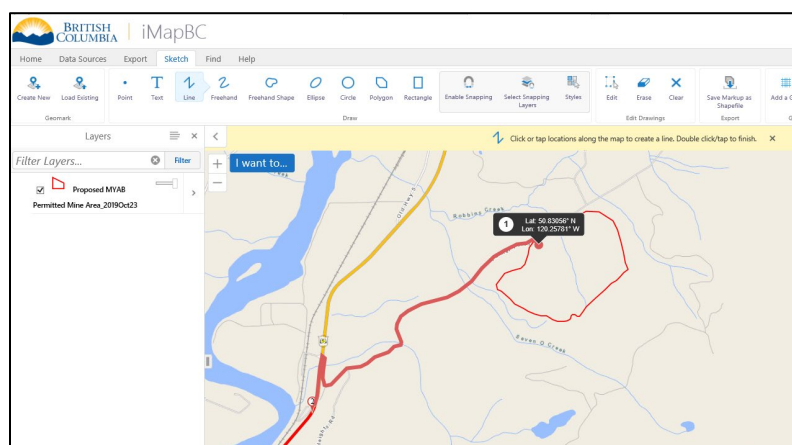


- Although, the Route Planner panel may be closed using the "X", to keep the route highlighted on the map, do not click **Exit**.

3. To create a complete access route to the mine site, click the **Sketch** toolbar tab and the **Line** tool to start creating a line.
 - The colour of this line MUST match the route planner (red), so be sure change the symbology before you draw your line.
4. Click **Styles** and choose **Create your own style** to choose the red used previously.



5. Draw the line and double click to end the line. Use whichever basemap makes it easiest to accurately draw the line along existing roads or where proposed roads will be.
 - Note: When digitising in iMapBC, your line will show up as a black line until you've double-clicked to finish the line.

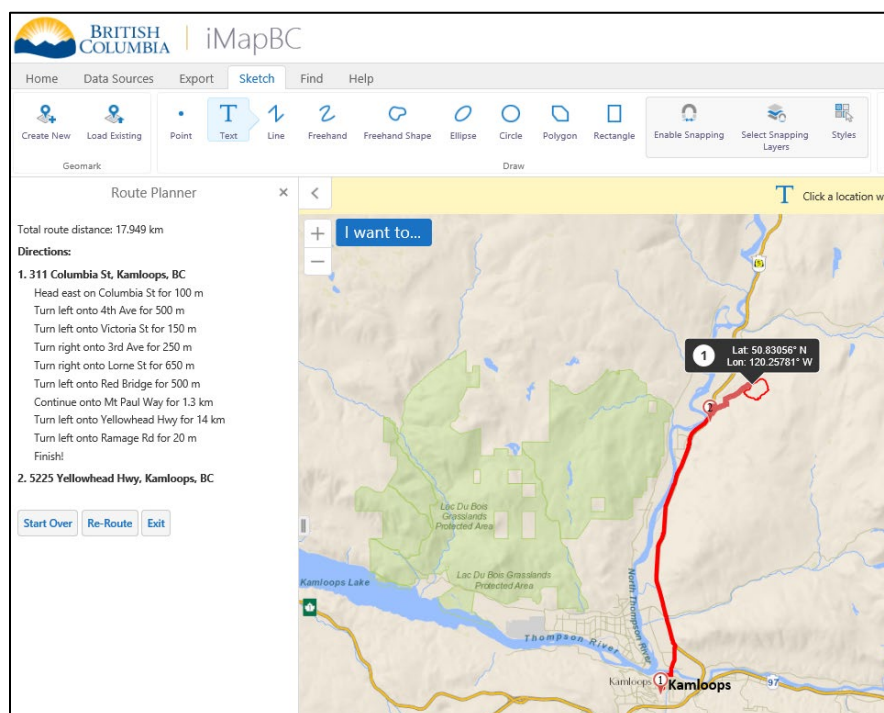
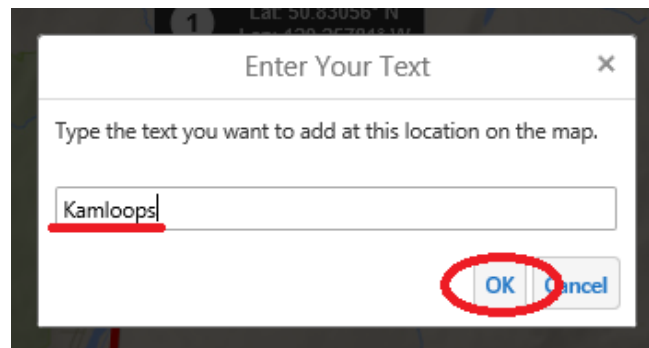


6. Add a label to the line to signify that it is the access route.

3.3.4 Add a Label for Nearest Community

Label the nearest community if its label isn't clearly visible on the basemap to be used in the final map.

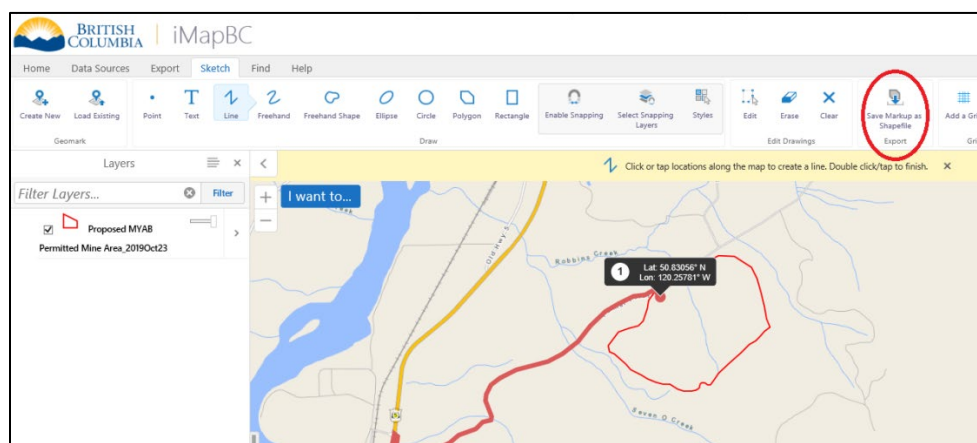
1. On the **Sketch** toolbar tab, select the **Text** mark up tool.
2. Click a location on the map where the label will clearly identify the community, without overlapping any important information already visible.
3. Enter the name of the community in the pop-up and select **OK**. To edit the label, click the **Edit** tool and then click the **Styles** tool and make your edits in the **Select Drawing Style** panel.



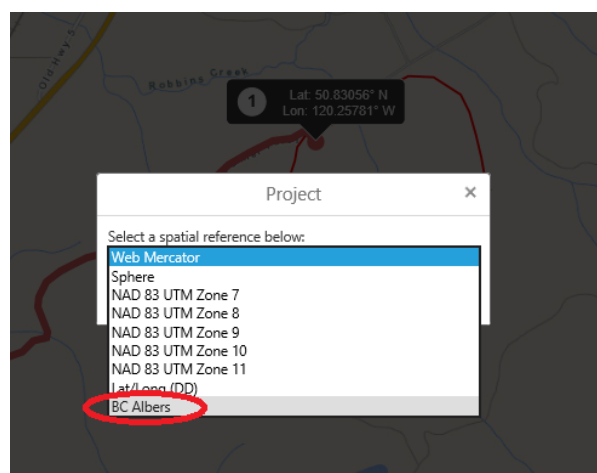
3.4 Save Markup to Shapefile

To retain your markup for future mapping and sharing, save your markup as a shapefile. Please note, any markup created in the current session will not appear **Layers** panel automatically and it would be lost if the session is closed without saving it as an iMapBC project file (.gvhp). To see the markup in the **Layers** panel it first needs to be saved as a shapefile and then imported back into iMapBC via the **Upload Data** tool in the **Data Sources** toolbar tab. This will then be visible in the **Layers** panel as its own layer.

1. In the **Sketch** toolbar tab click the **Save Markup as Shapefile** tool in the **Export** toolbar.

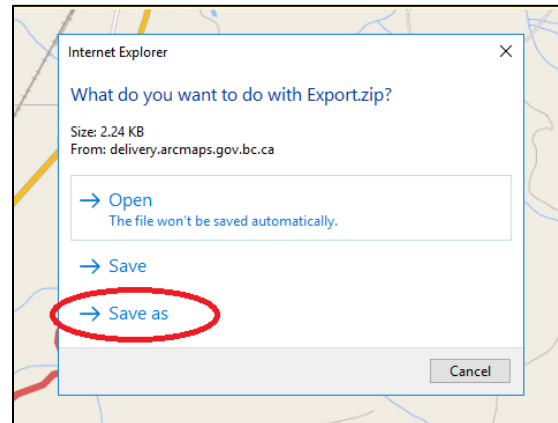
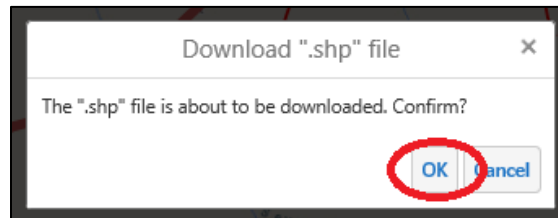


2. From the **Project** pop-up, select the appropriate spatial reference. The Ministry suggests you choose the **BC Albers** projection.



3. Click **Save**.

4. Click **OK** and save it with a file name representative of what the markup is for.

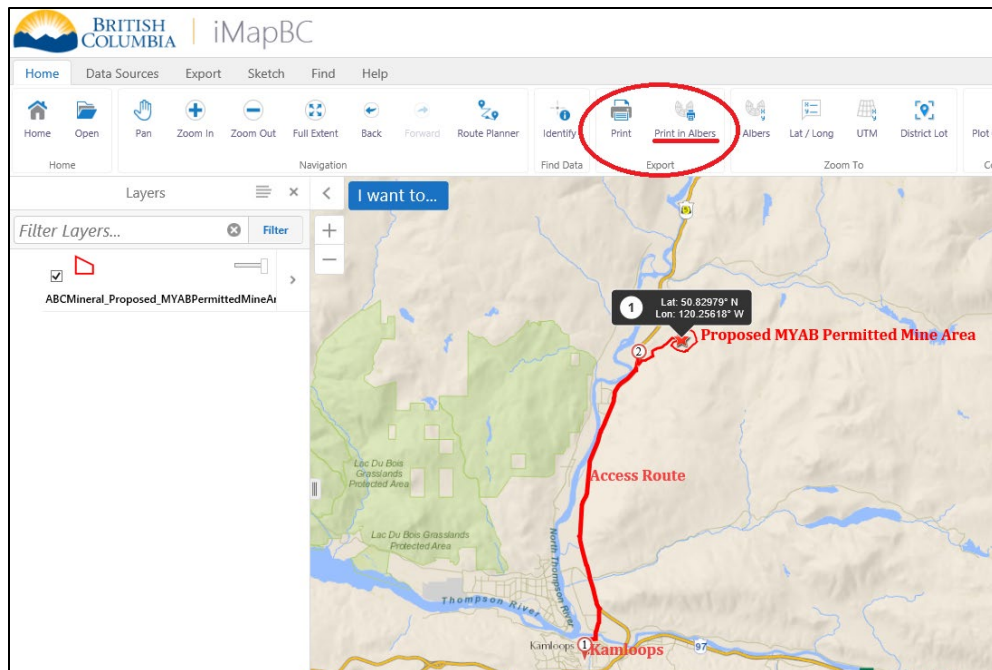


This shapefile would be useful to Ministry staff when reviewing the permit application. Please send all markup shapefiles created for the maps along with your application package.

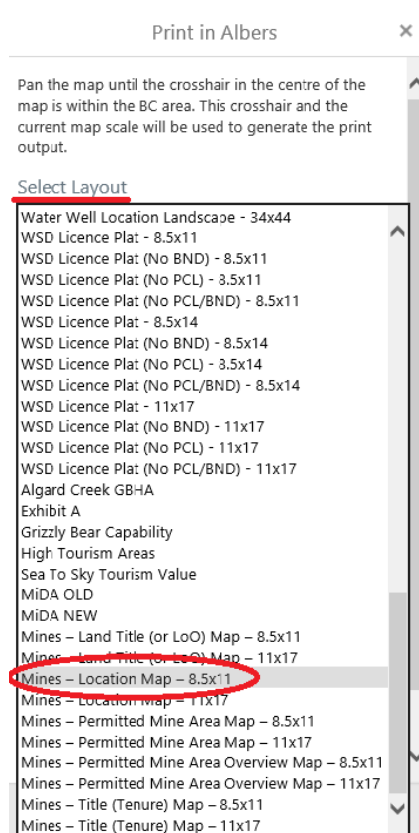
3.5 Export the Location Map to PDF

This section explains how to export maps to PDF using the “Mines – Location Map -8.5x11” print template. Before exporting your map, ensure you have everything required on your location map; here is a final checklist to double-check your map content:

- a. An appropriate **basemap** to clearly show the access route to the site.
 - b. A **mine point** (red star) with a **coordinate label**.
 - c. Your proposed or existing **permitted mine area** (red polygon); with a **label** indicating it is the mine site area.
 - d. An **access route** (red line) from the nearest service community directly to the mine site and a **label** indicating it as an access route.
 - e. A label for the **nearest community** and any other important landmark areas within the map extent.
1. Select the **Print in Albers** tool from the **Home** toolbar tab in the **Export** toolbar.



2. Select the **Mines – Location Map - 8.5x11** from the **Select Layout** dropdown menu. You will need to scroll to the bottom of the list.



3. Fill in all the fields referenced below.

Print in Albers

map is within the BC area. This crosshair and the current map scale will be used to generate the print output.

Select Layout

Mines – Location Map – 8.5x11

Output Format

Pdf

Resolution

High

Grid

Latitude / Longitude

Map Scale

1:250,000

Company Name

ABC Minerals

Mine Name

ABC Mine - Kamloops

Map Date

2020Apr03

Prepared By

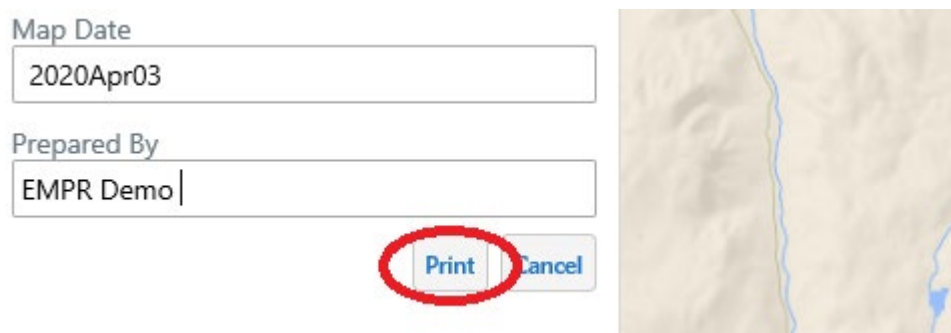
EMPR - Demo

Print Cancel

Home Layers

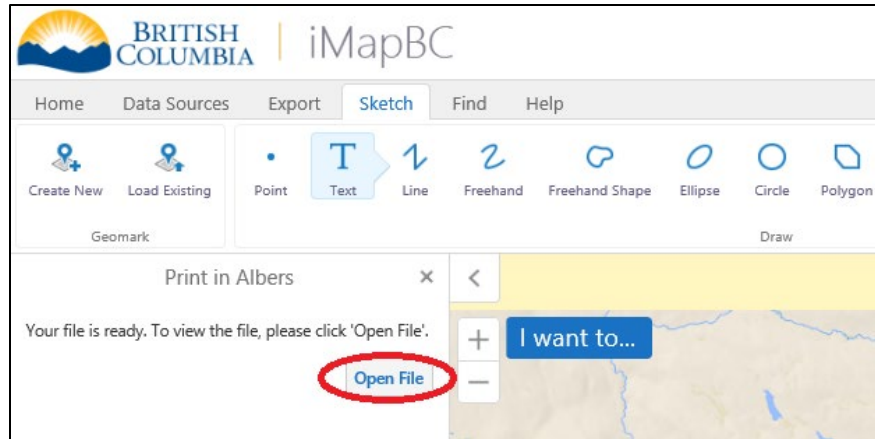
Print in Alb...

- **Output Format:** The Ministry suggests using PDF exclusively for Mines Act application maps as there is less distortion in the projection and scale in a map saved as a PDF rather than as a PNG or TIFF.
 - **Resolution:** Choose the high-resolution option for the map.
 - **Grid:** Choose the Latitude/Longitude grid option from the drop down. This feature is important to include so that Ministry staff can gather basic georeferencing information from your map.
 - **Map Scale:** Choose a map scale to encompass the entire area (note, you may have to run a couple tests prints to get an appropriate scale). Please also consider who the audience of the map may be, if they are required to make measurements from this map, then an even, rounded number scale is much more efficient than using the current scales option.
 - **Company Name, Mine Name, Map Date, and Prepared by:** These fields will contain all the required map details that will show up in the title and text areas on the right side of the map.
 - Current date (formatted as YYYYMmmDD, i.e., 2020May11).
4. Click **Print** and wait for the tool to run. The run time of the tool varies depending on the detail included on the map and the scale it is being drawn at.

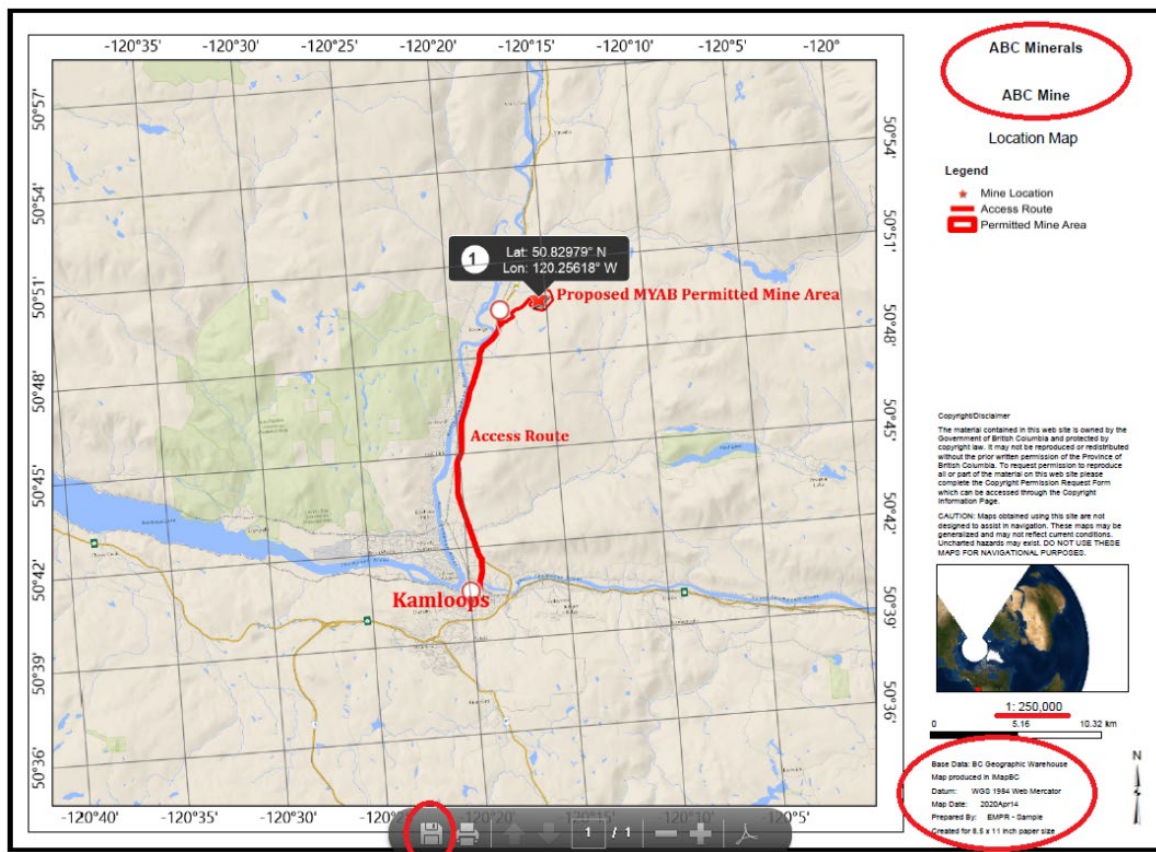


The screenshot shows a web-based interface for creating a map. On the left, there are two text input fields. The first is labeled "Map Date" and contains the text "2020Apr03". The second is labeled "Prepared By" and contains the text "EMPR Demo". Below these fields are two buttons: "Print" and "Cancel". The "Print" button is highlighted with a red circle. To the right of the input fields is a preview of a map, which appears to be a topographic map of a mountainous area with a river or stream running through it.

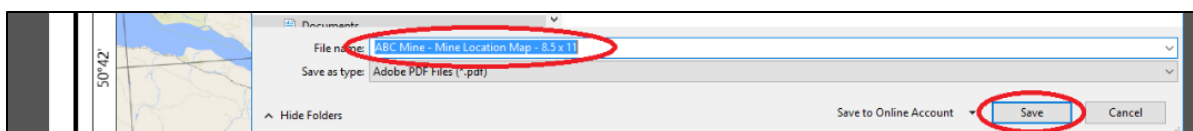
5. Once the tool has finished running, you'll see the option to open the map by clicking the **Open File** button.



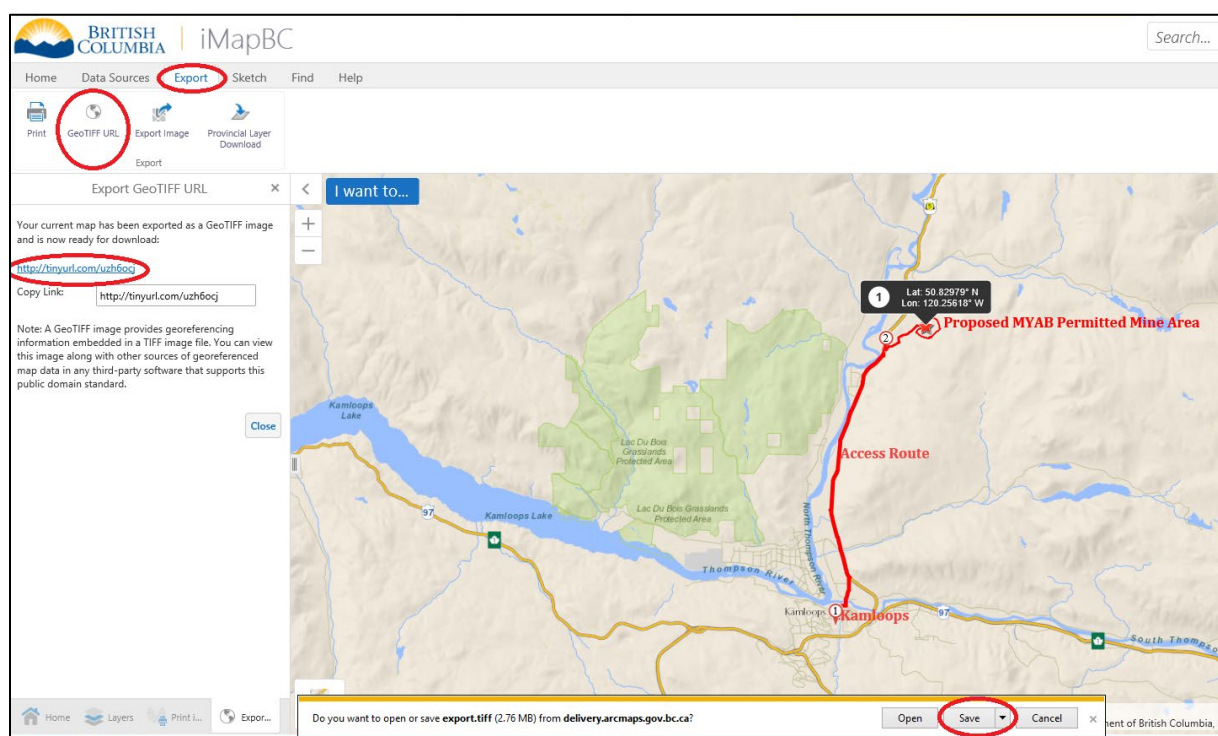
6. The map will open in a new tab, here you can see what edits might need to be made and you can re-run the tool as many times as you want.
7. Save the PDF map to your computer and attach it to your application submission package.



- Enter the filename you wish to save the PDF as and select **Save**.



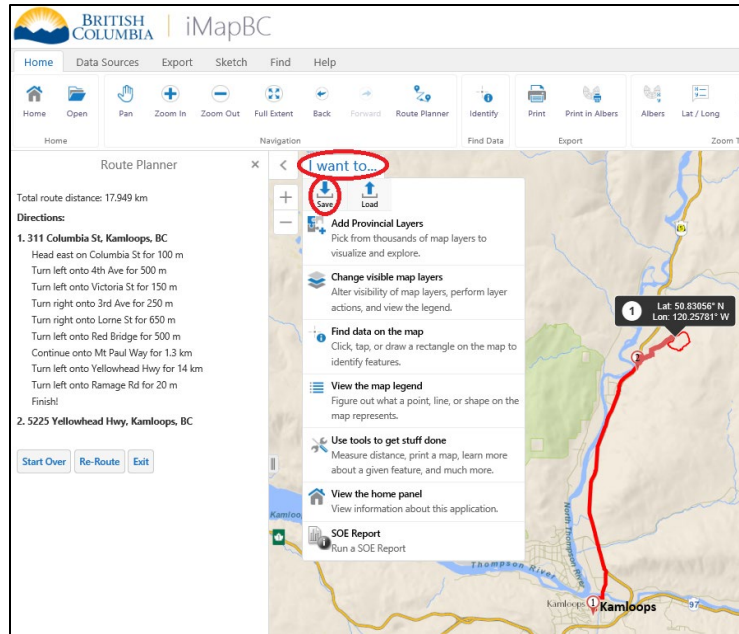
Note: In addition to a PDF, you may also want to later export the map as a georeferenced GeoTIFF for use on mobile GIS applications. Mines Inspectors find this useful during the permit review process and currently the PDF maps created in iMapBC do not include georeferencing metadata for loading onto mobile devices automatically.



3.6 Save this iMapBC Session

It is recommended to save the iMapBC session for future reference. In addition, users can attach their session files along with their application package to the Ministry. It is advised to save your session after exporting your maps and saving your markup as shapefiles.

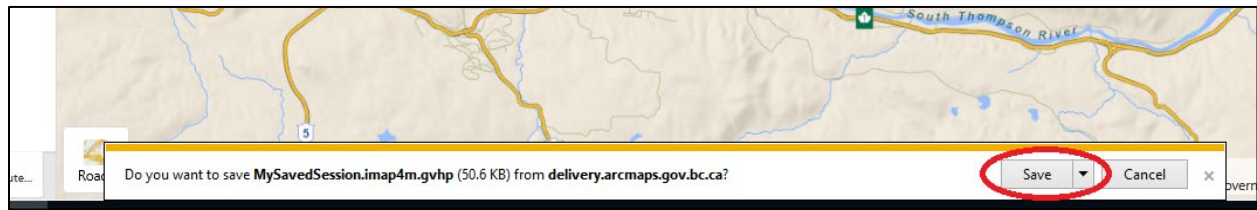
1. On the map, click the **I want to...** menu.
2. Select **Save** from the top of the menu.



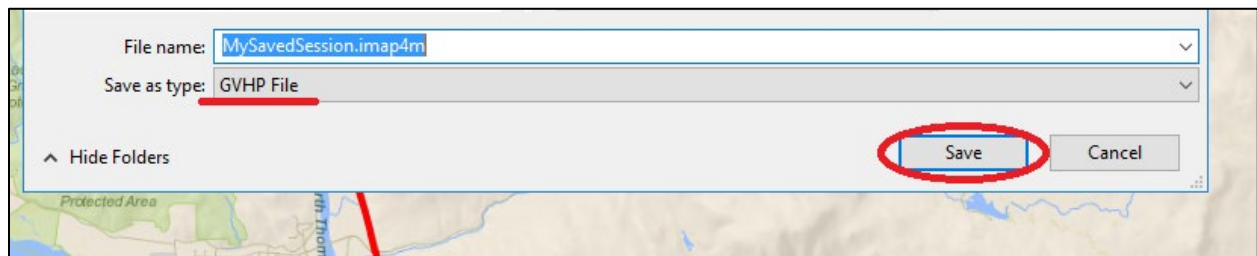
3. Enter a **Name** for your map session and provide a **description**, as needed.
4. Click **Save**.



5. Your browser will save the session to the downloads folder on your computer as a GVHP file.
 - Your default location may be similar to this:
C:\Users\username\Downloads\MySavedSession.imap4m.gvhp



- Choose a different location and file name if you wish.



4. Title (Tenure) Map

For Mineral & Coal Exploration, Industrial Mineral Quarries, and Placer Permits

To create a Title (Tenure) Map in iMapBC, please follow the instructions in the previous sections on how to download and open the Mines Act Permit Application - iMapBC Project File Template (Section 2), and how to load or create your map content required in your map (Section 3.2 to 3.5).

Map Content required on your Title (Tenure) Map:

- **Mineral, placer, or coal title(s)**
- **Proposed and/or existing permitted mine area**
- **Geographic coordinates of mine**
- Note: Please ensure all these map contents are clearly labelled.

Turn on the following layers from the **Layers** panel:

- Mineral, Placer, and Coal Titles
- Mineral and Placer Subsurface Crown Grants

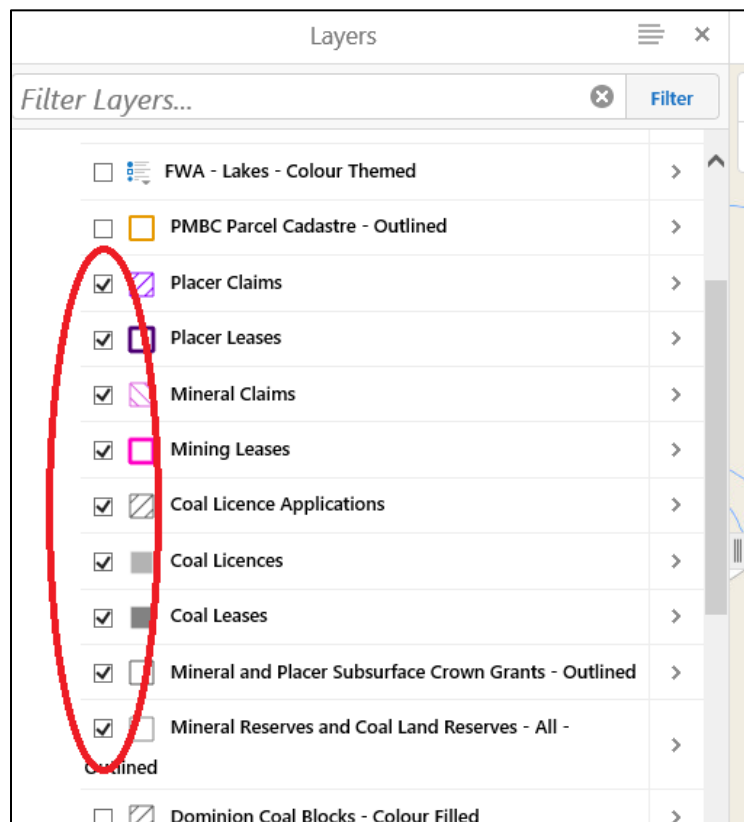
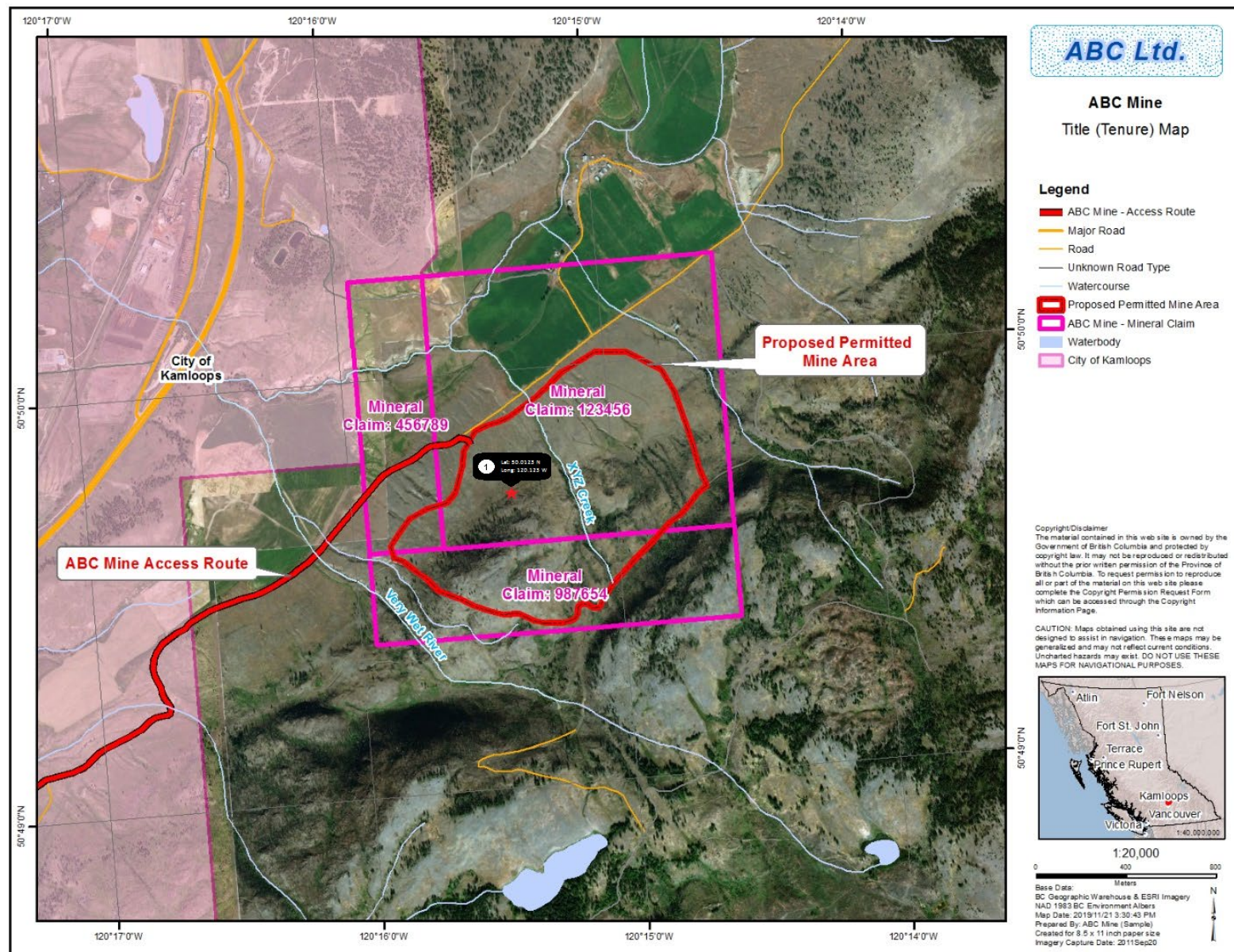


Figure 2. Sample Title (Tenure) Map



5. Land Title (or Licence of Occupation) Map

For Sand and Gravel Permits

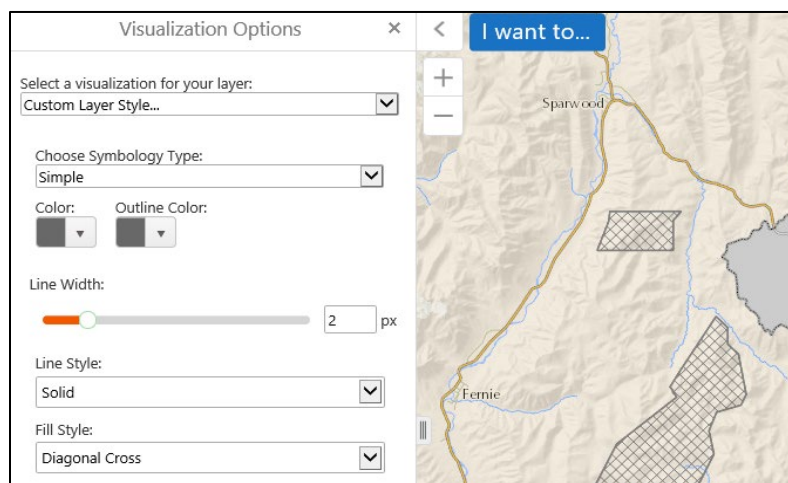
To create a Land Title (or Licence of Occupation) Map in iMapBC, please follow the instructions in the previous sections on how to download and open the Mines Act Permit Application - iMapBC Project File Template (Section 2), and how to load or create your map content required in your map (Section 3.2 to 3.5).

Map Content required on your Land Title (or Licence of Occupation) Map:

- **Proposed and/or existing permitted mine area**
- **Geographic coordinates of mine**
- **All land title(s) and/or licence(s) of occupation in and surrounding the site**
- **Additional map feature layers, (e.g., wells, land uses)**
- Note: Please ensure all these map contents are clearly labelled.

Turn on the following layers from the **Layers** panel:

- Mineral, Placer, and Coal Titles
- Mineral and Placer Subsurface Crown Grants
- Mineral Reserve Sites
- Parcel Map BC (PMBC) Parcel Cadastre
 - For Dominion Coal Blocks: This is the definition query to identify the dominion coal blocks if viewing in other GIS software: PID IN ('014832020', '014832038')
- Dominion Coal Blocks: If your mine site is within the vicinity of the Dominion Coal Blocks (between Fernie, Sparwood and the BC/Alberta border), please change the symbology of the layer in iMapBC to a diagonal cross hatch in grey (rgba values: 104, 104, 104, 1) as seen below:



- Federal Transfer Lands
- Historic Places – Recognized
- Harvested Areas of BC (Consolidated Cutblocks)
- National Parks
- Provincial Parks, Ecological Reserves and Protected Areas
- Recreation Areas
- Conservation Lands
- Conservancy Areas
- Wildlife Management Areas
- Local and Regional Greenspaces
- Agricultural Land Reserve (ALR) Polygons
- Indian Reserves
- First Nations Treaty Lands
- First Nations Treaty Related Lands
- First Nations Treaty Areas
- Community Watersheds
- Municipalities

<input checked="" type="checkbox"/>		Historic Places - Recognized	>
<input checked="" type="checkbox"/>		Harvested Areas of BC (Consolidated Cutblocks)	>
<input checked="" type="checkbox"/>		National Parks - Colour Filled	>
<input checked="" type="checkbox"/>		Provincial Parks, Eco Reserves and Protected Areas - All - Tantalus - Colour Filled	>
<input checked="" type="checkbox"/>		Recreation Areas - Tantalus - Colour Filled	>
<input checked="" type="checkbox"/>		Conservation Lands - All	>
<input checked="" type="checkbox"/>		Conservancy Areas - Tantalus - Colour Filled	>
<input checked="" type="checkbox"/>		Wildlife Management Areas - Tantalus - Colour Filled	>
<input checked="" type="checkbox"/>		Local and Regional Greenspaces - Colour Filled	>
<input checked="" type="checkbox"/>		ALR Polygons	>
<input checked="" type="checkbox"/>		Indian Reserves - Colour Filled	>
<input checked="" type="checkbox"/>		First Nations Treaty Lands - All	>
<input checked="" type="checkbox"/>		First Nations Treaty Related Lands - Colour Themed	>
<input checked="" type="checkbox"/>		First Nations Treaty Areas - Color Themed	>
<input checked="" type="checkbox"/>		Community Watersheds	>
<input checked="" type="checkbox"/>		Municipalities - ABMS - Colour Themed	>

If you know of other land interests/titles/claims/tenures not included in the template project file then please search for these additional layers to add to the map and make sure to include clear labels for each feature.

1. From the **Data Sources** toolbar tab, select **Add Provincial Layers**



2. Search for the layers of interest. Click the checkbox to the left of the layer name and click **OK** to add it to the map and Layer panel.

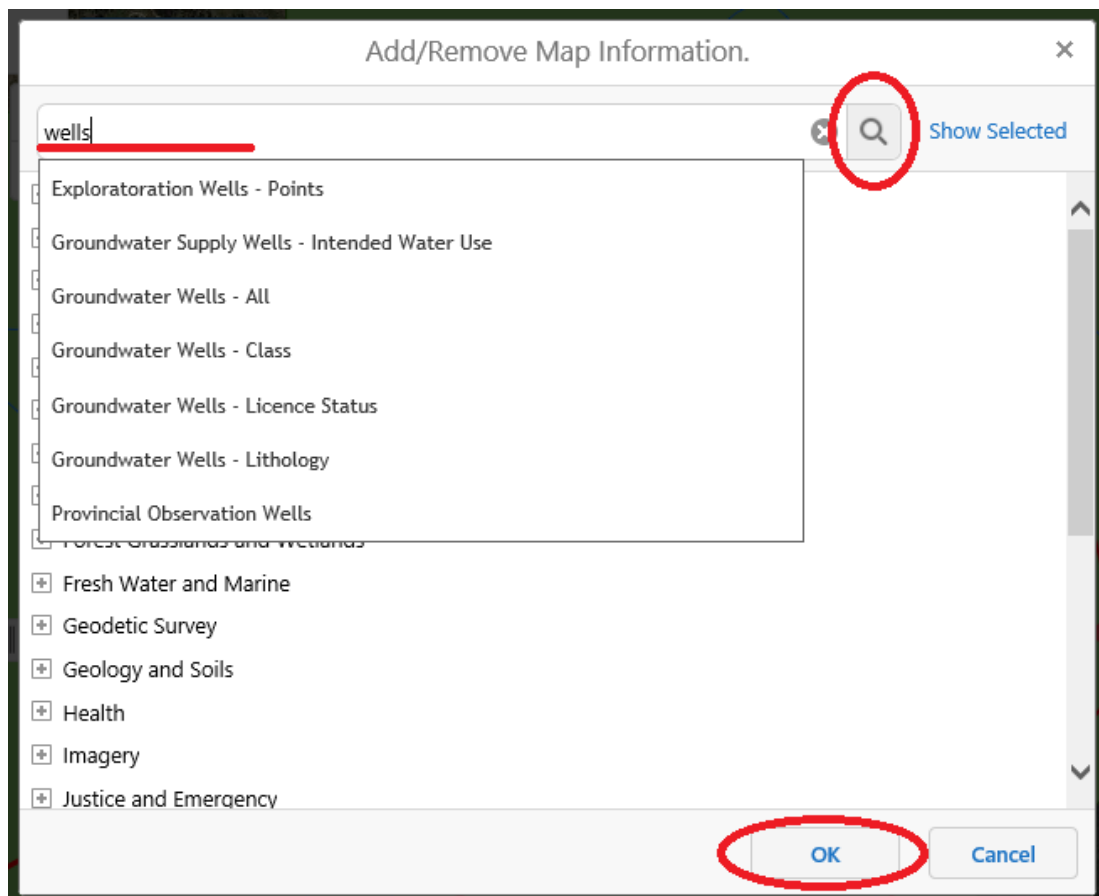
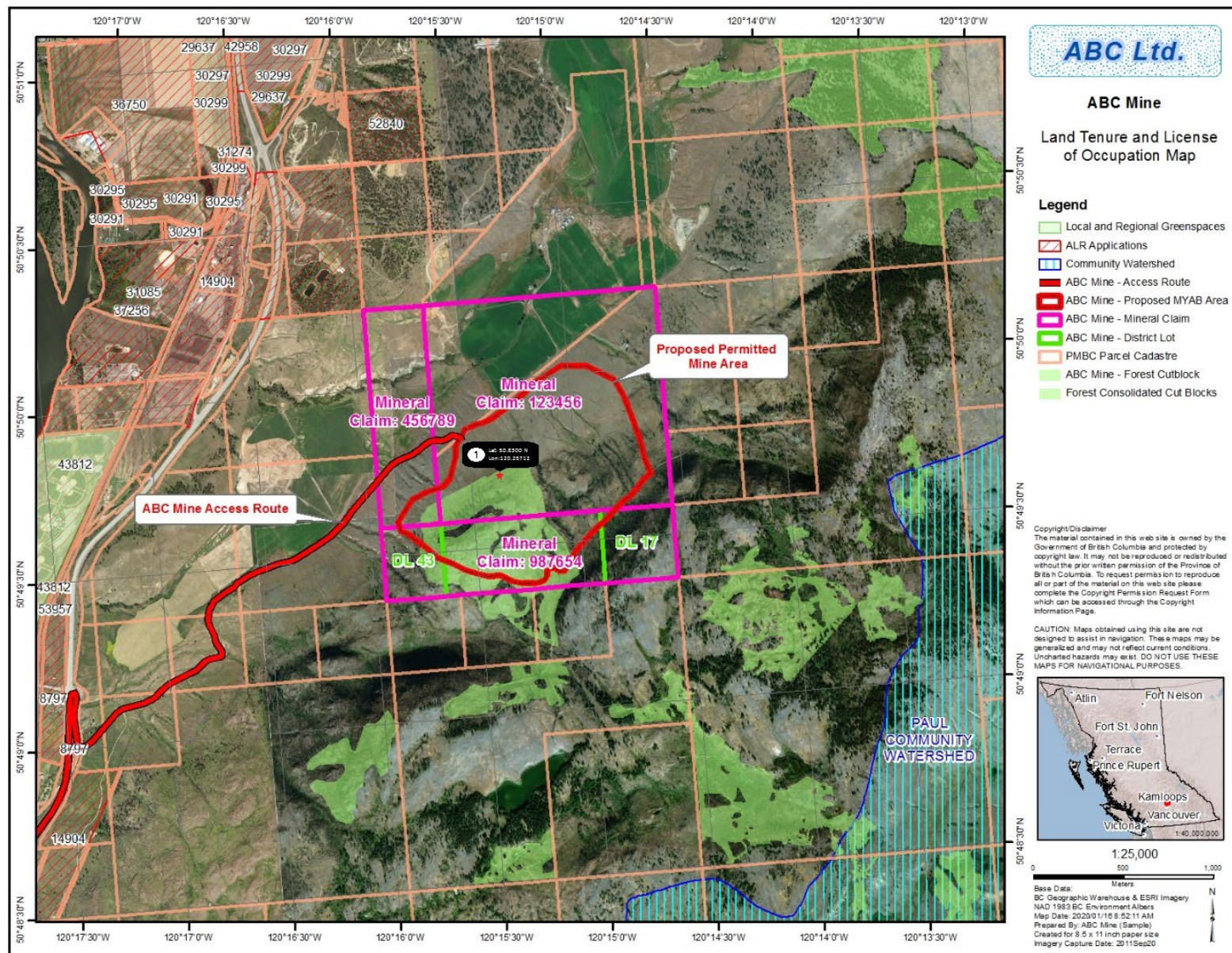


Figure 3. Sample Land Title and Licence of Occupation Map



6. Proposed and/or Permitted Mine Area Map

6.1 For Mineral and Coal Exploration, and Placer Permits

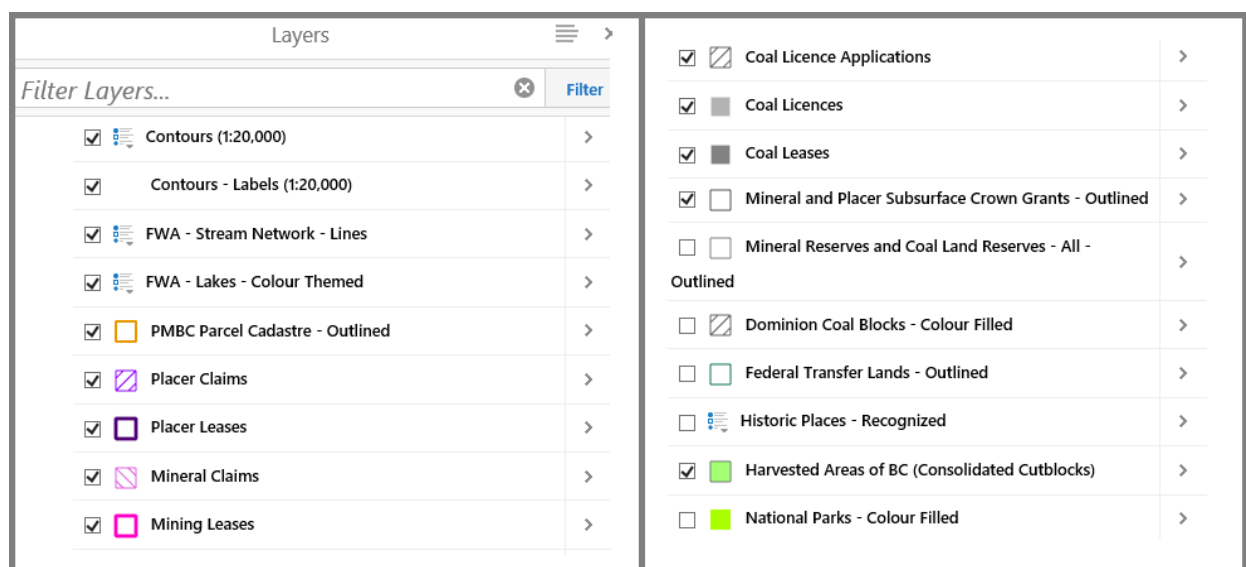
To create a Proposed and/or Permitted Mine Area Map in iMapBC, please follow the instructions in the previous sections on how to download and open the Mines Act Permit Application - iMapBC Project File Template (Section 2), and how to load or create your map content required in your map (Section 3.2 to 3.5).

Map Content required on your Proposed and/or Permitted Mine Area Map for Mineral and Coal Exploration, and Placer:

- **Proposed and/or existing permitted mine area**
- **Proposed disturbance and reclamation activities**
- **Existing disturbance and reclamation activities**
- Note: Please ensure all these map contents are clearly labelled.

Turn on the following layers from the **Layers** panel:

- Contours
- Fresh Water Atlas (FWA) – Stream Network
- Fresh Water Atlas (FWA) – Lakes
- Parcel Map BC (PMBC) Parcel Cadastre
- Mineral, Placer and Coal Titles
- Mineral and Placer Subsurface Crown Grants
- Harvested Areas of BC (Consolidated Cutblocks)



6.2 For Sand and Gravel, and Industrial Mineral Quarry Permits

To create a Proposed and/or Permitted Mine Area Map in iMapBC, please follow the instructions in the previous sections on how to download and open the Mines Act Permit Application - iMapBC Project File Template (Section 2), and how to load or create your map content required in your map (Section 3.2 to 3.5).

Map Content required on your Proposed and/or Permitted Mine Area Map for Sand and Gravel and Industrial Mineral Quarries:

- **Proposed or existing permitted mine area**
- **Proposed disturbance and reclamation activities**
- **Existing disturbance and reclamation activities**
- **Excavation set back**
- **Cross/long section location**
- Note: Please ensure all these map contents are clearly labelled.

Turn on the following layers from the **Layers** panel:

- Contours
- Fresh Water Atlas (FWA) – Stream Network
- Fresh Water Atlas (FWA) – Lakes
- Parcel Map BC (PMBC) Parcel Cadastre
- Mineral, Placer and Coal Titles
- Mineral and Placer Subsurface Crown Grants
- Harvested Areas of BC (Consolidated Cutblocks)

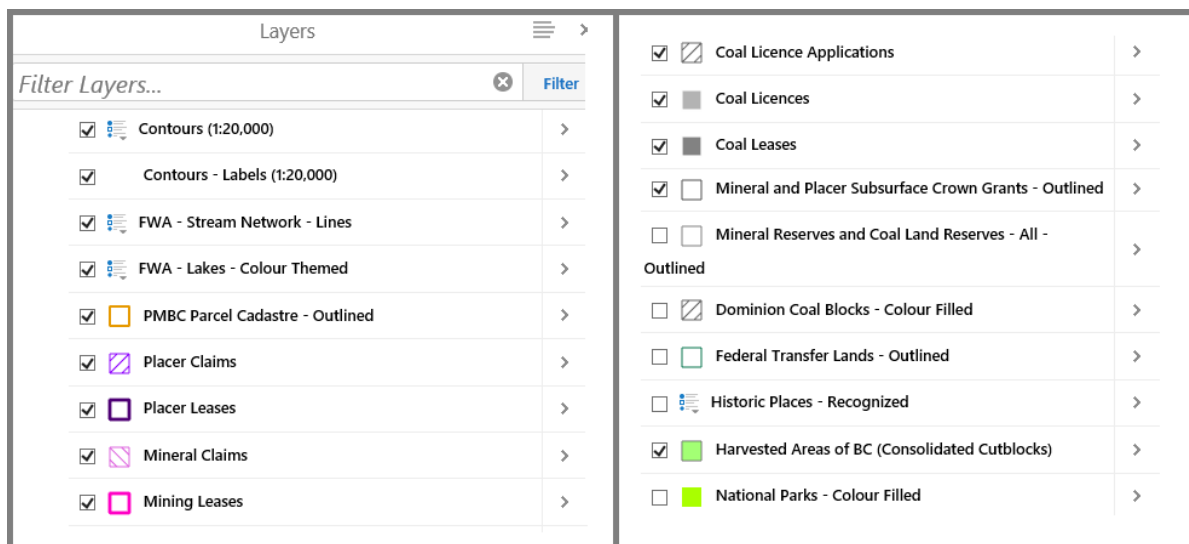
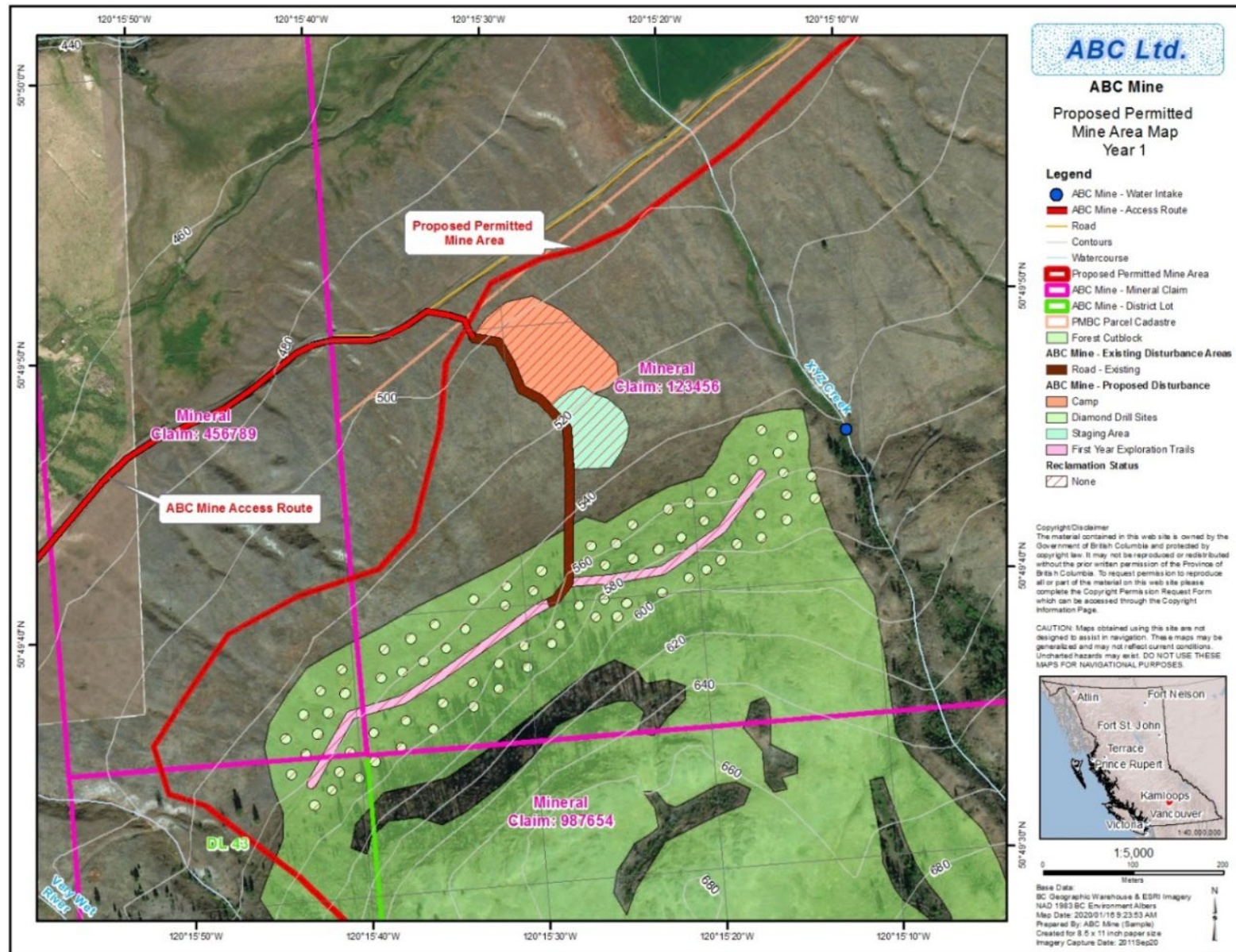


Figure 4. Sample Proposed Permitted Mine Area Map



7. Overview Map(s) (if required)

It may be necessary to create one or more overview maps in situations where your mine site is very remote and/or too small/large to visibly see enough detail in the maps required. Please create an overview map to highlight your map extent(s) in relation to the nearest community. To create an Overview Map in iMapBC, please follow the instructions in the previous sections on how to download and open Mines Act Permit Application - iMapBC Project File Template (Section 2), and how to load or create your map content required in your map (Section 3.2 to 3.5).

Map Content required on your Overview Map(s):

- **Basemap features**
- **Map dependent elements**
- **Location and extent of the larger scale maps included in the map submission**

Appendix 1: Layers needed on each map

Mapping features must be consistent across all maps within an application or report. For example, the same polygon must be used for the MYAB area on every map that it is displayed on. The topography, roads, streams, etc. must be consistent across all maps (i.e., from the same base data source, in the same units, and in the same geographic location).

The [BC Geographic Warehouse](#) contains data and metadata for many publicly available datasets. The following layers are suggested for consistency between map submissions:

All Maps:

- Major Cities: [WHSE BASEMAPPING.BC MAJOR CITIES POINTS 500M](#)
- Digital Road Atlas: [WHSE BASEMAPPING.DRA DGTL ROAD ATLAS MPAR SP](#)
- Municipalities: [WHSE LEGAL ADMIN BOUNDARIES.ABMS MUNICIPALITIES SP](#)

Title (Tenure) Map:

- Mineral, Placer and Coal Titles: [WHSE MINERAL TENURE.MTA ACQUIRED TENURE SVW](#)
- Mineral and Placer Subsurface Crown Grants:
[WHSE MINERAL TENURE.MTA CROWN GRANT MIN CLAIM SVW](#)

Land Title Map:

- Mineral, Placer and Coal Titles: [WHSE MINERAL TENURE.MTA ACQUIRED TENURE SVW](#)
- Mineral and Placer Subsurface Crown Grants:
[WHSE MINERAL TENURE.MTA CROWN GRANT MIN CLAIM SVW](#)
- Mineral Reserve Sites: [WHSE MINERAL TENURE.MTA SITE SP](#)
- Parcel Map BC (PMBC) Parcel Cadastre:
[WHSE CADASTRE.PMBC PARCEL FABRIC POLY SVW](#)
- Dominion Coal Blocks: If your mine site is within the vicinity of the Dominion Coal Blocks (between Fernie, Sparwood and the BC/Alberta border) , please change the symbology of the layer in iMapBC to a diagonal cross hatch in grey (rgba values: 104, 104, 104, 1): [WHSE CADASTRE.PMBC PARCEL FABRIC POLY SVW](#)
 - For Dominion Coal Blocks: This is the definition query to identify the dominion coal blocks in the PMBC dataset if viewing in other GIS software: PID IN ('014832020', '014832038')
- Federal Transfer Lands:
[WHSE MINERAL TENURE.MTA FEDERAL TRANSFER LANDS SVW](#)
- Historic Places – Recognized:
[WHSE HUMAN CULTURAL ECONOMIC.HIST HISTORIC ENVIRONMENTS SP](#)
- Harvested Areas of BC (Consolidated Cutblocks):
[WHSE FOREST VEGETATION.VEG CONSOLIDATED CUT BLOCKS SP](#)
- National Parks: [WHSE ADMIN BOUNDARIES.CLAB NATIONAL PARKS](#)
- Provincial Parks, Ecological Reserves and Protected Areas:

[WHSE TANTALIS.TA PARK ECORES PA SVW](#)

- Recreation Areas: [WHSE TANTALIS.TA PARK ECORES PA SVW](#)
- Conservation Lands:
[WHSE LEGAL ADMIN BOUNDARIES.WCL CONSERVATION LANDS SP](#)
- Conservancy Areas: [WHSE TANTALIS.TA CONSERVANCY AREAS SVW](#)
- Wildlife Management Areas: [WHSE TANTALIS.TA WILDLIFE MGMT AREAS SVW](#)
- Local and Regional Greenspaces:
[WHSE BASEMAPPING.GBA LOCAL REG GREENSPACES SP](#)
- Agricultural Land Reserve (ALR) Polygons:
[WHSE LEGAL ADMIN BOUNDARIES.OATS ALR POLYS](#)
- Indian Reserves: [WHSE ADMIN BOUNDARIES.CLAB INDIAN RESERVES](#)
- First Nations Treaty Lands: [WHSE LEGAL ADMIN BOUNDARIES.FNT TREATY LAND SP](#)
- First Nations Treaty Related Lands:
[WHSE LEGAL ADMIN BOUNDARIES.FNT TREATY RELATED LAND SP](#)
- First Nations Treaty Areas: [WHSE LEGAL ADMIN BOUNDARIES.FNT TREATY AREA SP](#)
- Community Watersheds:
[WHSE WATER MANAGEMENT.WLS COMMUNITY WS PUB SVW](#)
- Municipalities: [WHSE LEGAL ADMIN BOUNDARIES.ABMS MUNICIPALITIES SP](#)

Proposed Permitted Mine Area Map:

- Contours: [WHSE BASEMAPPING.TRIM CONTOUR LINES](#)
- Fresh Water Atlas – Stream Network:
[WHSE BASEMAPPING.FWA STREAM NETWORKS SP](#)
- Fresh Water Atlas – Lakes: [WHSE BASEMAPPING.FWA LAKES POLY](#)
- Parcel Map BC Parcel Cadastre: [WHSE CADASTRE.PMBC PARCEL FABRIC POLY SVW](#)
- Mineral, Placer and Coal Titles: [WHSE MINERAL TENURE.MTA ACQUIRED TENURE SVW](#)
- Forest Harvest Areas:
[WHSE FOREST VEGETATION.VEG CONSOLIDATED CUT BLOCKS SP](#)
- Mineral and Placer Subsurface Crown Grants:
[WHSE MINERAL TENURE.MTA CROWN GRANT MIN CLAIM SVW](#)