How to Create Spatial files:
Shapefiles, KML, and Geomark

This document is a guide on how a user can create their own spatial files using BC government geographic web services.

iMapBC is a public web-based mapping tool which allows users to analyze thousands of geographic datasets stored in the British Columbia Geographic Warehouse (BCGW). iMapBC supports exporting CSV, GeoJSON, ESRI File Geodatabases, and ArcView Shapefiles of various Provincial Layers.

Geomark is a public web service that allows a user to create a spatial file from one spatial format and convert it to another spatial format for sharing purposes.

This guide will walk the user through identifying and querying layers using iMapBC and exporting the results as an ArcView Shape (i.e. Shapefile). Furthermore, the guide will walk the user through the process of creating a Geomark using the Government of British Columbia's Geomark Webservice.

Although this how-to document will use the Placer Claim layer as an example, you can follow these instructions for any layer within the BCGW that allows for public download. When exporting, each individual layer must be downloaded as a separate order.

NOTE: The data download button in iMapBC does not work with Internet Explorer. Please use Google Chrome or Firefox.

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## iMapBC Background: Loading and Adding Layers

This section briefly outlines the steps taken to load and add layers in iMapBC. If you have never used iMapBC before, please read through this section carefully. If you have previously used iMapBC to load layers and data, please feel free to skip this section.

1. Open Google Chrome or Firefox and navigate to the iMapBC homepage.
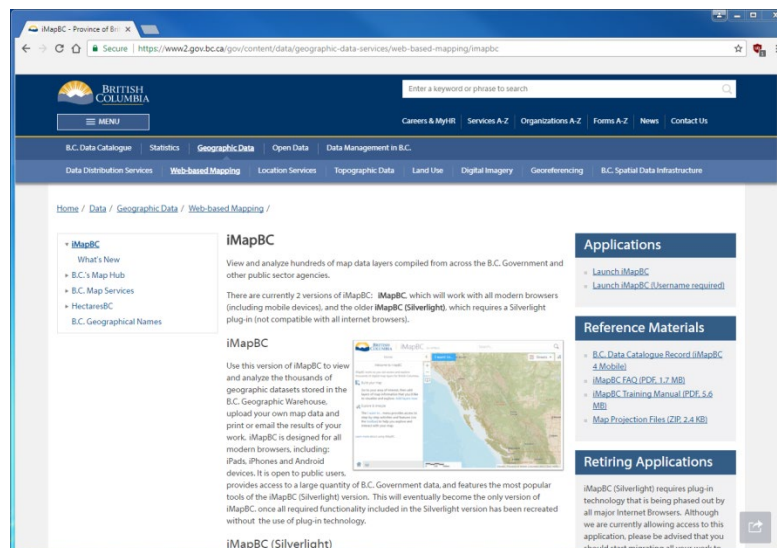
2. Launch iMapBC by one of the following:
- Clicking on the **Launch iMapBC** button under the **Applications** header
- Clicking on the **Launch iMapBC (Username required)** button under the **Applications** header (requires an IDIR or BCeID).

o IDIR and BCeID users can save map sessions using the **Save** button found under the **I want to…** drop-down menu.
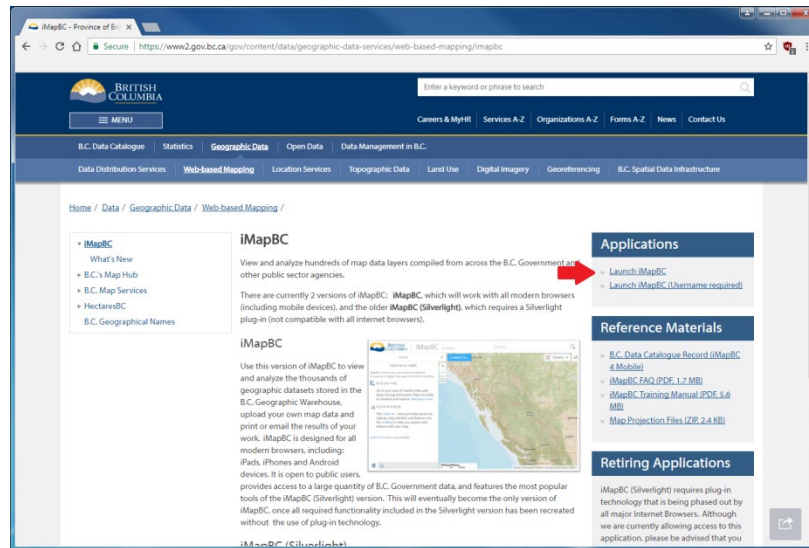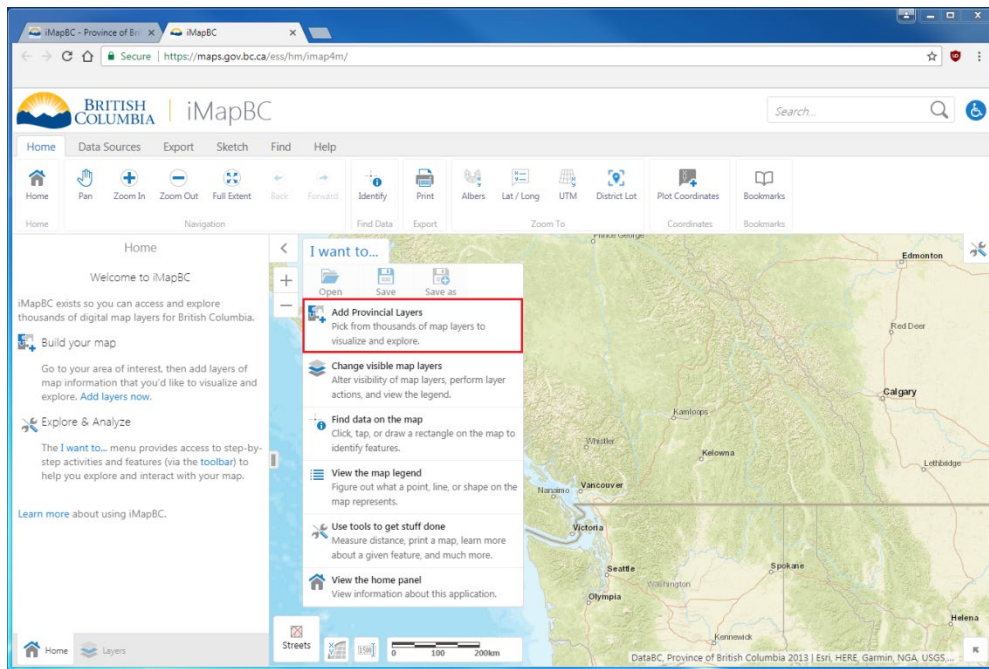

3. Click on the **I want to…** button located near the top left corner of the map.
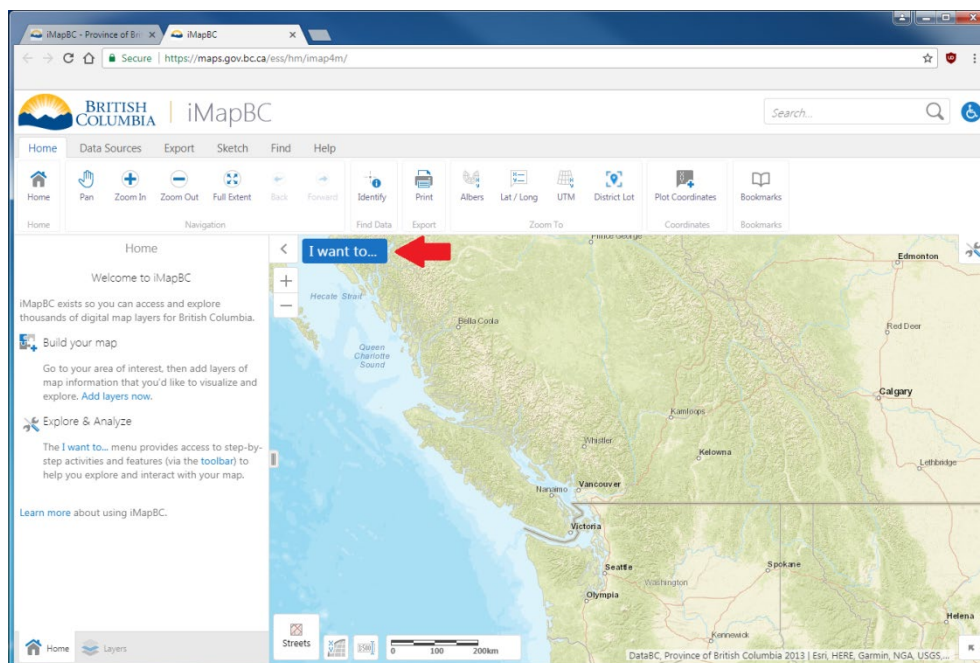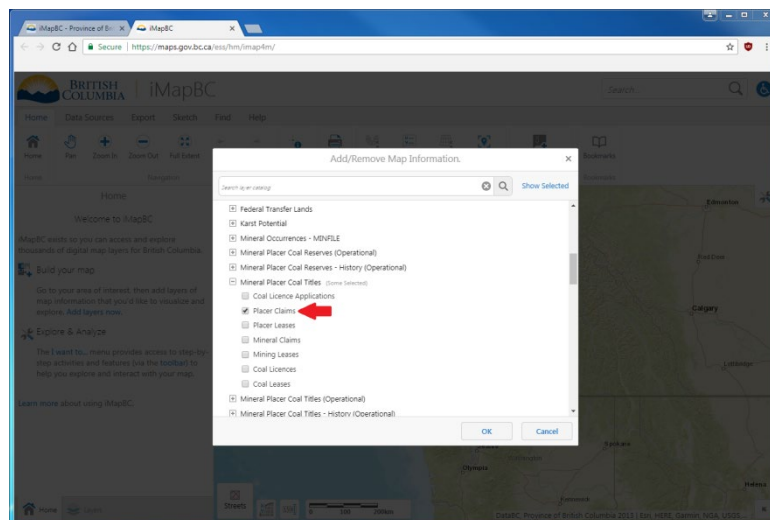

If the layout of iMapBC you see in your browser is different from this screenshot, make sure the URL is correct. If the problem persists, try clearing your browsers cache.

4. In the drop-down menu, click on the **Add Provincial Layers** option.

5. Under the **Add/Remove Map Information** pop-up menu:
- Navigate down to **Mining and Petroleum** and click on the ⊞ button; then navigate to the **Mineral Placer Coal Titles** and click on the ⊞ button.
- Apply a checkmark on the box adjacent to **Placer Claims** and click OK.

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How to Create Shapefiles Using iMapBC
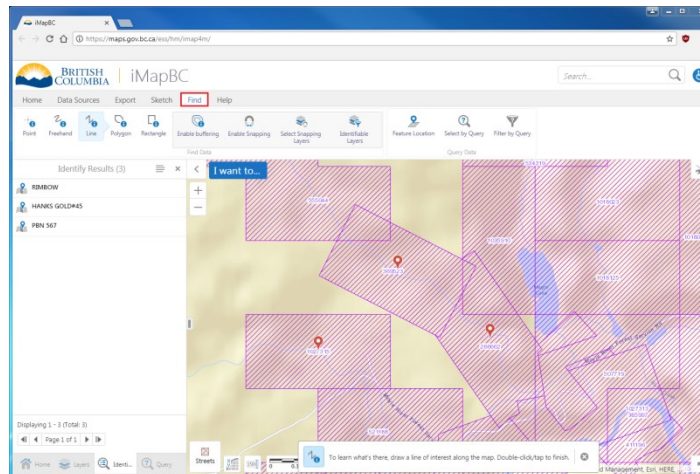
a) Identify

1. If you haven't already loaded your layers, follow steps 1 – 5 in section iMapBC Background: Loading and Adding Layers.

2. Before using the **Identify** tool, zoom to the area of interest using the **Zoom In** tool.

- Using the **Zoom In** tool:
   - From the **Home** tab, click on the **Zoom In** button.
   - Left click and drag until the grey box outlines the area of the map you wish to enlarge.
   - Repeat the previous process until you've reached your desired location.
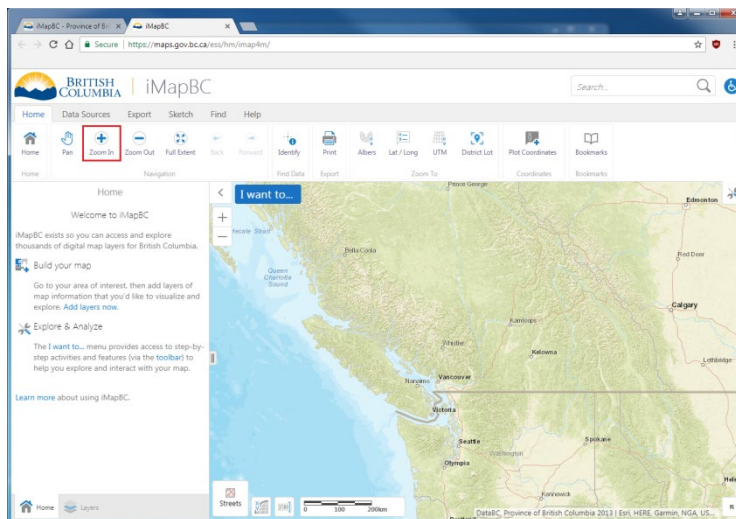
3. Navigate to and click on the **Find** tab. There are five different identify tools: Point, Freehand, Line, Polygon, and Rectangle.

- The **Point** identify tool is used to select a single feature by clicking on it.
- The **Freehand** identify tool is used select one or more features by holding down the left mouse button down and drawing a shape.
- The **Line** identify tool is used to select one or more features by clicking the left mouse button once to begin a line and double clicking twice to complete the line.
- The **Polygon** identify tool is used to select one or more features encapsulated within a polygon. A polygon is created using the same methodology as the **Line** tool.

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- The **Rectangle** identify tool is used to select one or more features encapsulated within a rectangle. To create the rectangle, left click and drag your cursor in any direction.
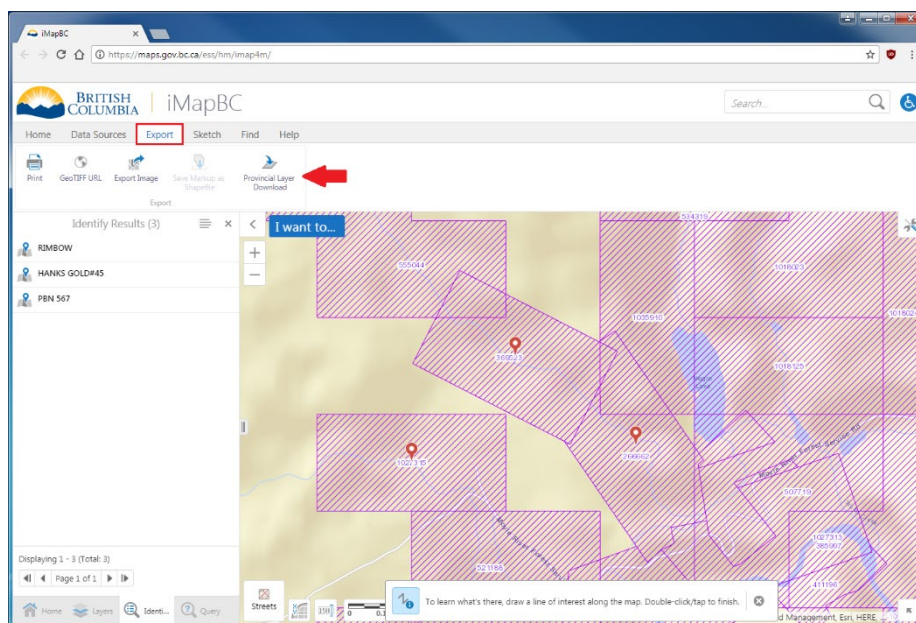

In this example, we will use the **Line** identify tool to select titles 266662, 369523, and 1027315. Click on the **Line** identify tool.
- Trace a pathway that touches only titles 266662, 369523, and 1027315
- Double click on the identify tool to complete the selection and open the **Identify Results (3)** tab
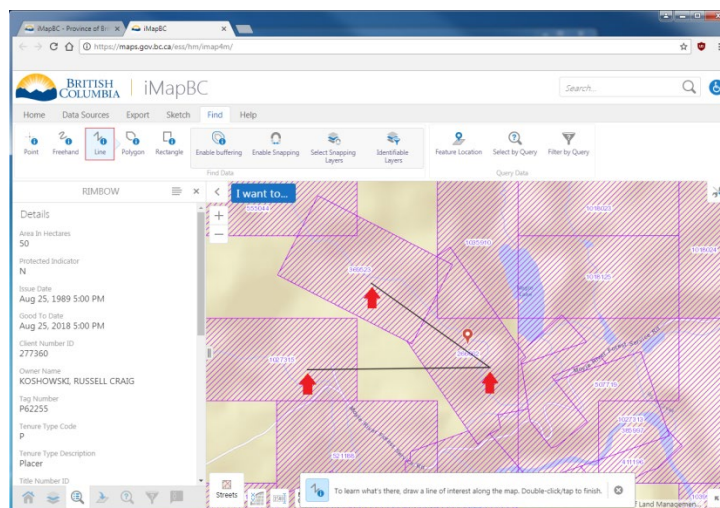
4. Navigate to the **Export** tab:
- Click on the **Provincial Layer Download** button

5. On the left side of the application, a **Data Download Service** tab will open with the follow sections:

- The **Area of Interest** section is an overview of the selected Extent and Data
  Clipping Method chosen for the selected layer(s)
- Below the **Area of Interest** section is the where the user chooses the Extent and Data Clipping Method for their map
- The **Data Clipping Method**: section refers to the geoprocessing method used to prepare the data
  - o An **Intersect** will split a feature class anywhere it overlaps with another feature class
  - o A **Clip** will cut out a piece of one feature class using the feature of another feature class, i.e. a cookie cutter
- The **Layers** section contains all the layers that are available for download.
- If a subset of a layer is selected, the (subset) symbol will be visible.
  - o A subset refers to a portion of a selected layer, e.g. an identified/queried/filtered placer claim
  - o A non-selected layer subset for download is identified by a symbol
  - o A selected layer subset for download is identified by a symbol

> **Map Extent**: Download only data from the selected layers visible in the map window.
>
> **Full Database**: Download the entire dataset for the province of British Columbia.

To export Placer Claims 266662, 1027315, and 369523, for example, complete the following tasks:
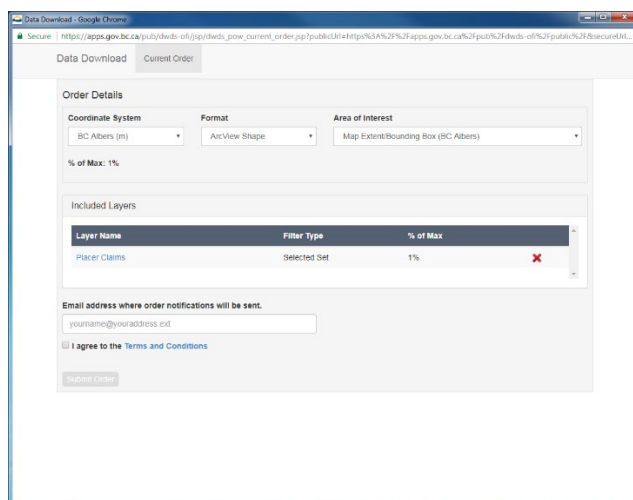
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- Under the **Using**: section, select **Map Extent**. (Notice the choice selected is added as a blue label beside the Area of Interest heading)
- Under the **Data Clipping Method**: section, select Clip. (Notice the choice selected is added as a blue label beside the Area of Interest heading)
- By default, a selected layer is toggled off. Navigate to the selected Placer Claims and turn on the selected layers by clicking ⬤ on the symbol. The resulting symbol should turn blue, ⬤. (Notice the number of layers selected is added as a blue label beside the Layers heading)
- Click on Prepare Order…

NOTE: Internet Explorer will open the pop-box as a blank. Please use Google Chrome or Firefox to avoid this issue.
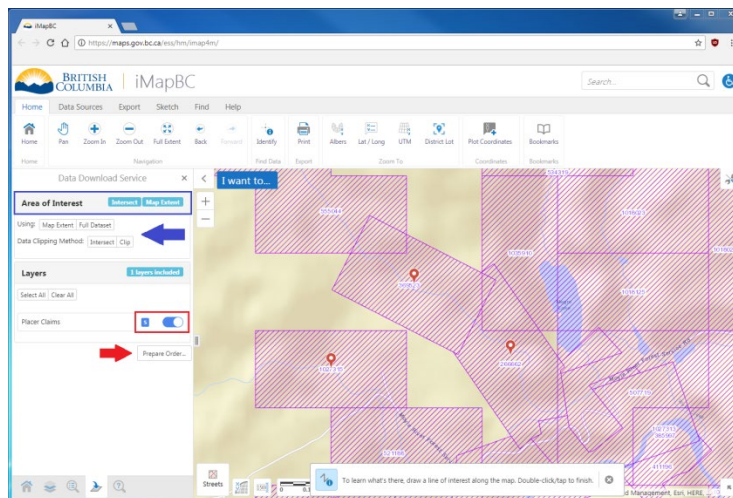
6. In the **Data Download** pop-up window, fill out the **Order Details** for your request:
- **Coordinate System**: BC Albers (m)
- **Format**: ArcView Shape
- **Area of Interest**: Map Extent/Bounding Box (BC Albers)
- **Included Layers**: List of all downloadable layers in your project (i.e. Placer Claims)
- **Email address where order notifications will be sent**: email@server.com
- **I agree to the Terms and Conditions**: Checked **NOTE: If you do not agree to the terms and conditions, you will not be able to download your data.**
- Click on the **Submit Order** button

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7. Upon clicking **Submit Order**, you will receive a notice on screen stating "Your Order has been successfully submitted! Your Order # is <your order number>" You will receive notification via email shortly. Shortly thereafter, NRS Applications will complete your request and send you a ZIP folder containing the requested shapefile. If you are unclear on how to unzip a file, please follow the procedures outlined here.
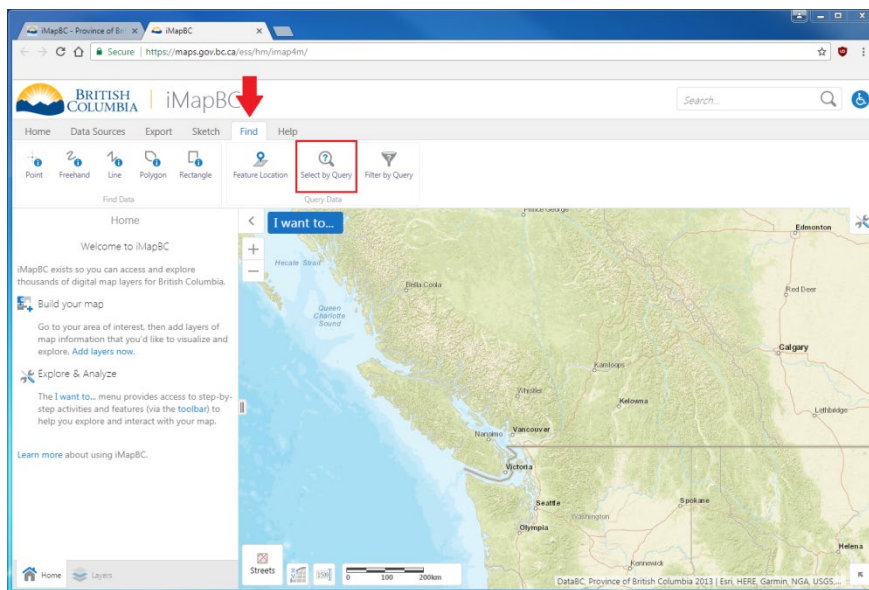

If you have not received your shapefile after an extended period, try completing the order again.
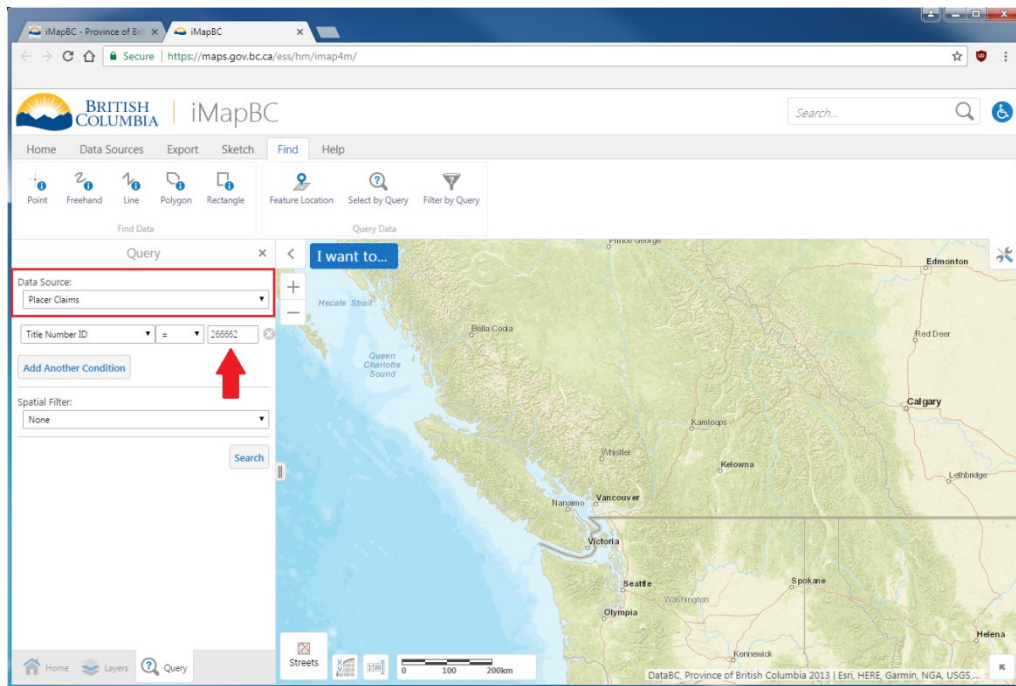
b) Select by Query

1. If you haven't already loaded your layers, follow steps 1 – 5 in section iMapBC Background: Loading and Adding Layers.

2. Click on the **Find** tab:
- Navigate to and click on the **Select by Query** tool

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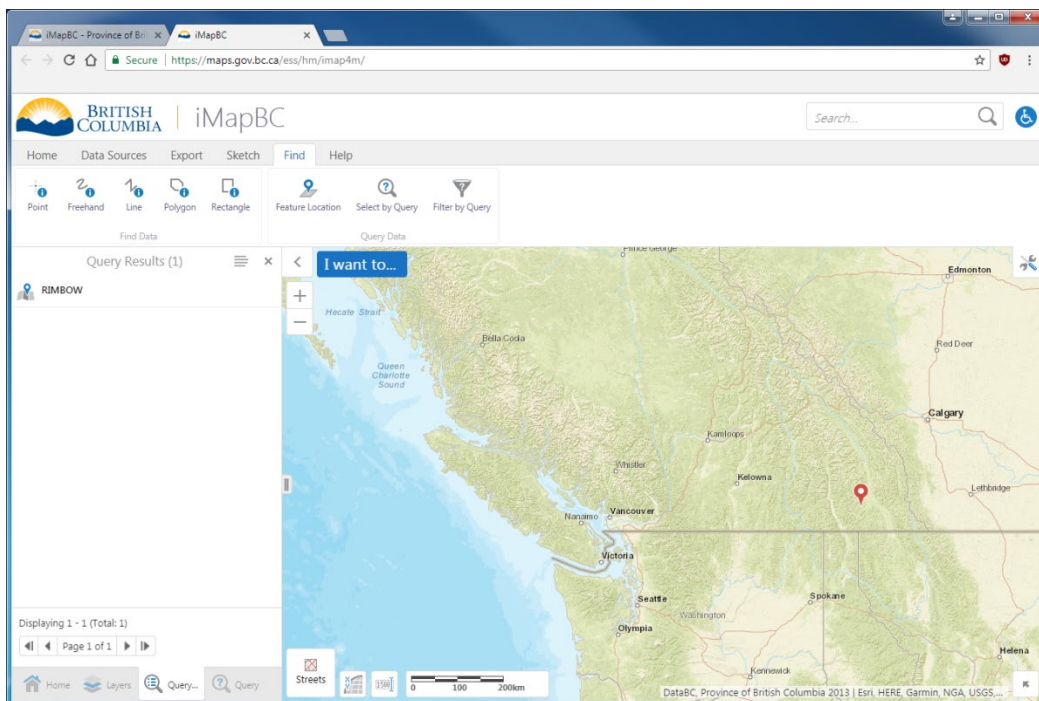www.MineralTitles.gov.bc.ca
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The **Select by Query** tool currently does not support querying for multiple tenures. For details on exporting multiple tenures please see section *a. Identify*

3. A **Query** tab will open on the left side of the application:
- Under **Data Source:** select Placer Claims
- In the drop-down box directly below **Data Source:** (left) choose Title Number ID
- In the drop-down box directly adjacent to Title Number ID choose =
- In the drop-down box directly adjacent to = input the desired Title Number ID, in this case 266662
- Click on the **Search** button

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4. Upon completing the query, the **Query** tab will change to the **Query Results ()** tab:
- The resulting placer claim will be displayed in uppercase letters, e.g. RIMBOW
- Click on RIMBOW to open the claim details and zoom to the selected claim

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5. Click on the query result (RIMBOW). In doing so, two things will occur:
- The **Details** tab will open giving the user all the information available regarding the query results
- The map will zoom to and select the query result. All selected query results will be highlighted in yellow and have a pin in them
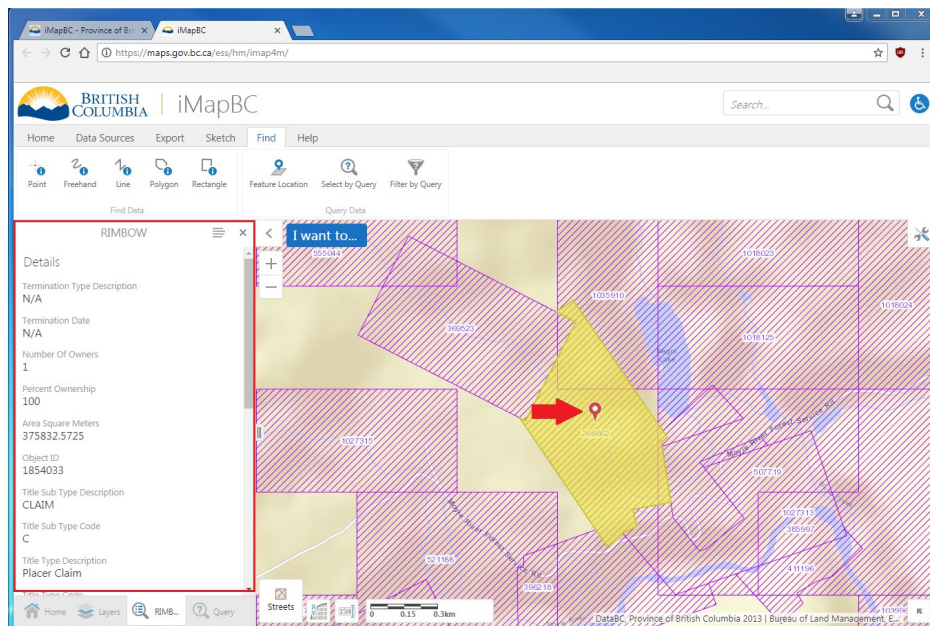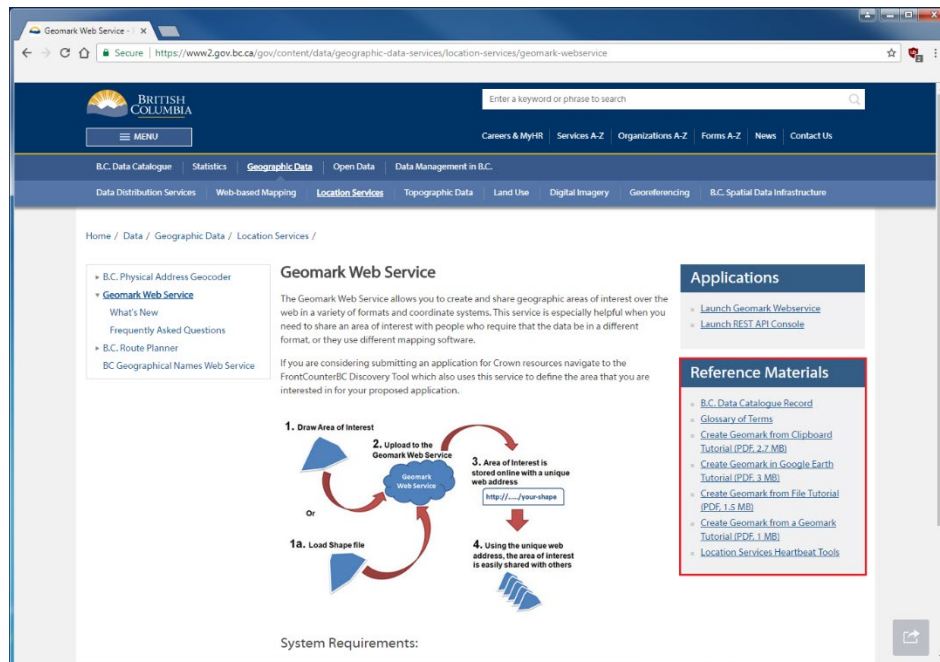

6. To export your shapefile(s), follow steps 4-7 outlined in section a. Identify

How to Create a KML from a Shapefile Using Geomark Webservice

1. Open Google Chrome or Firefox and navigate to the Geomark Webservice homepage

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Under **Reference Materials**, there are several tutorials for creating Geomarks offered by the Government of British Columbia:

- **Create Geomark from File**: An applicant/user has created an area of interest that needs to be shared with a party that does not support that file or coordinate system. This option enables the file to be uploaded and converted to a Geomark so the recipient can download it in a format that is compatible to their computer software
  This option allows the user to upload a shape or other file format into the **Create Geomark from File** form and convert it to a Geomark. There are seven different file formats that can be uploaded and converted

- **Create Geomark from Clipboard:** Use this form to construct a new Geomark from a KML you have copied to the clipboard. Using the clipboard is necessary only if you have Google Earth v. 4.3 or earlier installed on your machine because Create Geomark from Google Earth does not work with these earlier versions.
  NOTE: Only use this option if your Google Earth version is 4.9 or less.

- **Create Geomark from Geomark**: A small business forest company has created multiple Geomark cutblocks using the Geomark Web Service and would like to submit them as a group in one submission to another party
  This option allows the user to create one Geomark from multiple original Geomarks by pasting the multiple Geomark URLs into the address block and

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then selecting 'Create Geomark'. The newly created Geomark will be unique.

- **Create Geomark in Google Earth**: Use this option to open a Google Earth document that allows a Geomark to be created by copying the shape (KML) drawn in Google Earth and pasting it into the form.

For the purposes of this How-To, we will use **Create From File** using the shapefile just created in the steps above for placer claim 266662.

2. From the Geomark Webservices homepage, click on **Launch Geomark Webservice** under the **Applications** tab

3. Open the **Create From File** tab . Input the following parameters:
- **File Format**: ESRI Shapefile (shp)
- **Coordinate system**: 3005 – NAD83 / BC Albers
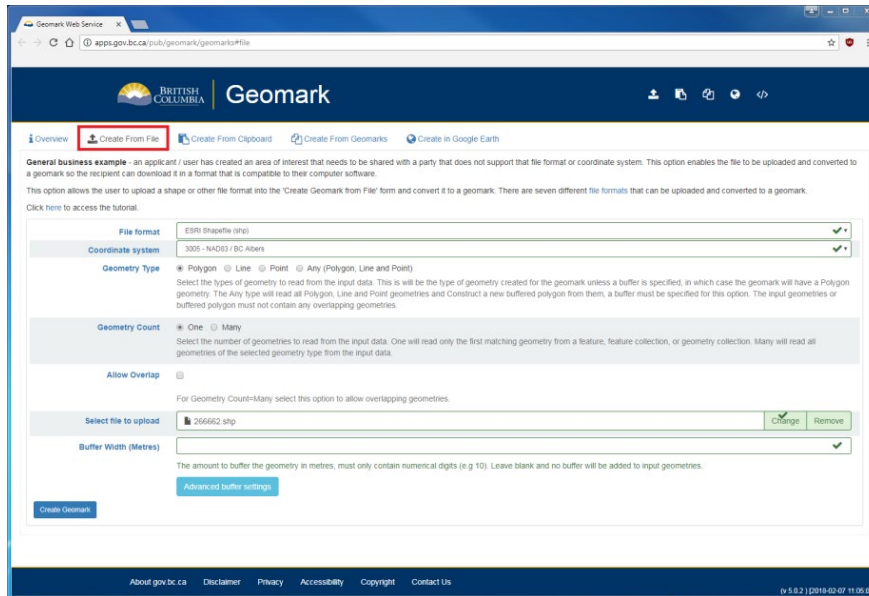- **Geometry Type**: Polygon
- **Geometry Count**: One
NOTE: If you selected more than one tenure (e.g. using the identify method), you must select the Many option.
- **Allow Overlap**: Unchecked
NOTE: If you selected more than one tenure (e.g. using the identify method), you must Check the box.
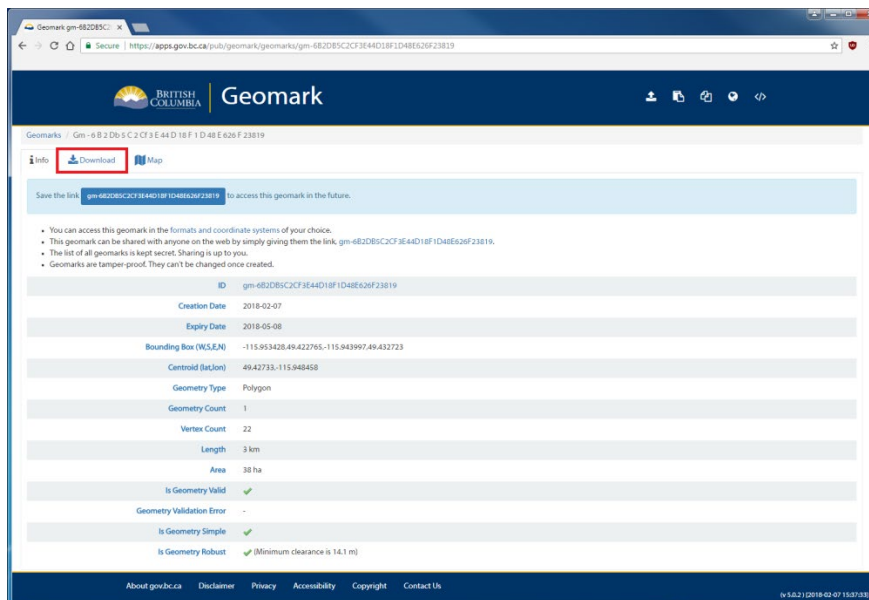- **Select file to upload**: 266662.shp (or any shapefile you wish to Geomark)
- **Buffer Width (Metres)**: Blank

4. Click on the **Create Geomark** button

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5. The resulting **Info** tab of the browser will contain a summary of the properties of the input shapefile
- Click on the **Download** tab

6. To download the KML or KMZ (KMZ is a compressed/zipped version of a KML) for your shapefile, click on the ⬇ button under **WGS 84 (4326)**
- Google Earth is only designed to open WGS 84 coordinate systems. Consequently, all other coordinate systems listed are unavailable for download with respects to KML and KMZ

- By default, a Geomark creates a KML, KMZ, Shapefile, GeoJSON, GML, and WKT for the corresponding input shapefile
- For a quick glance at the spatial location of your shapefile, click on the **Map** tab