Run the Alberta Soil Information Viewer

Navigation and Operation

Government Of Alberta

Alberta Agriculture and Forestry
2016
Run the Alberta Soil Information Viewer: Help with Navigation and Operation

Contents

Contents .......................................................................................................................................................... 0
Introduction .................................................................................................................................................. 3
How to use this Document .......................................................................................................................... 3
Getting Started ............................................................................................................................................. 4
Browser Requirements .................................................................................................................................. 4
Areas of Interaction ........................................................................................................................................ 4
Locations: 1, 5, 6 and 20 ................................................................................................................................ 5
   Locations 2, 3, and 4 Establish and Move to the Area of Interest through: .................................................. 5
Locations 7 through 11: List functioning mode choices for the viewer’s side window: ..................................... 6
Locations 12 through 17: House the Following Standard Tools ....................................................................... 6
Location 18: Update the Current Map Area Scale and Cursor Position Status .................................................... 7
   a. The current scale at which the spatial objects are being presented on the map area of the viewer, and .......... 7
   b. The current latitude and longitude coordinates (in decimal degrees) of the cursor in the mapped area ........ 7
Locations 19 and 20: Provide Alternatives for Selecting Soil Polygons .......................................................... 7
Location 21: Enable Global Zooming Capabilities ....................................................................................... 8
Detailed Description of Icons Tools and Functional Modes ........................................................................... 8
Location 1: Maximizing the Viewer Map Area ............................................................................................... 8
Location 2: Defining and Moving to the Area of Interest ............................................................................... 8
   Define a location of interest by: .................................................................................................................. 8
Location 3: Initiating the Search to the Area of Interest ............................................................................... 9

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Run the Alberta Soil Information Viewer: Help with Navigation and Operation

Location 4: Saving the Area of Interest for Future Sessions .......................................................................................... 9
Location 5: Increasing the Visible Map Area of the Application ..................................................................................... 9
Location 6: Choosing a Function Mode for Viewer ......................................................................................................... 9
Location 7: General Land Information Discovery ............................................................................................................ 9
Location 8: Land Suitability Rating System Information Discovery .................................................................................. 10
Location 9: Automated Soil Polygon Labeling .................................................................................................................. 11
Location 10: Specific Soil Information Discovery ............................................................................................................. 12
Location 11: Digital Soil Inventory Database Query and Extract for Alberta’s Agricultural Area ................................. 14
Location 12: Base Maps Selection and Display .................................................................................................................. 19
Location 13: Layer Visibility Control ................................................................................................................................... 19
Location 14: Linear and Area Measurement ...................................................................................................................... 20
Location 15: Graphical Markup, Label Placement and Buffering ....................................................................................... 21
  Drawing Tools ................................................................................................................................................................. 22
  Text Tool ........................................................................................................................................................................... 24
  Edit, Load and Save Tools ............................................................................................................................................... 24
  Save current (markup and label) drawing ......................................................................................................................... 26
  Load saved (markup and label) drawing .......................................................................................................................... 27
  Temporary Backup ............................................................................................................................................................ 27
  Buffer Creation ................................................................................................................................................................. 27
  Tips and tricks: ................................................................................................................................................................. 29
Location 16: Printing And Screen Capture ....................................................................................................................... 30
  Printing Options Area of the Print Window ....................................................................................................................... 30

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Run the Alberta Soil Information Viewer: Help with Navigation and Operation

Screen Shot Options...............................................................................................................................................32

Location 17 Import and Export of Spatial Soil Information and Graphical Markups..............................................33

The Import and Export tool....................................................................................................................................33

Exporting data..........................................................................................................................................................33

Importing Data........................................................................................................................................................34

Introduction
What follows is a detailed description of all the functions and tools available on the latest version of the Alberta Soil Information Viewer. The viewer is a web page optimized to run on several types of web Browser’s including Google Chrome, Firefox, Safari, and Internet Explorer or Internet Edge.

This means that the web page may be viewed and interacted with across PC, Apple, UNIX, and Android platforms. The functionality on a desktop and laptop may change or reduce somewhat if the application is used on a tablet or smartphone device and the essentials of the website’s functions remain.

If supported by the device, this webpage is also geographically aware and can support simple markup, buffering, measurement, query extract and import export operations as they relate to the use of digital soil information in the Agricultural area of the province of Alberta.

How to use this Document
The document starts with a numbered diagram of the main areas of interaction and a brief description of each area of interaction. Each numbered area is described in more detail by a numbered section located further down in the document.

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**Getting Started**
In order to get started using this application please refer to the getting started document located in the “Read How To:” section of the Alberta Soil Information Viewer Welcome Page.

**Browser Requirements**
This application works best using Apple Safari, Google Chrome, Mozilla Firefox, or Microsoft's Internet Explorer & Edge, browsers.

**Areas of Interaction**
There are several areas that a client may wish to interact with the Alberta soil information viewer Locations:
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**Figure 1: Main Areas of interaction.**

**Locations: 1, 5, 6 and 20**

Locations 1, 5, 6 and 20 are the common areas of Interaction with the viewer. These areas:

a. Maximize the map window

b. Open and close the functioning mode window, and

c. Spatial selections tools.

**Locations 2, 3, and 4 Establish and Move to the Area of Interest through:**

a. searching ,

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b. zooming and
c. bookmarking of favorite locations.

Locations 7 through 11: List functioning mode choices for the viewer’s side window:

Choose a functioning mode

a. Potential functional modes or
b. Work scenarios to which the soil information viewer is capable of configuring.

Locations 12 through 17: House the Following Standard Tools

a. Basemap Managing the choice of base map to be shown as a backdrop with the soil information.

b. Layers Managing spatial information layers that are designed to provide the client with visual context.

c. Measure Measurement of distance and area.

d. Markup Graphical sketching, markup, labeling and buffering of areas of interest.

e. Print Image and scaled map generation and printing in graphical and adobe reader file formats.

f. Import/Export Import and export of sketched and soil polygon information.

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**Location 18: Update the Current Map Area Scale and Cursor Position Status**

a. The current scale at which the spatial objects are being presented on the map area of the viewer, and  
b. The current latitude and longitude coordinates (in decimal degrees) of the cursor in the mapped area.

**Locations 19 and 20: Provide Alternatives for Selecting Soil Polygons**

a. Show the “select (soil polygon)” tool bar.

b. Close the “select (soil polygon)” tool bar.

c. “Select (soil polygons)” by dragging a rectangle using the mouse or gestures. Soil polygons touching the drawn selection rectangle become selected in the map area of the viewer.

d. “Select (soil polygons)” by drawing a multi-segmented polygon using the mouse or gestures. Soil polygons touching all or a portion of the drawn selection polygon become selected in the map area of the viewer.

e. “Select (soil polygons)” by a buffer (see markup tools Location15 for further information on buffer creation). By left mouse clicking or tapping the “select by buffer tool”, and then left mouse clicking or tapping the preferred buffer polygon all soil polygons that touch the buffer polygon will be selected.

f. “Select (soil polygons)” by a markup polygon (see markup tools Location15 for further information on point line and polygon markup creation). By left mouse clicking or tapping the “select by markup tool”, and then left mouse clicking or tapping the preferred markup point line or polygon all soil polygons that touch the buffer polygon will be selected.

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g. “Clear selected (soil polygons)” by left mouse clicking or tapping on this icon.

h. On a final note, the ability to select individual soil polygons may be done with or without initiating the “the select (soil polygon) tool bar” an individual soil polygon may be selected by moving the cursor to the preferred location in the map area of the viewer and then left mouse clicking, or tapping.

**Location 21: Enable Global Zooming Capabilities**

i. + zoom in on level.

j. - zoom out level.

k. If the device is location aware, zoom to the current position of the device running the application. If the device is a desktop or laptop located in an office, other private, or public location the selection of this icon will zoom to a general, and less exact position close to the desktop or laptop.

l. Home zoom to the full extent of Alberta Soil Information Viewer.

**Detailed Description of Icons Tools and Functional Modes**

Each location will now be described in further detail.

**Location 1: Maximizing the Viewer Map Area**

Maximize Viewer

Hide the website Banner to increase the map viewing space.

**Location 2: Defining and Moving to the Area of Interest**

Search

Define a location of interest by:

a. A quarter section Legal Land Description (e.g. qq-ss-ttt-rr-m),

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- A township Legal Land Description (e.g. ttt-rr-m),
- A latitude “N”, “+” or longitude “W”, “-” coordinate pair in decimal degrees,
- An Agricultural Regions of Alberta Soil Inventory Database (AGRASID) polygon number,
- Any Place Name in Alberta (e.g., Edmonton)

**Location 3: Initiating the Search to the Area of Interest**

Search and zoom to the previously defined area of interest.

**Location 4: Saving the Area of Interest for Future Sessions**

Activate the bookmark window to choose or create favorite map locations.

Created map locations are available between sessions if temporary browser files are not purged.

**Location 5: Increasing the Visible Map Area of the Application**

Close the “functioning mode” panel.

**Location 6: Choosing a Function Mode for Viewer**

Open the “functioning mode” panel.

**Location 7: General Land Information Discovery**

Configure the viewer to retrieve “General Soil Information” about one or more AGRASID polygons in this “functioning mode”:

- The currently selected AGRASID Polygon(s) are listed.
- A table listing the
  - “POLY_ID (AGRASID Polygon Number to use in the viewer Search window)”

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ii. AGRASID “MAP Unit Name”,

iii. AGRASID “Landform”, and

iv. Land Suitability Rating System Rating for spring seed small grains “LSRS Rating (Spring Grains)” for the currently highlighted AGRASID polygon number from the grouping of selected AGRASID polygons.

c. **Landscape Model Descriptions:** An Expanded definition of the “Map Unit Name” and “Landform” values.

d. If available an image of:

   v. A typical real world view of the highlighted soil landscape.

   vi. A typical view of what the elevation topography of the land may look like.

   vii. A profile graph of the wavelength (slope length) and amplitude (relief) of the land form found in the currently highlighted AGRASID polygon.

e. Export all the information displayed for a highlighted polygon in this “functional mode” in an adobe reader (pdf) file format.

Exit from the General Land Information “functional” mode.

**Location 8: Land Suitability Rating System Information Discovery**

**Land Suitability Rating System** Configure the viewer to retrieve “Land Suitability Rating System Ratings” for one or more AGRASID polygons in this “functioning mode”:

f. A table listing:

   viii. The currently highlighted or selected AGRASID Polygon(s),

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ix. The Land Suitability Rating System Rating for spring seed small grains “LSRS Rating (Spring Grains),”

x. The Amount of Area that an AGRASID polygon covers expressed in user defined:

1. Metric Units: Hectares (default), Square metres, Square kilometers; or
2. Imperial Units: Acres, Square Feet, Square Miles, Square miles.

g. A Metric or Imperial “Polygon Area Unit” selection may be made.

h. An Automated Email may be sent for:

xi. All (Up to ten [10]) selected AGRASID polygons or
xii. One (1) highlighted AGRASID polygon.

Exit from the General Land Information “functional” mode.

Location 9: Automated Soil Polygon Labeling

Configure the viewer for “Labeling” of AGRASID Soil Polygons “functioning mode”

Soil Polygons may be any one or combination of the following Labels associated with each AGRASID Soil Polygon:

a. “POLY_ID (AGRASID Polygon Number to use in the viewer Search window)”

b. “Map Unit Name, a soil scientist code that summarizes the major soils series as well as the expected landform that may be found in a particular AGRASID polygon”

c. The Land Suitability Rating System Rating for spring seed small grains “LSRS Rating (Spring Grains)”

d. The metric or imperial Area of the AGRASID soil polygon.

e. The metric or imperial perimeter of the AGRASID soil polygon.

Exit from the General Land Information “functional” mode.

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Location 10: Specific Soil Information Discovery

Specific Information

Configure the viewer for a “functioning mode” that provides “More detailed or specific” information about a highlighted or group of selected AGRASID Soil Polygons.

- As an aid to the structure of the soil information contained within each AGRASID polygon. Think of each polygon as a collection of landforms and a collection of soil series. Each land form component is thought of as occupying a specific percentage of the area contained within an AGRASID polygon. Soil series are expected or have a high probability of being found at one or more of potentially four generalized slope positions classifications (components):
  
  - Upper slope, Mid slope, Lower slope and Depression slope positions.

- Each Soil series in turn can have general characteristic described about the series or more detailed characteristics described on a layer by layer basis.

The specific information records are organized into four kinds of reporting tables in the Specific Information “function mode” window:

1. Soil Polygon tables, Component tables, Soil (series) tables, and (soil) Layer tables. The various kinds of “Soil information record reporting” tables are related as follows:

   a. A Soil Polygon table record may be associated with one or more Component reporting table records.

   b. A Component reporting table record may be associated with one or more Soil (series) reporting table records.

   c. A Soil (series) reporting table record may be associated with one or more soil Layer reporting table records.

2. Each Soil Polygon reporting table in a specific information record contains information referring to:

   a. The AGRASID polygon number POLY_ID

   b. The Map Unit Name

   c. Landform

   d. LSRS Rating for Spring Seeded small Grains.

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- The **Area** of the AGRASID polygon in hectares (ha)
- The **Area** of the AGRASID polygon in acres (ac)

3. Each (landform) **Component** reporting table contains information on:
   - The **Component Number** assigned to particular (landform) **Component**.
   - **Landform Position** (profile) classification associated with each **Component** identified in the AGRASID polygon.
   - The aerial **Extent** expressed as a percentage that a particular landform **Component** occupies in a highlighted or selected AGRASID **Soil Polygon**.
   - The expected **Slope Gradient** expressed as a percent at a slope position that is eighty percent (80 %) of the way from the bottom of the representative **Landform Position** (profile) associated with a particular (landform) **Component**.
   - The total **Slope Length** expressed in meters (m) of the representative **Landform Position** (profile) associated with a particular (landform) **Component**.

4. Each **Soil** (series) reporting table contains information on:
   - A **Soil Code**; a three letter uppercase soil series abbreviation.
   - A **Soil Series** name
   - A **Drainage** classification for the **Soil Series**
   - A **Parent Material Texture** code and short definition of the texture code.
   - A Canadian System of Soil Classification **Soil Subgroup** code and short definition of the code.
   - A **Parent Material Code** and short definition of the code.

5. Each (soil horizon) **Layer** reporting table contains information on:
   - A **Horizon Number** an integer number that ensures that horizon information topological order may be maintained for each soil series. Smaller horizon numbers are shallower (soil horizon) **Layers** while larger horizon numbers occur deeper.
   - A **Horizon Master** Classification code and short definition.

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c. A Horizon Suffix classification code.
d. A Upper Depth (cm) a measure of the vertical distance in centimeters from the surface of the soil series to the top of the (soil horizon) Layer.
e. A Lower Depth (cm) a measure of the vertical distance in centimeters from the surface of the soil series to the bottom of the (soil horizon) Layer.
f. A Texture Classification code and short definition of the (soil horizon) Layer.
g. A percentage estimate of the total sand content (Total Sand (%)) contained within a specific (soil horizon) Layer.
h. A percentage estimate of the total silt content (Total Silt (%)) contained within a specific (soil horizon) Layer.
i. A percentage estimate of the total clay content (Total Clay (%)) contained within a specific (soil horizon) Layer.
j. Further details on the specific soil information displayed in this “functional” mode may be found by downloading the metadata found at the Soil Information Site Uniform Resource Locator (URL) in the Query AGRASID window of this application.

Exit from the General Land Information “functional” mode.

Location 11: Digital Soil Inventory Database Query and Extract for Alberta’s Agricultural Area

Configure the viewer for a functioning mode that provides the ability to:

1. Query and export the AGRASID database attributes of a limited number of pre-selected soil information polygons; (up to approximately 1000 records). These queries can be performed on one of five tables to query:
   a. Table to query: [PolygonComponents] based on any of the following database attributes from this table:

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<table>
<thead>
<tr>
<th>CMP_ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component Number</td>
</tr>
<tr>
<td>Extent (%)</td>
</tr>
<tr>
<td>Landform Position</td>
</tr>
<tr>
<td>POLY_ID</td>
</tr>
<tr>
<td>Slope Gradient (50%)</td>
</tr>
<tr>
<td>Slope Gradient (80%)</td>
</tr>
<tr>
<td>Slope Length (m)</td>
</tr>
<tr>
<td>Surface Stoniness</td>
</tr>
</tbody>
</table>

Table to query: Soil Landscape Polygons based on any of the following database attributes from this table:

<table>
<thead>
<tr>
<th>Landform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landform Modifier</td>
</tr>
<tr>
<td>LSRS Rating (Spring Grains)</td>
</tr>
<tr>
<td>Map Unit Name</td>
</tr>
<tr>
<td>POLY_ID</td>
</tr>
<tr>
<td>Shape_Area</td>
</tr>
<tr>
<td>Shape_Length</td>
</tr>
<tr>
<td>SLC3</td>
</tr>
</tbody>
</table>

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Table to query: SoilLayers

- based on any of the following database attributes from this table:

<table>
<thead>
<tr>
<th>Base Saturation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk Density (g/cm³)</td>
</tr>
<tr>
<td>Calcium Carbonate Equivalent (%)</td>
</tr>
<tr>
<td>Cation Exchange Capacity (Meq/100g)</td>
</tr>
<tr>
<td>Coarse Fragments (%)</td>
</tr>
<tr>
<td>Dominant Sand Fraction</td>
</tr>
<tr>
<td>Electrical Conductivity (mS/cm)</td>
</tr>
<tr>
<td>Horizon Lithological Discontinuity</td>
</tr>
<tr>
<td>Horizon Master</td>
</tr>
<tr>
<td>Horizon Modifier</td>
</tr>
<tr>
<td>Horizon Number</td>
</tr>
<tr>
<td>Horizon Suffix</td>
</tr>
<tr>
<td>LAYER_ID</td>
</tr>
<tr>
<td>Lower Depth (cm)</td>
</tr>
<tr>
<td>OBJECTID</td>
</tr>
<tr>
<td>Organic Carbon (%)</td>
</tr>
<tr>
<td>pH in Calcium Chloride</td>
</tr>
<tr>
<td>pH in Water</td>
</tr>
<tr>
<td>Saturated Hydraulic Conductivity (cm/h)</td>
</tr>
<tr>
<td>SOIL_ID</td>
</tr>
<tr>
<td>Texture Class</td>
</tr>
<tr>
<td>Total Clay (%)</td>
</tr>
<tr>
<td>Total Sand (%)</td>
</tr>
<tr>
<td>Total Silt (%)</td>
</tr>
<tr>
<td>Upper Depth (cm)</td>
</tr>
<tr>
<td>Very Fine Sand (%)</td>
</tr>
<tr>
<td>Von Post</td>
</tr>
<tr>
<td>Water Retention (0 kPa)</td>
</tr>
<tr>
<td>Water Retention (10 kPa)</td>
</tr>
<tr>
<td>Water Retention (1500 kPa)</td>
</tr>
<tr>
<td>Water Retention (33 kPa)</td>
</tr>
<tr>
<td>Woody Material (%)</td>
</tr>
</tbody>
</table>

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d. Table to query: 

| SoilNames |

based on any of the following database attributes from this table:

<table>
<thead>
<tr>
<th>Attribute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcareousness</td>
</tr>
<tr>
<td>Drainage</td>
</tr>
<tr>
<td>Kind of Material</td>
</tr>
<tr>
<td>Mode of Deposition (1) - NSDB</td>
</tr>
<tr>
<td>Mode of Deposition (2) - NSDB</td>
</tr>
<tr>
<td>Mode of Deposition (3) - NSDB</td>
</tr>
<tr>
<td>MODIFIER</td>
</tr>
<tr>
<td>Parent Material Chemistry (1) - NSDB</td>
</tr>
<tr>
<td>Parent Material Chemistry (2) - NSDB</td>
</tr>
<tr>
<td>Parent Material Chemistry (3) - NSDB</td>
</tr>
<tr>
<td>Parent Material Code</td>
</tr>
<tr>
<td>Parent Material Genesis (1)</td>
</tr>
<tr>
<td>Parent Material Genesis (2)</td>
</tr>
<tr>
<td>Parent Material Texture (1)</td>
</tr>
<tr>
<td>Parent Material Texture (1) - NSDB</td>
</tr>
<tr>
<td>Parent Material Texture (2)</td>
</tr>
<tr>
<td>Parent Material Texture (2) - NSDB</td>
</tr>
<tr>
<td>Parent Material Texture (3) - NSDB</td>
</tr>
<tr>
<td>Profile Type</td>
</tr>
<tr>
<td>Province - NSDB</td>
</tr>
<tr>
<td>Root Restricting Layer</td>
</tr>
<tr>
<td>Root Restriction</td>
</tr>
<tr>
<td>Salinity</td>
</tr>
<tr>
<td>Soil Correlation Area</td>
</tr>
<tr>
<td>Soil Correlator Notes</td>
</tr>
<tr>
<td>Soil Great Group</td>
</tr>
<tr>
<td>Soil Order</td>
</tr>
<tr>
<td>Soil Series</td>
</tr>
<tr>
<td>Soil Subgroup</td>
</tr>
<tr>
<td>Soil Subgroup Phase</td>
</tr>
<tr>
<td>Soil Survey Report</td>
</tr>
<tr>
<td>SOIL_CODE</td>
</tr>
<tr>
<td>SOIL_ID</td>
</tr>
<tr>
<td>Watertable Characteristics</td>
</tr>
</tbody>
</table>

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e. Table to query: SoilProfiles

Based on any of the following database attributes from this table:

<table>
<thead>
<tr>
<th>CMP_ID</th>
<th>Primary</th>
<th>SOIL_ID</th>
<th>SoilProfileID</th>
</tr>
</thead>
</table>

2. Search for similarly attributed AGRASID polygons that match one selected polygon based on the following database attributes:

<table>
<thead>
<tr>
<th>Landform</th>
<th>Landform Modifier</th>
<th>LSRS Rating (Spring Grains)</th>
<th>Map Unit Name</th>
<th>SLC3</th>
</tr>
</thead>
</table>

3. Download AGRASID soil information using the Soil Information Site Uniform Resource Locator (URL) address for the download of AGRASID version 4.1 soil information.

4. For further information concerning the selection of soil polygon information please skip to the sections called Location 19 and section 20. of this document.

Exit from the General Land Information “functional” mode.

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**Location 12: Base Maps Selection and Display**

Basemap

There are six possible basemap choices that when selected become the backdrop to the soil information in the map area of the viewer:

1. SPOT6 2015 - 150cm
2. Imagery with labels
3. Terrain with labels
4. Topography
5. Streets
6. National Geographic

These basemaps are “as is” and may not be altered in any way.

🚫 Left mouse click, or tap the “close tool window” icon to close the basemap tool window.

**Location 13: Layer Visability Control**

Layers

Up to 11 vector layers and two image layers of visual context information are controlled and managed from the Layers icon. These layers may be:

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1. Turned on or off by adding a check mark \(\checkmark\) or removing a checkmark \(\square\) to the check box to the left of each layer and

2. Transparency of some layers may be increased or decreased by:
   a. Moving the slider control to the left for more transparency, and
   b. To the right for less transparency.

Left mouse click, or tap the “close tool window” icon to close the layers tool window.

**Location 14: Linear and Area Measurement**

1. Activate the distance measuring icon to measure and label a single or multi-segmented “line measurement graphic” in the map area of the viewer. Anyone of the following measurement units is available for measurement:

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<table>
<thead>
<tr>
<th>Metres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kilometres</td>
</tr>
<tr>
<td>Miles</td>
</tr>
<tr>
<td>Feet</td>
</tr>
<tr>
<td>Yard</td>
</tr>
</tbody>
</table>

2. Activate the area measuring icon to measure and label a multi-sided “area graphic” in the map area of the viewer. Anyone of the following measurement units is available for measurement:

<table>
<thead>
<tr>
<th>Square metres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Square kilometres</td>
</tr>
<tr>
<td>Hectares</td>
</tr>
<tr>
<td>Acres</td>
</tr>
<tr>
<td>Square feet</td>
</tr>
<tr>
<td>Square miles</td>
</tr>
<tr>
<td>Square yards</td>
</tr>
</tbody>
</table>

3. Distance and Area graphics may be cleared by re-pressing the distance or area measurement graphics again upon completion of a measurement or by pressing the clear button in the **Measure** window.

4. The most recent measurement may be cut and pasted from the “Result:” section of the **Measure** window.

Left mouse click, or tap the “close tool window” icon to close the measure tool window.

**Location 15: Graphical Markup, Label Placement and Buffering**

Activating the Markup icon enables the drawing of:

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- Labeling;
- Editing, loading, and saving of markup graphics.
- Buffering of mark up graphics and selected soil polygons within the mapping area of the viewer.

**Drawing Tools**

Each drawing tool follows the same two or in three step process:

1. Activate one of the seven icons in the “Drawing Tools” section of the window.
2. Begin drawing in the map area of the Alberta Soil Information Viewer.

In the case of the “Create point by latitude longitude coordinate” there is a step for manually entering a **decimal degree, negative longitude, geographic coordinate pair** in between the previously stated drawing steps.

3. There are seven different ways that mark ups (graphical points, lines and polygons) may be placed in the map area of the Alberta Soil Information Viewer:

   - **Point drawing** – a point is placed by moving and zooming the cursor to a desired location in the map area of the application and then left clicking or tapping to place the point.

   - **Create a point by Longitude, and Latitude coordinate pair** – a point is placed by manually entering negative longitude, and positive latitude coordinate pairs which appear in in the map area once the button is left mouse clicked or tapped.

   - **Polyline drawing tool** – a single or multiple segmented line is drawn by:

     a. Moving and zooming the cursor in the mapped area to the desired starting location, and then,

     b. Left mouse clicking or tapping at the beginning and end of each line segment being placed, and then,
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  c. Double left mouse clicking or double tapping to end the line placement.

The cumulative line segment distance and the units of measure are updated and displayed each time a line segment is placed and the total distance and units of measure are placed as a label for the completed polyline.

Freehand polyline drawing tool - draw (drag) a line by following the path of the cursor or finger once the left mouse button is pressed and held or once the finger makes contact with the screen in the mapped area of the application. The line is completed when the left mouse button no longer pressed or the contact of the clients finger is lifted from the screen. As in the case of the Polyline drawing tool, the free hand polyline drawing tool displays the cumulative line distance and the units of measure are updated and displayed until the freehand line is completed and the total distance and units of measure are placed as a label for the completed freehand polyline.

Circle drawing tool – draw a circle by:

a. Moving the cursor or pointing to the desired center of the circle and

b. Pressing and holding the left mouse button or by keeping finger contact with the device screen, the center point of the circle is set.

c. Dragging the circle out to the desired radius to establish the size of the circle. (The desired radius is updated on screen, along with the units of measure, in real time until the circle is completed).

d. Stop pressing the the left mouse button or breaking finger contact (The radius update is replaced by an area and units of measure label).

Polygon drawing tool – draw a multiple segmented polygon by:

a. Moving and zooming the cursor in the mapped area and then left clicking or tapping at the beginning and end of each polygon side being placed in the mapped area, and then,

b. Double clicking or double tapping to end the polygon placement.

The cumulative area and the units of measure are updated and displayed as third and following sides of the polygon are placed. The total area and units of measure are placed as a label for the completed polygon.

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**Freehand polygon drawing tool** - draw a freehand polygon by following the path of the cursor or finger once the left mouse button is pressed and held or once the finger makes contact with the screen in the mapped area of the application. The polygon is completed when the left mouse button is no longer pressed or finger contact is broken. As in the case of the polygon drawing tool, the freehand polygon drawing tool displays the area and units of measure label upon finishing, the freehand polygon drawing.

Text Tool

Text may be entered in the map area of the viewer with the following steps:

a. Enter the text intended for the label in the text box to the left of the text drawing tool.

b. Left mouse click or tap the text drawing tool.

c. Place the entered text on the mapped area by left mouse clicking or tapping the intended location in the map area of the viewer.

**Edit, Load and Save Tools**
The next section of the markup window allows for movement, deletion and editing of all markups placed in the mapped area. In addition, movement and deletions of all labels placed manually or automatically is also possible. Finally, the last version of markups and labels may be saved temporarily and reloaded into the mapped area of the viewer.

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Moving a Markup (or Label) – move a mark up or label by:

a. Left mouse clicking or tapping the “moving a markup” icon.

b. Left mouse clicking or tapping a mark up or label (as a heads up: labels and points take some patients to grab and move. The payoff is custom placement of these objects).

Delete a Selected Markup (or Label) – delete a mark up or label by:

a. Left mouse clicking or tapping the “delete a markup” icon.

b. Left mouse clicking or tapping a mark up or label.

Edit a Selected Markup – edit a selected mark up by:

a. Left mouse clicking or tapping the “Edit a selected markup” icon.

b. Left mouse clicking or tapping on the desired markup that requires modification.

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c. Left mouse clicking or tapping and then dragging a highlighted vertex point of the markup to a new location on the map area of the viewer.

d. Releasing the left mouse button or breaking finger contact once the desired location for the moved vertex has been reached.

e. Labels may not be edited. The work around is to delete and replace the label with revised text and a revised label location in the map area.

Figure 2 an example of edited markup vertices.

Save current (markup and label) drawing

Save

Save current drawings of labels and markups into a browser session clipboard by left mouse clicking or tapping the Save button.
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**Load saved (markup and label) drawing**

[Load]

Load saved drawings of marks and labels by clicking on the **Load** button.

**Temporary Backup**

The save [Save] and load [Load] buttons allow temporary back up during complex markup and label development onto an inter-session clipboard in the mapped area of the viewer. In order to start from the last temporarily saved set of mark ups and labels. The last saved version markups and labels are kept between sessions if the temporary files are not purged between browser sessions.

**Buffer Creation**

a. A buffer may be created from a selected markup that was drawn or imported to the current browser session by selecting the “Apply buffer on selected markup” radio button.

   [ ] Apply buffer on selected markup

Or,

b. From a selected soil polygon by selecting the “Apply buffer on selected soil polygon”.

   [ ] Apply buffer on selected soil polygon

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c. Once a buffering method has been chosen, specify the distance in the Buffer Creation text box and pick the desired units of measure in the adjacent selection list box.

<table>
<thead>
<tr>
<th>Distance</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Metres</td>
</tr>
<tr>
<td></td>
<td>Kilometres</td>
</tr>
<tr>
<td></td>
<td>Miles</td>
</tr>
<tr>
<td></td>
<td>Feet</td>
</tr>
<tr>
<td></td>
<td>Yard</td>
</tr>
</tbody>
</table>

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d. And finally left mouse clicking or tapping the create buffer button.

Tips and tricks:

a. The focus on the object for the buffering operation is automatic when:

i. Drawing a point, line, or polygon markup using the drawing tools in the previous session or
ii. Selection of a soil polygon for buffering (see section 19 and 20 earlier on in this document).

b. If the point, line or polygon markup was drawn and the focus is shifted away and then returned to the markup session or markups are loaded from a previously saved session into the current session the focus on the desired markup to buffer has to be reset with either:

i. The move a markup tool.
ii. The edit a selected markup tool.

c. If the focus is shifted away and then returned after a soil polygon has been selected, the focus may be returned by moving the cursor over the required soil polygon and left mouse clicking or tapping on the polygon once again to return the buffer focus.

d. Buffers and Markups may be removed from the map area of the viewer by left mouse clicking or tapping:

i. The clear buffer button and
ii. The clear markup button.

Left mouse click, or tap the “close tool window” icon to close the markup tool window.

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**Location 16: Printing And Screen Capture**

![Print](image)

The print tools icon enables ability to:

1. Print scaled and non-scaled maps in:
   a. Letter (8” X 11”) and
   b. Tabloid (11”X 17”) formats in both
   c. Portrait and
   d. Landscape layouts and to,
2. Generate image screen captures in the following industry standard graphic formats including:
   a. Joint Photographic Experts Group (JPEG or in this case JPG for short)
   b. 8 bit Portable Network Graphic (PNG8)
   c. 32 bit Portable Network Graphic (PNG32)
   d. Graphics Interchange Format (GIF)
   e. Adobe Reader Portable Document Format (PDF)

**Printing Options Area of the Print Window** enables clients produce maps by:

1. Chosing one of four distinct paper size and orientation options:

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2. Choosing one of two file formats:

3. Deciding on producing an un-scaled map or a scaled map:
   a. In the case of an unscaled map no value is required in the text box if the client is satisfied with using the current scale of the mapped area of the viewer. The scale text box is left blank.
   b. In the case of a scaled map, a smaller or larger scale may be set then the current scale of the map area.
   c. The printed map will reflect the set scale and will be centered on the current center of the mapped area:

   ![Figure 4. Illustrates how to produce a 1:10,000 scale map from the soil viewer map area at displayed at a scale of 1:577,791](image)

4. An appropriate title for the map may be placed on the title text box:

   ![Figure 5. The Title text box.](image)

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5. An appropriate description for the map may be placed in the description text box:

![Description]

Figure 6 The Description text box.

6. After choosing the preferred printing options, print the map by left mouse clicking or tapping the print map icon.

![Print Map Icon]

**Screen Shot Options** - allow for the generation of screen captures from the mapped area of the viewer by:

1. Selecting one of four image file formats:

   ![Select File Format]

2. Left mouse clicking or tapping on the screenshot icon.

   ![Screenshot Icon]

   Left mouse click, or tap the “close tool window” icon to close the markup tool window.

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Location 17 Import and Export of Spatial Soil Information and Graphical Markups:

The Import and Export tool facilitates:

1. Export of geo-referenced graphical objects from both:
   a. The markup layer, and
   b. The AGRASID version 4.1 soil polygon layer.

And

2. Import of geo-referenced graphical objects from
   a. A previous markup tool session,
   b. A limited number of soil polygons that were previously exported, or
   c. Geo-referenced points lines or polygons from an independent source such as way points from a gps receiver.

by turning on or off the various radio button options available in the “Chosse and Option” and “Choose a Layer” areas of the “Import/Export Tools” window.

Exporting data varies based on the particular combination of import export option and layer that is selected. The combinations of choices associated exporting spatial objects are itemized as follows:

1. Export a Markup Layer:
   ![KML, Shapefile]

2. Export Soil Polygons:
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<table>
<thead>
<tr>
<th>KML</th>
<th>Shapefile</th>
<th>CSV</th>
</tr>
</thead>
</table>

3. The export is initiated by left mouse clicking or tapping the Export button.

**Importing Data** occurs on point, line, and polygon data that are formatted in the same manner that markup objects are exported from the Alberta Soil Information Viewer plus an additional Global Positioning System (GPS) file format:

1. **KML** - a “compressed Keyhole Markup Language file”, the file name and extension look for on this file is “filename.kmz”

2. **Shapefile** - as series of file known collectively as a esri® ArcGIS “shapefile” layer.

3. **GPX** - as a series of way points or tracks from a global positioning system (GPS) unit that is capable of producing a GPS eXchange file.

An Import is initiated by left mouse clicking or tapping the import button.

Left mouse click, or tap the “close tool window” icon to close the markup tool window.

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