Introduction of ArcIMS HTML Viewer

- User Interface

The ArcIMS HTML Viewer interface includes title, a map display area (mapframe), grouped layer list, toolbar, scalebar, North arrow, overview map, the link of ArcIMS tutorial and tool help, and functions of refreshing map automatically.
The layer list is on the right of the map display area. A layer is “a slice or stratum of the geographic reality in a particular area, and is more or less equivalent to a legend item on a paper map.” Layers are grouped based on their characteristics. The boxes and the circles to the left of the layer are used to make the layer visible and/or active. ☑️ is used to make the layer **Visible** in the map display area. ⚫️ is used to make the layer **Active** against the function you are querying (A request that selects features or records from a database. A query is often written as a statement or logical expression.), buffering (A zone around a map feature measured in units of distance or time.), or identifying (In ArcGIS, a tool that, when applied to a feature (by clicking it), opens a window showing that feature's attributes.), so the query will be performed. For more detail, see the **Key** section located at the bottom of LAYERS area. After making every query, ✔️ **Auto Refresh** will automatically refresh map and the new changes will be reflected on the map. (Note: If the layer you want to view is below some active layers, make the active layers above invisible.) (Reference: ArcGIS Desktop Help)

- **GIS skills and tools**
  1. **Toggle**

<table>
<thead>
<tr>
<th>Toggle between legend and layer list:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn layers on and off, select an active theme, and convert to viewing layer legends.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Toggle overview map:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn on and off the overview map</td>
</tr>
</tbody>
</table>
2. Zoom and pan

<table>
<thead>
<tr>
<th>Icon</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Zoom in icon]</td>
<td><strong>Zoom in on the view:</strong> Zoom in to a particular area in the view by either clicking in the center of an area or by dragging a box around an area.</td>
</tr>
<tr>
<td>![Zoom out icon]</td>
<td><strong>Zoom out of the view:</strong> Zoom out to a particular area in the view by either clicking in the center of an area or dragging a box around area.</td>
</tr>
<tr>
<td>![Zoom full extent icon]</td>
<td><strong>Zoom to full extent of the view:</strong> Zoom to the full spatial extent of all the themes (map layers) in the view by clicking this icon.</td>
</tr>
<tr>
<td>![Zoom active layer icon]</td>
<td><strong>Zoom to active layer:</strong> Zoom to the spatial extent of the active theme in the view by clicking this icon.</td>
</tr>
<tr>
<td>![Zoom last extent icon]</td>
<td><strong>Back to last extent:</strong> Zoom back to the previous extent. Unavailable until users have changed extents.</td>
</tr>
<tr>
<td>![Pan icon]</td>
<td><strong>Pan:</strong> Pan the view by dragging the display in any direction with the mouse.</td>
</tr>
<tr>
<td>![Hyperlink icon]</td>
<td><strong>Hyperlink:</strong> Link to other web pages in the new window.</td>
</tr>
</tbody>
</table>

3. Query

<table>
<thead>
<tr>
<th>Icon</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Identify icon]</td>
<td><strong>Identify:</strong> Lists attributes/information on one feature of map by clicking on the lines or polygon for active theme to view the database record.</td>
</tr>
<tr>
<td>![Query icon]</td>
<td><strong>Query:</strong> Search for the map features/information based on a query expression (consisting of at least one operand and one or more operators) on the active theme database and displays the results in a table. Note: the query expression is case sensitive.</td>
</tr>
<tr>
<td>![Find icon]</td>
<td><strong>Find:</strong> Find map features/information with an attribute value matching a string (a series of characters manipulated as a group) that the user types when a theme is active for fields in the database. Notice: the string is case sensitive.</td>
</tr>
<tr>
<td>![Measure icon]</td>
<td><strong>Measure:</strong> Measure distances on the map viewer by drawing points.</td>
</tr>
<tr>
<td>![Set units icon]</td>
<td><strong>Set units:</strong> Sets the map viewer units from the drop down list for the measure tool, i.e. feet, meters, and kilometers.</td>
</tr>
<tr>
<td>![Buffer icon]</td>
<td><strong>Buffer:</strong> Selects the features of one map layer that are within the specified buffer distance of selected features of another layer.</td>
</tr>
<tr>
<td>![Select by rectangle icon]</td>
<td><strong>Select by rectangle:</strong> Select a rectangle area and view the features from the database for the active theme.</td>
</tr>
<tr>
<td>![Clear selection icon]</td>
<td><strong>Clear selection:</strong></td>
</tr>
</tbody>
</table>
4. Project

**Print:**
Prints the map to user’s default printer.
How Do I Find Out the Quality of Data?

- **Query by Quality Assurance (QA)**
  1. Launch the web browser and type [http://www.sdbay.sdsu.edu/IMS/Website/CommonGroundNew/viewer.htm](http://www.sdbay.sdsu.edu/IMS/Website/CommonGroundNew/viewer.htm). You will see the ArcIMS HTML Viewer named as *San Diego Watersheds Common Ground*.
  2. From the right column, check **Visible** and **Active** for the layer you want to query, such as the “Sediment.”
  3. Click and you will see the query frame shown up on the bottom.
  4. In the query frame, select **QALEVEL** in the **Field**, and = in the **Operator**.
  5. Click to select the level you want to query.
  6. Click to see the query result. (Note: Remember to click to clear selection after finishing each query.)
How Do I Find Constituents that Exceed Water Quality and Sediment Quality Objectives in San Diego Bay?

1. Launch the web browser and type [http://www.sdbay.sdsu.edu/IMS/Website/CommonGroundNew/viewer.htm](http://www.sdbay.sdsu.edu/IMS/Website/CommonGroundNew/viewer.htm) and you will see the ArcIMS HTML Viewer named as San Diego Watersheds Common Ground.

2. Check Visible and Active for the layer you want to query, such as the “Otay Watershed”.

3. Click and you will see the query frame shown up on the bottom.

4. In the query frame, select ANALYTE in the Field, and = in the Operator.

5. Click to select the analyte you want to query, such as Copper (Cu).

6. Click to see the query result. (Note: Remember to click to clear selection after finishing each query.)

8. To determine whether these points exceed the sediment standard for copper, please see the RESULT field. 270mg/kg is the standard for copper.
9. For more information of standards, please see the file, click **Water / Sediment Quality Criteria**.
How Do I Find the Results of My Water Quality Monitoring?

I. Find the results of my water quality monitoring by using Data Query tool?

- **Query by DATE**
  1. Launch the web browser and type http://www.sdbay.sdsu.edu/IMS/Website/CommonGroundNew/viewer.htm and you will see the ArcIMS HTML Viewer named as San Diego Watersheds Common Ground.
  2. Check Visible and Active for the layer you want to query, such as the “Bay Water Quality”.
  3. Click and you will see the query frame shown up on the bottom.
  4. In the query frame, select SAMPLEDATE in the Field, and = in the Operator.
  5. Click to select the date you want to query.
  6. Click .
  7. Click to see the query result. (Note: Remember to click to clear selection after finishing each query.)
• **Query by CONSTITUENT**

1. Launch the web browser and type
   http://www.sdbay.sdsu.edu/IMS/Website/CommonGroundNew/viewer.htm and you will see the ArcIMS HTML Viewer named as **San Diego Watersheds Common Ground**.
2. Check **Visible** and **Active** for the layer you want to query, such as the “Otay Watershed”.
3. Click **Get Samples** and you will see the query frame shown up on the bottom.
4. In the query frame, select **ANALYTE** in the **Field**, and **=** in the **Operator**.
5. Click **Add to Query String** to select the analyte you want to query, such as **Copper (Cu)**.
6. Click **Execute**.
7. Click **Execute** to see the query result. (Note: Remember to click  to clear selection after finishing each query.)
8. To determine whether these points exceed the sediment standard for copper, please see the RESULT field. 270mg/kg is the standard for copper.

9. For more information of standards, please see the file, click Water / Sediment Quality Criteria.
• **Query by EVENT**
  1. Check Visible and Active for the layer you want to query, such as the “Otay Watershed”.
  2. Click and select EVENTYPE in the Field, and = in the Operator.
  3. Type WaterChem in the Value and click Add to Query String.
  4. Click Execute to see the query result. (Note: Remember to click to clear selection after finishing each query.)
II. Find the results of my water quality monitoring by using Select tool?

1. Check **Visible** and **Active** for the layer you want to query, such as the “Bay Water Quality”.
2. If you want to see the legend of “Bay Water Quality” or grouped layer list, switch .
3. Many point data layers are overlaid in this viewer so make point data layers which are above the layer you want to select invisible if necessary.
4. If you need to zoom in the points you want to query, click and draw a rectangle around the area you want to zoom in.
5. Click \(\text{\textcircled{r}}\) and draw a rectangle around the point of “Bay Water Quality” you want to identify.
6. The selected point is shown in yellow in the map display area and the results are shown in the bottom table. Every point you see include many rows so you can see how many elements have been measured at this test point.
How Do I Find Flow Data in Streams

I. Find the results of flow data in streams by using **Hyperlink** tool?

1. Launch the web browser and type 
   http://www.sdbay.sdsu.edu/IMS/Website/CommonGroundNew/viewer.htm and you will see the ArcIMS HTML Viewer named as **San Diego Watersheds Common Ground**.

2. Check **Visible** □and **Active** ☑ for the layer “USGS Realtime Gages”.

3. Click ☑ to see the legend of “USGS Realtime Gages”.

4. Click ☑ and one of the realtime gage points.

5. Please set up pop-up windows okay if pop-up is blocked.
6. The USGS web page will pop up.
II. Find the results of flow data in streams by using Select tool?

1. Make sure the layer “USGS Realtime Gages” is Visible and Active.
2. Click to see the legend of “USGS Realtime Gages”.
3. Click to draw a rectangle around one of the “USGS Realtime Gages” points.
4. Click the URL of the table, the USGS web page will pop up.
Map Access Tutorial

Introduction of Map Types:

- **ArcIMS Map**: ArcIMS (standing for ArcInternet Map Server) is a Web Map Server produced by ESRI. It is a GIS that is designed to serve maps across the Internet. ArcIMS maps could be static images allowing simple panning and zooming or more complex and interactive pages. Examples of interactive maps served with ArcIMS include maps with layers that can be turned on and off, or with features containing attributes that can be queried. A visitor to a site driven by ArcIMS needs nothing more than a web browser: the GIS and database are maintained on the server side. ([http://www.answers.com/](http://www.answers.com/))

- **PDF Map**: PDF is a file extension used in Adobe Acrobat. PDF map allows users to zoom in, zoom out and pan the map.

- **JPEG Map**: JPEG is the standard algorithm for the compression of digital images. ([http://www.answers.com/](http://www.answers.com/)) JPEG only displays map in images rather than providing other interactive functions.

Among ArcIMS, PDF, and JPEG maps, ArcIMS map is the most powerful and interactive map.
Steps for Map Access:

1. **ArcIMS Maps**
   - Launch the web browser and type [http://www.sdbay.sdsu.edu/](http://www.sdbay.sdsu.edu/).

2. Click [here](http://www.sdbay.sdsu.edu/).

3. Go through the maps disclaimer and click [Agree](http://www.sdbay.sdsu.edu/)...
4. If you want to learn more about ArcIMS functions, click to access ArcIMS tutorials.
JPEG Maps

1. Launch the web browser and type http://www.sdbay.sdsu.edu/.

2. Click Static.

3. Click the JPEG map you want. For example, click and get the following JPEG map.

![Land Use Map:](http://geoinfo.sdsu.edu/CG_Beta/test/maps/map_files/land_use_static_map.jpg)

![The San Diego Bay Watersheds Private and Public Lands](http://geoinfo.sdsu.edu/CG_Beta/test/maps/map_files/land_use_static_map.jpg)
4. If you want to print the map, select 🔍.
5. If you want to save the map, select 📋.
1. Launch the web browser and type http://www.sdbay.sdsu.edu/.

2. Click

3. Click the PDF map you want. For example, click and get the following PDF map.
4. Select the zoom function you want to use from the drop down list. You also can select the percentage of display for displaying the map.

5. If you select the **Zoom In** or **Zoom Out** function, draw a rectangle near the location you want to zoom in or zoom out.

6. If you select the **Dynamic Zoom**, drag the cursor up for zoom in and down for zoom out.

7. If you want to print the map, select

8. If you want to save the map, select
I. Get a printout of water quality results.

1. Launch the web browser and type [http://www.sdbay.sdsu.edu/IMS/Website/CommonGroundNew/viewer.htm](http://www.sdbay.sdsu.edu/IMS/Website/CommonGroundNew/viewer.htm) and you will see the ArcIMS HTML Viewer named as **San Diego Watersheds Common Ground**.

2. Check **Visible** and **Active** for the layer you want to query, such as the “Otay Watershed”.

3. Click ![layer](http://www.sdbay.sdsu.edu/IMS/Website/CommonGroundNew/viewer.htm) and you will see the query frame shown up on the bottom.

4. In the query frame, select **ANALYTE** in the **Field**, and **=** in the **Operator**.

5. Click ![Get Samples](http://www.sdbay.sdsu.edu/IMS/Website/CommonGroundNew/viewer.htm) to select the analyte you want to query, such as **Copper (Cu)**.

6. Click ![Add to Query String](http://www.sdbay.sdsu.edu/IMS/Website/CommonGroundNew/viewer.htm)

7. Click ![Execute](http://www.sdbay.sdsu.edu/IMS/Website/CommonGroundNew/viewer.htm) to see the query result. (Note: Remember to click ![clear](http://www.sdbay.sdsu.edu/IMS/Website/CommonGroundNew/viewer.htm) to clear selection after finishing each query.)
1. Right click the query table and select **Print**.

   ![Image of the query table with the right-click action highlighted]

2. Select the printer you want to use and copies.

   ![Image of the print dialog with the printer selection highlighted]

   ![Image of the print dialog with the number of copies highlighted]
II. Get a printout of the Map.

1. After getting your map, click and you will see a print frame shown on the bottom.
2. Keep the original map title, ArcIMS HTML Viewer Map or type your map title, such as My Map.
3. Click Create Print Page.
4. Click **Print** from the **File** drop down list.

5. Select the printer you want to use and copies.