

## DIVER Explorer – Using Spatial Filters to Limit a Query

This document provides an introduction to limiting queries using a shape or polygon in DIVER Explorer.

Limiting by shape allows users to take the results from a completed **Guided Query** or **Custom Query**, and apply an additional filter in order to return only results that fall within that area. A user can alternately draw a shape (by clicking the “Query by Shape” button on the map) and then run a query.

### Scenario

An initial query was run accessing all Anthracene results from sediment samples collected in 2010-2013 (see the Guided Queries reference document for detailed instructions). The user would like to re-run this query to limit to results in Minnesota.

### Procedure

#### 1. Access the Query Shapes menu.

To begin the process of limiting your query by area, click the **Query by Shape** button on the map.

The screenshot displays the DIVER Explorer interface. At the top, the 'Query Filters' panel shows the following settings: Analysis Category = "Contaminant Chemistry", QM Matrix = "Sediment", Result Type = "Result", Depth Category = "Surface Sediment", Analysis = "Anthracene", and Year = "2010" | "2011" | "2012" | "2013". Below the filters are buttons for 'Edit Query Filters' and 'Return to Start'. A yellow status bar indicates 'Query successful : 1,817 records returned.' The main map area shows the Great Lakes region with various data points. A 'Query by Shape' button is highlighted with a red box. The legend on the right, titled 'Concentration : Anthracene (PPB)', lists five categories: 'Below Detection Limit (DL < 59.0)' (green circle), 'Below Detection Limit (59.0 ≤ DL < 880.0)' (blue circle), 'Below Detection Limit (DL ≥ 880.0)' (red circle), 'Concentration < 59.0' (green circle with a dot), '59.0 ≤ Concentration < 880.0' (blue circle with a dot), and 'Concentration ≥ 880.0' (red circle with a dot). The map also shows state names like MINNESOTA, WISCONSIN, MICHIGAN, and IOWA, and major cities like Minneapolis, Chicago, and Detroit.

## 2. Add a shape filter and re-run the query.

DIVER Explorer allows users to draw a shape around an area and then re-run the query to return only the data that lies within the geographic boundary. Note that there are also pre-defined shapes based on rivers that may be selected from the **Load and Manage Shapes** tab. This example shows a custom shape.

To draw a custom shape, first use the mouse or navigation buttons in the top left corner of the screen to zoom to the points in Minnesota.

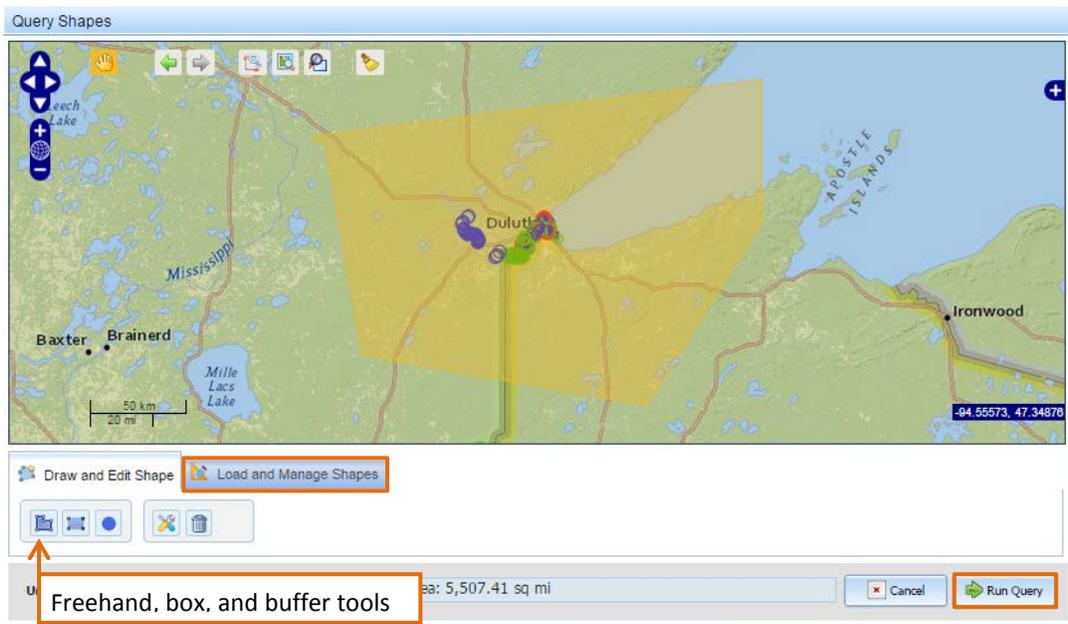
There are three drawing tools: free-hand, box, and buffer.

With the free-hand tool selected, click once on the map to generate the first vertex of the shape. Then move the pointer and click another location to create the next vertex, generating the first side of the shape. Keep creating sides until the desired area is enclosed, and then double-click on the final vertex to complete the shape.

Note that shapes created using all three drawing tools can be edited by either clicking inside of the shape, or clicking on the edit tool .

If necessary, any user generated shape can be removed and re-drawn by clicking the trash can icon  or by drawing another shape.

Click **Run Query** to re-run the original query, returning records contained only within the shape.



### 3. View the results of the refined search.

Once the query has re-run, a new notification appears indicating the revised number of records returned and there is an updated Query Summary below the map.

For more information on querying, interacting with results, and downloading data refer to the additional help materials.

Query successful : 568 records returned.

Display Results By: Concentration

-91.80707, 46.56625

Legend Symbology

Concentration : Anthracene (PPB)

- Below Detection Limit (DL < 20.0)
- Below Detection Limit (20.0 ≤ DL < 105.0)
- Below Detection Limit (DL ≥ 105.0)
- Concentration < 20.0
- 20.0 ≤ Concentration < 105.0
- Concentration ≥ 105.0

Summary Table Charts Metadata Study Notes Export

Columns Filters Additional Information Download

568 of 568 rows displayed

#	Sharing Status	Collection Study Name	QM Study ID	QM Sample ID	Station/Site	Date	Sample ID
1	Publicly Available	SL Duluth Harbor USACE 2008 & 2010	78	21A-01	TF-44	03/09/2010	0531-78-TF-44-21A-01
2	Publicly Available	SL Duluth Harbor USACE 2008 & 2010	78	21A-03	TF-34	03/09/2010	0531-78-TF-34-21A-03
3	Publicly Available	SL Duluth Harbor USACE 2008 & 2010	78	21A-05	TF-39	03/09/2010	0531-78-TF-39-21A-05
4	Publicly Available	SL Duluth Harbor USACE 2008 & 2010	78	21A-08	TF-8A	10/14/2010	0531-78-TF-8A-21A-08
5	Publicly Available	SL Duluth Harbor USACE 2008 & 2010	78	21A-08D	TF-8A	10/14/2010	0531-78-TF-8A-21A-08
6	Publicly Available	SL Duluth Harbor USACE 2008 & 2010	78	21A-12	TF-50A	10/14/2010	0531-78-TF-50A-21A-1
7	Publicly Available	SL Duluth Harbor USACE 2008 & 2010	78	21A-14	TF-15A	10/14/2010	0531-78-TF-15A-21A-1
8	Publicly Available	SL Duluth Harbor USACE 2008 & 2010	78	21A-16	TF-1A	10/14/2010	0531-78-TF-1A-21A-16
9	Publicly Available	SL Duluth Harbor USACE 2008 & 2010	78	21A-17	TF-19A	10/15/2010	0531-78-TF-19A-21A-1
10	Publicly Available	SL Duluth Harbor USACE 2008 & 2010	78	21A-19	TF-22A	10/15/2010	0531-78-TF-22A-21A-1
11	Publicly Available	SL Duluth Harbor USACE 2008 & 2010	78	21A-21	TF-102	10/16/2010	0531-78-TF-102-21A-2
12	Publicly Available	SL Duluth Harbor USACE 2008 & 2010	78	21A-23	TF-100	10/16/2010	0531-78-TF-100-21A-2