Example Searches for ECHO Advanced Water Training

Case Study #1

Purpose: Identify the largest dischargers of selenium in the State of California. Examine which industries and facilities are discharging to impaired waterbodies, and determine whether they have permit limits in place.

Water Pollution Search/EZ Search

- Navigate to EZ Search: https://cfpub.epa.gov/dmr/ez_search.cfm
- Select the following search criteria:
  - Reporting Year = *2016*
  - Under "Location or Watershed" box
    - State = *California*
    - *Only include facilities that discharge to impaired waters* and
    - *Only include facilities that discharge pollutants contributing to waterbody impairment*
  - Under "Pollutant" box
    - Enter Pollutant Name = *Selenium*
- Click *Search*

Search Results

- In the Top Facility Discharges table, several report icons are displayed for each facility.
- Click on the green *P icon* to open the Permit Limits and Monitoring Requirements Report
  - This table provides details about effluent limitations and monitoring requirements at the facility. We can see how long the limit has been in place, how frequently the facility is required to monitor, whether the limit varies by season, and the concentration and quantity based limits.
- Click on the *Facility Name* or *NPDES ID* to open the Pollutant Loading Report
  - This report shows the top ten pollutants for the facility ranked by total mass and by toxic weighted load
- Click on the *E icon* to open the Effluent Charts Report
  - These charts present the actual effluent measurements that are reported on a monthly basis. Viewing this information helps to provide more context about the magnitude of the discharges.

Case Study #2

Purpose: Identify the facilities with mercury violations who have not been recently inspected.

Water Facility Search

- Navigate to https://echo.epa.gov
- Select *Explore Facilities*
- Select *Water* under Evaluate Compliance

- On the search form, scroll down to the "Pollutant" section
  - Enter pollutant = *Mercury* and select *2448 – Mercury from dropdown list*
  - Check *Pollutant(s) Have Violations (past 3 years)*
- Click *Search*

Water Results – ECHO Map Filter

- In the Current Search panel to the right of the map, under Explore Enforcement and Compliance Criteria, check:
  - *Facilities with Current Violations*
  - *Facilities without on-site Inspections*
- Zoom to the Great Lakes area (Michigan, Illinois, Wisconsin)
- In the data table, click on *Effluent Violations* twice to sort facilities in descending order
- Collapse the side panels and expand *Customize Map Layers*
- Zoom in on the facility in Wisconsin until you reach 48% zoom
- Expand Water Maps and check *Impaired Waters 303(d)*
  - We can see that this facility is located close to an impaired waterbody
- In the data table below the map, click on the *C icon* to open the Detailed Facility Report (DFR)

Detailed Facility Report

- Expand the *Enforcement and Compliance* section and scroll down to the *3-Year Compliance Status by Quarter* table
  - Each column in this table represents a three-month period. The value presented in the table is the exceedance of the discharge over the permit limit expressed as a percentage. Only one value is presented for each quarter, and this is the highest percentage for the 3-month period. Values shown in bold, red are exceedances that were determined to be significant violations.
- To see more detail about the violation, click on the pollutant name to view the effluent charts. Click on the first *Mercury* row in this table.

Effluent Charts

- The effluent charts for Mercury at each outfall are loaded on the page. These charts present the actual effluent measurements that are reported on a monthly basis. Viewing this information helps to provide more context about the magnitude of the discharges. Note the units on the Y axis for the concentrations and quantities.

Key Takeaways

- ECHO provides several tools for analyzing CWA data: Water Facility Search, DMR Pollutant Loading Tool, Effluent Charts, and the Detailed Facility Report
- In our first case study, we used the Loading Tool to identify facilities with the largest discharges that may negatively impact the surrounding environment.
- In our second case study, we used the Water Facility Search and map filtering features to identify facilities with many effluent violations and without a recent inspection.
- In both cases, we used Effluent Charts and other reports to access more detailed information.
- These tools use the same underlying data, but we've shown how offering different querying capabilities and reports help users answer different questions.