



DMR Pollutant Loading Tool Version 1.0

EVERYDAY SEARCHES USER GUIDE

1. OVERVIEW

You have a new tool for analyses of wastewater pollutant discharge data. This tool, the Discharge Monitoring Report Pollutant Loading Tool (abbreviated “Loading Tool”) provides you with pollutant loadings you can use to answer questions about the amount and toxicity of pollutant discharges to U.S. waters.

The tool calculates pollutant loadings from monitoring and permit data from EPA’s Permit Compliance System (PCS) and Integrated Compliance Information System for the National Pollutant Discharge Elimination System (ICIS-NPDES). The tool also includes wastewater pollutant discharge data from EPA’s Toxics Release Inventory (TRI). Data are available for the years 2007 through 2010. This tool helps you access wastewater pollutant discharge data, if you are a general user or if you are a more technical user:

- If you are a **general user**, you can use the *EZ Search* or *TRI Search* to quickly find discharge monitoring data or TRI data based on simple searches.
- If you are a **technical user** (e.g., NPDES permit writer, watershed modeler, or regulatory agency), you can use the *Advanced Search* to access more detailed discharge monitoring data that you can download in a comma-separated value (CSV) file for further analysis in your own software application.

You can navigate the Loading Tool home page using the eight tabs described in Table 1.

Table 1. Loading Tool Tabs and Descriptions

Tab	Description
Overview	Provides general information about the tool including: (1) How to Navigate the Tool; (2) Loading Tool Data Sources; (3) Data Scope and Limitations; and (4) 2010 Beta Release and Testing.
EZ Search	General users can perform simple searches using DMR data. Results are displayed on a Web page in “top ten” lists to help you determine which discharges are important, which facilities and industries are producing these discharges, and which watersheds are impacted.
TRI Search	Similar search interface and display results as EZ Search but the data source is TRI data
Facility Search	Provides direct access to facility-level information, one facility at a time.
Advanced Search	Designed for technical users and provides increased flexibility on search criteria and data to be downloaded as a CSV file for post processing by the user.
Data Explorer	General users can create a thematic map of the United States in which states are shaded in blue in proportion to the user’s search criteria. For example, the user can visually see the number of POTWs in each state with states shaded in dark blue having the most number of POTWs.
Everyday Searches	Provides access to trend charts and other ‘canned’ searches (by geographic location, industry sector, and/or pollutant) of DMR data that are often used by technical users. In particular, the “Facility Loading Calculations” on this tab details exactly how the tool calculates annual pollutant loads using DMR data
Users Guide/Technical Documents	Provides the instructions, guides, and metadata to assist users with the Loading Tool.

This document provides guidance for using the Everyday Searches tab. You can find guidance for using the EZ Search, Facility Search, and Advanced Search in the *User’s Guide for using the EZ Search, Facility Search, and Advanced Search*; the Data Explorer feature in the *User’s Guide for using the Data Explorer*; and the TRI Search in the *User’s Guide for using the TRI Search*.

2. EVERYDAY SEARCHES

Everyday searches provide search options based on specialized data requests that cannot easily be queried using the EZ Search, Facility Search, or Advanced Search and other additional tools. The everyday searches page is shown in Figure 2-1 and includes Search EPA Lookup Tables, Facility Loading Calculations, Counts and Summaries, Loading Trends Charts, Exceedance Charts, Load Over Limit Summary, Facility Exceedance Counts, and Top Industrial Dischargers of Toxic Pollutants. Each of these searches is described in detail in the sections below.

Everyday Searches

Instructions. These "everyday" searches provide specialized search options that are not available using the EZ Search (DMR) or Advanced Search. These specialized searches use DMR data from PCS and ICIS-NPDES. For more information on using these Everyday Searches, refer to the [Everyday Searches User's Guide \(PDF\)](#) (x pp, XXXX).

Search EPA Lookup Tables. These look up tables provide an easy way to access information and the connections used by the Loading Tool. For example, you can use your zip code to find the name of your watershed.

Facility Loading Calculations. This search will allow you to review the exact monitoring data and formulas that the Loading Tool uses to calculate the annual estimates of pollutant discharge loading calculations for a single facility. This search is particularly useful for identifying potential data errors.

Counts and Summaries. This search will allow you to count facilities and summarize pollutant discharge amounts and group these data by state, pollutant, and industrial sector. You can search by year, geographic location, pollutant, and industry category. This search is particularly useful if you would like to count the number of facilities that have effluent limits for a particular pollutant and group these counts by state or industrial sector.

Loading Trends Charts. Search by geographic location, pollutant, and/or industry category and visually compare pollutant discharge amounts over multiple years.

Exceedance Charts. Search by geographic location, pollutant, and/or industry to visually compare the number of facilities with effluent limit exceedances and the magnitude of these exceedances (grouped as percentages over the effluent limit) over multiple years.

Load Over Limit Summary. Search by year, geographic location, and/or industry to generate a data file showing facility information, the total facility load over effluent limit, top load over effluent limit parameter, and the parameter load over effluent limit for each reporting year.

Facility Exceedance Counts. Using a facility name or unique identifier you can identify the months when a facility has exceeded its permitted effluent limit for each outfall at the facility.

Top Industrial Dischargers of Toxic Pollutants. This search provides a listing of the industrial sectors, grouped by EPA's Effluent Guidelines Point Source Categories, by the cumulative amount of toxic pollutant discharges (in units of toxic-weighted pound equivalents or "TWPE").

Figure 2-1. Everyday Searches Page

2.1 EPA Lookup Tables

The Loading Tool uses information from several data sources. Different data sources may use different codes or categories to describe the same facility, pollutant, industry, or watershed. For example, a facility may be identified by its NPDES ID, Toxic Inventory Release (TRI) ID and Clean Watershed Needs Survey (CWNS) ID. If you know one code or category for a facility, pollutant, industry, or watershed, you can use the Look-Up Table Searches to find the codes or categories used in other databases for that facility, pollutant, industry, or watershed. EPA created four look-up tables for these searches:

- Facility ID Look-up;
- Pollutant Look-up;
- Industry Code Look-up; and
- Watershed Look-up.

2.1.1 Facility ID Look-Up

Using the Facility ID Look-up, you can specify any one of the facility ID fields shown in Figure 2-2. When you click *Search*, the Loading Tool will display any matching IDs for the other facility ID fields. Note that searching on one type of facility ID may produce multiple results for other facility IDs. Multiple results are displayed in a list format within to the results field, as shown in Figure 2-2.

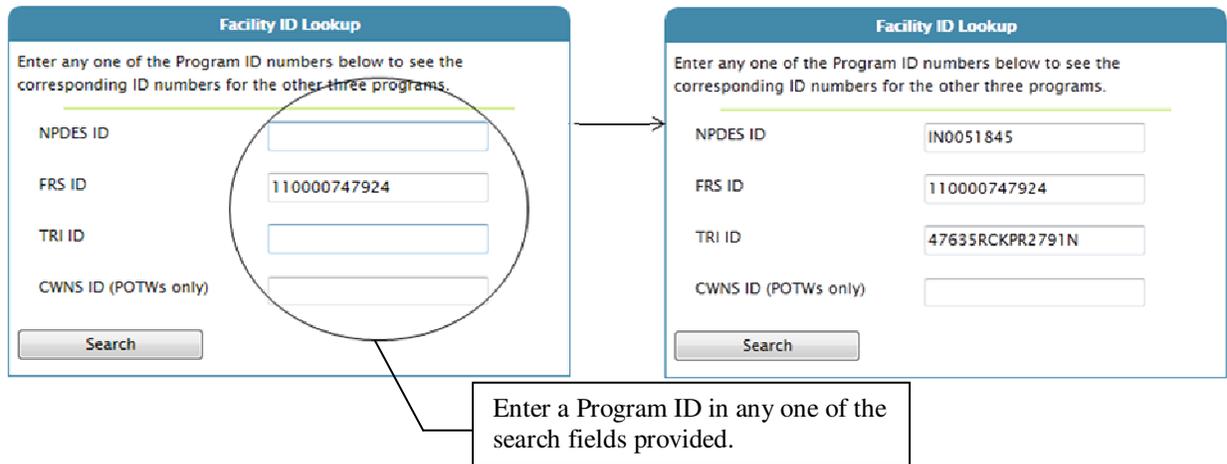


Figure 2-2. Facility ID Look-Up

2.1.2 Pollutant Look-Up

Using the Pollutant Look-Up, you can enter either a pollutant name or Chemical Abstracts Service (CAS) Number, as shown in Figure 2-3. When you click *Search*, the Loading Tool will display the corresponding parameter code(s), pollutant code, system registry service (SRS) IDs, pollutant toxic weighting factor (TWF), and pollutant category(ies).

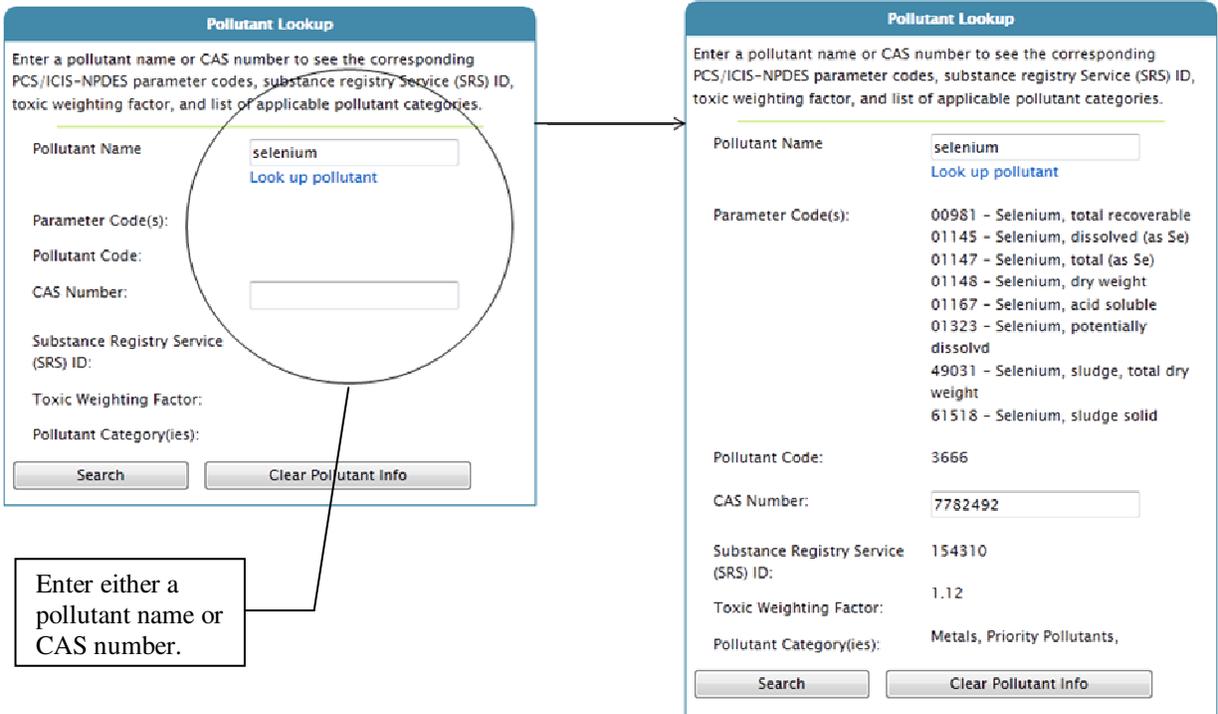


Figure 2-3. Pollutant Look-Up

2.1.3 Industry Code Look-Up

Using the Industry Code Look-Up, you can enter a Standard Industrial classification (SIC) code, a North American Industry Classification System (NAICS) code, or an Effluent Guidelines Point Source Category Code(s), shown in Figure 2-4. When you click *Search*, the Loading Tool will return the corresponding Point Source Category Code(s), SIC code(s), and NAICS code(s). EPA developed this linkage to assign facility discharges to Point Source Categories for its annual review analysis. The annual review includes discharges reported to TRI, the Permit Compliance System (PCS), and the Integrated Compliance Information System for the NPDES (ICIS-NPDES). TRI uses NAICS codes to categorize industrial activities at facilities, while PCS and ICIS-NPDES use SIC codes. Because EPA developed the look-up to link SIC codes and NAICS codes to Point Source Categories, and because there is not a one-to-one match between SIC codes and NAICS codes, the search does not directly link SIC codes to NAICS codes.¹

¹ The 1997 Economic Census provides a Bridge Between NAICS and SIC codes, available online at <http://www.census.gov/epcd/ec97brdg/>

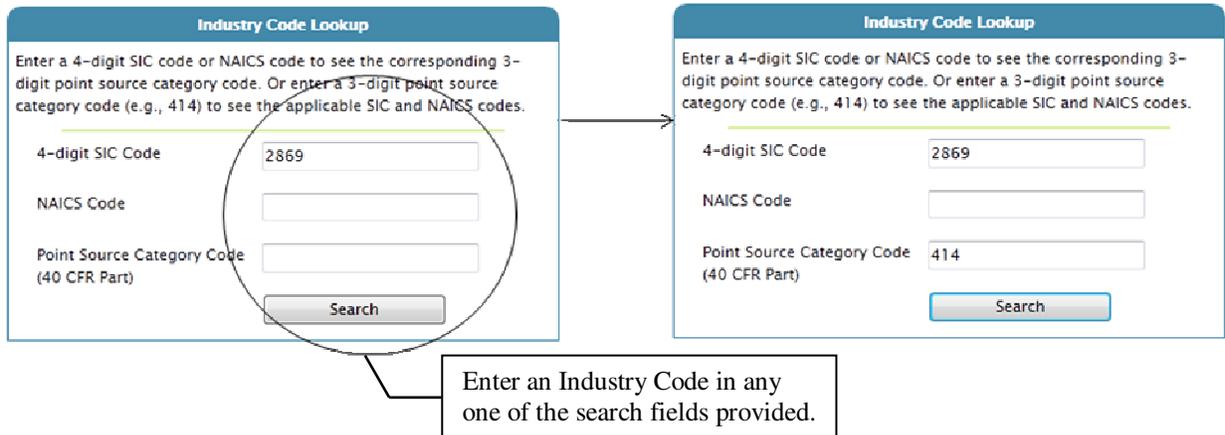


Figure 2-4. Industry Code Look-Up

2.1.4 Watershed Look-Up

Using the Watershed Look-Up, you can enter a 5-digit zip code as shown in Figure 2-5 and the Loading Tool will return the corresponding 12 digit hydrologic unit codes (HUC-12). The Loading Tool uses a WATERS web service to connect zip codes to HUC-12 codes. The geographic boundaries for zip codes are different from watershed boundaries and some zip codes comprise more than one watershed; therefore, searching on a zip code can return more than one HUC-12 code.

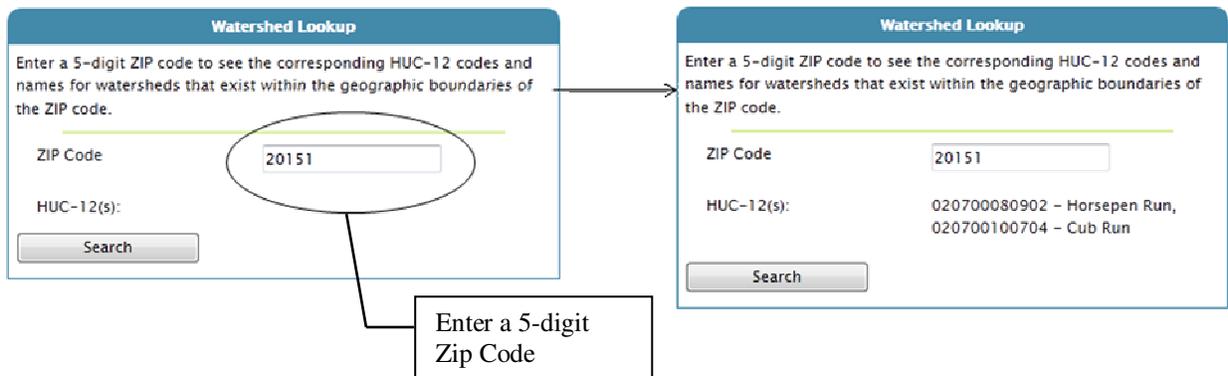


Figure 2-5. Watershed Look-Up

2.2 Facility Loading Calculations

The facility load calculation demo allows you to search for loadings data for a single facility. It allows you to click on pollutant loadings to see the underlying DMR data and the Loading Tool’s methodology for computing the annual load. You first select a reporting year and then enter facility criteria: FRS ID, NPDES Permit ID, or the Facility Name, shown in Figure 2-6. When you click search, the Loading Tool will return a list of annual pollutant loads for the facility. Click on the “View Details” button for any one of the pollutants and the Loading Tool will display the outfall-level loadings for the selected pollutant. Click on the “View More Details” button for any one of the outfall-level loads and the Loading Tool will display a table showing how the Loading Tool calculated the annual load using the monthly DMR data, shown in Figure 2-7.

Select Reporting Year: 2010

Select reporting year from menu.

Facility

FRS ID

NPDES Permit ID: MD0056545

Enter facility information (FRS ID, NPDES Permit ID, or Facility Name).

Facility Name

Look up facility name

Search

Click "Search" to view the annual loads for the facility.

MD0056545: SOD RUN WASTEWATER TREATMENT PLANT
2010 Total Annual Loads

Pollutant	Total Pounds (lbs./yr)	Total TWPE (lbs-eq./yr)
Ammonia as N	42,430	47.09
Phosphorus	21,605	0
Nitrogen	4,376,515	0
Inorganic Nitrogen (nitrate and nitrite) (as N)		

Click "View Details" to view the outfall loads for a single pollutant.

2010 Outfall-Level Loads for Ammonia as N

Outfall	Pollutant Pounds (lbs./yr)	Pollutant TWPE (lbs-eq./yr)
001	42,430	47.09

Click "View More Details" to view the annual load calculations (see next Figure).

Figure 2-6. Facility Loading Calculations

2010 Monitoring Period-Level Loads for Ammonia as N for Outfall 001

Monitoring Period	Discharge Information	Below Detection Limit?	Measurement Type	Avg Daily Value	Wastewater Flow (MGD)	Number of Days	Monitoring Period Load (kg./period)	Equation
01/01/2010	Occurred? Yes Reported? Yes Estimated? No	No	Concentration (mg./L)	0.74	18.5	01	1,179	Concentration (mg./L) X Flow (MGD) X 8.785 (L./gal) X Number of Days
02/28/2010	Occurred? Yes Reported? Yes Estimated? No	No	Concentration (mg./L)	2.81	18.9	28	4,149	Concentration (mg./L) X Flow (MGD) X 8.785 (L./gal) X Number of Days
03/01/2010	Occurred? Yes Reported? Yes Estimated? No	No	Concentration (mg./L)	2.86	18.78	01	5,279	Concentration (mg./L) X Flow (MGD) X 8.785 (L./gal) X Number of Days
04/01/2010	Occurred? Yes Reported? Yes Estimated? No	No	Concentration (mg./L)	0.99	18.7	00	923	Concentration (mg./L) X Flow (MGD) X 8.785 (L./gal) X Number of Days
05/01/2010	Occurred? Yes Reported? Yes Estimated? No	No	Concentration (mg./L)	0.8	12.8	01	1,174	Concentration (mg./L) X Flow (MGD) X 8.785 (L./gal) X Number of Days
06/01/2010	Occurred? Yes Reported? Yes Estimated? No	No	Concentration (mg./L)	0.7	11.45	00	910	Concentration (mg./L) X Flow (MGD) X 8.785 (L./gal) X Number of Days
07/01/2010	Occurred? Yes Reported? Yes Estimated? No	No	Concentration (mg./L)	0.6	11.8	01	802	Concentration (mg./L) X Flow (MGD) X 8.785 (L./gal) X Number of Days
08/01/2010	Occurred? Yes Reported? Yes Estimated? No	No	Concentration (mg./L)	0.7	11.02	01	909	Concentration (mg./L) X Flow (MGD) X 8.785 (L./gal) X Number of Days
09/01/2010	Occurred? Yes Reported? Yes Estimated? No	No	Quantity (kg./day)	25.8	11.2	00	762	Daily Load (kg./day) X Number of Days
10/01/2010	Occurred? Yes Reported? Yes Estimated? No	No	Quantity (kg./day)	33.5	12.74	01	1,040	Daily Load (kg./day) X Number of Days
11/01/2010	Occurred? Yes Reported? Yes Estimated? No	No	Quantity (kg./day)	8.17	11.5	00	99.2	Daily Load (kg./day) X Number of Days
12/01/2010	Occurred? Yes Reported? Yes Estimated? No	No	Quantity (kg./day)	69.3	12.02	01	2,024	Daily Load (kg./day) X Number of Days
Annual Load from Monitoring Data (kg./yr)							19,245	Sum of Monitoring Period Loads
Number of Months Requiring Estimation							0	
Annual Load (kg./yr)							19,245	Annual Load from Monitoring Data (kg./yr) X 12 / (12 - Number of Months Requiring Estimation)
Annual Load (lb./yr)							42,430	Annual Load (kg./yr) X 2.205

This column indicates whether the monitoring period load was based on a pollutant concentration that was measured below the detection limit.

The last column displays the equation used by the Loading Tool to calculate the monitoring period loads

Indicates whether the Loading Tool estimated discharges for months with missing DMR data.

Annual pollutant load displayed in EZ Search results.

Figure 2-7. Facility Loading Calculations (Continued)

2.3 Counts and Summaries

The Counts and Summaries search allows you to summarize data completeness statistics by Pollutant, SIC Code, or State. After selecting how to summarize results, enter search criteria on geographic location or watershed, pollutant, and industry category, shown in Figure 2-8. Click the search button to view the results, shown in Figure 2-9. You may also download a csv of all data or the facility data from the summary table page.

Counts and Summaries

Instructions: Enter or select a value for one or more of the criteria below and click the Search button to retrieve data completeness statistics summarized by geographic location, pollutant, and industry category.

Summarize Results By: **Pollutant** ← Select to summarize facility counts and load by Pollutant, SIC Code, or State.

Include Data From: **201** To: **201** ← Enter range of reporting years (e.g., 2008-2010).

1 Location

EPA Region: **Select an EPA Region**
View EPA regional map

OR

State: **Select a State**

Watershed Zip Code:

12-Digit HUC:
Find 12-digit HUC on a map

Major U.S. Watersheds: **Please Select a Watershed**

2 Pollutant

Pollutant Category: **Select pollutant category**

Chemical Abstract Service (CAS) Number:

Pollutant:

Look up pollutant

Parameter code:

Look up parameter code

Specify a concentration range for pollutants:

Greater than: mg/L

Less than: mg/L

3 Industry

All Point Source Categories

Publicly Owned Treatment Works (POTWs) Only

Industrial Point Sources (non-POTW)

Point Source Category: **All Point Source Categories**

2-Digit SIC Code: **All SIC Codes**

OR

Enter a 4-digit SIC Code:

SIC Code lookup

2-digit NAICS code: **All NAICS Codes**

Search ← Click "Search" to view summary report (see next Figure).

← Enter search criteria for Location, Pollutant, and/or Industry

Figure 2-8. Counts and Summaries Search Page

Counts and Summaries

Search Criteria: Summary by pollutant; Year = 2010 AND Region = 06 AND Pollutant category = Organic Enrichment AND POTWs only

Pollutant	Facilities Counts (Based on Facility Data)			Facilities Counts (Based on Facility and Permit Data)					Facilities with Facility, Permit Data, and DMR Data in ICIS/PCS	Total Pounds (lbs/yr)	Total TWPE (lbs-eq/yr)	
	All Facilities	Majors	Minors	With Facility Info Only	With Facility and Permit Data	Majors	Minors	With Monitoring Requirements Only				With Monitoring Requirements and Effluent Limits
BOD, 5-day, 20 deg. C	2,428	672	1,765	392	894	202	692	0	894	894	24,529,776	0
BOD, carbonaceous, 05 day, 20 C	2,428	672	1,765	392	1,149	461	688	0	1,149	1,149	20,871,586	0
Chemical oxygen demand (COD)	2,428	672	1,765	392	2	1	1	2	0	2	261,020	0

Download Data ← Click to download csv of above summary table.

Download Facilities ← Click to download csv of facility details.

Figure 2-9. Counts and Summaries Results

2.4 Loading Trends Charts

The loading trends charts allows you to search by geographic location, pollutant, and/or industry category and visually compare pollutant loadings in pounds per year and TWPE per year over multiple years, shown in Figure 2-10. After entering search criteria, you can click a “View Loading Trends” button to see a bar chart of pollutant loadings from 2007 to 2010.

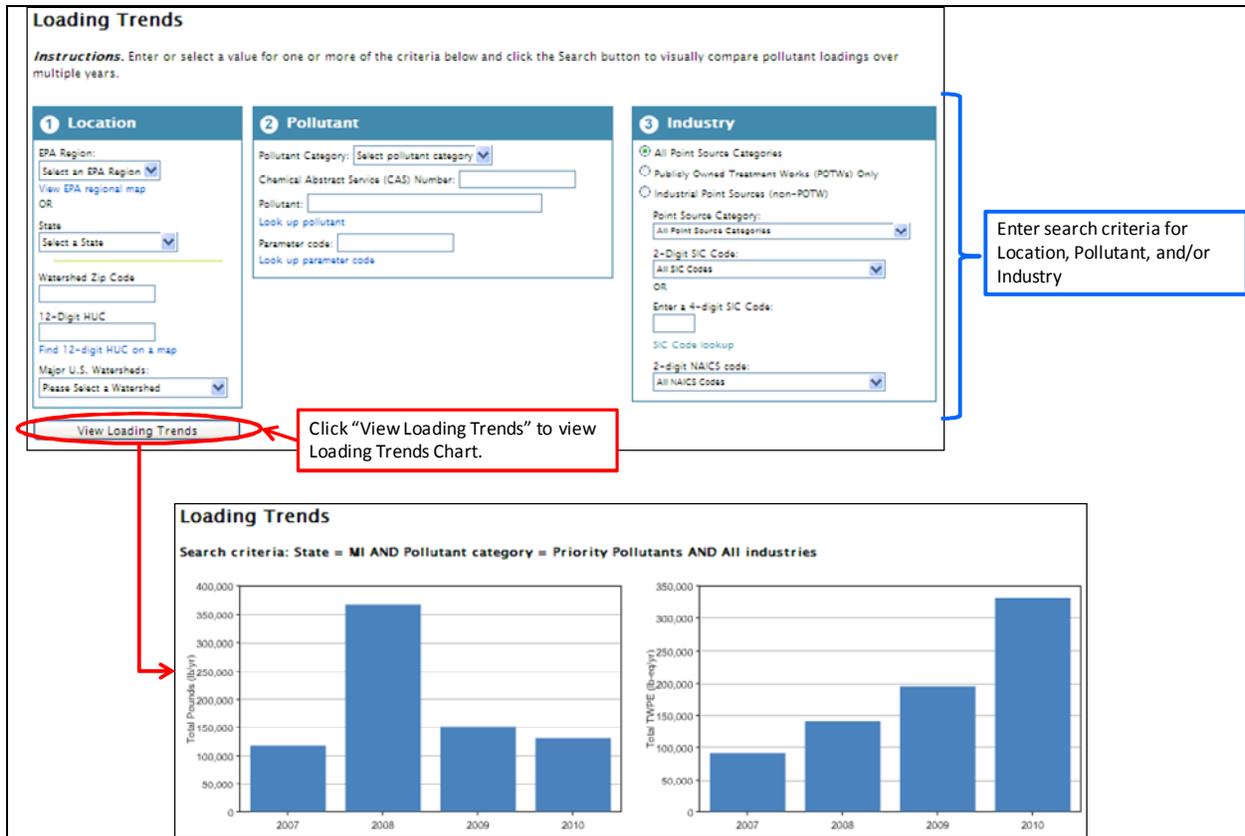


Figure 2-10. Loadings Trends Search and Results

2.5 Exceedance Charts

This search option allows you to search by geographic location, pollutant, and/or industry to visually compare the number and magnitude of exceedances over multiple years. After entering your search criteria, shown in Figure 2-11, click the “View Exceedance” button to see a bar chart comparing the counts of exceedances that are within percentage ranges (0 to 20%, 20% to 40%, 40% to 60%, 60% to 80%, 80% to 100%, and greater than 100%) from 2007 to 2010.

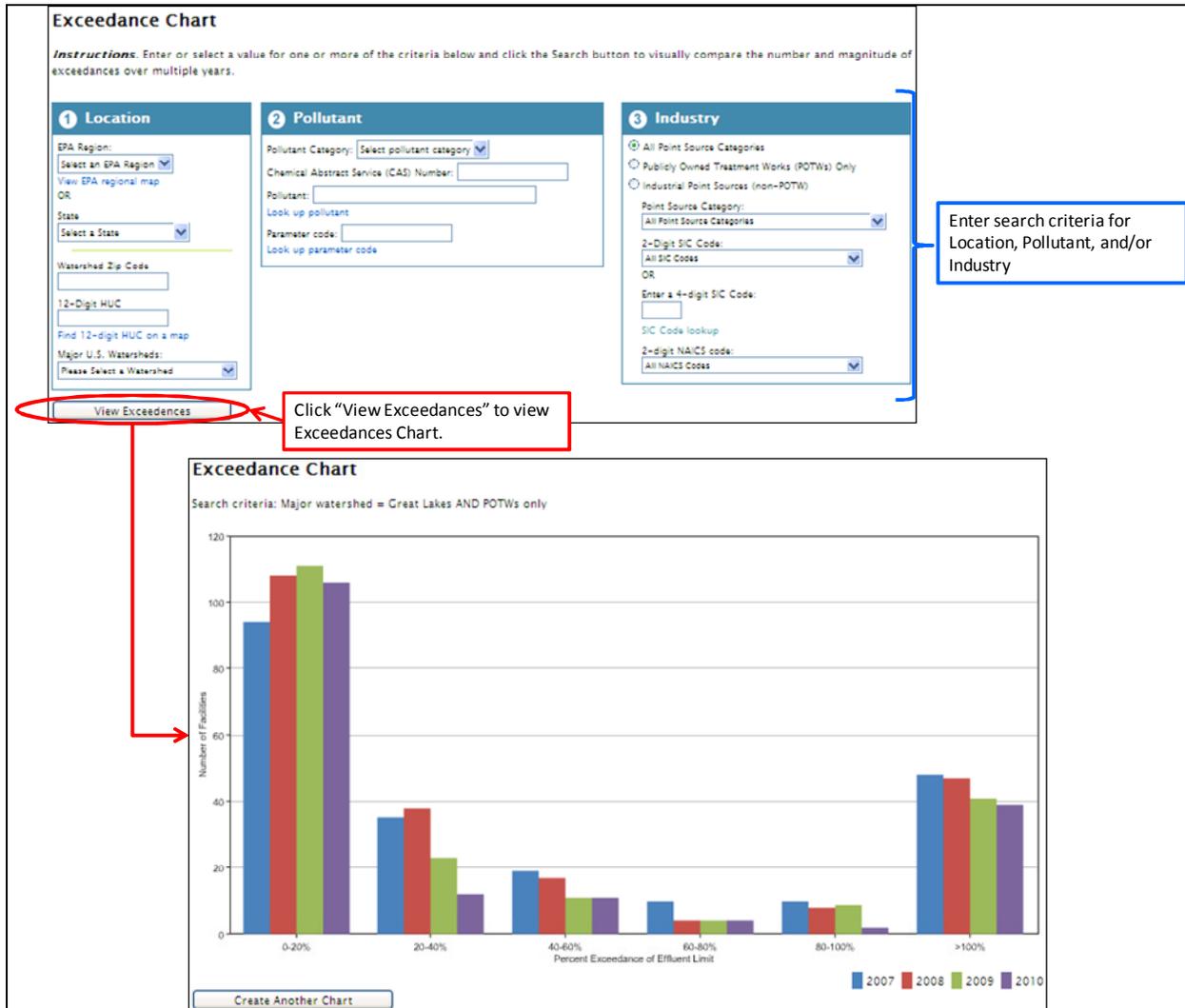


Figure 2-11. Exceedance Charts Search Page and Results

2.6 Load Over Limit Summary

The load over limit summary search allows you to search by year, geographic location, and/or industry, shown in Figure 2-12. The search generates a csv file showing facility information, the top load over limit pollutant in pounds, and the top load over limit pollutant in TWPE for each reporting year.

Load Over Limit Summary

Instructions. Enter or select a value for one or more of the criteria below and click the Search button to generate a data file containing facility information, the total facility load over limit, top load over limit parameter, and the parameter load over limit for each reporting year.

Select Reporting Year: 2010

1 Location

EPA Region:
Select an EPA Region
View EPA regional map
OR
State:
Select a State
Watershed Zip Code:
12-Digit HUC:
Find 12-digit HUC on a map
Major U.S. Watersheds:
Please Select a Watershed

2 Industry

All Point Source Categories
 Publicly Owned Treatment Works (POTWs) Only
 Industrial Point Sources (non-POTW)

Point Source Category:
All Point Source Categories
2-Digit SIC Code:
All SIC Codes
OR
Enter a 4-digit SIC Code:
SIC Code lookup
2-digit NAICS code: All NAICS Codes

Enter search criteria for , Year, Location, and/or Industry

Generate File

Click "Generate File" to download the Load Over Limit csv file.

Year	NPDES Permit Number	FRS ID	Facility Name	City	State	Industry Sector ID (SIC Code)	Watershed ID (12-Digit HUC)	Major/Minor	Data Source	Top Pollutant by Pounds (lbs/yr)	Top Load Over Limit Pounds (lbs/yr)	Top Pollutant by TWPE (lbs-eq/yr)	Top Load Over Limit TWPE (lbs-eq/yr)
2010	IL004919	1.1E+11	AMEREN ENERGY GENERATING CO	NEWTON	IL	4911	5.1201E+10	Major	ICIS	Solids, total suspended	13.6054		
2010	IL003691	1.10006E+11	AMERGEN ENERGY CO LLC	CLINTON	IL	4911	7.13E+10	Major	ICIS	Solids, total suspended	7075.3		
2010	OH00995	1.10001E+11	AMERICAN MUNICIPAL POWER OHIO RH	MARIETTA	OH	4921	5.0302E+10	Minor	ICIS	Solids, total suspended	13214.3		
2010	IN000280	1.1E+11	CINERGY/PSI NORBESVILLE GENERATING	NORBESVILLE	IN	4911	5.1202E+10	Minor	ICIS	Copper	66.4775	Copper	41.8808
2010	IL002476	1.1E+11	CITY WATER LIGHT & POWER	SPRINGFIELD	IL	4911	7.13E+10	Major	ICIS	Boron	291.671	Boron	2.43303
2010	OH00043	1.10001E+11	DAYTON POWER & LIGHT CO/JM STUART	ABERDEEN	OH	4911	5.0902E+10	Major	ICIS	Chlorine	43812.8	Chlorine	21906.4

Figure 2-12. Load Over Limit Summary Search and Results

2.7 Facility Exceedance Counts

The facility exceedance counts search allows you to search by facility and monitoring period range, as shown in Figure 2-13, to generate a csv file showing counts of exceedances for each type of effluent limit (e.g., maximum concentration, average concentration), for each pollutant, at each outfall at the facility.

The screenshot shows a web interface for searching facility exceedance counts. It includes a search form with fields for monitoring period range and facility identification. A 'Generate File' button is highlighted with a red circle and an arrow pointing to a data table below. The table lists outfalls, monitoring locations, parameters, and exceedance counts.

Facility Exceedance Counts

Instructions. Enter or select a value for one or more of the criteria below and click the Search button to generate a data file containing counts of exceedances for each type of effluent limit (e.g., maximum concentration, average concentration), for each pollutant, at each outfall at the facility.

Monitoring Period Range Start: Jan 2010
Monitoring Period Range End: Dec 2010

Facility

FRS ID:
NPDES Permit ID:
Facility Name: [Look up facility name](#)

Generate File

Click "Generate File" to download the Facility Exceedance Counts csv file.

	A	B	C	D	E	F	G	H	I
1	Facility Exceedance Counts								
2	Search Criteria: Monitoring Period=01/01/2010 to 12/31/2010; ; NPDES Permit ID =DC0000019								
3	Outfall Number	Monitoring Location Code	Parameter Code	Parameter Name	Number of Reports	Count of Avg Qty Limit Exceedances	Count of Max Qty Limit Exceedances	Count of Avg Conc Limit Exceedances	Count of Max Conc Limit Exceedances
4	2	1	1105	Aluminum	1	0	0	5	5
5	2	1	1042	Copper	1	0	0	0	1
6	2	1	980	Iron	1	0	0	1	1
7	2	1	530	Solids, total :	1	0	0	5	5
8	3	1	1105	Aluminum	1	0	0	3	3
9	3	1	1042	Copper	1	0	0	3	3
10	3	1	980	Iron	1	0	0	2	2

Figure 2-13. Facility Exceedance Counts

2.8 Top Industrial Discharges of Toxic Pollutants

This search option allows you to rank Point Source Categories by their combined DMR and TRI TWPE. To generate rankings, select a reporting year and click “View Rankings”. You also have the option to exclude categories that have been under review for Effluent Guidelines development since a specified year. The Top Industrial Discharges of Toxic Pollutants search page and results are shown in Figure 2-14.

Top Industrial Dischargers of Toxic Pollutants

Instructions. Select a reporting year and click View Rankings to view the top industrial discharges of toxic pollutants for a specific year.

Select Reporting Year: 2008

Exclude categories that have been reviewed for Effluent Guidelines development since: [dropdown]

View Rankings

2008 Rankings

Rank	40 CFR Part	Industrial Sector	DMR TWPE (lb-eq/yr)	TRI TWPE (lb-eq/yr)	Total TWPE (lb-eq/yr)	Cumulative % of Total TWPE (lb-eq/yr)
1	414	Organic chemicals, plastics and synthetic fibers	1,557,247	9,427,502	10,984,749	30.3
2	423	Steam electric power generating	5,141,640	1,514,303	6,655,943	48.7
3		Drinking Water Treatment	2,599,736	398	2,600,134	55.9
4	420	Pulp, paper and paperboard	353,884	1,990,901	2,344,784	62.4

Figure 2-14. Top Industrial Discharges of Toxic Pollutants Search and Results