
NPDES Effluent Violations Dashboard (beta)

https://awsedap.epa.gov/echo/extensions/Effluent_Violations/Effluent_Violations.html

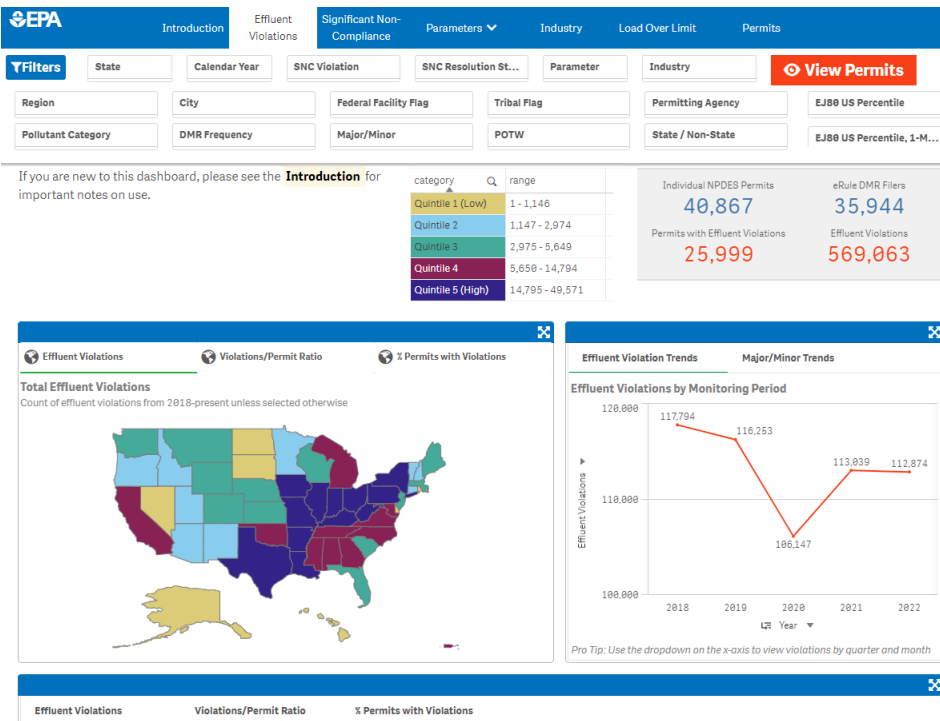


2023 National NPDES Permitting Meeting
1 March 2023



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Purpose of the Dashboard



Provide a comprehensive, analytical tool for exploring effluent violations associated with NPDES individual permits.

Support advanced analysis of effluent violation trends.

Identify effluent violation issues that may require regulatory attention for locations, parameters, industries, specific permits, or groups of permits.



How to Access the Dashboard

The screenshot shows the ECHO.gov website interface. At the top is a navigation bar with links: Environmental Topics, Laws & Regulations, Report a Violation, About EPA, and a search bar. Below the navigation bar is the ECHO logo and the text 'Enforcement and Compliance History Online'. A sidebar on the left contains links: Quick Search, Search Options, Analyze Trends (highlighted), Find EPA Cases, Data Services, Help, and News. The main content area is titled 'Analyze Trends' and contains a description of ECHO's features. It lists several categories of tools and dashboards:

- Track Performance**
 - EPA/State Dashboards
 - Air / Wastewater / Drinking Water / Hazardous Waste / Pesticides
 - ECHO EJ Dashboards (EPA/State)
 - Air / Wastewater / Hazardous Waste
 - EPA/State Comparative Maps
 - NPDES DMR Non-Receipt Status Search
 - State Review Framework (SRF)
 - SRF Recommendations
 - Archived Tools
- Data Visualization**
 - Data Visualization Gallery
 - PFAS Analytic Tools
 - PFAS Analytic Tools - Government
 - NPDES SNC/Category 1 Violations
 - Lead Occurrence and Source Map
 - NPDES eRule Dashboards
 - Benzene Fenceline Monitoring
- Pollution Analysis**
 - Water Pollutant Loading Tool
 - Clean Air Tracking Tool (ECATT)
 - Data Analytics
 - Water Quality Indicators Map

At the bottom of the 'Analyze Trends' section, it says 'Popular Feature' and 'ECHO Gov' and 'EPA Only'.

Below the 'Analyze Trends' section is a list of four dashboards, each with a thumbnail, title, description, and a 'Provide Feedback' button:

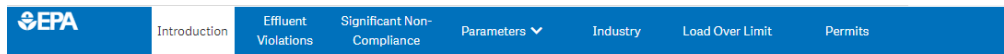
- NPDES eRule Readiness and Reporting Dashboard**: This dashboard shows the progress that states and permittees are making in the adoption of electronic reporting and the subsequent sharing of wastewater... Read more detail
- PFAS Analytic Tools and Data Navigation Center (Version 3)**: The PFAS Data Navigation Center is a directory of data resources related to per- and polyfluoroalkyl substances (PFAS) occurrence and potential source... Read more detail
- NPDES SNC/Category 1 Violations**: OECA has created this dashboard for EPA and states to use to track progress in reducing the rate of significant noncompliance (SNC) in the Clean Water... Read more detail
- CWA NPDES Effluent Violations Dashboard (beta)**: This dashboard is a comprehensive, analytical tool for exploring effluent violations associated with NPDES individual permits from 2018-present. The d... Read more detail

https://awsedap.epa.gov/echo/extensions/Effluent_Violations/Effluent_Violations.html

Available to ECHO.gov Users through the Data Visualizations Gallery



Navigating the Dashboard



[Tour This Platform](#)

Welcome to the CWA NPDES Effluent Violations Dashboard

What is an Effluent Exceedance Violation?

The NPDES program requires that permitted facilities sample their discharge and periodically report the results on discharge monitoring reports (DMRs). An effluent exceedance violation is automatically generated when a reported DMR pollutant/parameter value exceeds the limit value, be that of base (permit) limits, permit modification limits, stay limits, or enforcement limits.

What is the Purpose of This Dashboard?

This dashboard is a comprehensive, analytical tool for exploring effluent violations associated with NPDES individual permits from 2018-present. The dashboard is not meant to be used for purposes of reporting or performance tracking, rather it is designed to support more advanced analysis of effluent violation trends and to identify where there may be effluent violation issues that require regulatory attention, be that for a particular location, parameter, industry, specific permit, or group of permits.

Important Notes on Use

- The platform refreshes on a weekly basis.
- The dashboard includes the following permit and effluent violation data
 - Individual permits that have submitted at least one DMR from 2018-present*
 - Effluent exceedances of enforceable limits identified via discharge monitoring report (DMR), indicated by violation code = e90
- Any effluent violations with an RNC detection code is considered significant non-compliance (SNC)
- Parameter is used instead of pollutant, though a crosswalk is included along with the relevant pollutant group
- Industry is based on Standard Industrial Classification (SIC) code
- Year refers to calendar year, not fiscal year

**Permit totals are aggregated by calendar year, with a combined total from 2018-present reflecting all permits (i.e. unique NPDES IDs) that submitted at least one DMR during that timeframe*

Dashboard is divided into sections on Effluent Violations, Effluent SNC, Parameter Trends, Industry Trends, Load Over Limit, and Permit Specific Information

“Tour this Platform” if you are unfamiliar with other EPA Qlik tools.

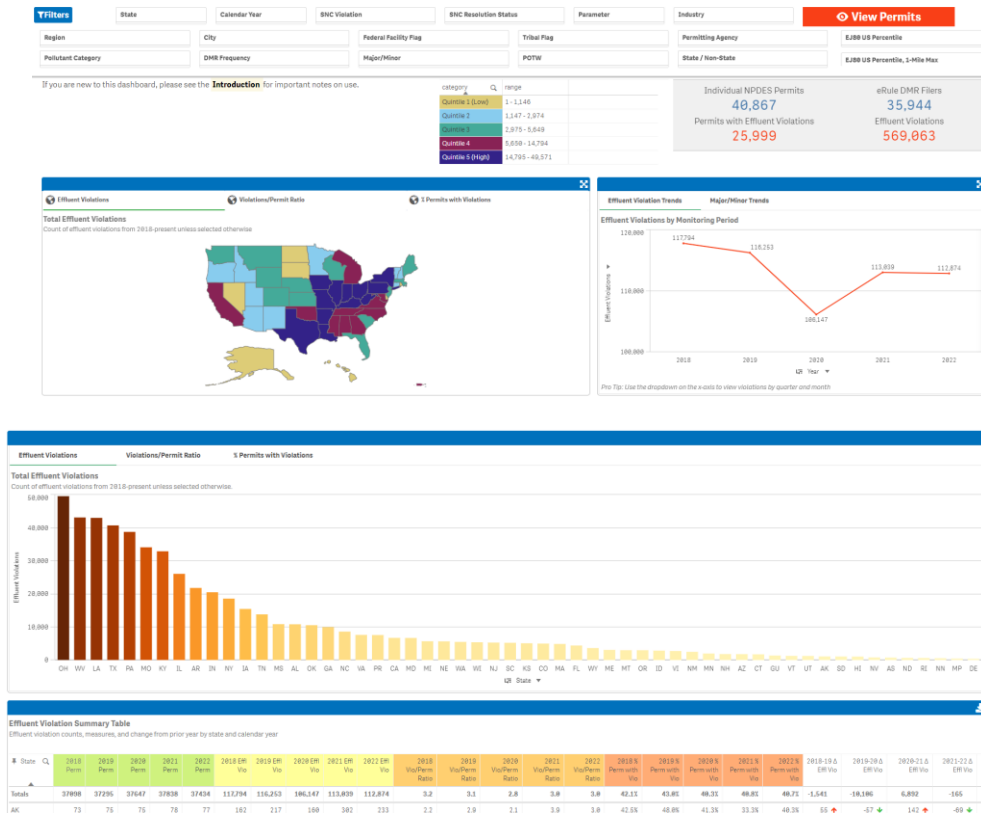
Based on data from the ECHO water pollutant loadings tool

Take into account data caveats



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Effluent Violations

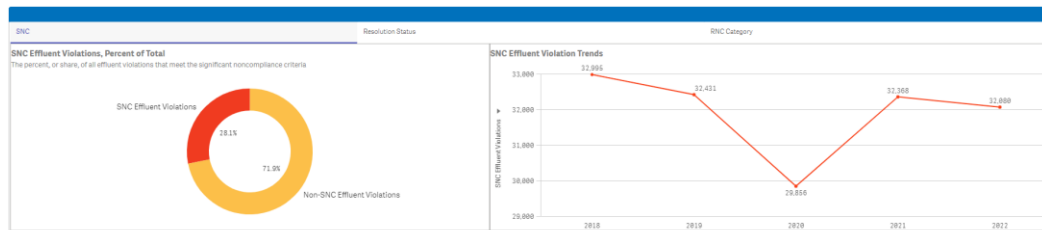


Review annual trends on number of violations, violations/permit, % of permits with violations

Summary table by state with data on each of the trends, and change from prior year



Significant Non-Compliance



Review annual trends on SNC effluent violations, resolution status, and RNC categories

SNC Effluent Violation Summary Table
Count and share of SNC effluent violations by state

State	CL	Trend	% SNC	SNC	Resolved	Unresolved	% Unresolved	TRC	Chronic	Enf Limit	% TRC	% Chronic	% Enf Limit
Totals			28%	159748	137844	21906	13.7%	149171	8331	2438	26.2%	1.4%	0.4%
WA			58%	3171	1229	1951	61.5%	2923	248	0	53.3%	4.5%	0.0%
MP			56%	243	243	0	0.0%	232	11	0	53.7%	2.5%	0.0%
MD			53%	3783	2881	902	22.2%	3537	166	0	53.0%	2.5%	0.0%
WV			53%	416	174	242	58.2%	374	42	0	47.6%	5.4%	0.0%

Summary table by state with data on each of the trends, % unresolved, %TRC, %Chronic

AR			32%	6981	6833	148	2.1%	6752	229	0	31.0%	1.1%	0.0%
OK			31%	3240	3225	15	0.5%	3057	183	0	29.6%	1.7%	0.0%
DE			31%	112	112	0	0.0%	80	32	0	21.9%	8.7%	0.0%

Note: Trend line excludes current year

Drill down on by state on specific permits and parameters.

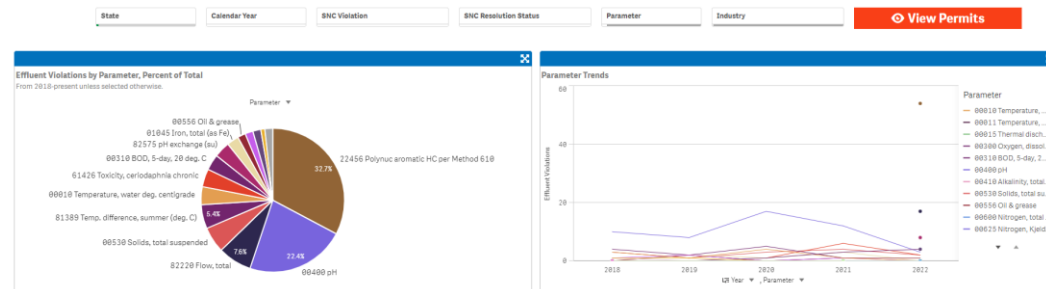
SNC Pivot Table
Count of SNC effluent violations by year

State: NPDES ID: Parameter: Industry: Impaired Water: Year:

	Total	2018	2019	2020	2021	2022
WA	362	41	83	82	58	98
MN0061433	15	8	7	3	-	-
00610 Nitrogen, ammonia total (as N)	27	12	12	3	-	-
30600 Chlorine, total residual	8	-	2	6	-	-
01042 Copper, total (as Cu)	39	1	8	9	3	9
MN0064564	26	-	1	3	6	16
MN0048649	22	5	9	6	2	-
MN0023311	21	-	-	-	6	15

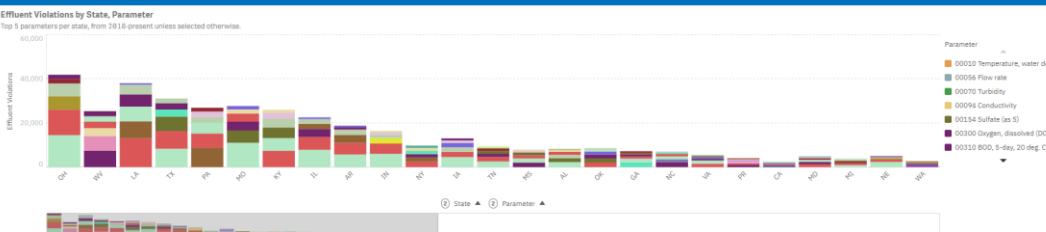


Parameters



Review what parameters are have the most violations

Compare parameters across states



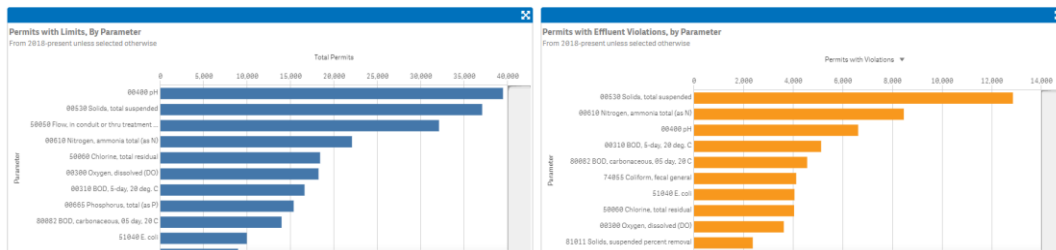
Drill down on by state on specific parameters and parameters.

Parameter Pivot Table
Count of effluent violations by parameter and year

Parameter	State	NPDES ID	Year	Totals	2018	2019	2020	2021	2022	2023
Totals				869,855	117,784	116,283	106,144	113,838	112,878	
00010 Nitrogen, ammonia total (as N)	OH	042603		186	40	44	42	48	12	-
	OH	0006173		63	10	20	11	11	11	-
	OH	0007298		21	6	6	6	2	1	-
	OH	138401		177	-	1	40	57	73	-
	OH	021832		289	41	38	43	39	44	



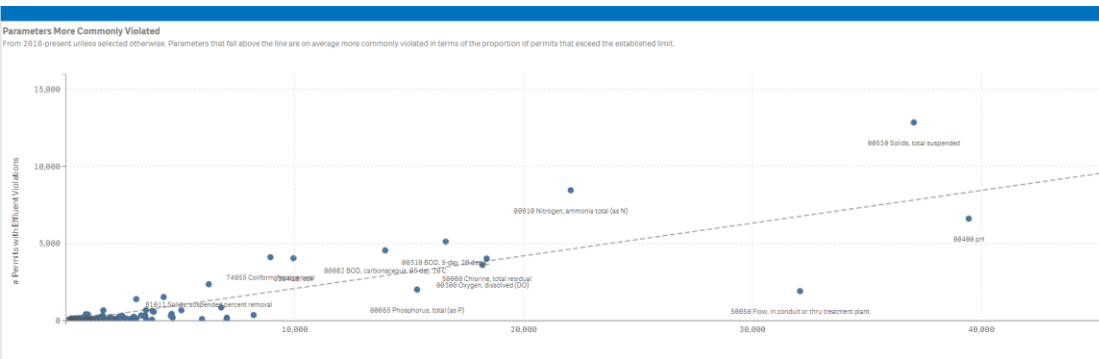
Parameters and DMRs



Compare permits with limits vs permits with effluent violations by parameter

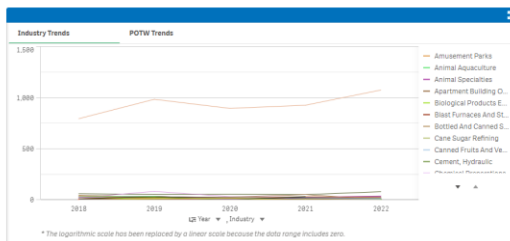
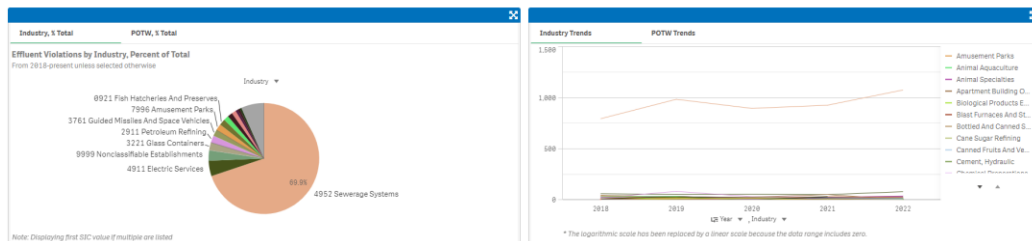
Parameter	Effluent Violations	Permits with Violations	Permits with Limits	% Permits with Violations	DMRs with Violations	DMRs with Limits	% DMRs with Violations
Totals	569,063	80,761	684,855	4.1%	569,063	91,541,663	0.4%
00530 Solids, total suspended	99,404	12,851	37,851	34.7%	99,404	9,849,789	1.0%
00510 Nitrogen, ammonia total (as N)	101,717	8,454	22,859	38.3%	101,717	3,351,898	3.0%
00400 pH	23,831	6,614	39,458	16.8%	23,831	6,480,890	0.3%
00310 BOD, 5-day, 20 deg. C	48,683	5,121	16,597	30.8%	48,683	2,980,459	1.4%
00802 BOD, carbonaceous, 05 day, 20 C	34,163	4,559	13,952	32.7%	34,163	2,868,696	1.2%
74055 Coliform, fecal general	38,827	4,116	8,937	46.1%	38,827	783,368	3.9%
51040 E. coli	28,015	4,046	9,945	40.7%	28,015	735,404	3.8%
50060 Chlorine, total residual	21,021	4,032	18,387	21.9%	21,021	1,657,915	1.3%
00300 Oxygen, dissolved (DO)	17,265	3,617	18,207	19.9%	17,265	1,240,000	1.4%

See parameters most commonly violated

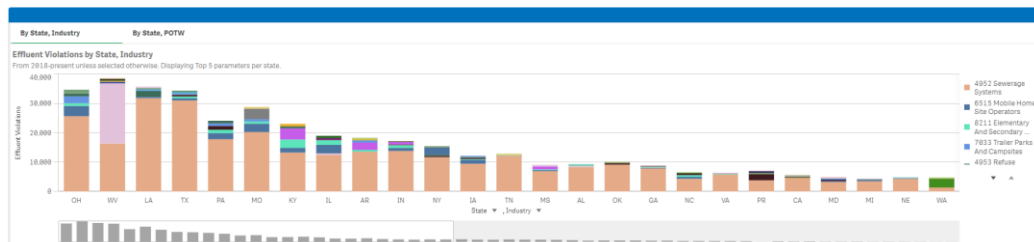


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Industry Trends



Review industry trends for numbers of effluent violations



Compare industries with violations across states

Industry Pivot POTW Pivot

Industry Pivot Table
Count of effluent violations by industry and year

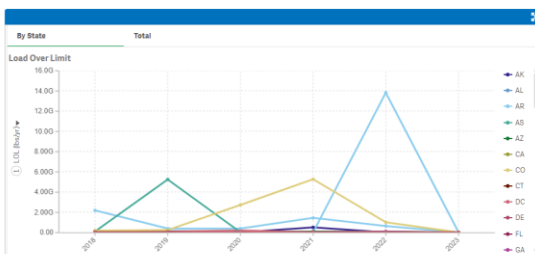
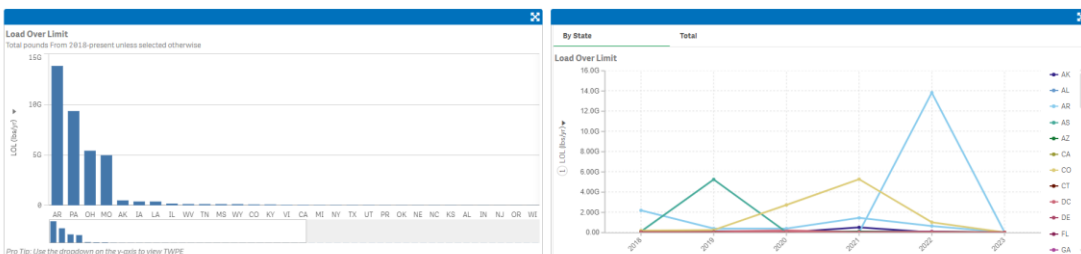
State: OH Industry: Sewerage Systems NPOES ID: Parameter: Year: 2018

	Total	2018	2019	2020	2021	2022
Total	561,763	116,289	114,783	104,885	111,496	111,383
OH	49,566	10,103	10,132	8,935	9,959	10,255
Sewerage Systems	25,675	5,267	5,355	4,866	4,909	5,157
OH0142603	544	118	116	133	142	35
OH020265	320	78	93	126	31	-
OH0138481	273	1	6	75	75	116
OH0021832	271	51	48	48	56	63
OH0021482	243	2	14	39	96	98
OH0077790	236	10	41	44	47	47

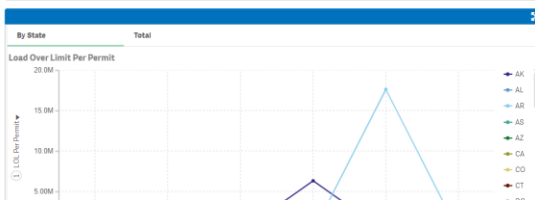
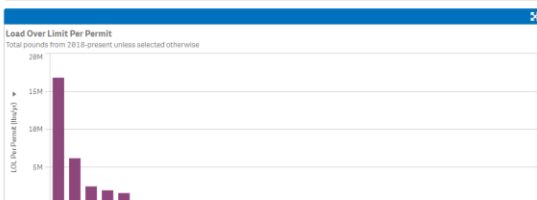
Drill down to industries by state



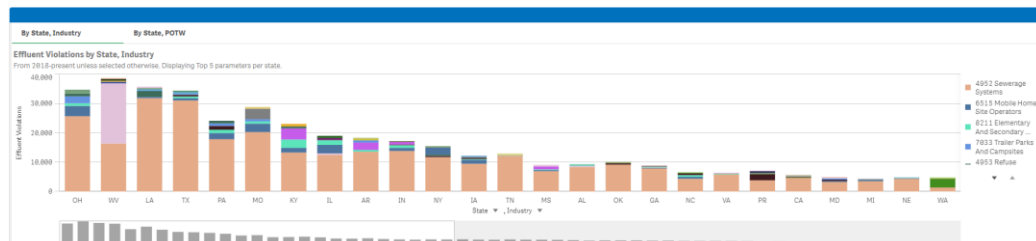
Load Over Limit



Review total load over permit limits and load over limit per permit



Look at load or toxic weighted loads



Quick access to drill down to ECHO exceedance and loadings reports

Supplemental Reports
Use the a.) Exceedance Report view load over limit calculations and potential outliers across years by outfall, parameter, and ORM values and b.) the Loading Report for a closer look at load calculations by year, receiving water body, and wastewater treatment technology if available.

State	NPDES ID	Q	Load Over Limit	Exceedance Report	Q	Loading Report	Q
AR	AR0052451		13,869,928,483	Effluent Limit Exceedance Report		Pollutant Loading Report	
PA	PA0215520		8,813,561,270	Effluent Limit Exceedance Report		Pollutant Loading Report	
OH	OH0020281		4,238,008,318	Effluent Limit Exceedance Report		Pollutant Loading Report	
MO	MO0083084		1,768,824,869	Effluent Limit Exceedance Report		Pollutant Loading Report	
MO	MO0086321		1,183,455,711	Effluent Limit Exceedance Report		Pollutant Loading Report	
OH	OH0070815		864,746,801	Effluent Limit Exceedance Report		Pollutant Loading Report	
AK	AK0046876		492,265,887	Effluent Limit Exceedance Report		Pollutant Loading Report	
MO	MO0097163		386,617,388	Effluent Limit Exceedance Report		Pollutant Loading Report	
MO	MO0099094		225,344,849	Effluent Limit Exceedance Report		Pollutant Loading Report	
PA	PA0211902		164,278,832	Effluent Limit Exceedance Report		Pollutant Loading Report	



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Average Load Over Limit Measure

- GAO reviewed NPDES SNC National Compliance Initiative and requested EPA develop a measure to see effect of our enforcement.
- OECA agreed to develop a methodology and outcome measure for tracking using a pilot method to estimate the average load over limit (LOL) per NPDES individual permit
- Average load over limit was estimated using this pilot method as 8,538 pounds per individual NPDES permit in calendar year 2021, and 7,744 pounds for calendar year 2022



Data Quality Filters for LOL Analysis



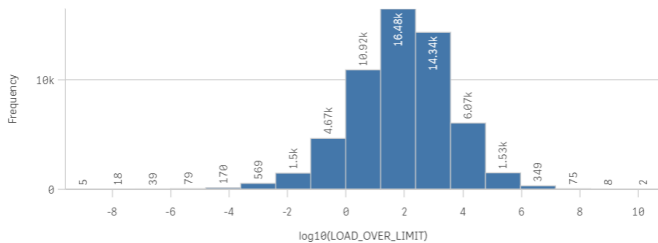
Load Over Limit (lbs/yr)

Data Quality Flags

High Variability Flag

Avg Flow > 500 Flag

Exclude Flagged Values



Outliers dominate the load over limit analysis. High variability flag is the blue flag for values in ECHO. Tried to develop other filters to exclude parameters.

1. Facilities with greater than 500 million gallons a day of average flow;
2. Minor facilities with greater than 5 million gallons a day of average flow;
3. Parameters with loads that are between 95-105% of 365 times their permitted load (assuming these facilities entered daily amounts for an annual amount);
4. Parameters with loads that are between 98-102% of 10^x times their permitted load (assuming these facilities reported incorrect units);
5. Parameters where the average daily flow for an outfall is greater than 10 times the design flow on the permit.
6. Parameters where the average daily flow for an outfall is greater than 100 times the average daily flow listed on the permit.

Asking regions and states to identify and correct data.



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Specific Permits

Permit Summary Table

Permits with one or more effluent violations from 2018-present. *A permit may have multiple discharge points, if any of these points show an unresolved violation then the overall permit status is listed as in violation.

Permit Name	NPDES ID	State	City	Effluent Violation Count	SNC Effluent Violation Count	Median Exceedance %	Parameters Violated (most recent first)	Current Violation Status*	Current SNC Status*	Qtrs in SNC	La Eff Vio
Totals				444,917	116,310	76%					
BUCKHORN MOUNTAIN MINE	WA0052434	WA	Chesaw	2,988	2,301	140%	00094 Conductivity 00154 Sulfate (as S) 00300 ...	Effluent - Monthly Average Limit	Effluent - Monthly Average Limit	12	
SUGARTREE SURFACE MINE	WV0099392	WV	Madison	762	456	53%	00981 Selenium, total recoverable 01045 Iron, tota...	Effluent - Monthly Average Limit	Effluent - Monthly Average Limit	12	
GREENDALE COAL CO	WV1027301	WV	Bentree	725	257	1940%	00400 pH 01045 Iron, total (as Fe) 01105 Alumin...	-	-	-	
DEPARTMENT OF NATURAL AND ENVIRONMENTA...	PR0021326	PR	Cabo Rojo	598	225	195%	00300 Oxygen, dissolved (DO) 00945 Sulfate, total...	Compliance/Permit Schedule - Violations	Compliance/Permit Schedule - Violations	6	
4 STAR MHP STP	IL0070351	IL	Marseilles	564	266	238%	00610 Nitrogen, ammonia total (as N) 74055 Colif...	Effluent - Monthly Average Limit	Effluent - Monthly Average Limit	12	
CARVEL MANOR MHP	OH0142603	OH	Ashville	544	234	222%	00300 Oxygen, dissolved (DO) 00530 Solids, total ...	Resolved	-	-	
MANTENO MHP STP	IL0038199	IL	Manteno	527	317	92%	00530 Solids, total suspended 00610 Nitrogen, a...	Effluent - Monthly Average Limit	Effluent - Monthly Average Limit	12	
AGANA SEWERAGE TREATMENT PLANT	GU0020007	GU	Hagatna	518	155	153%	00310 BOD, 5-day, 20 deg. C 00530 Solids, total s...	Effluent - Monthly Average Limit	Effluent - Monthly Average Limit	12	
PRESTON COUNTY SEWER PSD	WV0025101	WV	Bruceton Mills	510	273	175%	00610 Nitrogen, ammonia total (as N) 01119 Copp...	Effluent - Monthly Average Limit	Effluent - Monthly Average Limit	12	
COOLBROOK WWTP	KY0044351	KY	Frankfort	490	154	200%	00610 Nitrogen, ammonia total (as N) 51040 E. col...	Effluent - Monthly Average Limit	Effluent - Monthly Average Limit	12	
FORMER FORD CITY FAC SLURRY LAGOON AREA	PA0254967	PA	Cadogan Tow...	434	48	78%	00400 pH 00530 Solids, total suspended 00400 ...	Resolved - Pending	-	-	
MADISON MINE	MO0098752	MO	Fredericktown	429	222	100%	00979 Cobalt, total recoverable 01074 Nickel, total...	Effluent - Monthly Average Limit	Effluent - Monthly Average Limit	12	
WINTERPORT WWTF	ME0100749	ME	Winterport	427	279	116%	00310 BOD, 5-day, 20 deg. C 00530 Solids, total s...	Effluent - Monthly Average Limit	Effluent - Monthly Average Limit	12	

Dashboard can be filtered and provide direct access to permits and ECHO tools.



Questions



Questions, comments, training requests on the NPDES Effluent Violations Dashboard should be directed to:

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