

Understanding EPA's Toxics Release Inventory Data

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Presentation Overview

- How TRI can help you
- Background and History
- Using TRI to understand facility operations
- Tools and Resources
- Which Facilities Report to TRI
- Case studies and examples



Why was the Toxics Release Inventory created?



Bhopal memorial for those killed and disabled by the 1984 toxic gas release

- Bhopal, India December 1984
 - Methyl isocyanate gas accidentally released from a facility. Thousands died.
- Institute, West Virginia August 1985
 - Chemical release at a similar facility in the U.S.
- Increased concern in the U.S. about chemical accident preparedness and availability of information on chemicals used in industrial facilities
- In 1986, Emergency Planning and Community Right-to-Know Act (EPCRA). Section 313 established the Toxics Release Inventory.



What is TRI?

 TRI is a public database of the quantities of toxic chemicals that are released and managed as waste in the U.S. each year. TRI includes information on:



Releases



Waste transfers



Recycling & Treatment

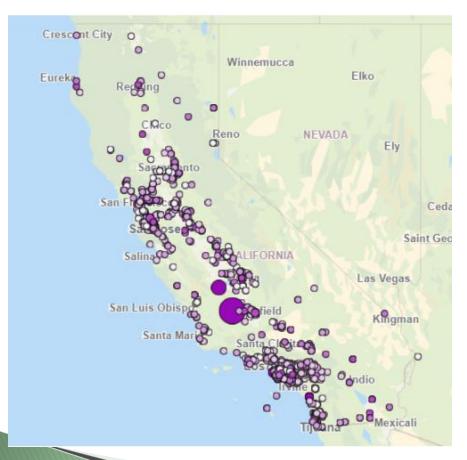


Pollution prevention

TRI is chemical-specific



TRI Reporting



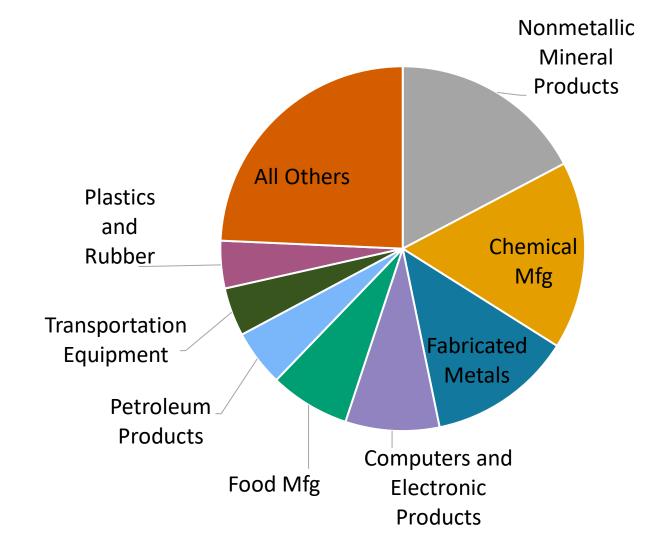
- TRI includes data from ~20,000 facilities and covers more than 800 toxic chemicals and chemical categories
 - >1,000 facilities in California
- TRI forms must be submitted by July 1st each year
 - July 1, 2024 deadline for January 1 December 31, 2023 activities
 - Preliminary data published July/August



California Quick Facts

- 1,000+ facilities, 180+ chemicals
- Top sectors for releases and waste:
 - Petroleum Products (refineries)
 - Hazardous Waste (TSDFs)
 - Chemical Manufacturing
 - Food Manufacturing
 - Primary Metals

California Facilities by Sector





TRI Chemicals and Chemical Categories

- TRI is chemical-specific
- Current list contains over 800 individual chemicals and chemical categories. Listed chemicals include:
 - Individual chemicals
 - Chemical categories (metals, dioxins, PACs, others)
 - PFAS
- Section 313 chemical list and more information available at:

https://www.epa.gov/toxics-release-inventory-tri-program/tri-listed-chemicals



Why is TRI relevant to my work?

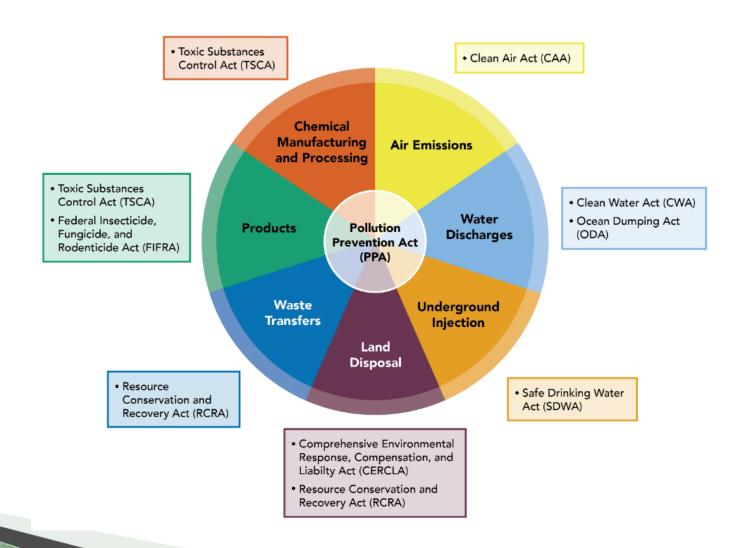
- TRI data provide information about facility activities
 - TRI provides data on facility operations and chemicals handled
- TRI data can be used for targeting
- Find sources of pollution





How does TRI fit in to EPA programs?

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Best Practices for Information Sharing

- Use TRI data in targeting, enforcement
- TRI and other enforcement are related. Goes Both ways
- Use EPA resources!
 - RITA
 - RCRA Inspection Targeting Assistant: connects TRI data to RCRA Handler IDs via FRS ID (parent ID used in ECHO)
 - ECHO
 - List of lists: combines EPCRA, CERCLA, CAA 112(r)
 - https://www.epa.gov/epcra/consolidated-list-lists



Enforcement Targeting

- TRI data available in certain EPA enforcement tools
- Uses:
 - ID facilities
 - Target chemicals, sectors
 - Target facilities shipping waste
 - Facilities with EPCRA violations
 - Contact information

Penalty Amount Collected: \$157,800

Case Summary

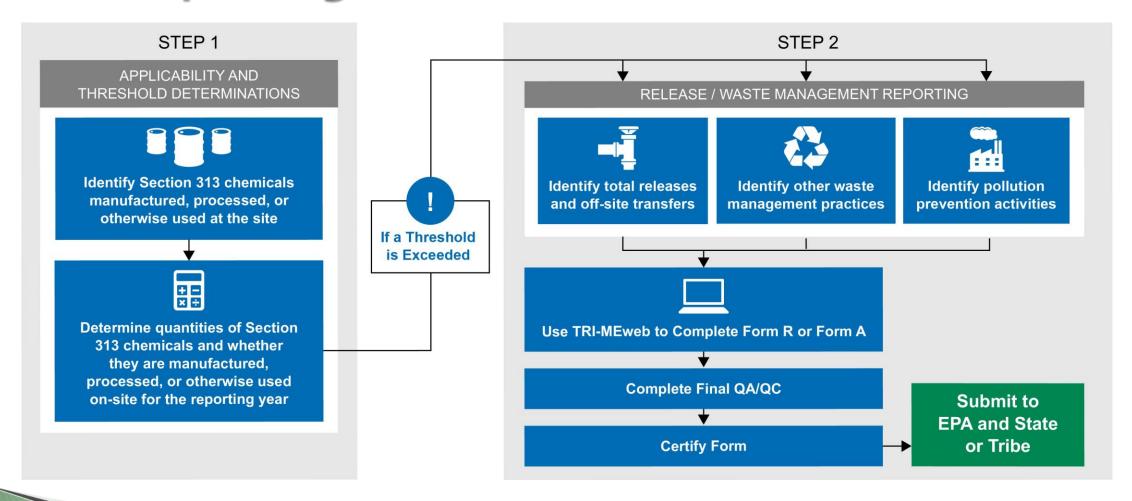
This is a Consent Agreement and Final Order (CA/FO) negotiated between the United States Env (Valero). This CA/FO sets out the terms for resolution of the Resource Conservation and Recover administrative civil penalty actions against Valero for violations discovered during routine compositional civil administrative penalty of \$157,800 to settle the matter.

Laws and Sections

Law [‡]	Sections	Programs
RCRA	3002, 3004, 3007	Hazardous Waste Treatment Storage and Disposal Standards, Record keeping Inspection Information Request, Standards Applicable to Generators of Hazardous Waste
EPCRA	313	Toxic Chemical Release Reporting (TRI)



TRI Reporting – 2 Part Process





The TRI Data – Key points

- TRI release data is independent of compliance with other laws
- Data is limited to certain facilities and certain chemicals
- Reporting zero releases is possible
 - Reporting is triggered based on what is handled, not what's released





What data are reported?

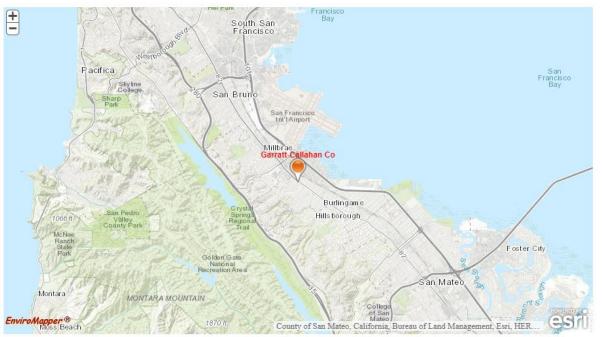


Facility Information

- Facility name, address, etc.
- Parent Company

<u>Facility Name</u>	GARRATT-CALLAHAN CO BURLINGAME	TRIID	94010SCHLZ50ING
<u>Address</u>	50 INGOLD RD BURLINGAME, CA, 94010		110000831832
Mailing Name	GARRATT-CALLAHAN CO BURLINGAME	DUNS Number	009118340
Mailing Address	50 INGOLD RD BURLINGAME, CA, 94010	Parent Company	GARRATT-CALLAHAN CO
<u>County</u>	SAN MATEO	Public Contact	DAVE LEWIS
EPA Region	9	Phone	(650) 697-5811
<u>Latitude</u>	37.59524	Tribe	NA
<u>Longitude</u>	-122.37792	BIA Tribal Code	NA
NAIC(S)	325998 All Other Miscellaneous Chemical Product and Preparation Manufacturing	<u>Industry</u> <u>Sector</u>	325 Chemicals
Last Form	2022		

- Public Contact
- Sector



*You can navigate within the map with your mouse.

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Form R Content (Chemical-specific)

- Chemical use and storage
- On-site releases of TRI chemicals to Air, Water, Land
 - Including specific land disposal type
- On-site waste management: Treatment, Recycling, Energy Recovery
- Transfers of chemical waste to off-site locations



Uses of the Chemical at the Facility

Section 3. Activities and Uses of the Toxic Chemical

3.1 Manufacture the Toxic Chemical:

Produce: YES	Import: NO	On-Site Use/Processing: NO
Sale/Distribution: NO	Byproduct: YES	<u>Impurity</u> : NO

3.3 Otherwise Use the Toxic Chemical:

Chemical Processing Aid:

Manufacturing Aid:

NO

Ancillary or Other Use:

YES

Sub-Uses:

Z306 Waste treatment

3.2 Process the Toxic Chemical:

Reactant:

Formulation Component:NO

Article Component: NO

NO

NO

Repackaging:

Impurity: NO

Recycling: NO



Maximum On-Site Amount (Section 4)

WEIGHT RANGE IN POUNDS				
Range Code	From	То		
01	0	99		
02	100	999		
03	1,000	9,999		
04	10,000	99,999		
05	100,000	999,999		
06	1,000,000	9,999,999		
07	10,000,000	49,999,999		
08	50,000,000	99,999,999		
09	100,000,000	499,999,999		
10	500,000,000	999,999,999		
11	1 billion	More than 1 billion		

- Range codes indicating the maximum quantity on-site during the reporting year
- Maximum total (non-exempt) amount present at one time during reporting year
- Based on amount in storage, process, and wastes
- Maximum amount on site may differ from the Tier II (HMBP)-reported maximum amount on site value
 - HMBP is usually by mixtures, Form R is chemicalspecific
 - Form R includes all forms of the chemical on site (raw materials, products, wastes)



Air and Water Releases

- Facilities use best available information
 - Monitoring not required
 - Facilities report stack and fugitive air emissions, surface water discharges, and transfers to POTWs

Section 5. Quantity of the Toxic Chemical Entering each Environmental Medium Onsite

5.1 Fugitive or Non-Point Air Emissions

<u>NA</u>	TOTAL RELEASE (per year)	UNIT OF MEASURE	BASIS OF ESTIMATE
NO	0	Pounds	E1 - Emission Factor, Published

5.2 Stack or Point Air Emissions

<u>NA</u>	TOTAL RELEASE (per year)	UNIT OF MEASURE	BASIS OF ESTIMATE
NO	47	Pounds	O - Other Approaches

5.3 <u>Discharges to Receiving Streams or Water Bodies</u>





Basis of Estimate Codes

- Continuous monitoring (M1)
- Periodic or random monitoring (M2)
- Mass balance calculation (C)
- Published emissions factors (E1)
- Site-specific emissions factors (E2)
- Engineering calculations (O)
 - Everything NOT M1, M2, C, E1 or E2 above, such as:
 - Best engineering judgment
 - Estimated removal efficiencies
 - Non-chemical-specific and non-published emission factors

5.3 <u>Discharges to Receiving Streams or Water Bodies</u>

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FORUM	

5.2 Stack or Point Air Emissions

<u>NA</u>	TOTAL RELEASE (per year)	UNIT OF MEASURE	BASIS OF ESTIMATE
NO	13	Pounds	E1 - Emission Factor, Published

<u>NA</u>	STREAM/WATER BODY NAME	REACH Code	TOTAL RELEASE (per year)	UNIT OF MEASURE	BASIS OF ESTIMATE	
NO	MOBILE RIVER		0	Pounds	M2 - Monitoring, Periodic/Random)

Disposal to Land On-Site

- Includes releases to:
 - Landfills (RCRA C and other)
 - Surface Impoundments (RCRA C and other)
 - Land Treatment/Application Farming
 - Other land disposal
 - Underground injection



Transfers to POTWs

- Localities can trace source of contaminants
- Review facility wastewater permit

Section 6. Transfers of the Toxic Chemical in Wastes to Off-Site Locations

6.1 Discharges to Publicly Owned Treatment Works (POTWs)

1 - NAME: TULARE CITY WASTEWATER PLANT	ADDRESS: 1875 SOUTH WEST STREET	
CITY: TULARE	STATE: CA	
COUNTY: TULARE	<u>ZIP CODE</u> : 932749488	

POTW AMOUNT SEQUENCE	TOTAL TRANSFERS (per year)	UNIT OF MEASURE	BASIS OF ESTIMATE	WASTE MANAGEMENT TYPE
1	509420	Pounds	C - Mass Balance Calculations	P30 - Discharged to Water Stream



Other Off-site Transfers

- Transfers to other off-site locations (Section 6.2)
 - Includes name, address, and RCRA ID of the receiving facility
 - Codes identify activity (waste treatment, disposal, recycling, and energy recovery)
- Facilities may refer to RCRA records





On-Site Waste Management



Waste Treatment



Energy Recovery



Recycling Methods



Waste Management Data

Section 8. Source Reduction and Recycling Activities

SECTION	TYPE OF QUANTITY	<u>UNITS</u>	PRIOR YEAR	CURRENT REPORTING YEAR	FOLLOWING YEAR	SECOND FOLLOWING YEAR
8.1a	Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills		NA	NA	NA	NA
8.1b	Total other on-site disposal or other releases	Pounds	36000	24000	24000	24000
8.1c	Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills		NA	NA	NA	NA
8.1d	Total other off-site disposal or other releases		NA	NA	NA	NA
8.2	Quantity Used for Energy Recovery Onsite		NA	NA	NA	NA
8.3	Quantity Used for Energy Recovery Offsite		NA	NA	NA	NA
8.4	Quantity Recycled Onsite		NA	NA	NA	NA
8.5	Quantity Recycled Offsite		NA	NA	NA	NA
8.6	Quantity Treated Onsite	Pounds	170000	209958	209958	209958
8.7	Quantity Treated Offsite		NA	NA	NA	NA



Waste Treatment Methods and Efficiency

- Facilities report each waste treatment method that each waste stream containing the chemical undergoes
 - Included even if method has no effect on the chemical
 - Efficiency of the waste treatment methods at eliminating the chemical from the waste stream
 - Includes <u>destruction or physical removal</u>
- Quantity treated on-site (<u>destruction only</u>)



Treatment Methods Example

Section 7A. On-Site Waste Treatment Methods and Efficiency

7A.1a. Waste Stream: GASEOUS

7A.1b.	WASTE TREATMENT METHOD(S) SEQUENCE
1	A07 - OTHER AIR EMISSION TREATMENT

7A.1d. Waste Treatment Efficiency Estimate: Equal to or greater than 0% but less than or equal to 50%

7A.2a. Waste Stream: GASEOUS

7A.2b.	WASTE TREATMENT METHOD(S) SEQUENCE
1	A05 - ELECTROSTATIC PRECIPITATOR
2	A03 - SCRUBBER
3	A07 - OTHER AIR EMISSION TREATMENT

7A.2d. Waste Treatment Efficiency Estimate: Greater than 95% but less than or equal to 99%

Air Emissions Treatment

- A01 Flare
- A02 Condenser
- A03 Scrubber
- A04 Absorber
- A05 Electrostatic Precipitator
- A06 Mechanical Separation
- A07 Other Air Emission Treatment

Chemical Treatment

- H040 Incineration--thermal destruction other than use as a fuel
- H071 Chemical reduction with or without precipitation
- H073 Cyanide destruction with or without precipitation
- H075 Chemical oxidation
- H076 Wet air oxidation
- H077 Other chemical precipitation with or without pre-treatment

Biological Treatment

H081 Biological treatment with or without precipitation

Physical Treatment

- H082 Adsorption
- H083 Air or steam stripping
- H101 Sludge treatment and/or dewatering
- H103 Absorption
- H111 Stabilization or chemical fixation prior to disposal
- H112 Macro-encapsulation prior to disposal
- H121 Neutralization
- H122 Evaporation
- H123 Settling or clarification
- H124 Phase separation
- H129 Other treatment

Energy Recovery

- Facility reports quantity and process
- Chemical must be combustible and have a significant heating value (>5,000 BTU/lb.)
- Combustion unit is integrated into an energy recovery system (e.g., industrial furnace, industrial kiln, or boiler)

Section 7B. On-Site Energy Recovery Processes

ON SITE ENERGY RECOVERY PROCESSES

U02 - INDUSTRIAL FURNACE

Energy Recovery Codes

U01 Industrial Kiln

U02 Industrial Furnace

U03 Industrial Boiler



Recycling

- Facility reports quantity and methods used
 - Does not count direct reuse or energy recovery

Section 7C. On-Site Recycling Processes

ON SITE RECYCLING PROCESSES

H10 - Metal recovery (by retorting, smelting, or chemical or physical extraction)

On-Site Recycling Codes

H10 Metal recovery (by retorting, smelting, or chemical or physical extraction) – Metals and Metal Category Compounds only

H20 Solvent recovery (including distillation, evaporation, fractionation or extraction)

H39 Other recovery or reclamation for reuse (including acid regeneration or other chemical reaction process)



Non-production related waste

- Quantity of the chemical released into the environment or transferred off-site as a result of:
 - Remediation
 - Catastrophic events (e.g., earthquake, hurricane, fire, floods)
 - Other one-time events not associated with production processes (e.g., pipe rupture due to unexpected weather)
- Sometimes includes waste managed by recycling, treatment, energy recovery



Source Reduction Activities

- Material Substitutions and Modifications
- Inventory and Material Management
- Operating Practices and Training
- Process and Equipment Modifications
- Product Modifications

SOURCE REDUCTION ACTIVITIES	METHOD 1	METHOD 2	METHOD 3	ESTIMATED ANNUAL REDUCTION
S11 - REFORMULATED OR DEVELOPED NEW PRODUCT LINE	T06 - EMPLOYEE RECOMMENDATION (UNDER A FORMAL COMPANY PROGRAM)			R2 - greater than or equal to 50%, but less than 100%





Who reports?



Which facilities must report to TRI?

• Facility must be in a TRI-covered industry sector, including:



Manufacturing



Coal/Oil Electricity
Generation;
Natural Gas
Processing



Certain Mining Facilities



Hazardous Waste Management



Federal Facilities



Additional Requirements

- Facility must have the equivalent of at least 10 full-time employees.
- Facility must manufacture, process or use more than a certain amount of a TRI-listed toxic chemical per year (usually 25,000/10,000 lb).



Chemical Thresholds

A facility meeting the first two applicability criteria for reporting must file a TRI Report for TRI-listed chemical* if the facility:

THRESHOLDS

Manufactured (including imported)

more than 25,000 pounds of the chemical in the reporting year



Processed

more than 25,000 pounds of the chemical in the reporting year



Otherwise Used

more than 10,000 pounds of the chemical in the reporting year

*These thresholds apply to most of the 800+TRI-listed chemicals but do <u>not</u> apply to the Chemicals of Special Concern



Exemptions

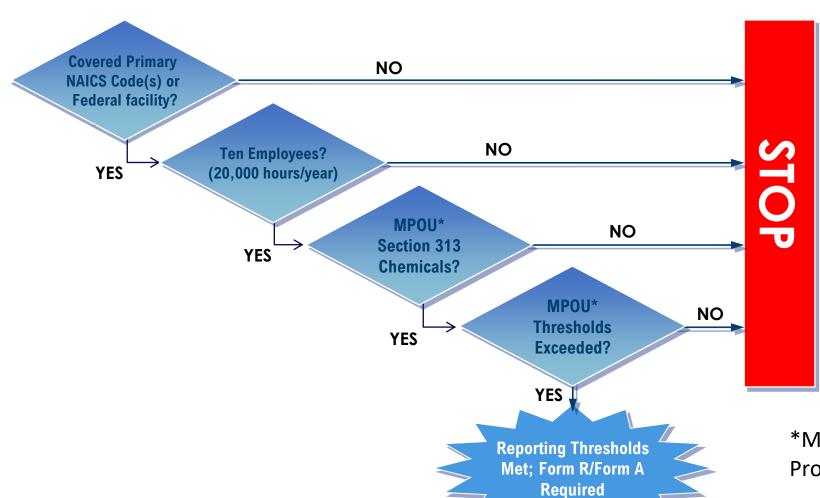
- TRI regulations provide exemptions for specific scenarios.
- Exemptions allow for a facility to not consider quantities of toxic chemicals in certain circumstances

- Articles
- De Minimis
- Coal Extraction
- Intake Air and Water
- Laboratory Activities
- Janitorial or Facility Grounds Maintenance
- Metal Mining Overburden
- Motor Vehicle Maintenance
- Owners of Leased Property
- Personal Use
- Structural Component of the Facility



TRI Reporting Requirements Summary

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*MPOU = Manufacture, Process, or Otherwise Use

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TRI Guide-ME

- Review TRI Reporting Forms and Instructions
- Browse guidance materials
- Updated chemical list
- Browse questions and answers
- Available at: http://epa.gov/tri/guideme



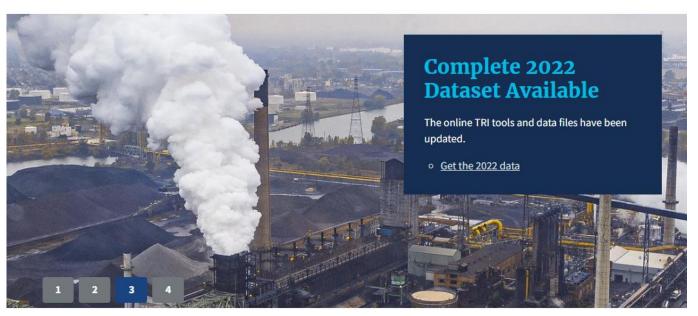
Find and Use TRI data



TRI Homepage

- www.epa.gov/tri
- TRI website for reporting materials and guidance, links to other pages

Toxics Release Inventory (TRI) Program



What is the TRI? The Toxics Release Inventory (TRI) is a resource for learning about toxic chemical releases and pollution prevention activities reported by industrial and federal facilities. TRI data support informed decision-making by communities, government agencies, companies, and others. Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) created the TRI.





What is the TRI?



Report TRI Data



Access & Use Data





TRI Toxics Tracker

- https://edap.epa.gov/public/extensions/TRIToxicsTracker.html
- Good for finding facilities of interest
- Search by location, chemicals reported, sector, etc.



Releases and Demographic Index



Envirofacts

- https://www.epa.gov/enviro/tri-search
- Best tool for the details from a single form
- Displays all public data elements

PART I. FACILITY IDENTIFICATION INFORMATION (FORM R)

DOCUMENT CONTROL NUMBER: 1321219817285

Facility Registry System ID:

Section 1. Reporting Year

Reporting Year: 2021

Section 2. Trade Secret Information

2.1 Trade Secret: NO

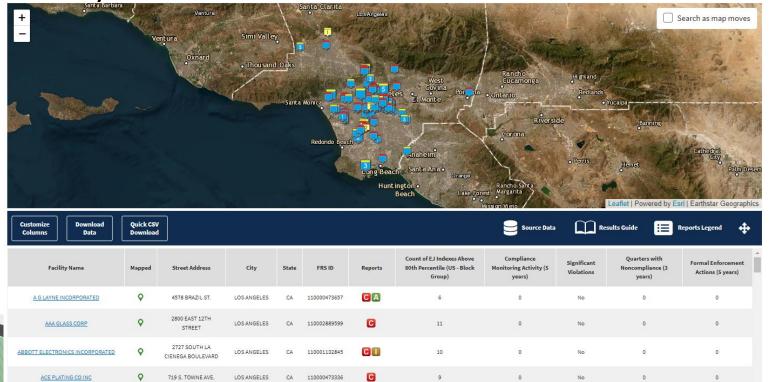
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2.2 Sanitized Copy: Unsanitized

ECHO – Enforcement and Compliance History Online

- https://echo.epa.gov/
- Connects all major EPA programs, some state data, and enforcement

• Start here if you have a site in mind





Compliance Monitoring History Last 5 Years \$





Statute ‡	Source ID ‡	System ‡	Activity Type \$	Compliance Monitoring Type	Lead Agency	Date ‡	Finding (if applicable)	
~	~	I x ×	-	-	~			
CAA	100000052426	ICIS	Information Request	Formal	EPA	05/08/2019		
CAA	3601127783	ICIS	Inspection/Evaluation	112(r)(7) Inspection	EPA	07/24/2019		
EPCRA	3601127783	ICIS	Inspection/Evaluation	Evaluation	EPA	07/24/2019		

Formal Enforcement Actions Last 5 Years \$



Statute ‡	System ‡	Law/ Section ‡	Source ID ‡	Type of Action	Case No.	Lead Agency	Case Name	Issued/ Filed ‡ Date	Settlements/ Actions	Settlement/ Action Date	Federal Penalty ‡ Assessed
CAA	ICIS	112[R][7]	RMP/100000052471	Administrative - Formal	09- 2023- 3515	EPA	Anheuser- Busch, LLC (NC)	06/02/2023	1	06/02/2023	\$174,813
CAA	ICIS	112[R][7]	RMP/100000052471	Administrative - Formal	HQ- 2023- 5011	EPA	Anheuser- Busch LLC (Lead)	06/02/2023	1	06/02/2023	\$0
CAA	ICIS	112[R][7]	RMP/100000052426	Administrative - Formal	09- 2021- 3502	EPA	Anheuser- Busch AOC	12/07/2020	1	12/07/2020	\$0

Facility/System Characteristics

, , ,						
System ‡	Statute ‡	Identifier ‡	Universe ‡	Status ‡	Areas ‡	Permit Expiration Date \$
FRS		110070790129				
ICIS		3600210046				
ICIS		3400050613				
ICIS-Air	CAA	CABAA00006001A0062	Major Emissions	Operating	CAAMACT, CAASIP, CAATVP	
CEDRI	CAA	CEDRI10079299				
CEDRI	CAA	CEDRI10079359				
EIS	CAA	382111				
ICIS-NPDES	CWA	CAZ180704	Non-Major: General Permit Covered Facility	Expired	Industrial Stormwater	06/30/2020
TRI	EP313	94621MRCNB7825S	Toxics Release Inventory	Last Reported for 2022		
RCRAInfo	RCRA	CAD021774559	LQG	Active (H)		



Toxics Release Inventory History of Reported Chemicals Released or Transferred Air Pollutant Report TRI Pollution Prevention Report in Pounds per Year at Site ①



TRI Facility ID ‡	Year ‡	Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs	Underground Injections	Disposal to Land	Total On-Site Releases	Total Off-Site Transfers
94533NHSRB3101B	2022	13,033	0	17,987			13,033	17,991
94533NHSRB3101B	2021	10,606	0	14,257			10,606	14,265
94533NHSRB3101B	2020	20,861	0	13,308			20,861	13,316
94533NHSRB3101B	2019	19,695	0	12,235			19,695	12,239
94533NHSRB3101B	2018	5,875	0	11,016			5,875	11,018
94533NHSRB3101B	2017	8,579	0	11,176			8,579	11,176
94533NHSRB3101B	2016	18,960		13,364			18,960	13,364
94533NHSRB3101B	2015	17,690		17,104			17,690	17,354
94533NHSRB3101B	2014	4,010		14,275			4,010	14,285
94533NHSRB3101B	2013	9,147	16	13,001			9,163	13,013

Toxics Release Inventory Total Releases and Transfers in Pounds by Chemical and Year ①

Chemical Name ‡	2022 ‡	2021 ‡	2020 ‡	2019 ‡	2018 ‡	2017 ‡	2016 ‡	2015 ‡	2014 ‡	2013 ‡
Ammonia	30,640	24,871	34,177	31,934	16,893	19,755	32,324	35,044	17,130	20,717
Hydrogen sulfide	384								1,165	1,459
Nitric acid					0	0		0	0	0

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CWA Discharge Monitoring Report (DMR) Pollutant Loadings ①

DMR and TRI Multi-Year Loading Report



NPDES ID

Description

1

No data records returned

e-Manifest Hazardous Waste History (Public)

Hazardous Waste Shipped in Kilograms by Year (Through 11/4/2023)

Source ID ‡	Waste Description ‡	2021 ‡	2022 ‡	2023 ‡	2024 ‡
CAD080711252	Hazardous Waste	719	4,057	454	
CAD080711252	Acute Hazardous Waste	0	0	0	
CAD080711252	Pharmaceutical Hazardous Waste	0	0	0	



Region 9 TRI Trainings for reporters

- Region 9 TRI Trainings for reporting facilities:
 - Basic and Advanced trainings
 - Dates TBA
- Contact <u>abby.burton@erg.com</u> or <u>johnson.kendall@epa.gov</u> for registration information





Questions?

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Kendall Johnson, EPA Region 9 TRI Coordinator, <u>johnson.kendall@epa.gov</u>

