Ten Years of ChemTRAC. Lessons Learned

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What's ChemTRAC?

Goal:

- To protect health through reduced exposure to toxic substances.

Objectives:

- Make facilities aware of their use & release of substances of health concern
- Collect data on the use and releases of 25 priority substances
- Provide public access to data
- Stimulate pollution prevention

Environmental Reporting and Disclosure Bylaw (Municipal Code Chapter 423)

First such municipal bylaw in Canada

Passed in 2008.

Came into effect January 1, 2010

Requires annual reporting on 25 toxic substances

Reported data is available to public

Applies to about 700 Toronto facilities

NPRI & ChemTRAC thresholds

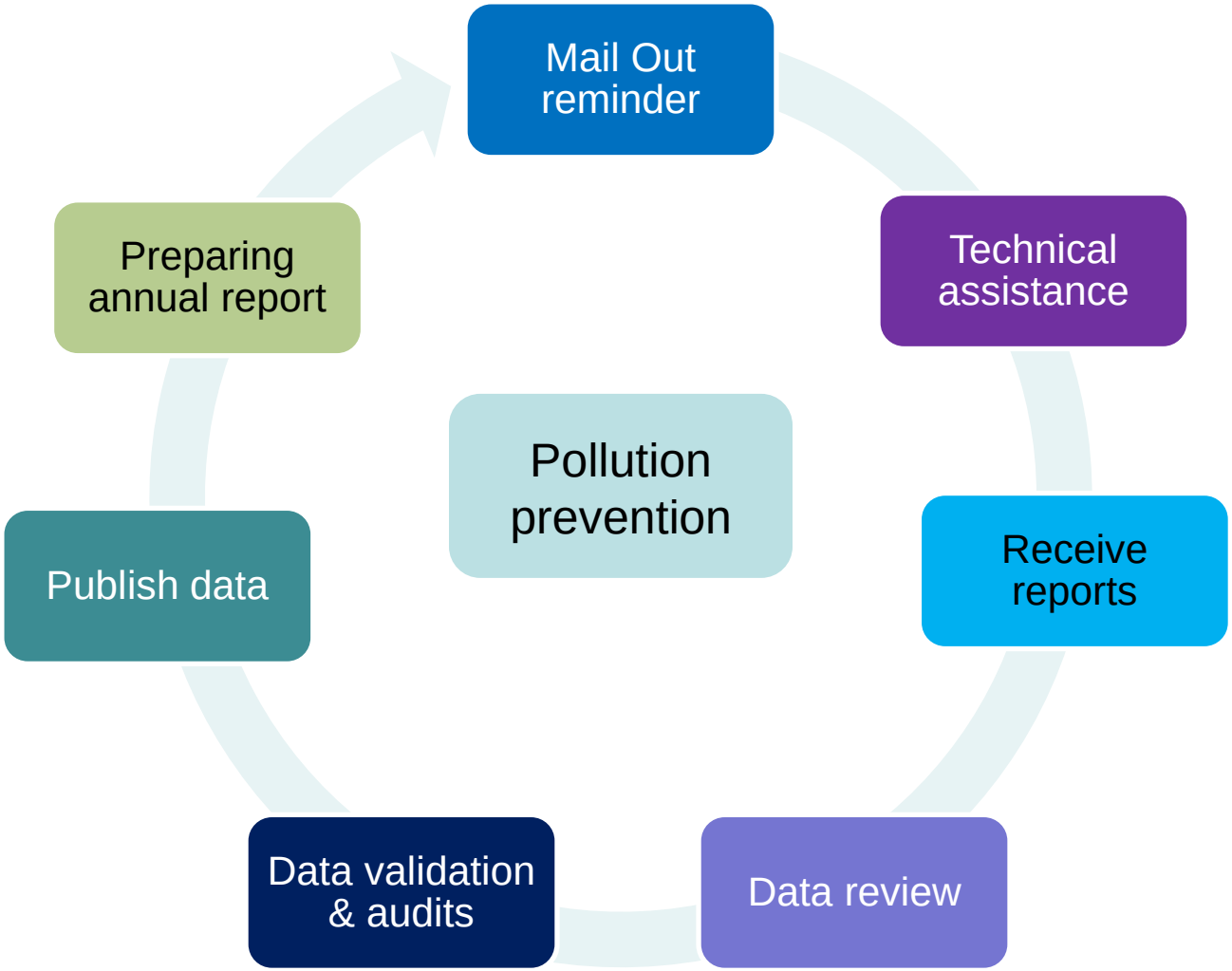
Chemical Name	ChemTRAC Reporting Threshold kg/year	NPRI Reporting Threshold kg/year
Acetaldehyde	100	10,000
Acrolein	100	10,000
Benzene	100	10,000
1,3-Butadiene	100	10,000
Carbon tetrachloride	100	10,000
Chloroform (Trichloromethane)	100	10,000
Chromium, Non-hexavalent[1]	100	10,000
1,2-Dibromo ethane (Ethylene dibromide)	100	-
1,4-Dichlorobenzene	100	10,000
1,2-Dichloroethane (Ethylene dichloride)	100	10,000
Dichloromethane (Methylene chloride)	100	10,000
Formaldehyde	100	10,000
Manganese[1]	10	10,000
Nickel[1]	100	10,000
Tetrachloroethylene (Perchloroethylene)	100	10,000
Trichloroethylene	100	10,000
Vinyl chloride	100	10,000
Cadmium[1]	1	5
Chromium, Hexavalent[1]	10	50
Lead[1]	10	50
Mercury[1]	1	5
PAHs	10	50
NOx	200	20,000
PM2.5	30	300
VOCs Total	100	10,000

[1]and its compounds, expressed as the metal

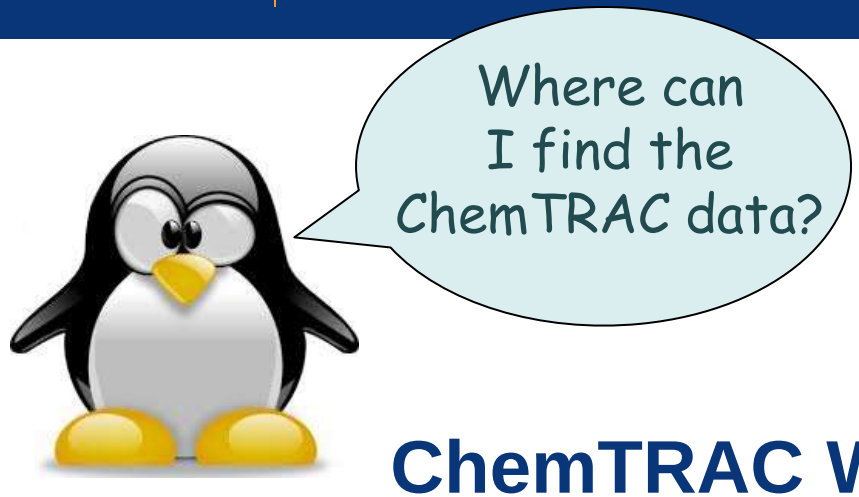
ChemTRAC Program Elements

- Facilities Reporting
- Public Data Disclosure
- Pollution Prevention

ChemTRAC Cycle



Public Data Disclosure



ChemTRAC Website

Annual Report

- Interactive Map
- Data Download

Reporting Tools for Businesses

...e required information for the reporting process ...calculators for your activities, thresholds, ...prevention and more information.

General ChemTR...

Frequently Aske... effects of spec... business.

ChemTRAC Reports

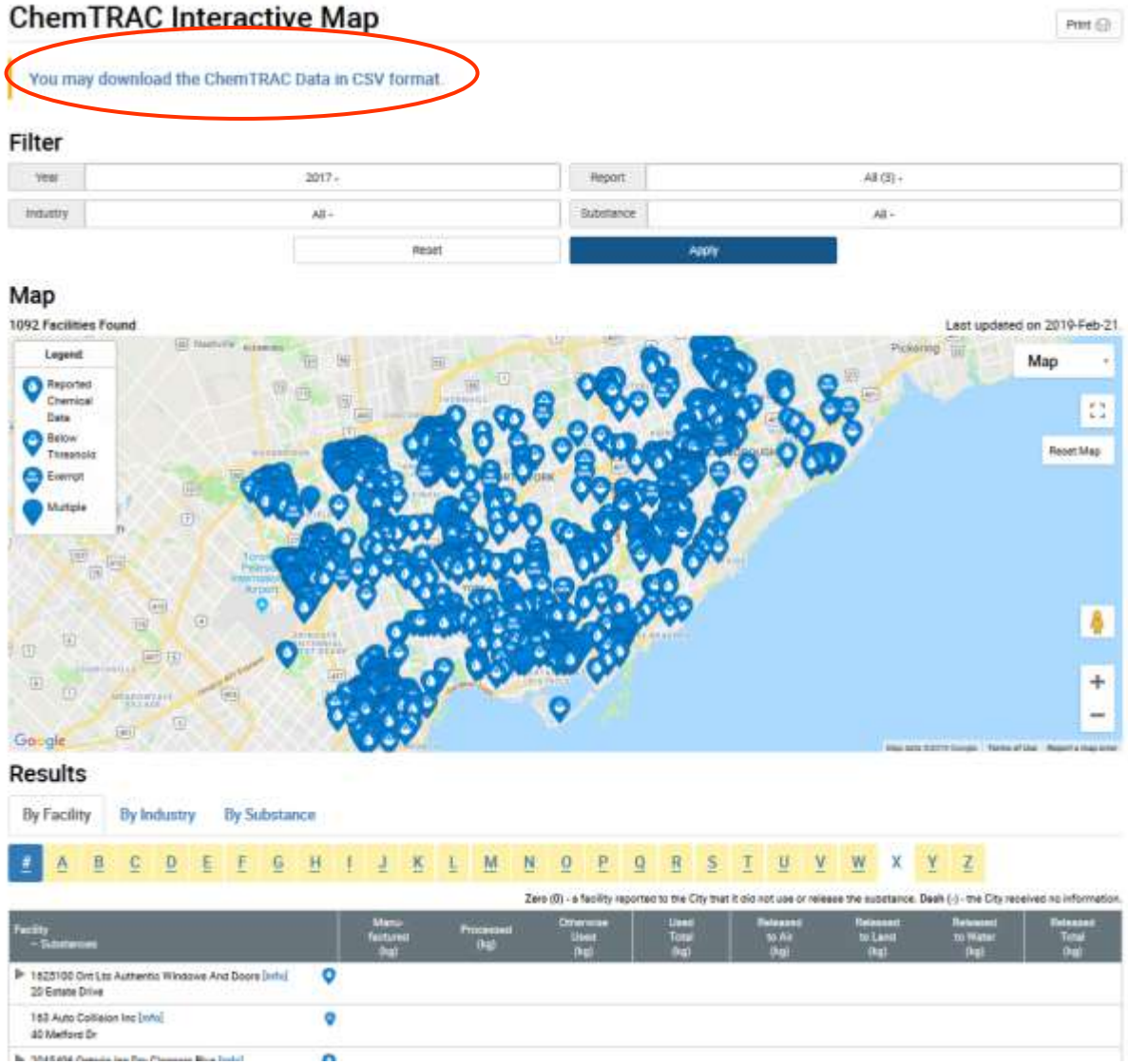
This includes new and archived annual and other ChemTRAC-related reports going back to 2005.

Data Disclosure

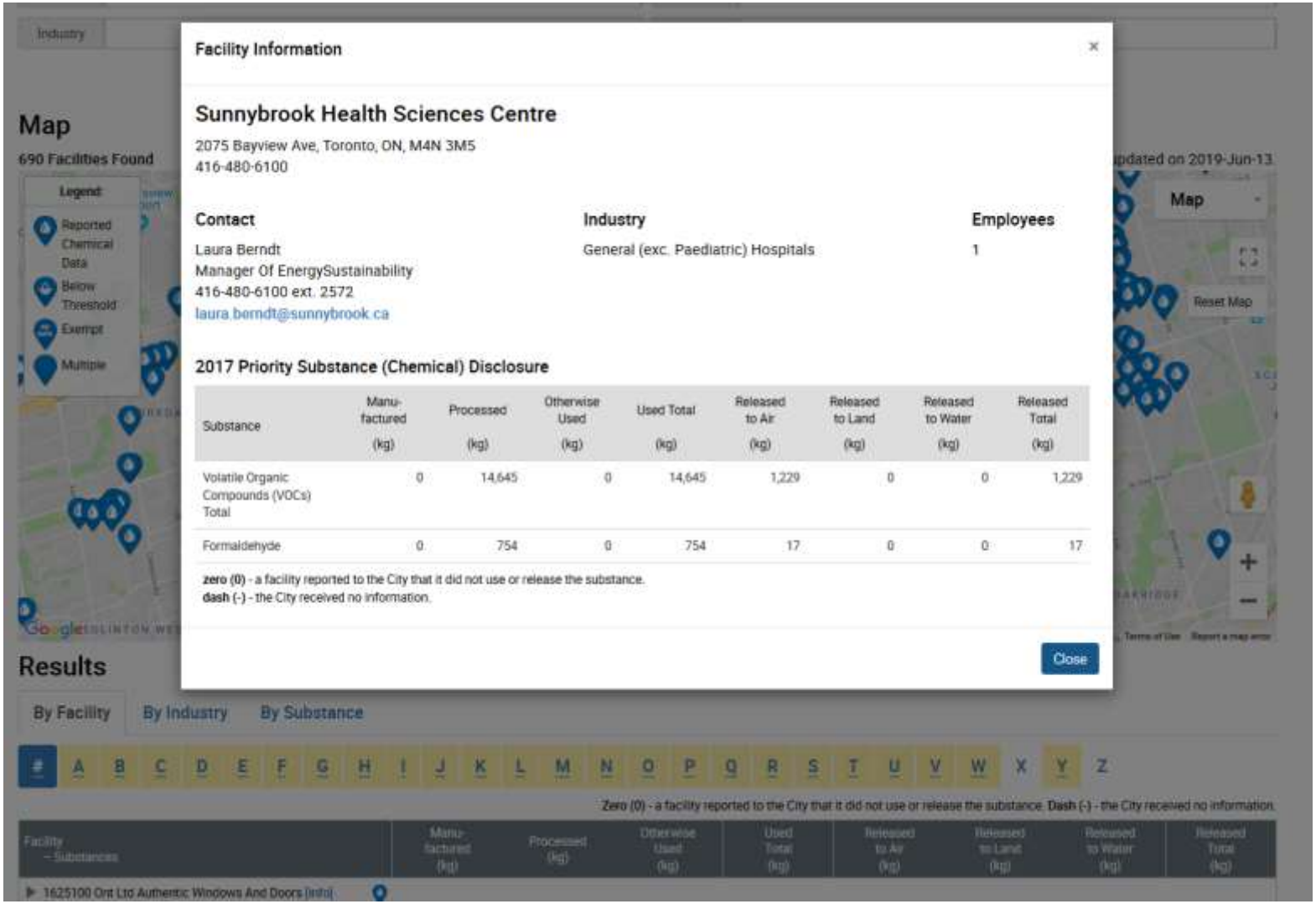
You can find facilities information and the reported chemical data by searching ChemTRAC's interactive map.

Data Disclosure

- Interactive map
- Downloadable data



Interactive Map



Pollution Prevention

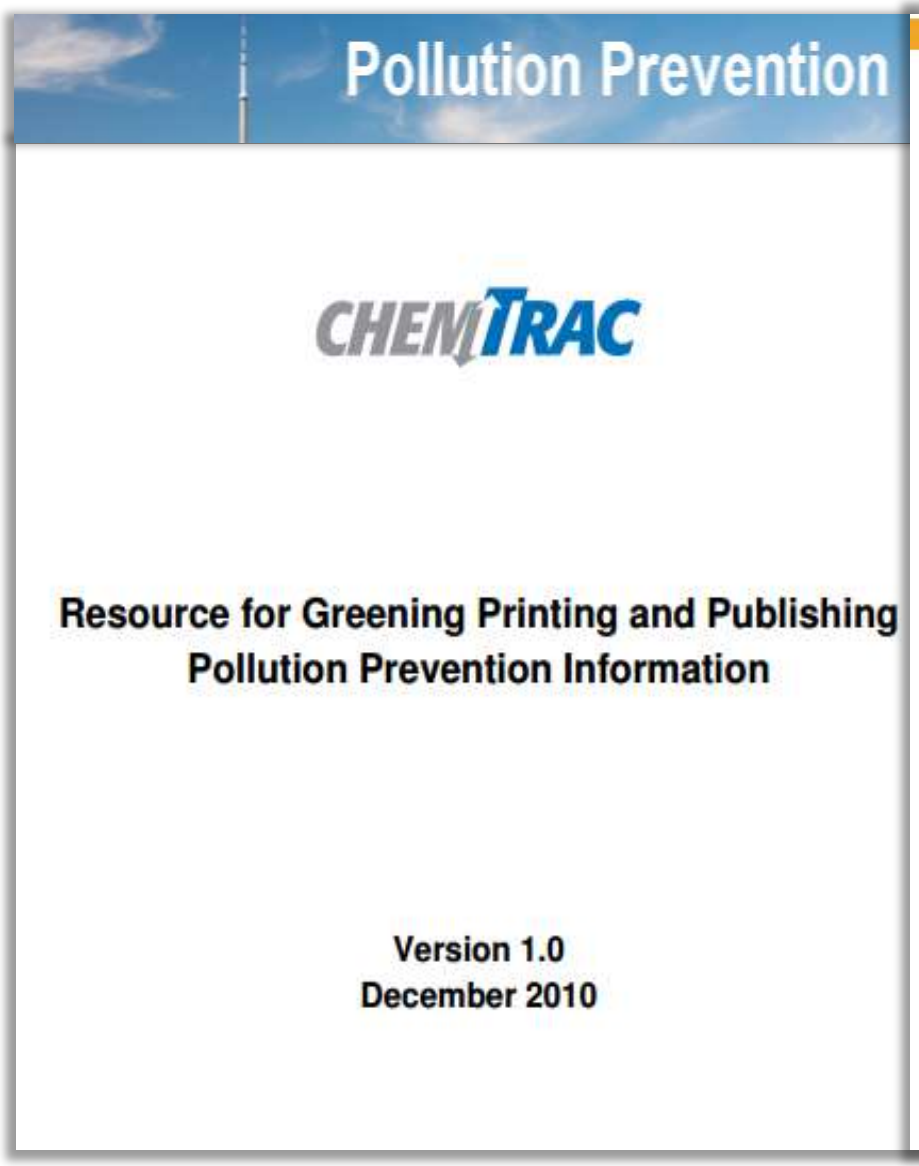
ChemTRAC Pollution Prevention initiatives:

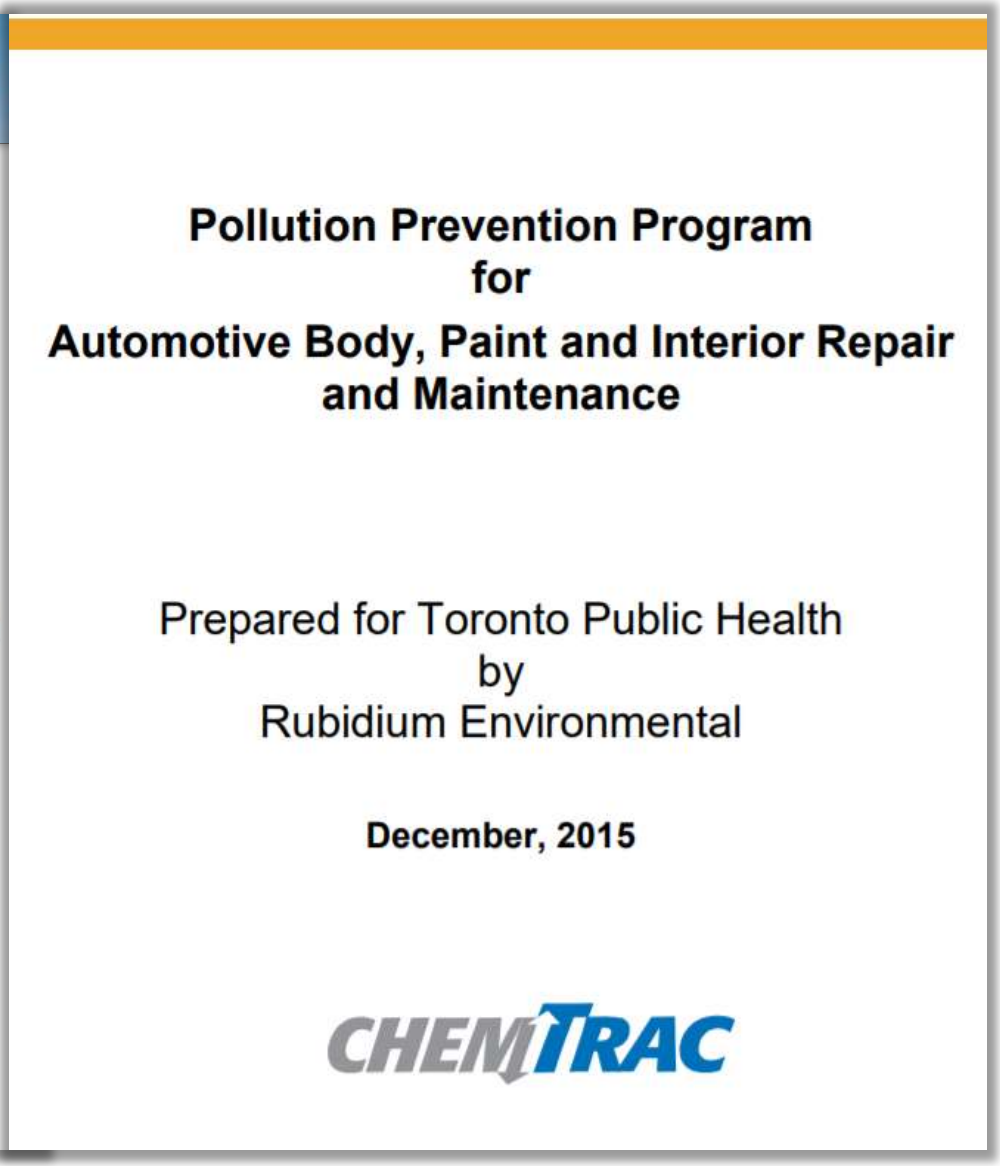
1. Developed more than 10 Pollution Prevention guides
2. Awarded more than 15 grants to business association and ENGOs
3. Organized ChemTRAC business panel
4. Developed Pollution Prevention program for 5 business sectors
5. Developed an e-learning module

Most Common Industrial Sectors

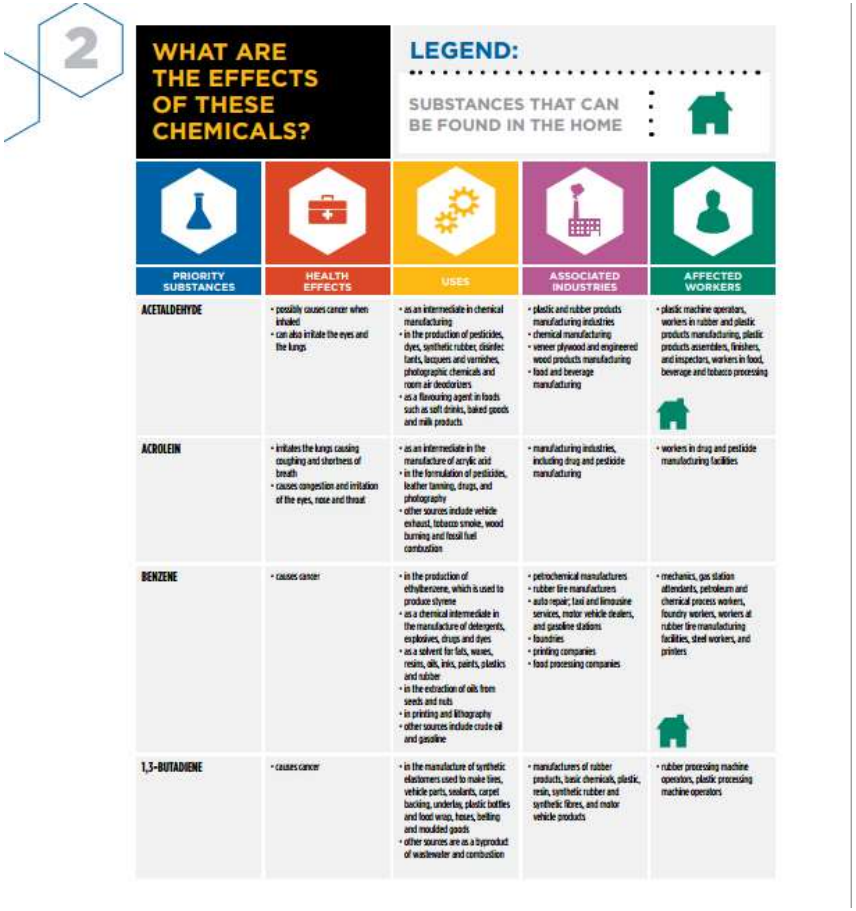
- Autobody Refinishing
- Dry Cleaning
- Food and Beverage
- Funeral Services
- Manufacturing
- Metal Processing
- Other Industries
- Power Generation
- Printing and Publishing
- Wood Industries

Support for Greening





Partnering with community groups



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WHAT ARE THE EFFECTS OF THESE CHEMICALS?

LEGEND:

SUBSTANCES THAT CAN BE FOUND IN THE HOME

PRIORITY SUBSTANCES	HEALTH EFFECTS	USES	ASSOCIATED INDUSTRIES	AFFECTED WORKERS
ACETALDEHYDE	• possibly causes cancer when inhaled • can also irritate the eyes and the lungs	• as an intermediate in chemical manufacturing • in the production of pesticides, dyes, synthetic rubber, disinfectants, lacquers and varnishes, photographic chemicals and room air deodorizers • as a flavouring agent in foods such as soft drinks, baked goods and milk products	• plastic and rubber products manufacturing industries • chemical manufacturing • veneer plywood and engineered wood products manufacturing • food and beverage manufacturing	• plastic machine operators, workers in rubber and plastic products manufacturing, plastic products assemblers, finishers, and inspectors, workers in food, beverage and tobacco processing
ACROLEIN	• irritates the lungs causing coughing and shortness of breath • causes congestion and irritation of the eyes, nose and throat	• as an intermediate in the manufacture of acrylic acid • in the formulation of pesticides, leather tanning, drugs, and photography • other sources include vehicle exhaust, tobacco smoke, wood burning and fossil fuel combustion	• manufacturing industries, including drug and pesticide manufacturing	• workers in drug and pesticide manufacturing facilities
BENZENE	• causes cancer	• in the production of ethylbenzene, which is used to produce styrene • as a chemical intermediate in the manufacture of detergents, explosives, drugs and dyes • as a solvent for fats, waxes, resins, oils, inks, paints, plastics and rubber • in the extraction of oils from seeds and nuts • in printing and lithography • other sources include crude oil and gasoline	• petrochemical manufacturers • rubber tire manufacturers • auto repair; taxi and limousine services, motor vehicle dealers, and gasoline stations • laundries • printing companies • food processing companies	• mechanics, gas station attendants, petroleum and chemical process workers, foundry workers, workers at rubber tire manufacturing facilities, steel workers, and printers
1,3-BUTADIENE	• causes cancer	• in the manufacture of synthetic elastomers used to make tires, vehicle parts, sealants, carpet backing, underlay, plastic bottles and food wrap, hoses, belting and moulded goods • other sources are as a byproduct of wastewater and combustion	• manufacturers of rubber products, basic chemicals, plastic, resin, synthetic rubber and synthetic fibres, and motor vehicle products	• rubber processing machine operators, plastic processing machine operators

Toronto Cancer Prevention Coalition (TCPC)

Partnerships and Grants – Auto body sector 2017

- Auto body Pollution prevention program
  - Partnership with the Toronto Region Conservation Authority (TRCA)

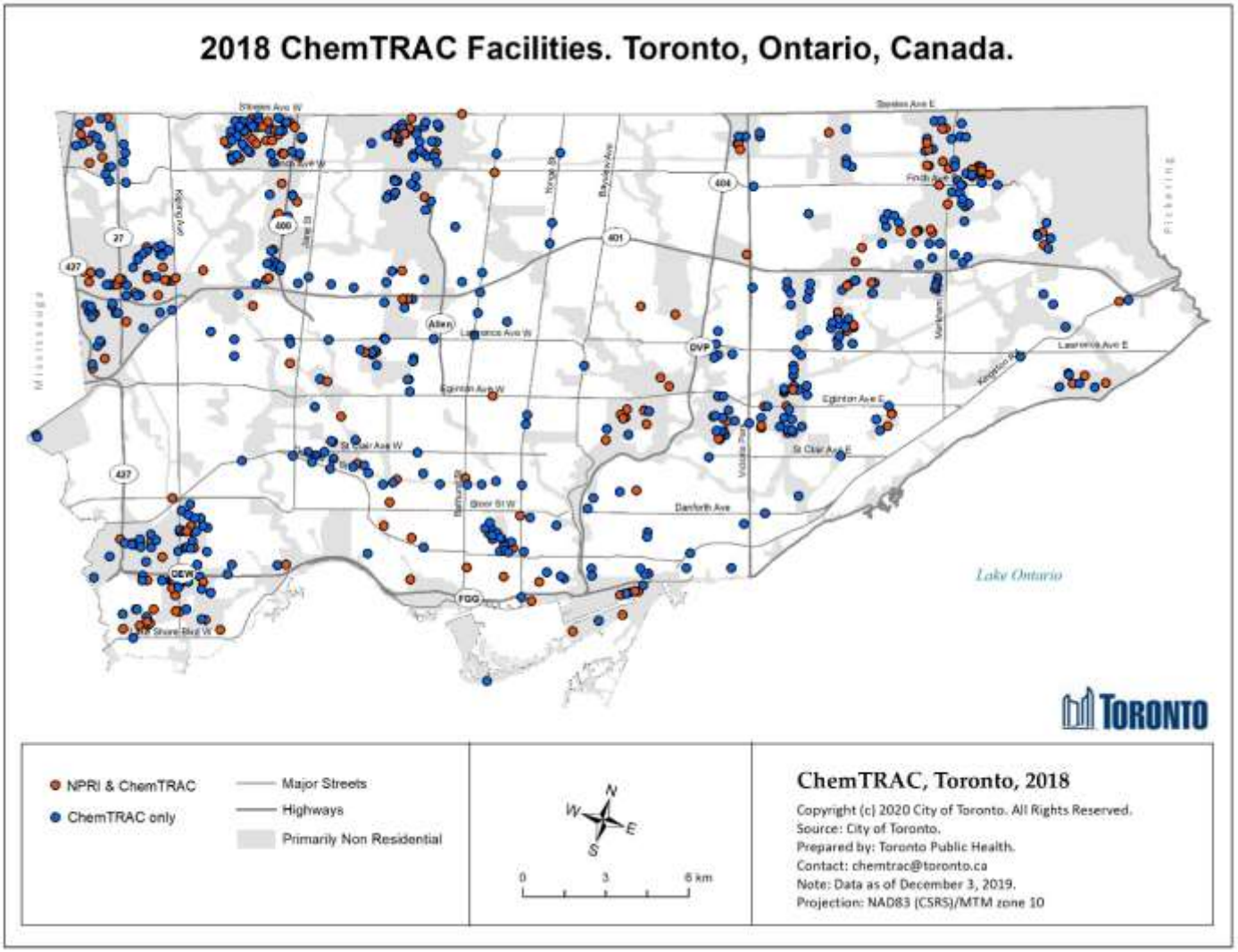
52 Auto body facilities participated in the pollution prevention program and received individual Pollution Prevention plans.

Dry Cleaning sector

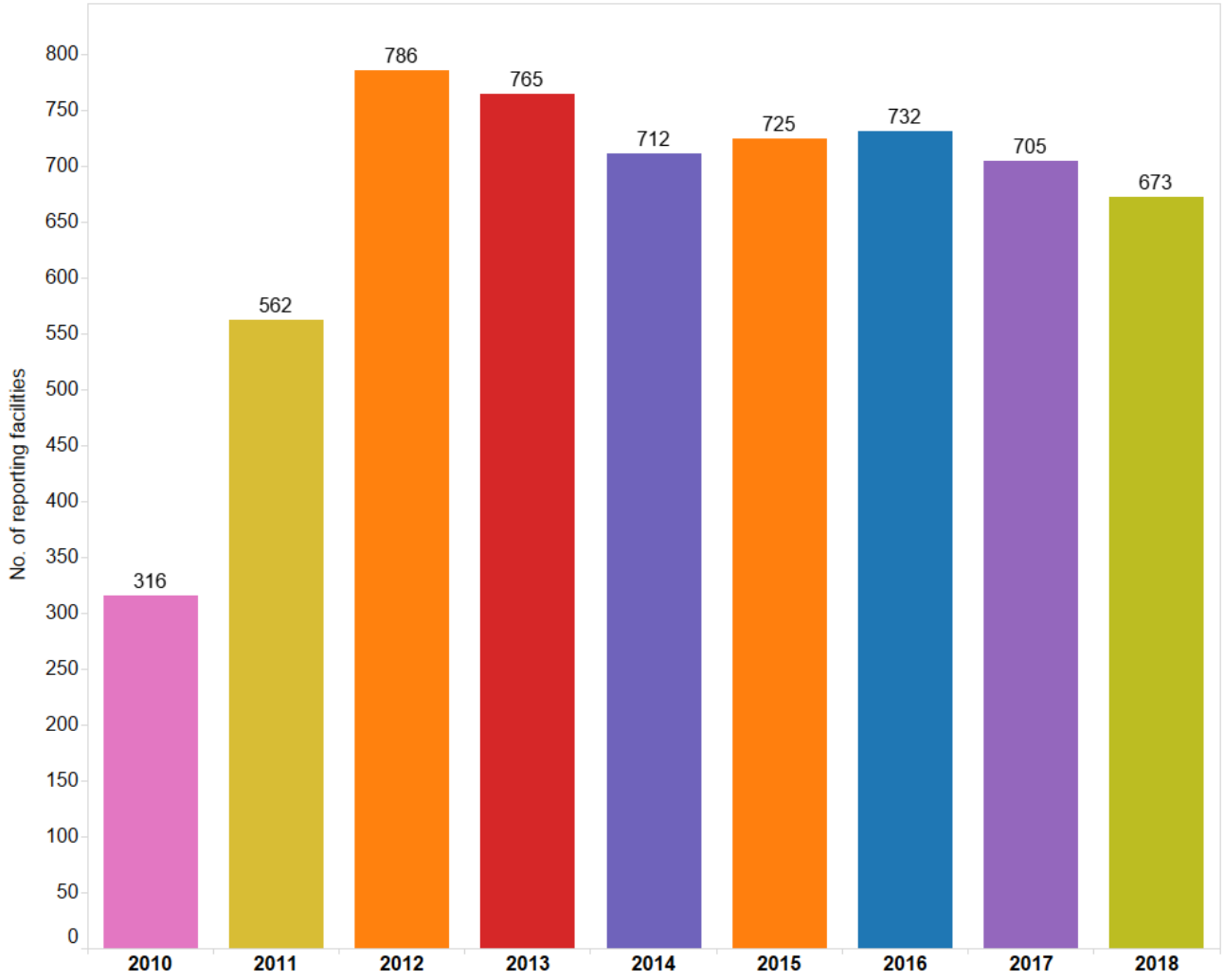
- Conventional cleaning solvents (toxic)
  - Perc
  - Hydrocarbon
  - Green Earth (D5)
  - Acetaldehyde
  - Ethers
  - N-propyl Bromide
- Best alternative cleaning method
  - Wet cleaning
  - CO_2 cleaning

Using ChemTRAC grants, EDC & TEA launched a campaign to generate awareness of the health and environmental impacts of conventional dry cleaning solvents and for promoting wet cleaning in Toronto

Location of reporting facilities



Number of Reporting Facilities



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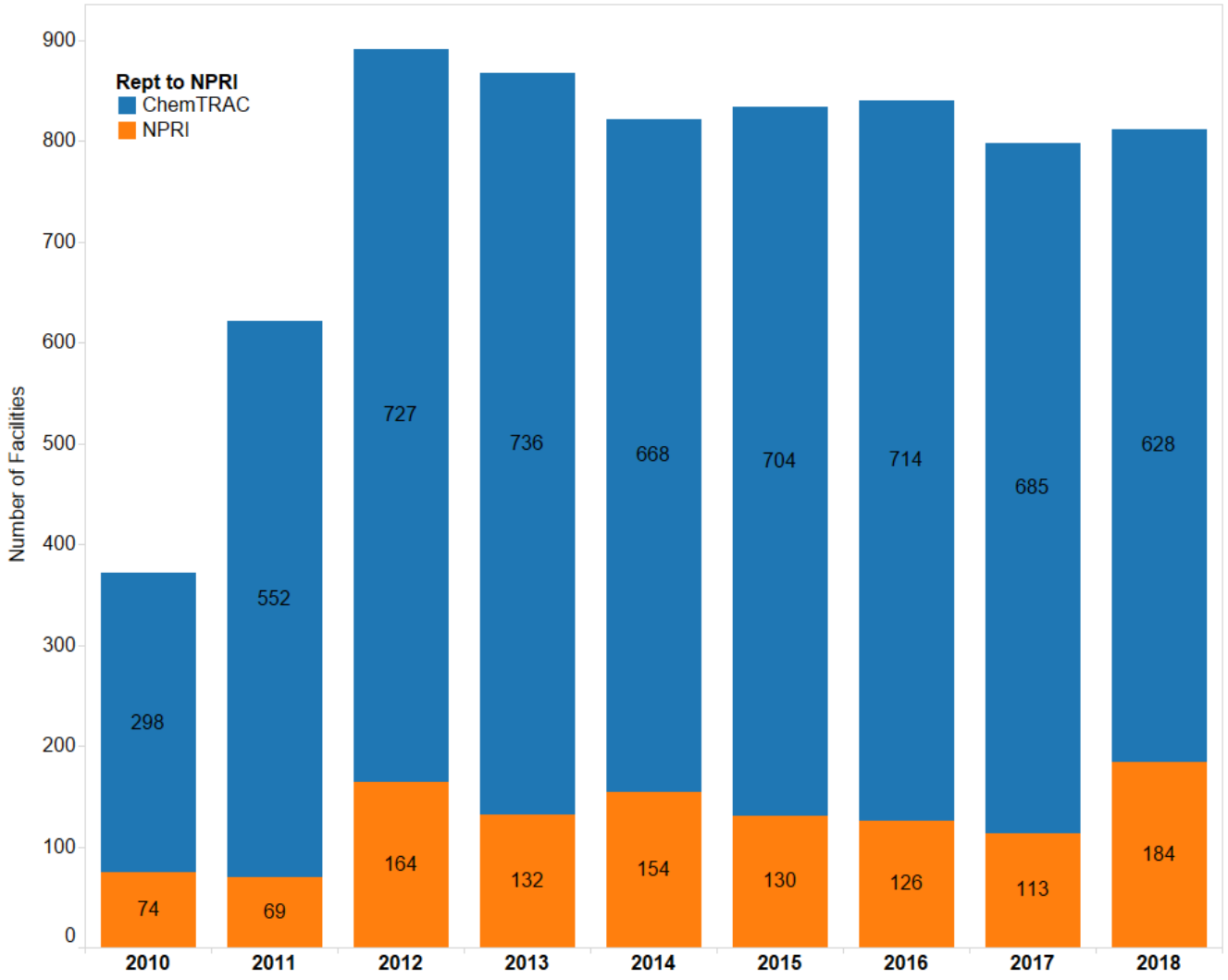
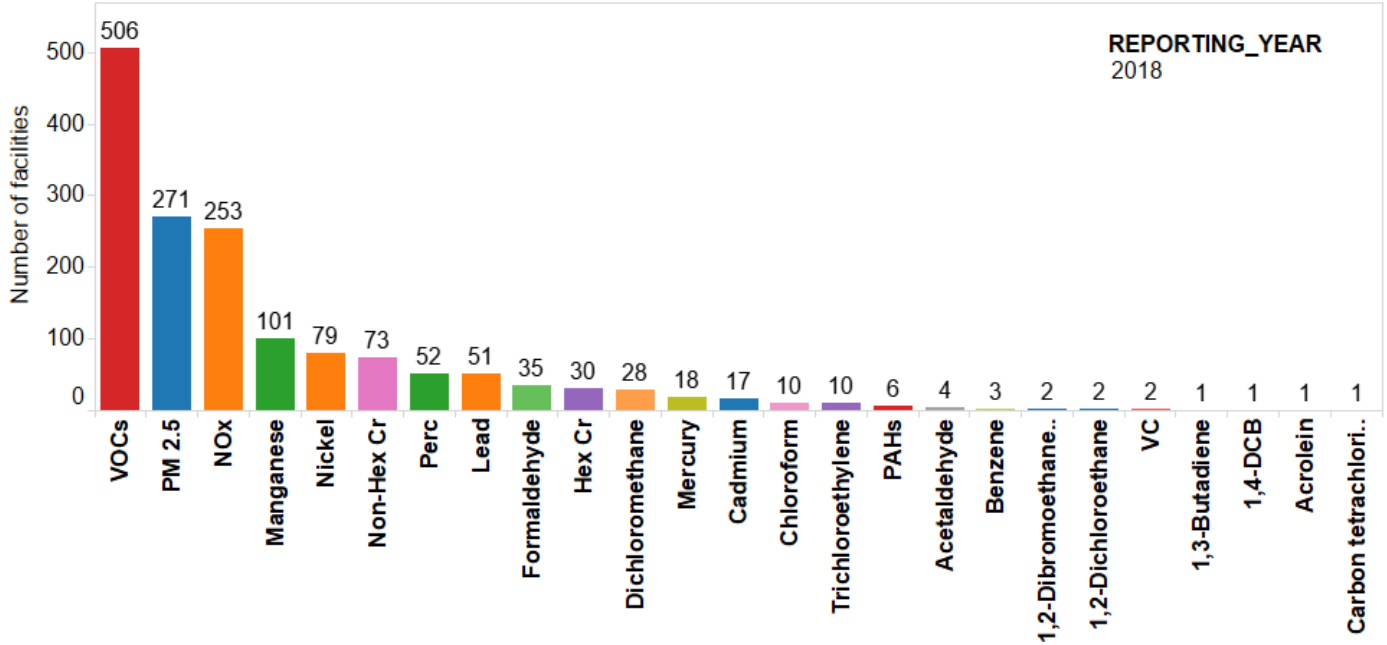


Number of Reports by Chemical



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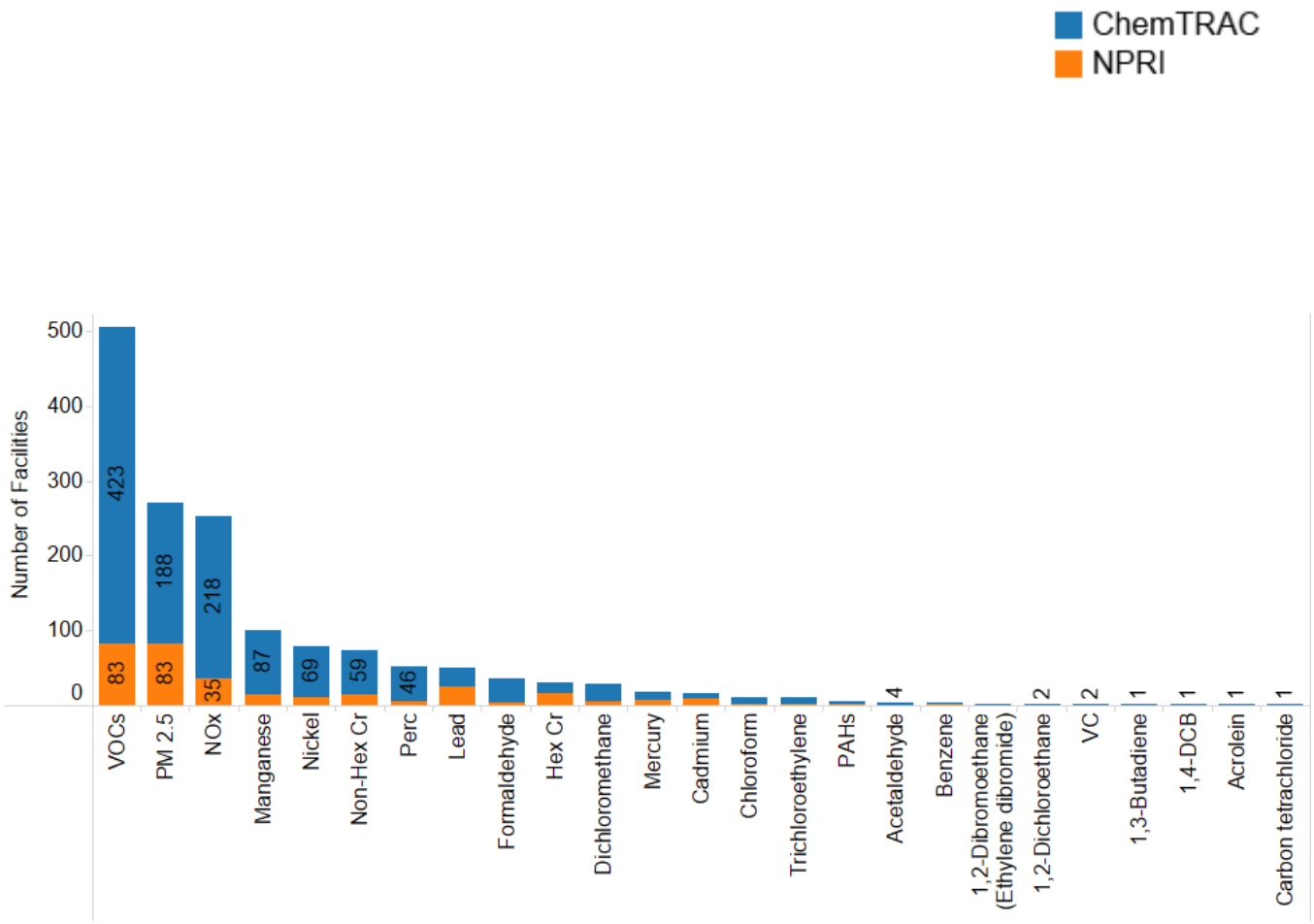

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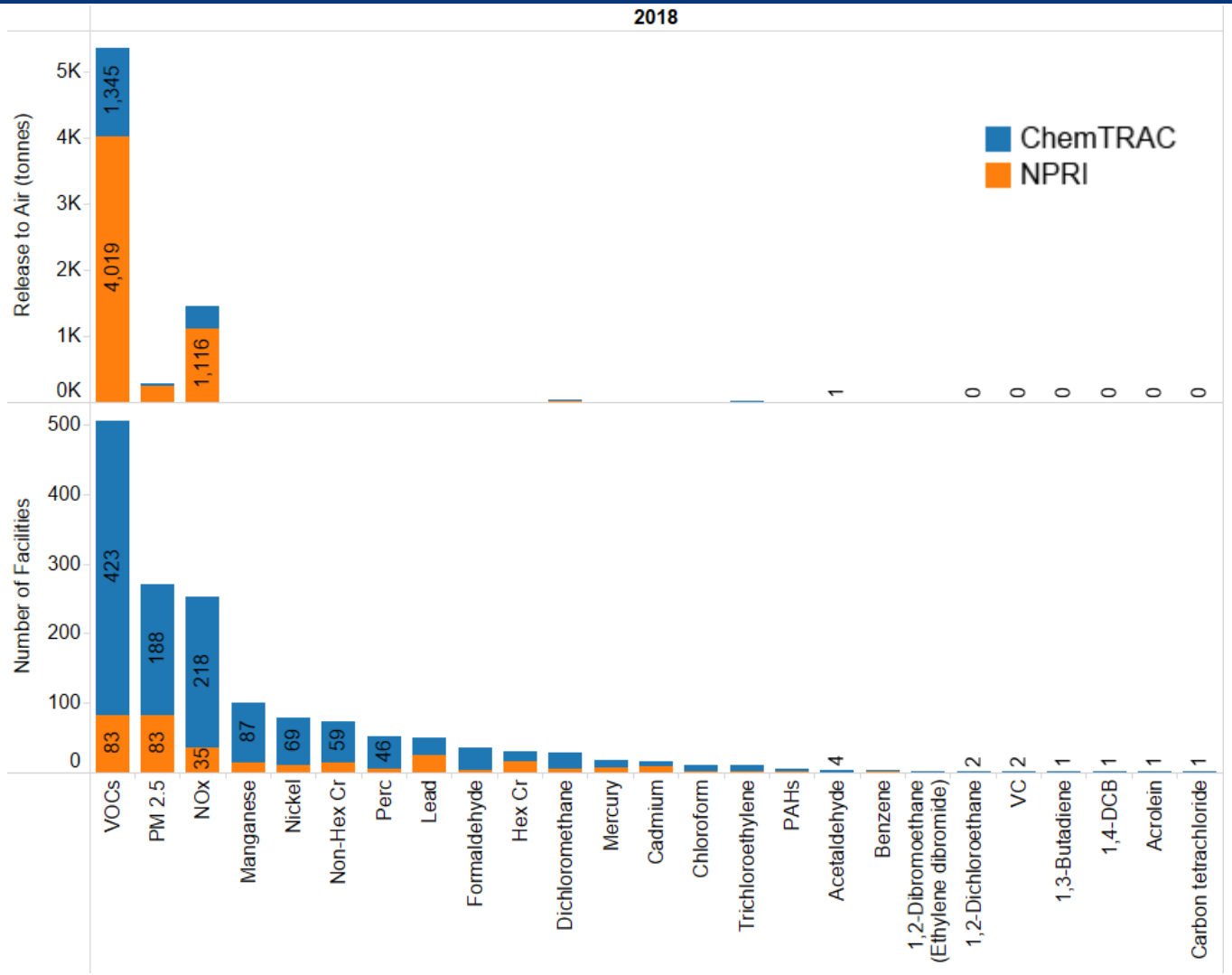
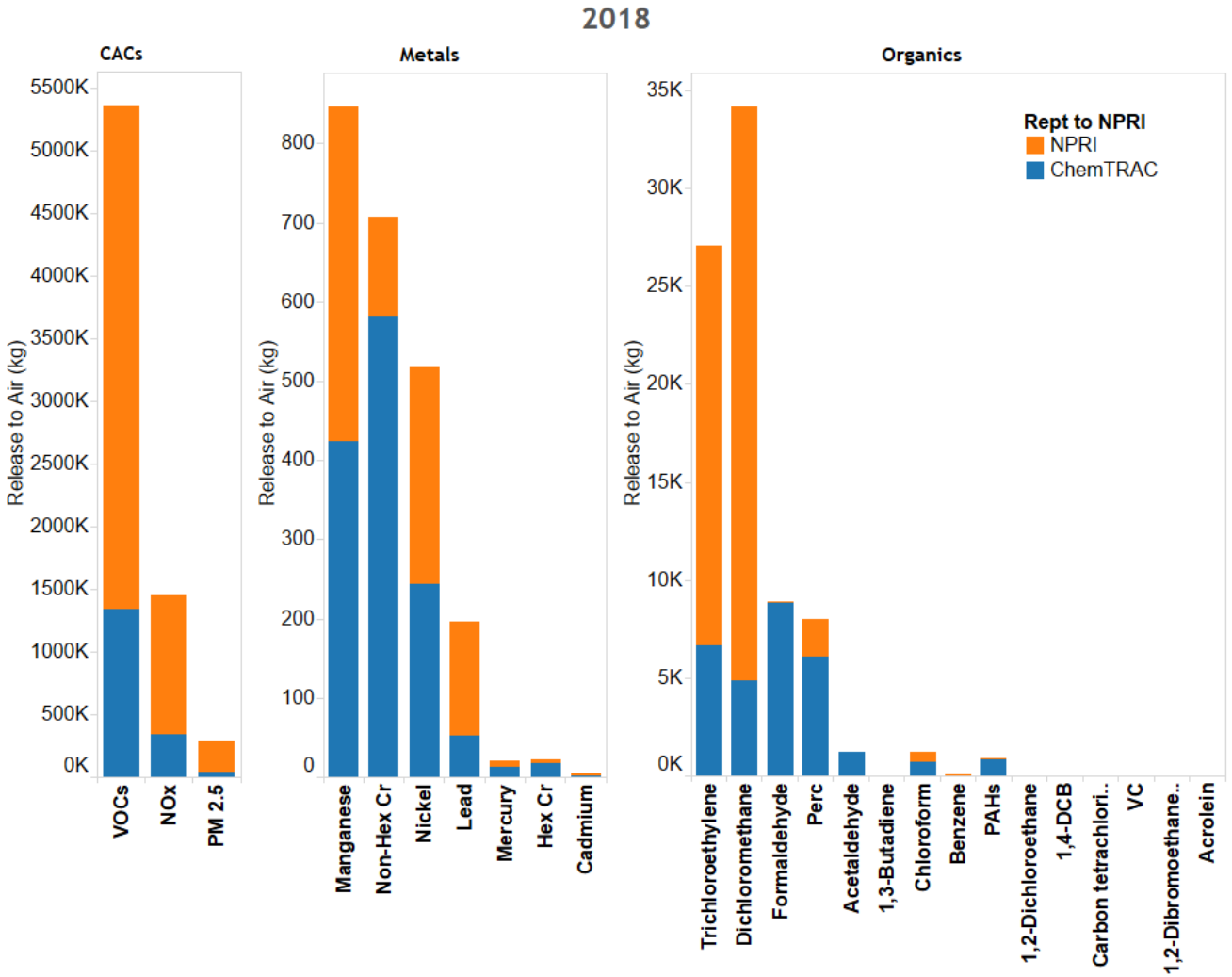
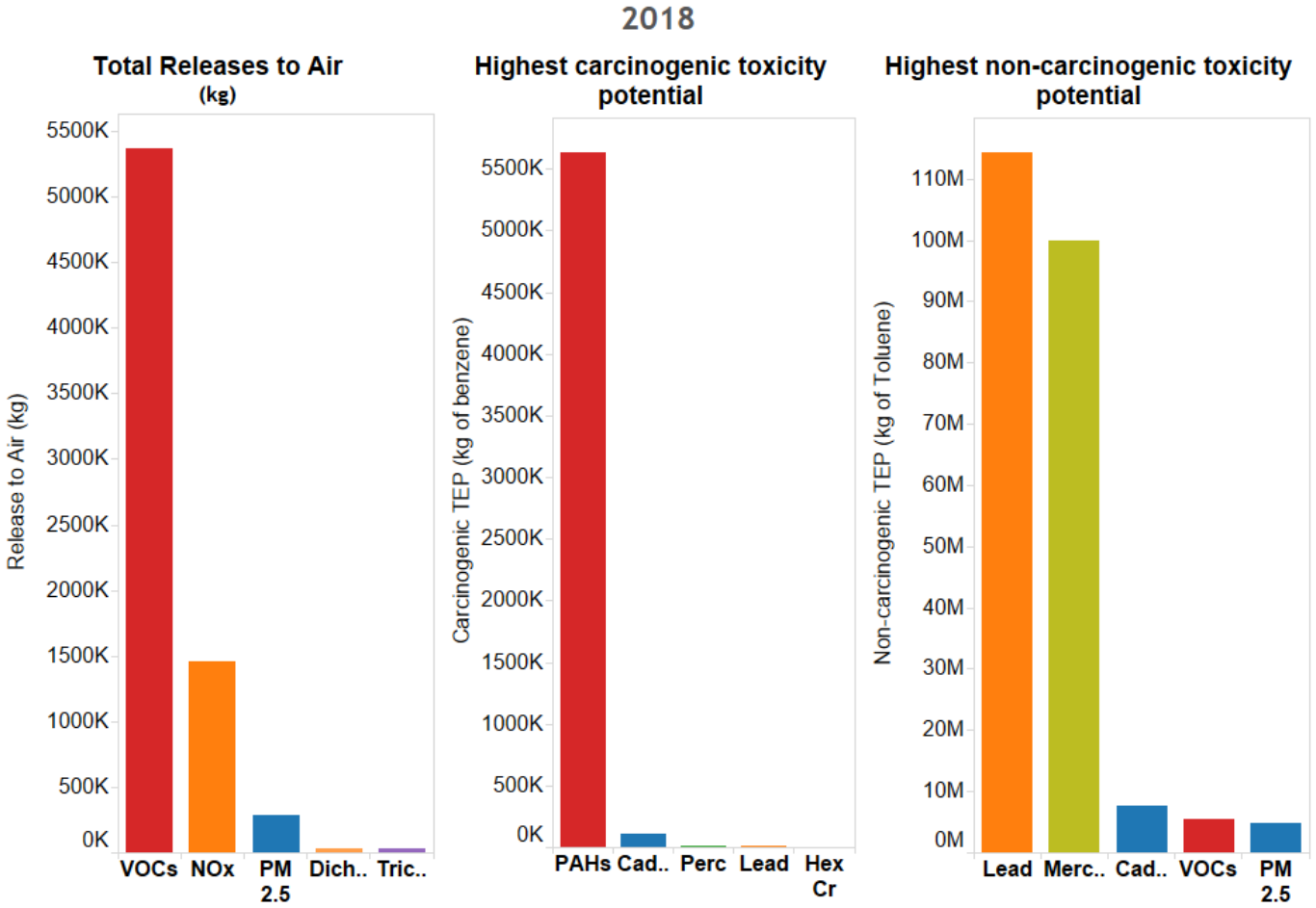


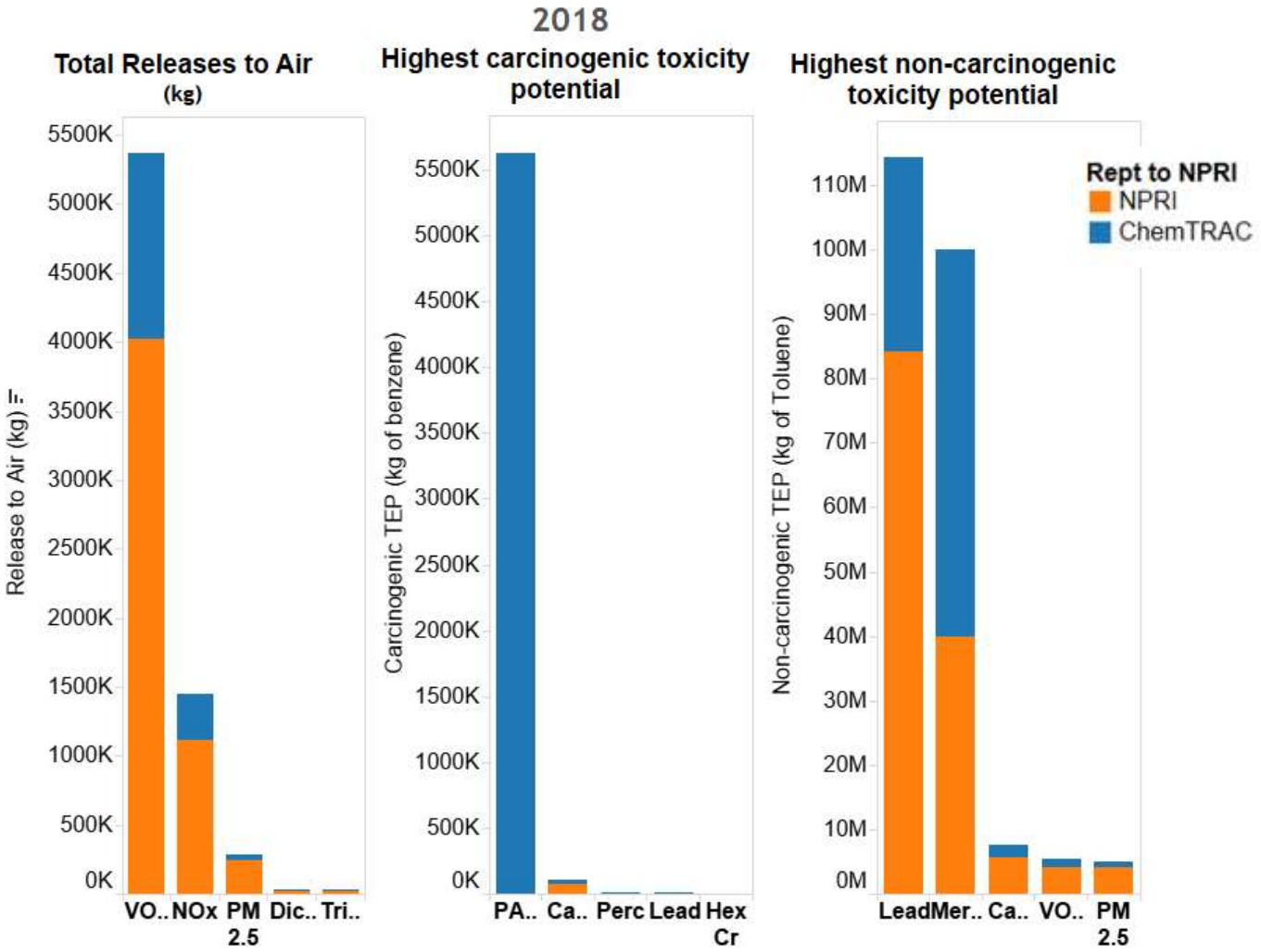
ChemTRAC & NPRI data - 2018



Top 5 substances – 2018
Mass & Toxic Equivalent Potential



Top 5 substances – 2018 NPRI-CT Mass & Toxic Equivalent Potential



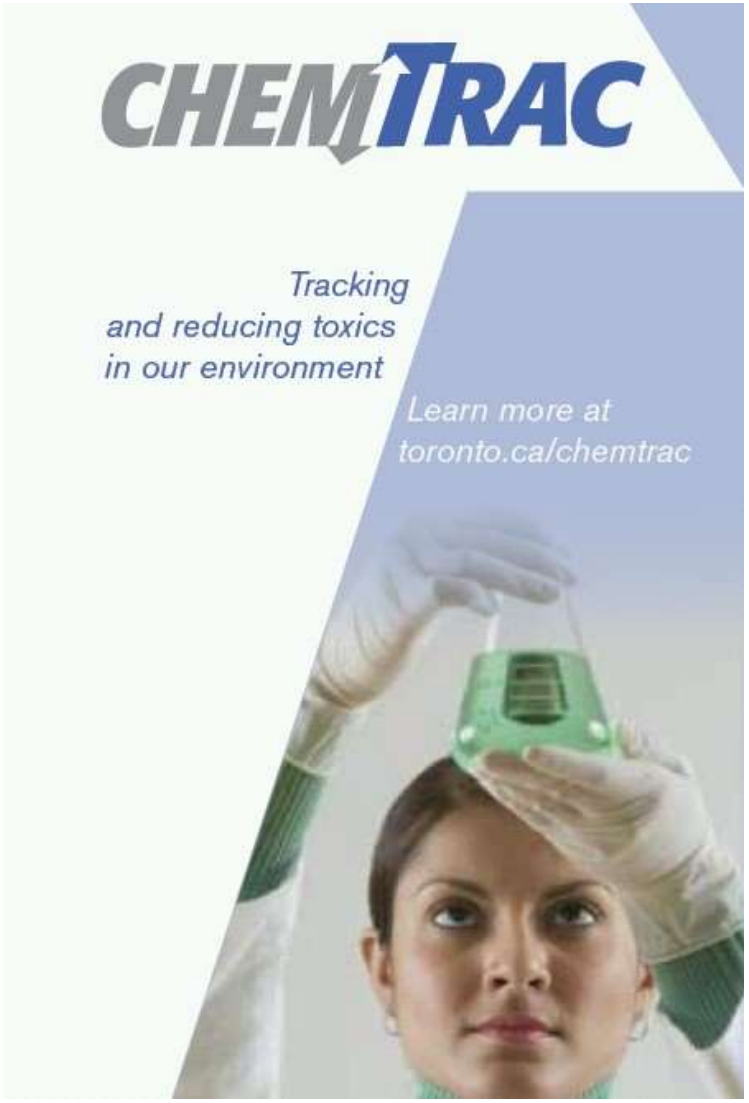
Lessons learned

- The guides and calculation tools offered online are very important to reduce the number of clients' inquiries by phone or email.
- Reporting Workshops are very useful but resource consuming.
- Reminder letters and emails are effective for compliance.
- Data very sensitive to wrong reports of large amounts.
- Reports need to be reviewed/audited.

NPRI & ChemTRAC

- About 20% of the ChemTRAC facilities report to NPRI as well.
- For some substances, most of the total amount is reported by facilities that do not report to NPRI (e.g. Mn, Non-hex Cr, formaldehyde, perc).
- The NPRI data is very useful for the ChemTRAC data validation processes

Learn more about ChemTRAC



For more information:

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Acknowledgements

The ChemTRAC Team:

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Questions?

Thank You!

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