

**Tracking and Reducing Chemicals in Toronto:
Third Annual ChemTRAC Report**

Date:	June 13, 2014
To:	Board of Health
From:	Medical Officer of Health
Wards:	All
Reference Number:	

SUMMARY

The ChemTRAC program was developed to improve the understanding of institutional, commercial and industrial sources of pollution in Toronto, encourage pollution prevention to protect health, and support a green local economy.

The program has three key elements: 1) the Environmental Reporting and Disclosure Bylaw (Municipal Code Chapter 428) that requires businesses to report on their use and release of 25 priority substances if they meet certain thresholds in a given year; 2) a public disclosure system to inform the public about facilities in their neighbourhoods; and 3) supports for businesses to reduce their use and release of the priority substances.

The implementation of the Bylaw was phased in over three years. This is the first report to include information from facilities in all industrial and commercial sectors subject to the bylaw. In 2013, 745 facilities reported to ChemTRAC for the prior business year. In total, approximately 71,000 tonnes of priority substances were reported as manufactured, processed or used in 2012. Of this, about 10 percent (8,000 tonnes) were released to the environment, mostly into the air. Review of data from facilities that reported over a three year period (2010-2012) showed a small reduction (2 percent) in total releases.

Over the past three years, Toronto Public Health and its partners – LiveGreen, Economic Development and Culture, Toronto Water, Partners in Project Green – have provided business support service to more than 7,300 businesses. In 2013, ChemTRAC's disclosure system was viewed by over 7,000 unique visitors, and ChemTRAC is one of the top downloaded datasets from Open Data. The ChemTRAC program has started to increase Toronto businesses' awareness of pollution prevention options. Toronto Public Health will continue to promote implementation of pollution prevention.

Financial Impact

This report has no financial impact.

DECISION HISTORY

On December 3, 2008, City Council adopted the Environmental Reporting, Disclosure and Innovation Program, which included the Environmental Reporting and Disclosure Bylaw (Municipal Code Chapter 423);

<http://www.toronto.ca/legdocs/mmis/2008/cc/decisions/2008-12-01-cc27-dd.pdf>).

At its June 25th, 2012 and June 14th, 2013 meetings, the Board of Health received annual update reports on the status and implementation of ChemTRAC;

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2012.HL15.7> and

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.HL22.4>.

ISSUE BACKGROUND

In 2008, Toronto Public Health (TPH) identified 25 priority substances that are of concern for health in Toronto. The priority substances include solvents, metals and combustion by-products that can cause both short-term and long-term adverse health effects. Toronto residents are most commonly exposed to these substances through emissions to air. The ChemTRAC program was developed to protect the health of Torontonians by improving the understanding of institutional, commercial and industrial sources of these substances, which can lead to pollution prevention initiatives and the greening of the local economy.

In its 2014 air pollution burden of illness update, Toronto Public Health estimated that pollutants emitted within Toronto's borders contribute to 670 deaths and 1,970 hospitalizations, with local industries contributing about 18 percent of these deaths and 10 percent of these hospitalizations.

COMMENTS

The first three years of implementing the ChemTRAC program focused on developing the systems and capacity for businesses to comply with the Bylaw, and for the release the data to the public. Toronto Public Health surveyed businesses over the first three years of the program to evaluate customer service and attitudes on pollution prevention. The following sections outline activities and outcomes of the three program elements: reporting, data disclosure and pollution prevention.

Element 1: Reporting

The Environmental Reporting and Disclosure Bylaw requires facilities in Toronto to annually report their use and release of the 25 priority chemicals, if they meet reporting requirements. The implementation of ChemTRAC was phased-in over three years; 2013 was the first year when all sectors had to report on their previous year's operations. Phase One facilities began reporting in 2011, Phase Two facilities in 2012 and Phase Three in 2013. Table 1 shows the number of facilities within each phase and sector that reported chemical information on their 2012 operations.

Table 1: Number of facilities that reported data on priority substances for 2012 operations

Sector	Number of facilities that reported
Phase One Facilities	300
Chemical and related products manufacturing	113
Food, beverage and tobacco products manufacturing	61
Power generation	5
Printing and publishing	73
Water and wastewater treatment	6
Wood products manufacturing	42
Phase Two Facilities	223
Automotive repair and maintenance	111
Chemical wholesale	4
Dry cleaning and laundry services	91
Funeral services	9
Medical and diagnostic laboratories	3
Waste management and remediation services	5
Phase Three Facilities¹	222
Fabricated metal product manufacturing	74
Non metallic mineral product manufacturing	22
Electrical equipment, appliance and component manufacturing	15
Educational services	11
Computer and electronic product manufacturing	11
Transportation equipment manufacturing	11
All other	78
Total	745

Highlights from 2012 Operations

In 2013, 745 facilities provided data to ChemTRAC for the prior business year. In total, approximately 71,000 tonnes of priority substances were reported as manufactured, processed or used in 2012. Of this amount, about 10 percent (8,000 tonnes) were released to the environment, mostly to air. Review of data from facilities that reported over a three year period (2010-2012) showed a small reduction (2 percent) in total releases. The variation in economic activity from year to year can have a large impact on the total amount of manufacture, use or release of priority substances.

Similar to previous years, the substances reported released in largest quantities were smog-forming pollutants – volatile organic compounds, nitrogen oxides and fine particulate matter (PM_{2.5}). Other substances that are released in smaller amounts can also

¹ 2013 was the first year that Phase 3 facilities were required to report.

be of concern because of their toxicity. Based on their toxic equivalency potential for cancer and non-cancer effects,² an additional five compounds were ranked as having a higher potential for adverse health impacts in Toronto: polycyclic aromatic hydrocarbons (PAHs), cadmium, tetrachloroethylene (also known as perc), mercury and lead.

The ChemTRAC program collects and makes public a large amount of data that are not captured by federal and provincial programs. The ChemTRAC programs adds data for small and medium-sized sources to the data collected on large pollutant sources through Environment Canada's National Pollutant Release Inventory (NPRI) and Ontario's Toxics Reduction Act (TRA). In 2013, 80 percent of facilities that reported under the Environmental Reporting and Disclosure Bylaw, reported only to ChemTRAC. Facilities that report to ChemTRAC include smaller facilities such as autobody shops and dry cleaners that do not meet reporting thresholds for provincial and national programs. In addition, because of lower reporting thresholds, data on six priority substances in Toronto were only collected through ChemTRAC. The substances are acetaldehyde, benzene, chloroform, 1,4-dichlorobenzene, vinyl chloride, PAHs

Data Validation and Enforcement

To ensure accuracy of the reported data, TPH corresponded with about 650 facilities. Twenty seven warning letters were also issued; this resulted in facilities correcting their data. TPH also verified reports from 200 facilities that identified themselves as below threshold or exempt from reporting. TPH also contacted by mail about 6,000 facilities that never provided any information about their reporting status. Of these, about 600 facilities confirmed that they were below threshold or exempt.

Support to Business

Over the past three years, TPH and its partners – LiveGreen, Economic Development and Culture, Toronto Water, Partners in Project Green – provided business support service to more than 7,300 businesses through mailings, telephone and email support, webinars and technical assistance visits. An up-to-date website, calculators and technical guides were also provided. This assistance is particularly important for small facilities that are unaccustomed to tracking chemicals or considering pollution prevention opportunities. In the 2013 survey of businesses who reported to ChemTRAC, the majority of businesses were satisfied with the overall quality of the ChemTRAC program.

- 90 percent of businesses that used ChemTRAC support services found them helpful or very helpful.
- 82 percent of businesses agreed or strongly agreed with the statement "I was satisfied with the overall quality of the ChemTRAC program".

² Toxic equivalency potentials provide a value based on the amount released and the toxicity of a substance. A high toxic equivalency potential value represents a higher potential to cause harm. The toxic equivalency potential scoring system ranks substances that cause cancer (carcinogens) and substances with other health impacts (non-carcinogens) separately.

Element 2: Data Disclosure

Toronto Public Health informs the public about facilities in their neighbourhood through information on its website including an interactive map and database that can be sorted by industry and chemical name. All of the data is also made available through Toronto's Open Data initiative site. It is listed as one of the top downloaded datasets from Open Data: Open Data was accessed 9,623 times in 2013 and the disclosure system on the ChemTRAC website was viewed by over 7,000 unique visitors in the same time period. The ChemTRAC website has been updated and highlights of the 2012 data have been compiled (see Attachment).

The ChemTRAC dataset is used by Toronto Public Health, along with community organizations and other City divisions. Toronto Public Health's Healthy Environments team uses the ChemTRAC data to address community questions about facilities in their neighbourhood. Environment and Energy Division, in collaboration with Toronto Public Health, used the ChemTRAC data to inform the selection of wards for future local air quality studies. These studies will make use of ChemTRAC data in the air quality modelling.

ChemTRAC data has also been used to identify pollution prevention projects. For example, the 2013 ChemTRAC annual report identified mercury as a substance of high concern and crematoria as a major source of releases to air. Using this information, in consultation with staff, Summerhill Impact is reviewing approaches to reduce mercury releases from the funeral services sector. The Toronto Environmental Alliance combined ChemTRAC data with other information to identify communities for their outreach programs that engage residents and local businesses in initiatives to reduce the use of toxic chemicals.

Element 3: Pollution Prevention

The ChemTRAC program is increasing Toronto businesses' awareness of pollution prevention, which is the first step in reducing releases of toxic substances to the environment. Sixty-four per cent of businesses surveyed in 2013 indicated that the ChemTRAC program has made them more aware of the measures they can take to reduce the release of use of priority substances. The next challenge is to use this awareness to mobilize businesses to implement pollution prevention techniques. Lack of alternative products and cost are among the greatest barriers to businesses implementing pollution prevention initiatives.

Toronto Public Health is committed to supporting businesses in reducing their use and release of priority chemicals. As part of the ChemTRAC Pollution Prevention Pilot Project, supported by the Toronto Atmospheric Fund, TPH worked with industry representatives to review best practices for supporting businesses to implement environmental improvements, and participated in pollution prevention assessments. This information will be used to support future pollution prevention activities.

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ATTACHMENT

ChemTRAC – Improving Toronto's Air: 2014 Annual Report