



## STAFF REPORT INFORMATION ONLY

### Tracking and Reducing Chemicals in Toronto: First Annual ChemTRAC Report

<b>Date:</b>	June 8, 2012
<b>To:</b>	Board of Health
<b>From:</b>	Medical Officer of Health
<b>Wards:</b>	All wards
<b>Reference Number:</b>	

#### SUMMARY

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ChemTRAC is a City program led by Toronto Public Health (TPH) that collects data each year from local businesses and institutions on 25 priority chemicals that are commonly used or released, and exist in our environment at levels of concern for health. The requirements are set out in the Environmental Reporting and Disclosure Bylaw (Municipal Code Chapter 423). The information helps the City better assess and address health and environmental risks, and support the roles of businesses and the community in reducing the use of chemicals and potential health concerns.

Implementation of the bylaw is being phased in. June 30, 2011 was the first ChemTRAC reporting deadline. The attached report presents the first data set, which captures the reported use and release of priority substances from applicable industrial sectors in 2010. The data are also available in a searchable map and for download at [www.toronto.ca/chemtrac](http://www.toronto.ca/chemtrac).

Facilities reported the manufacture, process or other use of approximately 66,000 tonnes of priority substances in 2010. Of this, 8 per cent (approximately 5,000 tonnes) were released to the environment, mostly to air. The report identifies seven pollutants of greater priority for action because they are released in large quantities or ranked high because of their toxicity. TPH is concerned about potential health effects from these substances in the short and long-term. As the ChemTRAC program is phased in over the next two years, a more complete picture will be available of the use and release of these substances in Toronto. The data will help TPH, in partnership with other City divisions, the federal and provincial governments, businesses and the community, assess local air quality and track progress in pollution prevention and reduction of exposure to these chemicals.

## **Financial Impact**

There is no financial impact from this report.

## **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>

The Medical Officer of Health submitted the first annual progress report on the Environmental Reporting, Disclosure and Innovation Program, renamed as ChemTRAC, to the Board of Health at its June 28, 2010 meeting. The report described the development of the program, the achievement of key milestones, and preparations for the first data reporting in 2011.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2010.HL32.3>

## **ISSUE BACKGROUND**

In an urban environment like Toronto, the public's health may be affected by a number of environmental factors, including chemicals that pollute the air, water and land. Exposure to chemical sources can occur outdoors and in homes and workplaces.

In 2008, TPH research identified 25 chemicals in our local environment of concern for health and a lack of information on the institutional, commercial and industrial sources of these substances. The ChemTRAC program was developed to help better understand the source of these 25 priority chemicals and encourage pollution prevention to protect health. 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 air emissions.

Much of the data that ChemTRAC collects has not previously been available to the public. It adds important information on small and medium-sized sources to complement the data collected on large pollutant sources through Environment Canada's National Pollutant Release Inventory (NPRI) and Ontario's *Toxics Reduction Act*.

## **COMMENTS**

### **Data collection and validation**

In 2011, TPH focussed on developing electronic systems to collect and validate 2010 data, helping businesses to identify and report substances for the first year's deadline, and analysing and preparing the data for public release through a searchable database on the ChemTRAC website and in the attached Annual Report. TPH worked with Environment Canada to review and validate the data submitted by facilities.

ChemTRAC reporting is being phased in over three years to allow time for all affected facilities, particularly small and medium-sized enterprises, to learn about the bylaw and

their reporting requirements. Facilities that reported in 2011 include printers, chemical product manufacturers, food and beverage manufacturers, and facilities operated by the City of Toronto.

The key findings from the 2010 data are:

- 274 facilities reported the manufacture, process or other use a total of approximately 66,000 tonnes of priority substances. Of this, about 8 per cent (5,000 tonnes) were released to the environment, mostly to air. 152 of these facilities did not report releases under the NPRI.
- The substances reported in the highest amounts were volatile organic compounds, nitrogen oxides and fine particulate matter. These pollutants contribute to smog.
- When data are ranked by relative toxicity using an approach called toxic equivalency potential, substances like polycyclic aromatic hydrocarbons, mercury, lead and cadmium are identified as being of high concern even though they are released in small amounts.

## **Health impacts**

TPH is concerned about potential health effects from ChemTRAC substances in the short and long-term. The 2010 data are a helpful "snapshot in time" of use and release from certain facilities to help us better understand potential health impacts, but more information is needed to fully assess health risks. As full reporting is phased in over the next two years, ChemTRAC data will add to information such as emissions data from other sources, findings from modelling studies and air monitoring data, to help understand and improve local air quality.

The potential for health risk from a pollutant depends on how toxic a substance is and the amount of exposure a person has to the substance. Exposure is affected by factors like how close a person is to a source of pollution, the length of time a person is exposed, and the concentration of the pollutant in the air. It is important to consider the impact a substance can have on health from both short-term exposures and exposure over a lifetime. It is also important to consider the impacts of exposure to a mixture of pollutants, even if some are individually below levels of concern.

Socioeconomic status is an important factor that influences health. People with lower socioeconomic status are more likely to have poor health because conditions like poverty, unemployment, social isolation and poor housing can contribute to stress, heart disease and other health effects. Some research suggests that lower socioeconomic position predisposes people to greater susceptibility to health effects from air pollution because of already compromised health status. When we compare the location of facilities that reported in 2011 to the socioeconomic status of communities in Toronto, there are some areas of low-socioeconomic status that have a higher number of facilities.

TPH will explore the health risks of these contaminants through continued data analysis and modelling in collaboration with the Toronto Environment Office, other City divisions and the Ontario and federal Ministries of the Environment.

## Emerging priorities for action

TPH developed ChemTRAC in partnership with many stakeholders and continues to collaborate with several partners to implement the program in ways that support health, environmental innovation and economic sustainability. These partners include Economic Development and Culture, the Toronto Environment Office, Toronto Water, Environment Canada, the Ontario Ministry of Environment, the business community, labour groups, and various environmental and health organizations.

In 2012, TPH will continue supporting facilities to identify and report their priority substances through the online reporting system, technical seminars and visits, website resources and telephone and email support. In addition, although the 2010 data do not reflect all reporting sectors, TPH and its partners can begin to:

- **Identify actions to protect health** – TPH can use the information to identify substances of concern, support health promotion activities in more vulnerable communities, and support pollution prevention for specific substances, sectors or industrial processes. To set priorities for action, TPH will consider factors such as the health risk of the substances, the location of sources in relation to sensitive populations and communities of low socioeconomic status, and opportunities for collaboration with partners.
- **Study how these pollutant sources contribute to local air quality** – the City of Toronto uses various approaches to better understand how our air is affected by pollutant sources, types of releases, topography, and weather conditions. ChemTRAC provides new data on industrial/commercial sources of pollutants, and can be used to conduct new air modelling studies such as the one recently done by the Toronto Environment Office (TEO) in Wards 30 and 32. TPH's summary of this study can be found at [http://www.toronto.ca/health/hphe/abtp\\_emissions.htm](http://www.toronto.ca/health/hphe/abtp_emissions.htm).
- **Support environmental innovation in business** – pollution prevention can benefit businesses by increasing profitability and efficiencies, reducing business risk, increasing health and safety and employee retention, and improving community relations. ChemTRAC data provide key details to help TPH and partners help businesses begin to identify pollution prevention options and set priorities for future work. Examples of current pollution prevention work that can be further refined are webinars, web-based guides and e-learning courses. TPH is establishing a pollution prevention business panel and plans to continue working with its partners in the City and community to consider how the data can focus current work and guide new ways to support pollution prevention.

## **CONTACT**

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## **SIGNATURE**

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Dr. David McKeown  
Medical Officer of Health

## **ATTACHMENTS**

Attachment 1: Tracking and Reducing Chemicals in Toronto: ChemTRAC Annual Report – 2010 Reporting Year