Access to Environmental Information:
Preventing Pollution, Avoiding Risks

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Dr. David McKeown
Medical Officer of Health

TORONTO Public Health

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Authors: Rich Whate, Carol Mee, Ronald Macfarlane and Monica Campbell

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www.toronto.ca/health/hphe/toxic_chemicals/toxicchemicals.htm

For more information:
Environmental Protection Office
Toronto Public Health,
277 Victoria Street, 7th Floor
Toronto, Ontario,
Canada M5B 1W2.

Tel: 416-392-6788
Fax: 416-392-7418

Executive Summary

The City of Toronto believes in government that is open and accessible to enable full participation in the life of our City. Commitment to this vision is reflected in the City's Strategic Plan and the "Corporate Access and Privacy Renewal Initiative," which includes a goal to enhance transparency through development of policies for routine disclosure of information to the public. City Divisions have been asked to work with the Corporate Access and Privacy Office to develop plans that identify records that may be disclosed routinely to the public and members of Council.

When residents, business owners and other stakeholders can access and understand reports, meeting agendas, budgets and other information, they are better able to contribute their skills and views to the programs and policies that affect their daily lives.

Providing information about the state of our environment is part of the City's commitment to open governance and enhancing health and our quality of life. In an urban environment like Toronto, our health may be affected by a number of environmental factors. Information about the chemicals that local industries use, the condition of our drinking water and the state of the air, for example, can enable the business community, governments, community agencies, labour and residents to more actively participate in improvements that can benefit health. The more understandable and accessible this information is, the more meaningful this participation can be.

Public access to information held by government or industry on chemical substances or conditions that might pose a risk to health or to the environment is often termed "community right-to-know."

This report examines the current state of environmental data collection and public access to that information in Toronto. It draws from a recent review conducted for Toronto Public Health by the Canadian Environmental Law Association and from preliminary discussions with the business community, environmental and health organizations, labour representatives, international experts and several City Divisions.

Evidence suggests that the systematic collection and dissemination of environmental information, such as chemical use data, have been useful to businesses, government and the general public. The primary benefits include stimulating pollution prevention, supporting emergency preparedness and enabling meaningful community engagement in environmental decision-making.

While there are several laws and voluntary programs in existence under which companies and governments provide data, there is still

important information that is relevant to the residents of Toronto that is neither collected nor made easily accessible. TPH believes that these limitations reduce our ability to understand and prevent health risks resulting from environmental pollution, and diminish opportunities for governments and industry to pursue environmental innovations.

Given the potential public health benefits of making environmental information accessible, the City of Toronto should consider ways to enhance the collection and access to these data.

Key to the path forward is the consideration of how to balance public rights to information and the benefits of such access with necessary protections of confidentiality and public security. As the City assesses options to enhance data reporting and access, it should consider the particular types of data and the level of availability that may be most appropriate and useful for businesses, government, community groups, labour and residents.

This report provides a preliminary snapshot of environmental reporting and public access to information about Toronto communities. It concludes that both health and the environment can be better protected by collecting more information and making it more easily available, and that the City should explore ways to do so. The City should review the environmental information it currently has and examine possibilities to enhance information exchange between Divisions and options for public access. Priority should also be given to consulting with external stakeholders and City Divisions to identify further gaps and overlaps in environmental reporting and options for enhancing information access.

Making meaningful environmental data available to the City and the community is complex but worthwhile. It requires dedicated inquiry into the City's own operations and ways in which it can meet corporate commitments to transparency and environmental leadership. It also must be done in consultation with the business community, labour and community organizations to consider their roles in enhancing access and pursuing pollution prevention opportunities to benefit health and the environment.

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Introduction

"The concept of any individual being able to access government-held information is one of the fundamental principles of accountable government and participatory democracy."
Dr. Ann Cavourkian, Ontario Information and Privacy Commissioner
Privacy and Access: A Blueprint for Change – 2003 Annual Report[1]

"Open, democratic decision-making processes and effective dialogue invite people to contribute their ideas, opinions, and energy to the well-being of the city"

"Awareness of environmental impacts results in active public participation in environmental improvements"
City of Toronto Strategic Plan, 2001[2]

Toronto City Council has identified transparency, accountability and public accessibility as fundamental values for the public service and the governance of our City. The intent is to provide those with a stake in the activities of government with access to information that enables informed participation in decisions and policies that affect them. Access is provided through various means, such as making Council and Standing Committee agendas and reports available prior to meetings, establishing advisory committees and holding community consultations on key issues.

The Ontario Information and Privacy Commissioner recently called on the City to renew the government culture of openness, including access to environmental data[3]. The City is responding through a "Corporate Access and Privacy Renewal Initiative," which includes a goal to enhance transparency through development of policies for routine disclosure of information to the public. City Divisions have been asked to work with the Corporate Access and Privacy Office to develop plans that identify records that may be disclosed routinely to the public and members of Council.

This report explores the implications of expanding access to data about environmental conditions and hazardous substances that might pose a risk to health or to the environment. Environmental conditions may describe air or water quality, while hazardous substances refers to chemicals being used, stored or released from specific buildings or sites.

In the environmental field, access to such information is referred to as "community right-to-know.'' Its origins can be traced to a 1984 industrial disaster in Bhopal, India, when a toxic gas leak at a Union Carbide plant caused 20,000 deaths and an estimated 120,000 people to become ill. Following the tragedy, communities around the globe demanded the right to know more about risks to their health and environment from industrial and commercial facilities in their neighbourhoods. Many countries, including Canada, responded with laws and voluntary programs to collect and disclose environmental information.

In Toronto, interest in access to environmental information has existed for at least two decades. In 1985, in response to community concern and following public consultation, the Council of the former City of Toronto agreed in principle to pass municipal legislation that would require facilities in the City to publicly disclose the hazardous substances that they used or stored. The City drafted a by-law in 1986 but chose not to proceed when the province introduced the *Occupational Health and Safety Act* that made information on hazardous substances more widely available.

Clean, Green and Healthy, Toronto's Environmental Plan adopted in May 2000, recommended that the City develop a Community Right-to-Know By-law that would empower community members to know the location, sources and health effects of toxics in their community.

A right-to-know strategy was also included in the 2002 "Action Plan for Cancer Prevention in the City of Toronto" developed by the Toronto Cancer Prevention Coalition. This Action Plan was endorsed by City Council.

Most recently, at its meeting on January 17, 2005, the Board of Health (BOH) recommended that the Medical Officer of Health "report on practical and effective Community-Right-to-Know strategies to increase public access to information on toxic substances in Toronto, including consideration of the feasibility of a Community Right-to-Know by-law, in consultation with appropriate City Departments and community stakeholders." This report specifically responds to this request.

This document draws on the recent work of the Canadian Environmental Law Association (CELA) and research by Toronto Public Health (TPH). On behalf of TPH, CELA reviewed current literature and conducted interviews with key stakeholders on environmental disclosure initiatives in Canada, the United States and Europe. Stakeholders included representatives of industry, labour and health and environmental organizations. The CELA report concluded that public access to information can stimulate environmental and health protection and that access to such information could be improved. The report identified "best practices" that the City could consider to enhance access to information.

TPH staff used the CELA report as starting point for further research specific to the City of Toronto, and began discussions with key city staff whose program focus includes pollution control or emergency preparedness, including Toronto Water, Fire Services, Occupational Health and Safety, and Technical Services. Staff was asked about the information they collect and currently report, and to consider what other information should be made publicly available.

This report provides a preliminary snapshot of environmental reporting and public access to information about Toronto communities. It concludes that both health and the environment could be better protected by collecting more information and making it more easily available, and that the City should explore ways to do so. City divisions should review the environmental information they hold for opportunities to increase interdivisional sharing as well as public access, and the City should consult further with the business sector and community stakeholders on ways to further prevent pollution through data collection and meaningful public information dissemination.

Information Leads to a Cleaner Environment and Better Health

Over the years, access to environmental information has helped citizens to advocate for safer and cleaner industries, encouraged companies to adopt environmental programs and enabled governments to identify risks and explore solutions – all of which contribute to the health of communities.

Access to such information can benefit our health and quality of life in three main ways:

- by stimulating pollution prevention
- by supporting emergency planning and preparedness
- by improving understanding of health and environmental risks

Information Can Stimulate Pollution Prevention

The benefits of pollution prevention can include reduced operating costs, higher profits, reduced risk of liability, improved occupational health and safety, enhanced company image in the community and public health and environmental benefits[4].

Pollution Prevention is often stimulated in two ways:

- collecting data requires companies to more closely examine processes and emissions and enables them to identify previously unrecognized opportunities for improvement

- publishing pollution data provides information to government regulators, corporate shareholders and the public that can encourage environmental innovations

The state of New Jersey's Pollution Prevention Act, passed in 1991, is an example of how detailed chemical tracking can stimulate pollution prevention. The Act requires facilities to submit on-site pollution prevention plans to regulators that track the use, not just the release, of hazardous substances. New Jersey companies have reported that they found the planning requirements worthwhile in contributing to greater understanding of industrial processes, fulfilling regulatory requirements and providing a more complete cost-benefit framework with which to propose capital investment projects[5]. Regulators also reported that companies set greater substance reduction goals and considered more ways to amend processes than before the Act was passed[6].

Making data publicly available can further stimulate pollution prevention in several ways. Information can help government regulators better tailor their environmental priorities and work with companies to develop pollution prevention programs[7]. Companies' desire to improve their image to shareholders, regulators and the public also drives environmental improvement, often beyond that which might be stimulated without public disclosure[8]. In the U.S., for example, the annual release of Toxics Release Inventory (TRI) data has been linked to drops in certain corporate stocks, motivating those companies to reduce pollution[9].

Canada's National Pollutant Release Inventory (NPRI) and the U.S. TRI collect information from large industrial facilities and make them publicly available through reports and an Internet database. They have been credited with triggering substantial emission reductions and manufacturing innovations over the years. TRI emissions are reported to have decreased by 46 per cent between 1988 and 1999[10] and the NPRI has been credited with lowering emissions by 27 per cent[11] since it began in 1993.

Novopharm, a pharmaceutical company in Scarborough, Ontario, substituted the hazardous chemical dichloromethane with water-based solvents after its NPRI emission data alerted corporate managers, workers and the surrounding community to this potential hazard. Novopharm's emissions and recycling of the chemical declined from over 98 tonnes in 1999 to zero the following year[12], and the company was recognized with a 2002 Pollution Prevention Award from the Canadian Council of Ministers of the Environment[13].

Information Can Support Emergency Planning and Preparedness

Accessible information about the storage and movement of hazardous substances at commercial and industrial facilities is crucial to emergency preparedness. At the time of a fire, chemical spill or other hazardous situation, emergency responders (e.g. fire, police and public health agencies) have access to hazard data from Material Safety Data Sheets (MSDSs), fire safety plans, spill response plans and, for some facilities, federal Environmental Emergency Plans. This information enables them to more safely address the emergency and to assess potential risks to the environment and surrounding community.

From a longer-term emergency planning perspective, most Toronto residents currently have very limited access to this information. If this information were publicly available, it may offer those communities surrounding facilities housing hazardous substances more opportunities to better plan for an emergency.

Furthermore, industries can use data to identify opportunities to substitute hazardous substances for less toxic ones, making their sites inherently safer in the event of an emergency. In the United States, for example, a recent review of federal Risk Management Plans identified that many facilities reduce or eliminate hazardous substances as a way of reducing the risks that may result from an accident or terrorist attack[14].

In some cases, industries have voluntarily shared chemical information and emergency plans to engage the surrounding community. Responsible Care, a national program operated by chemical manufacturers, strives to share chemical data and emergency plans in order to improve environmental performance.

"Knowing the risks will help you better plan for them."
Emergency Planning for Your Family: The 5-Step Guide. 2005
Public Safety and Emergency Preparedness Canada www.psepc.gc.ca

Information Can Improve Understanding of Health and Environmental Risks

For governments and industries, data on the state of the environment and emissions of toxic compounds are an essential component in the development of environmental policy initiatives[15]. For the public, this information enables them to make better choices about living and working conditions and enables meaningful participation in dialogue to achieve pollution prevention and emergency

preparedness goals. Conversely, the lack of accessible and clear information about a commercial or industrial site can generate fear and suspicion in the community, and obscure opportunities for environmental innovation.

The most successful environmental information tools provide both raw data and interpret potential risks. Pollution Watch, a website operated by Environmental Defence Canada and the Canadian Environmental Law Association, makes searching and interpreting Canada's NPRI data easier for the public. Users can search NPRI data by postal codes and learn whether the chemicals being emitted from facilities are linked to cancer, reproductive or developmental harm, endocrine disruption, ozone depletion or respiratory damage. The U.S. National Library of Medicine's "Tox Town" is another website that describes common chemical hazards that may be found in a typical neighbourhood.

Improved understanding of information can also benefit companies' bottom lines. Understanding potential environmental risks can reduce legal liability and facilitate regulatory compliance. In addition, because many investors incorporate environmental, social and governance criteria into their selection and management of investments, environmental responsibility can enhance the financial returns of a company[16].

"It's just good business practice to track your hazardous materials… (DuPont) is committed to being transparent about its environmental performance."
- Edwin L. Mongan III, Director of Energy and Environment, DuPont Company[17]

Addressing Concerns About Providing Environmental Information

Successful tools such as the NPRI and others discussed in this report illustrate the health and environmental benefits that can be realized by providing public access to environmental information. With any approach, however, important questions about the type of information and the degree to which it is made available to different users must be addressed at the outset. Protecting confidentiality and public security, and limiting undue administrative and financial burdens are essential.

Industries incur costs in collecting and reporting information, and governments bear costs to compile and disseminate this information. This burden depends on the particular approach followed and should be weighed against the benefits of that particular approach. For example, New Jersey, Massachusetts and the cities of New York and Eugene, Oregon have community right-to-know laws that require facilities to provide detailed information about the chemicals that come in, are stored and leave as either pollution or products. This

information is much more detailed than the emission data that many of these industries already report under programs like the federal TRI. However, the additional data enable companies and regulators to conduct much more detailed analyses of how chemicals are used and how they can be reduced or substituted with safer alternatives[18]. The New Jersey Department of Environmental Protection has observed that this information saves most companies much more than it costs to collect[19].

Information of a sensitive personal or proprietary corporate nature must also be guarded against inappropriate access, and is therefore protected by current Freedom of Information and environmental disclosure laws. All environmental information laws in Canada also limit corporate spying by allowing certain information to be kept confidential. In many cases, businesses keep the data on site and governments are only given summaries or notice of the information.

Concerns that facility-specific information could be used for criminal intent or terrorism continue to be addressed when considering public disclosure programs. Both the *Canadian Environmental Protection Act* and the U.S Clean Air Act initially required certain industrial facilities to provide public access to "worst case scenarios" that identified risks to the community from industrial accidents. In response to terrorism concerns, however, both countries have subsequently limited full public access to these plans via the internet, while retaining some level of local access, such as library reading rooms or restricted websites.

It is unclear whether or not removing access to this information has enhanced security. Evidence suggests, however, that many industries are choosing to substitute hazardous chemicals with safer ones as part of their security programs. A recent U.S. study identified 284 facilities in 47 states that had switched to less hazardous processes or chemicals[20]. Notably, in addition to security concerns, facilities most commonly reported regulatory requirements to collect environmental information, emergency planning and community expectations as the primary catalysts for reducing chemicals use[21].

Voluntary programs such as Responsible Care, operated by the Canadian Chemical Producers' Association, also mandate member companies to provide emergency information to neighbourhoods bordering their facilities.

What We Know About Environmental Hazards in Toronto

Currently, certain businesses operating in Toronto, including some City-operated facilities (Figure 1), provide environmental data through some voluntary programs and a combination of federal, provincial and municipal requirements. The particular information they must provide depends on the size and nature of the business and the hazardous substances involved. Compared to other countries such as the United States, the resulting Canadian data is in some ways very detailed, while in others more limited.

Figure 1: City of Toronto Facilities: Environmental Reporting

The City of Toronto operates facilities that must report under certain regulations. Water treatment and filtration plants, which use and store large volumes of certain chemicals to treat water before or after use, commonly report, along with several other operations.

National Pollutant Release Inventory (2004):
Humber Water Treatment Plant
Ashbridges Bay Water Treatment Plant
R.L. Clark Water Filtration Plant
F.J Horgan Water Filtration Plant
R.C. Harris Water Filtration Plant
Highland Creek Water Filtration Plant
North Toronto Water Treatment Plant
Island Water Filtration Plant
Keele Valley Landfill

Environmental Emergency Plans:
Ashbridges Bay Water Treatment Plant
Highland Creek Water Filtration Plant
Island Water Filtration Plant
R.C. Harris Water Filtration Plant
Toronto Fire Academy

Public access to environmental information varies according to the regulation or program under which it was collected. With the exception of the Internet databases described below that provide direct access to some of the data held by the governments, citizens must usually make a request under the provincial or municipal *Freedom of Information and Protection of Privacy Acts* to access specific information.

Ontario's Provincial and Municipal *Freedom of Information and Protection of Privacy Acts* provide an individual the right to access records of information, including one's own personal information, that are under the control of the provincial or local government. Freedom of Information requests cost $5.00 and must be submitted in writing to the province or municipality. Additional costs may apply depending on the volume of information resulting from the request.

The two main categories of environmental information that Toronto companies or governments may provide address:

1. chemicals used or released at facilities, and

2. operating conditions and planned changes that may impact the environment.

1) Chemicals Used or Released at Facilities

There are approximately 71,500 businesses in Toronto. The City of Toronto estimates that 9,600 commercial or industrial businesses in Toronto may be using or releasing chemicals to the environment[22]. Depending on the nature of their business or the chemicals they use, facilities may report under one or more of the following programs:

- National Pollutant Release Inventory
- Environmental Emergency Regulation
- Workplace Hazardous Materials Information System
- Responsible Care
- Ontario Regulation 127/01
- City of Toronto Sewer-Use By-law

i) National Pollutant Release Inventory

The National Pollutant Release Inventory (NPRI) is a Canada-wide program that requires facilities to report each year on the release, disposal and transfer of any of 323 hazardous substances. In 2004, approximately 8,500 Canadian facilities reported to the NPRI, and 284 were located in the City of Toronto[23].

Under the *Canadian Environmental Protection Act*, companies must report to the NPRI if they have 10 or more full-time employees (or an equivalent of 20,000 worker-hours each year) and use the listed substances in quantities of more than 10 tonnes and in concentrations of greater than 1 per cent. For certain extremely toxic substances, such as dioxins, the thresholds for reporting are much lower. Pollutants from sources such as transportation and household heating are estimated periodically, but data is restricted to key air contaminants. Certain sector activities, such as agriculture and education and some mining activities, are not included in the NPRI.

Annual data are gathered by Environment Canada and made publicly available in print and via a searchable internet database. Due to the time required to collect, analyze and report data, the information may not be up to date – as of March 2006, the website hosts "preliminary" data on 2004 releases.

The NPRI collects less data than the Toxics Release Inventory (TRI) in the United States. The TRI requires reporting on 650 substances – almost twice the number listed when it began, and double the number of chemicals currently tracked by the NPRI. Furthermore, the NPRI allows companies to emit much more of certain chemicals before they must report: the TRI requires reporting if 2,500 pounds (approximately 1100kg) of a substance is emitted, which is ten times lower than the NPRI's 10 tonne threshold.

The fact that the NPRI collects fewer data than the TRI may be providing less of an incentive to Canadian facilities to pursue pollution prevention. A recent study comparing air pollution from U.S. and Canadian industries around the Great Lakes found that, on a per facility basis, Canadian companies released 79 per cent more respiratory toxins, 93 per cent more known or suspected carcinogens into the air and 342 per cent more chemicals considered reproductive or developmental toxins than their American counterparts[24].

ii) Environmental Emergency Regulations

The *Canadian Environmental Protection Act* requires companies that use or store relatively large quantities of any of 172 potentially hazardous substances – for example, explosive or radioactive substances – to develop Environmental Emergency (E2) Plans. Facilities must keep these detailed plans on site and notify the federal government and appropriate local emergency response personnel that the plans exist. Currently, 25 Toronto facilities are identified as having developed these emergency plans.

In case of emergency, this information is made available to the appropriate agencies but the data is not easily available to the community. The list of facilities that have plans, but not the substances involved, is available via the Internet through controlled access.

In addition to E2 requirements, facilities in Toronto are required by Toronto Fire Services to develop plans for fire safety, spill response (for flammable liquids) and perform building audits. These plans are kept on site for access by emergency personnel. While these plans are not made public, some facilities develop community awareness plans in which they inform their local communities about measures that should be taken in an environmental emergency. To enhance preparedness, the City's Office of Emergency Management and emergency responders such as the Toronto Police Services and Toronto Fire Services run community emergency simulations to test, evaluate and improve the plans and to increase awareness of actions that the community could take in an emergency.

iii) Workplace Hazardous Materials Information System

The Workplace Hazardous Materials Information System (WHMIS) is a federally-mandated program that requires the manufacturers of hazardous chemicals or products to provide health hazard information about these substances to those using them in the workplace. This information is provided in the form of a Material Safety Data Sheet (MSDS) that accompanies the product when it is shipped to a facility.

In Ontario, the *Occupational Health and Safety Act* (Regulation 860) supports WHMIS by requiring employers to assess materials used in their workplaces to determine whether they are hazardous, to ensure that such materials are properly labeled, to make MSDSs available to workers and to provide appropriate health and safety training. The City of Toronto's Occupational Health, Safety and Worker's Compensation Program guides regular communication with City workers about WHMIS training and ensures updated MSDSs are available and accessible to all employees who may potentially be exposed to these products.

While WHMIS is aimed primarily at workers, local medical officers of health, the local fire department or the Ministry of Labour may request copies of MSDSs from an employer. The public may also request this information from the medical officer of health.

WHMIS is an important information resource, particularly for workers, but has several significant limitations:

- The MSDSs from a site will not indicate the volume of the substances identified, so would not differentiate the potential risk between, for example, a can and a tank of a chemical.
- MSDSs do not necessarily indicate which substances are actually present in a facility at a given time, since MSDSs may exist for chemicals that were previously purchased but no longer in use.
- WHMIS requirements depend on the size of the facility, not the level of hazard, so small businesses may have less access to training and safety information.
- The information in MSDSs may not reflect the latest hazard information, since they are only updated every three years.
- Hazardous products such as pesticides and consumer chemicals do not fall under WHMIS, as they are covered

by other legislation that do not have such disclosure provisions.

Ensuring that WHMIS information is up-to-date and accessible around the world is of such importance that a new global regulation has been developed to improve the program. By 2008, an international Globally Harmonized System for the Classification and Labeling of Chemicals is due to replace WHMIS regulation in Canada. It will mandate more detailed hazard information for a wider range of chemicals and products, and ensure that warning symbols and MSDSs are updated and consistent around the world. It is expected that this new system will enhance health and safety training for workers[25], support emergency response and in turn the quality of information available to the community.

iv) Responsible Care

Responsible Care, a program run by the Canadian Chemical Producers Association (CCPA), is an example of a voluntary program undertaken by industry to provide environmental information to the community. The CCPA represents businesses that manufacture chemicals. In Toronto, seven companies operating eight local facilities participate in Responsible Care: BASF Canada, Crompton Company, Eka Chemicals Canada Inc., Nacan Products Ltd., National Silicates, Rohm and Haas and Schenectady Canada Ltd.

Responsible Care companies agree to submit emission data to a registry called the National Emissions Reduction Masterplan (NERM), provide environmental progress reports for each facility which are done in partnership with community representatives and updated every 3 years. Companies also commit to making the surrounding community aware of the hazards on their sites and their emergency response plans through a variety of means, such as open houses, websites and notices in newspapers or community meetings. Responsible Care has stimulated numerous environmental achievements, particularly for those facilities with strong community partnerships[26].

v) Ontario Regulation 127/01

Ontario's Airborne Contaminant Discharge Monitoring and Reporting Regulation – also known as Regulation 127/01, or simply "ONAir" – was passed in 2001 to collect data on the release of 350 airborne contaminants in the province. Effective February 15, 2006, the Ontario government amended Regulation 127/01 with Regulation 37/06 to avoid duplication with NPRI data. The amendment reduced the list of 350 air contaminants that were tracked with OnAir to 15, and these will be added to the NPRI. Reporting duplications were also eliminated. OnAir reports filed by companies between 2001 and

2004 are available to the public through an Internet site, but OnAir data submitted for 2005 will be accessible through the NPRI website.

This change, while it streamlines work for facilities that reported to both OnAir and NPRI, limits public access to information in two major ways. First, it reduces data collected on air contaminants. OnAir tracked an additional 70 substances not included in NPRI, and of the 280 contaminants followed by both programs, OnAir tracked many at lower quantities and from a greater number of facilities. Secondly, these changes increase the time before data is publicly available. Companies reporting to OnAir posted their data simultaneously to a searchable internet database, whereas the NPRI data can take at least six months to post.

vi) Toronto Sewer Use By-law

The City of Toronto's Sewer Use By-law (Municipal Code Chapter 681), passed in 2000, requires businesses to provide information on the discharge of certain substances to the sanitary or storm sewers. An estimated 5,000 Toronto businesses, grouped into 139 sectors, must report if they release any of 54 specific substances to the sanitary sewers or 44 substances to the storm sewers. The by-law also requires that most facilities submit pollution prevention (P2) plans. These P2 plans use "mass balance" reporting to record the inputs and outputs of substances (outputs include air discharges, water discharges and amounts of pollution in sewer sludge) and identify differences between them. These data are used as the basis for identifying further reductions in pollution. Certain industry sectors are mandated to follow Best Management Plans (BMPs) to lower the emissions rather than developing P2 plans.

City enforcement staff routinely inspect industries discharging to sewers and collect and analyze water samples to monitor compliance. In addition, stormwater and surface water quality monitoring is conducted that informs the by-law enforcement and other City water programs. Since the by-law was implemented, concentrations of mercury, arsenic, molybedenum and selenium in the biosolids at the wastewater plants have decreased substantially. The City has also worked with industry to eliminate cleaners containing nonylphenols and nonylphenol ethoxylates. In recognition of its success, the City of Toronto was awarded a 2002 Pollution Prevention Award from the Canadian Council of Ministers of the Environment[27].

As of early 2006, approximately 3,700 of the 5,000 businesses that must comply with the by-law have submitted P2 plans to the City. Toronto Water regularly reports the number of violations and summons issued under the by-law to the City's Works Committee, but these reports may be hard for the general public to find on the large committee agendas. Pollution prevention plan summaries are collected but this information is not routinely disclosed. Residents

who wish to know what substances are being emitted by a facility must make a Freedom of Information request to obtain summaries of the P2 plans from the City.

2) Operating Conditions and Planned Changes That May Impact the Environment

In addition to data on chemical use, Environmental Management Systems (EMS) are a way in which operating conditions and procedures can be monitored and improved. EMS are based on a business management framework "plan, do, check and act" that allows an organization to analyze, control and reduce the environmental impact of its activities, products and services. The City of Toronto has EMS activities planned or underway in Toronto Water, Fleet Services and Transportation Services. Once an EMS system is implemented, a reporting system is put into place to ensure compliance and these reports could provide for public reporting if the City desired.

On a regulatory level, Toronto companies must provide the Ontario Ministry of the Environment (MOE) with information about the potential environmental impacts of its operations. Several regulations guide this reporting, and outline the access that citizens may have to this information:

- Ontario's *Environmental Protection Act* and *Water Resources Act*
- The Environmental Bill of Rights
- Records of Site Conditions Regulation
- Drinking-Water Systems Regulation
- Local Air Quality Regulation

i) *Ontario Environmental Protection Act* (Section 19) and the *Ontario Water Resources Act* (Section 13)

Under Ontario's *Environmental Protection Act* and *Water Resources Act*, the MOE must maintain a list of outstanding permits, certificates of approval and orders for facilities operating in the province. Certificates of approval are MOE documents that permit companies to conduct various activities in compliance with Ontario's environmental laws. They describe requirements for the protection of human health and the environment, and address specific considerations for the site of the business operation. A single facility may have multiple certificates of approval for specific activities.

Although the Acts provide for public access to certificates of approval without having to make a Freedom of Information request, it remains difficult to obtain and interpret these data.

Residents and even other levels of government often have to resort to Freedom of Information requests to obtain information in a timely manner, and much of it exists in lengthy paper format instead of electronic. The MOE is currently considering changes to the certificate of approval process, including its public reporting practices, to enhance the information available through websites and other means[28].

ii) Environmental Bill of Rights and the Environmental Registry

Ontario's *Environmental Bill of Rights* (EBR) took effect on February 15, 1994. It provides formal rights to every resident to know about and participate in government decisions that have a significant environmental impact. Through an electronic (Internet) public registry, the government posts notice of all proposed policies, Acts, regulations and instruments that are deemed to be environmentally significant, and provides a public comment period for input. Ontario's Environmental Commissioner, who is appointed by and reports to the Ontario Legislature, acts as an independent overseer of the EBR.

The EBR provides an important opportunity for public input on important decisions. Although the website is easy to use, it can be challenging to stay informed on the issues being posted for comment.

iii) Records of Site Condition Regulation

In urban spaces like Toronto, former industrial land can offer the City or developers the opportunity to build new residences, businesses or greenspace. Prior to developing these properties – known as "brownfields" – it is essential to determine whether or not contamination may exist on this site. The Record of Site Condition Regulation (O.Reg. 153/04) requires documentation that a property has been properly assessed and meets the soil, sediment and groundwater standards appropriate for redevelopment. This record also indicates what action will be taken if site cleanup is required.

Records of Site Condition are publicly available on the internet via the Ministry of Environment's Brownfields Site Registry. Residents can search by municipality, street name or property owner. This information is made available after assessments and cleanup activities have been proposed. Residents could more fully participate in these reviews if, like the EBR, there was notification of any assessments being undertaken.

iv) Drinking-Water Systems Regulation (O.Reg. 170/03)

In May 2000, seven residents of Walkerton, Ontario died and thousands of others fell ill due to drinking water contamination.

It also brought the need for government transparency to light. Following the tragedy, increasing public access to information about the state of our drinking water became a key component of the government's approach to avoiding future incidents. Ontario's *Safe Drinking Water Act* mandates annual reports on water quality and public notices whenever municipal drinking water systems are out of compliance with provincial standards. The Act also specifies that annual drinking water quality reports must be promoted and made available to the public, and that residents may obtain the results of water tests and any approvals and orders issued since January 1, 2001 from the operator of a drinking water system. The City of Toronto makes this information available on the Internet and in hard copy in libraries and civic centres.

v) Local Air Quality Regulation (O Reg 419/05)

Ontario Regulation 419/05 came into force on November 30, 2005, replacing the previous Regulation 346. The new regulation requires commercial and industrial businesses to meet emission standards for 344 chemical substances, and notify the Province of any expected or measured exceedences. The regulation introduced several new, tougher standards for air pollutants and phases in requirements for industries to use new U.S Environmental Protection Agency approaches for estimating emissions. Any emissions are reported to the Ministry and accessible through Freedom of Information laws.

Enhancing Access to Environmental Information

Despite existing regulations and programs in Canada, TPH believes that the full potential of environmental information to stimulate pollution prevention, support emergency planning and preparedness and increase understanding is not being realized. Important information that is relevant to the City and Toronto residents is neither collected nor made easily accessible.

The two primary ways in which this is occurring are

- gaps in environmental information, and
- information that is not used to its full potential.

Gaps in Environmental Information

There is continued concern about environmental and health hazards such as air and water pollution, particularly in urban centres like Toronto. Communities turn to the NPRI and other environmental data sources to help understand these risks. Unfortunately, despite the information provided through these laws and programs, there is incomplete reporting of environmental data, and a limited number of chemicals are tracked.

i) Incomplete Reporting of Environmental Data

Currently:

- Only 284 Toronto facilities had to report to the NPRI in 2004 - those with more than 10 employees and that emit relatively large quantities of chemicals.
- Responsible Care covers only 8 facilities operated by 7 chemical companies, who also report under the NPRI.
- Toronto's Sewer Use By-law has the widest coverage – approximately 5,000 businesses, including smaller businesses – but covers relatively few substances and primarily focuses on emissions to sewers.

This is insufficient because very little information concerning chemical use and emissions from smaller businesses such as dry cleaners and gas stations is provided. The U.S. EPA estimates that these types of smaller sources may account for 35 per cent of air pollution, and are collectively a larger pollution source than the industries reporting to the Toxics Release Inventory[29]. More importantly, these businesses are commonly located within or close to residential neighbourhoods, which may increase the risk from emissions or accidents.

ii) A Limited Number of Chemicals are Tracked

Of the thousands of chemicals that are in commerce today, only a small fraction are tracked through tools like the NPRI, E2 regulations and Toronto's Sewer-Use By-law. The NPRI, E2 Regulations and the Sewer Use By-law track only 324, 174 and 38 chemicals, respectively. The initial lists were developed with the aim of collecting data on the most hazardous substances released by the largest industrial sectors, and governments continue to update the lists – since 1993, Environment Canada has almost doubled the list of chemicals reported to the NPRI. There are concerns, however, that these lists are failing to keep up with the growing list of substances, such as endocrine disruptors, for which health and environmental hazard information continues to emerge. Data on

the use and release of such substances would facilitate risk reduction measures.

Information That Is Not Used to Its Full Potential

Research indicates that the full potential of environmental information to benefit health and the environment depends on the way in which the data is used. Evaluations of the U.S. Toxics Release Inventory and the Risk Management Plans, for example, have confirmed environmental benefits but concluded that their potential is being limited by a lack of mechanisms to enable full use of the data by companies, governments and the public[30,31].

In Canada, there are several barriers to the effective use of the information provided by the programs reviewed in this report. These barriers include

- limited access to existing data; and
- little interpretation of the data.

i) Limited Access to Existing Data

The Internet has in many ways increased access to environmental information. Electronic databases like the NPRI and the *Environmental Bill of Rights* Registry are accessible without cost, relatively easy to use, and linked to websites like Pollution Watch that further interpret the data. For governments and the business community, information can be provided and updated more quickly and less expensively than through printed copies.

For much environmental data, however, citizens and even governments must rely on Freedom of Information (FOI) laws to obtain information. Under these laws, a person must request information in writing from the appropriate government office. But the process presents barriers – citizens seeking information about a company must know its legal name (often registered as a numbered company rather than its public name) and how to make an FOI request. Then they may endure lengthy waits and high costs for the data. On occasion the City itself has had to make an FOI request to the province to obtain Certificates of Approval to help them make certain planning decisions.

The Environmental Commissioner of Ontario (ECO) has detailed difficulties in accessing environmental information from provincial ministries in this province. ECO audits done in 1994/1995 and again in 2001 sought to determine whether the public has sufficient access to information posted on various

ministry instruments. The Environmental Commissioner described the findings of the 2001 audit as "disappointing and worse" than the earlier study, as only one in six Ministry offices was able to provide full information and answer all questions, and two of the six suggested that callers pursue FOI requests for their answers[32]. In 2003, the Environmental and Occupational Carcinogens Working Group of the Toronto Cancer Prevention Coalition examined the accessibility of environmental data in the Beaches-South Riverdale area of Toronto. The study found a "fundamental lack of timely and relevant information" for residents seeking to learn about risks in their community[33].

ii) Little Interpretation of the Data

Most of the data available to the public are not accompanied by an interpretation of what they mean. For example, environmental reporting systems such as the NPRI do not provide information about the health risks associated with exposure to these substances. Determining the potential harm from exposure to a substance can be difficult, particularly in an urban setting, but even basic information about the chemicals may help to inform communities and government agencies about exposures that should be a priority for reduction. In the absence of information about potential risks, partial information about chemicals has the potential to raise unnecessary public alarm or lead to haphazard policy decisions[34].

The Pollution Watch website provides some health information by interpreting the chemicals listed in NPRI reports. Users of the website can find health and environmental hazard information for any substance listed on the site.

Other Approaches to Information Access

In the United States, approaches to environmental information exist that are generally not available here in Canada. These approaches include

- user-friendly, "one-stop shops" that provide access to environmental information
- programs that track the use of chemicals within facilities, rather than just the release; and
- local legislation to require additional environmental reporting.

i) User-Friendly, "One-Stop Shops" That Provide Access to Environmental Information

To help address the challenges of searching for information from various departments within government, the U.S. has created internet databases to help citizens more easily access and interpret information from different government sources.

The Envirofacts Data Warehouse, created by the U.S. Environmental Protection Agency (EPA), consists of 11 major EPA databases that hold information on the Toxics Release Inventory (TRI), Superfund sites, water discharge permits, air pollution, drinking water test results, radiation monitoring and contaminated sites. The EPA database has several mechanisms to ensure the accuracy of the information and also includes explanatory notes to make the data more understandable to users. Another database, Enforcement and Compliance History Online (ECHO) enables citizens and regulators to avoid costly and time-consuming freedom of information requests by posting inspection and regulatory compliance histories for specific facilities.

Non-governmental organizations have worked to make even this central database more user-friendly for citizens. OMB Watch is a Washington, D.C.-based organization that facilitates public access to the EPA websites on its Right-to-Know Network website, and scorecard.org is a website that facilitates access to and interprets information collected by the TRI.

Overall, the same ease of access to information does not currently exist in Canada. While various government levels and offices maintain information, most information is separately housed. The federal government operates an online program called One Window to National Environmental Reporting System (OWNERS) that aims to facilitate reporting by industry to various programs but does not provide public access to the information. The NPRI data held by Environment Canada is made more user-friendly by non-governmental organizations on the Pollution Watch website.

The City of Toronto collects data in order to direct and evaluate its environmental programs and regulations. Some of this information, such as drinking water quality reports, is made easily available on the city's website while other data are less easily found within committee reports or not publicly available at all. TPH believes that making appropriate information available to the public and improving the sharing of information between City Divisions could support businesses, motivate continued environmental improvements and enhance health protection.

ii) Programs that Track the Use of Chemicals Within Facilities, Rather than Just the Release

Inventories that go beyond capturing facility emissions data to collect information on the inputs, use, storage and outputs of chemicals can produce better results than simple emissions reporting programs. The New Jersey *Worker and Community Right-to-know Act* and the Massachusetts *Toxics Use Reduction Act* are examples of such legislation.

Under these laws, an industry must provide reports that balance the input and output of chemicals by accounting for the flow of individual hazardous substances into a facility, through its processes, and into its products and wastes. Safeguards within the legislation protect detailed information from being revealed to competing businesses[35].

On an individual facility basis, such input-output data is essential to fully understanding emissions, waste and opportunities for improvement. For example, NPRI data from a facility that manufactures paint may show levels of emissions remaining unchanged from year to year. However, more detailed data may reveal that the volume of a certain hazardous ingredient used to make the paint was increasing annually. This could indicate that the manufacturing process was becoming less efficient. In addition to lower profits for the company, this inefficiency may increase shipments of this hazardous ingredient to the facility, which may heighten the risk of a spill or other exposure in the surrounding community. This level of information could enable corporate managers and regulators and concerned citizens to discuss opportunities for improved manufacturing processes or explore product substitutions that may reduce pollution and improve working conditions.

Through these programs, Massachusetts met its goal of reducing toxic by-product generation in the state by 50 per cent in just 10 years, and New Jersey achieved a 33 per cent reduction in emissions between 1994 and 2001[36,37]. Companies in New Jersey reported setting higher pollution prevention goals and improved process information among the benefits realized through requirements for this type of information[38].

Under Toronto's Sewer Use By-law, the pollution prevention plans that must be submitted by most sectors are an example of this type of legislation. However, the plans are kept at the facilities and the summaries provided to the City are generally not easily available to the public.

iii) Local Legislation to Require Additional Environmental Reporting

In addition to the state legislation in New Jersey and Massachusetts, some jurisdictions have passed local laws to require additional environmental reporting. Such by-laws currently exist in New York City and the City of Eugene, Oregon. These by-laws, like the state-level versions, are based on an input-output approach that require facilities to provide an annual inventory of materials kept and used on site.

Compared to other right-to-know programs, these by-laws require reporting from smaller neighbourhood industries, such as dry cleaners and auto body shops. In New York City, the Department of Environmental Protection provides information to the public upon written request, and the Eugene Fire Department maintains an internet database that citizens can freely access. Reports are also made available in public libraries.

New York City and Eugene both require industries to make financial contributions to support the maintenance of the program. Eugene, a city of 140,000 people, operates its program with less than one full-time employee for approximately USD$80,000 per year, at a cost to the reporting facilities of USD$10.79 per full-time employee in 2002[39].

These local laws provide important additional information and aid emergency preparedness beyond that achieved by national programs like the TRI. Oregon's Department of Environmental Quality noted in 2000 that Eugene's by-law captured data on eight to nine times as many hazardous substances as the TRI[40]. The internet database is visited approximately 1,500 times per month, and used by both the public and the local government[41]. The New York City Department of Environmental Quality notes that its inventory database is used by police and fire departments and other agencies in emergency response and is valuable in identifying areas of vulnerability for citywide emergency planning and providing information to elected officials, the public and the local emergency planning committee[42].

Conclusion

The systematic collection of environmental information, such as chemical use data, has been useful to businesses, government and the general public.

For **businesses** that use substances that are potentially harmful to human health or the environment, detailed information aids in:

- identifying preventable emissions and discharges
- improving regulatory compliance and occupational health and safety programs
- enhancing site security
- reducing liability and economic losses, and
- facilitating community partnerships and communication.

For **government,** consolidated environmental information improves:

- land-use planning
- environmental protection
- risk reduction and communication
- emergency planning and preparedness, and
- trends analysis and identification of environmental and health priorities.

For **the public**, easy access to environmental information provides:

- information about the immediate neighbourhood or broader community, and
- helps them meaningfully participate in environmental protection, risk reduction and emergency planning.

Successful laws and voluntary programs in Canada and the United States have achieved these benefits while protecting individual and corporate privacy and public security.

TPH has conducted a preliminary review of the current state of environmental data collection and public access to that information in Toronto. This review suggests that a lack of information and barriers to access currently exist, and that health and environmental protection and corporate innovation may be being diminished as a result.

In dense urban centres like Toronto, for example, significant exposure to pollutants likely comes from the many small and

medium-sized facilities that are not required to collect or report environmental data. Furthermore, the emissions data that is collected – primarily for large industrial sites – seldom contains detail on the flow and storage of key substances. In the United States, requirements for this additional level of data have proven to promote pollution reduction and prevention, commercial innovation and sound environmental policy.

Barriers to accessing environmental information also exist. The National Pollutant Release Inventory and the associated Pollution Watch website only provide access to data on large facilities and certain substances. Generally, residents seeking community-level information must rely on Freedom of Information laws for access. These laws balance necessary privacy protection with public access, but can be difficult to understand and potentially costly to use.

In light of these benefits and barriers, TPH believes that work should continue to explore how the City of Toronto could more fully realize the economic, health and environmental benefits of access to environmental information. This goal is consistent with City Councils' vision of open governance, economic innovation and environmental sustainability.

Next Steps

This report represents a starting point. Some potential *next steps* that merit consideration follow.

- **Engage in broad consultation with key stakeholders in the business community and environmental/health organizations to identify information needs, barriers and opportunities for enhanced access.**

This approach could help identify the types of data and the level of access that is most appropriate and useful to businesses, government and the general public in reducing risks and stimulating innovation. The results of the stakeholder consultation could present the City and the broader public with timely, tailor-made options to consider for moving forward.

- **Explore the feasibility of conducting a pilot project with academic, government, business and community partners to create a workable reporting and disclosure framework.**

A pilot approach would allow the City to evaluate the feasibility and success of any new initiative prior to implementing it across

Toronto. The ease of reporting, the usefulness of the data, the associated costs and the level of access to various audiences are among the key considerations that could be explored and assessed on a smaller scale for specific business sectors or government divisions.

- **Collaborate among City Divisions to improve the internal exchange of environmental data and explore tools such as an integrated telephone and web-based portal to increases ease of public access to information.**

Facilitated inter-divisional sharing of information could benefit environmental monitoring, enforcement, policy development and community programming. TPH's research has also identified a need to make the City's website more user-friendly for businesses, City staff and the public. City Divisions could, for example, use explore ways to use the existing Internet portal (www.toronto.ca/environment) to better and more routinely disclose environmental information and promote relevant Council and Committee reports. Coordinated measures could ensure that data were presented in a manner that is most useful for users.

To further increase access beyond the Internet, staff could liaise with the city's 3-1-1 project to enhance access to general environmental information via the telephone.

- **Collaborate with the Toronto Community Health Profiles Partnership to provide map-based information on environmental conditions on a neighbourhood scale.**

Toronto Community Health Profiles (*www.torontohealthprofiles.ca*) is an Internet site that profiles local communities through data tables and thematic maps. By presenting complex health data via simple tables and maps, the project strives to illustrate health inequalities within our communities and empower solutions. The resource is supported by a partnership between Toronto Public Health, St Michael's Hospital, Wellesley Central Hospital and the South East Toronto Project.

This map-based communication tool has the potential to foster neighbourhood-level links between residents, the City and local industries to enable emergency planning and preparedness and information sharing on environmental and health risks. As a starting point, Toronto Public Health could work with its partners and City divisions to map environmental data through this website.

- **Explore approaches designed to disseminate information (particularly to smaller facilities) on environmental reporting methods and best practices for minimizing the use, storage or release of substances of health and environmental concern.**

This work offers the City another opportunity to continue to support local businesses to pursue environmental innovation. The City could link businesses, particularly smaller companies, to resources like the Canadian Centre for Pollution Prevention (C2P2) and the U.S. EPA's Pollution Prevention Information Clearinghouse to share best practices, evaluate progress and broaden the benefits of environmental reporting within and beyond the City.

- **Review provisions of legislation from other jurisdictions and assess their applicability to the Toronto situation.**

The concept of using municipal legislation to enhance environmental reporting and is not a new one in Toronto. In 1985, the Council of the former City of Toronto agreed in principle to pass legislation that would require facilities in the City to publicly disclose the hazardous substances that they used or stored in the community. A by-law was drafted but the City chose not to proceed when the province introduced the *Occupational Health and Safety Act*.

Since then, the NPRI and many of the tools that provide environmental information have also been introduced. Yet specific local legislation continues to be suggested as a means of providing additional information. For example, Toronto's Environmental Plan, endorsed by City Council in 2000, proposed passing a right-to-know by-law that would empower community members to know the location, sources and health effects of toxic chemicals in their communities[43].

As part of a comprehensive review and stakeholder consultation regarding opportunities to improve accessibility to environmental information, it may be worthwhile to investigate what value local legislation could add to other approaches.

Appendix 1
Selected Environmental Information Websites

The following is a partial list of websites that provide access to environmental information.

Note: Links to sites external to the City of Toronto Web site are provided as a convenience and their inclusion does not imply that the City of Toronto endorses or accepts any responsibility for the content or use of these sites.

Toronto Environmental Portal
www.toronto.ca/environment/index.htm
This site provides the latest environmental information, such as recycling, pesticide reduction and water efficiency, and has links to community events and agencies.

Toronto Green Guide – A Directory of Environmental Projects, Programs and Policies
www.toronto.ca/greenguide.index.htm
The Green Guide is a 2006 summary of the City's environmental projects, programs and policies.

Environmental Commissioner of Ontario (ECO)
www.eco.on.ca
This site contains general information about the Environmental Bill of Rights, ECO publications and access to the Environmental Registry, which provides information about environmentally-significant proposals and decisions made by Ontario ministries.

Ontario Ministry of the Environment
www.ene.gov.on.ca
The Ministry's website provides information on provincial environmental regulations, policies and emerging issues.

Ontario Ministry of the Environment Brownfields Site Registry
www.ene.gov.on.ca/environet/BESR/index.htm
This searchable database provides access to Records of Site Conditions. The public can search by street, municipality and company to obtain information on contaminated former industrial lands (brownfields).

Environment Canada
www.ec.gc.ca
Environment Canada's website provides information on national and regional environmental regulations, policies and emerging issues.

National Pollutant Release Inventory
www.ec.gc.ca/npri
This is a searchable database of data compiled under the National Pollutants Release Inventory. Visitors can search past and current data by company name or location.

OWNERS
www.owners.gc.ca
OWNERS (One Window to National Environmental Reporting System) is an online reporting mechanism to streamline reporting under federal, provincial and municipal environmental regulations. Companies can access selected regulations and forms such as the National Pollutant Release Inventory and Ontario Ministry of Environment Regulation 127/01.

Pollution Watch
www.pollutionwatch.org
This website, run by Environmental Defence Canada and the Canadian Environmental Law Association, contains reports and a searchable database that allows users to manipulate and better understand data submitted under the National Pollutant Release Inventory.

Responsible Care
www.ccpa.ca/ResponsibleCare/
Operated by member companies of the Canadian Chemical Producers' Association, this website includes a description of the global program, reporting data and verification reports from local companies.

Scorecard
www.scorecard.org
This U.S.-based sites enables users to understand and manipulate data collected by the Toxics Release Inventory.

Tox Town
www.toxtown.nlm.nih.gov/
This resource, hosted by the U.S. National Library of Medicine, provides easy-to-understand information about sources and potential health and environmental effects of hazardous substances commonly found in communities.

U.S. Toxics Release Inventory
www.epa.gov/tri
This is a searchable database of data compiled under the U.S. Toxics Release Inventory. Visitors can search past and current data by company name or location.

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