TORONTO TOXIC REDUCTION **TOOL KIT**

TORONTO TOXIC REDUCTION TOOL KIT ACKNOWLEDGEMENTS

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AUTHORS

Anne Wordsworth (Principle Author), Heather Marshall (Toronto Environmental Alliance), and Sarah Miller (Canadian Environmental Law Association).

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NOTE TO READERS

The purpose of this Tool Kit is to help guide community members through various aspects of the City of Toronto's Environmental Reporting and Disclosure Bylaw and the ChemTRAC Program. Readers are advised to check the ChemTRAC website for updates as the Toronto Toxic Reduction Tool Kit was developed over the course of 2012 and the beginning of 2013, which coincided with the release of Phase 1 ChemTRAC data.

FOR FURTHER INFORMATION

Please contact the Toronto Cancer Prevention Coalition (TCPC) Environmental & Occupational Carcinogens Working Group project leads:

Heather Marshall heather@torontoenvironment.org
Sarah Miller millers@lao.on.ca

Toronto Cancer Prevention Coalition

TORONTO

CHEMTRAC

TORONTO TOXIC REDUCTION TOOL KIT INDEX

1

Tool Kit Item #1

YOUR NEW ENVIRONMENTAL REPORTING & DISCLOSURE BYLAW

1

Tool Kit Item #1

YOUR NEW ENVIRONMENTAL REPORTING AND DISCLOSURE BYLAW

Imagine having a bird's eye view of your neighbourhood that shows your home, your schools, your parks and -- local pollution! Now thanks to a City of Toronto Bylaw – the Environmental Reporting and Disclosure Bylaw, you will be able to find out about pollutants in your neighbourhood – what they are, where they are coming from, and what can be done about them.

This is how it works.

Toronto Public Health has identified 25 substances that could be harmful. They are known to be in the air at levels that may affect our health. Many of them have been linked to cancer or to lung problems.

The City's new bylaw requires companies – large or small – that are using these substances and releasing them to the air, to report them to Toronto Public Health each year. The City will then make this information available to us. The new bylaw is called the Environmental Reporting and Disclosure Bylaw. It came into effect in 2008, and the data from reporting companies are now available. The bylaw, and the City's ChemTRAC program created by Toronto Public Health to support the bylaw, can be found at **www.toronto.ca/health/chemtrac**.

The companies that have to report include many large facilities in the City like sewage treatment plants and power plants. But they also include hundreds of small facilities that you might pass by every day without even noticing – printing companies, dry cleaners, auto body repair shops, food and beverage manufacturers, and small furniture makers. This will be the first time that many of these companies have been asked to consider their use and release of hazardous chemicals and report them to the public.

How can this bylaw help you?

Knowing what's there is the first step in helping to solve some of the City's air pollution problems. Those of us living in neighbourhoods, those of us who work in the City of Toronto, and the companies that are part of our community, will have a chance to work together to find ways to reduce these chemicals.

To find out how, we have prepared this Tool Kit in sections to help explain the way in which the Bylaw works and how you can use it. You can choose to download or print those sections that are of the most interest to you.

2

Tool Kit Item #2

THE "TOXIC TWENTY-FIVE" PRIORITY SUBSTANCES

2

Tool Kit Item #2

THE "TOXIC TWENTY-FIVE" PRIORITY SUBSTANCES

What are the 25 toxic substances that must be reported?

Under the new Environmental Reporting and Disclosure Bylaw, companies must report their use and release of 25 different hazardous pollutants or groups of pollutants.

The City chose these substances because they pose a significant risk to our health if we breathe them every day over a long period of time. We know the risks associated with these substances, first, because studies show workers who have been exposed to them over a number of years have developed specific health problems, and, second, because hospital admissions for breathing problems increase when air pollution levels are high.

Some of the "toxic 25" pollutants – formaldehyde and benzene, for example – are known to cause cancer, while many others are likely to cause cancer or may possibly cause cancer. A few of them are not associated with cancer at all, but can irritate the lungs and make breathing problems like asthma or emphysema worse.

Very little is known about the levels of these substances in the City's air. However, in 2002 Toronto Public Health found that at least 7 of the 25 substances were in the air at levels that either approached or exceeded a "tolerable" level – that is, the level associated with more than one in a million people developing cancer.

There is also very little known about where these substances originate. The Environmental Reporting and Disclosure Bylaw will finally help us identify some of the industrial sources. However, these air pollutants come not only from industrial sources. They can also come from products we use in our homes like room sprays and cleaning products, or from the exhaust of cars and lawnmowers. See **Tool Kit Item #8** for more information on how to reduce pollutants in your own home.

What are the Effects of these Chemicals?

The 25 priority substances are listed in alphabetical order in the chart below. The list explains the health effects, the way in which these substances are used, which industries are most likely to be using them, and the workers who might be exposed. Because some of these chemicals are more toxic than others, Toronto Public Health has developed Toxic Equivalency Potential (TEP) ratings for each substance.

According to the Phase 1 ChemTRAC report written by Toronto Public Health, "toxic equivalency potential (TEP) provides a value based on the amount released and the toxicity of a substance. A high TEP value represents a higher potential to cause harm" (pp. 14). These values are given and explained in the ChemTRAC Annual Report 2010 (pages 14-16) at **www.toronto.ca/health/chemtrac/pdf/final_report_2012.pdf**. However, even though some substances may be more harmful than others, the more effort we put into pollution prevention and toxics reduction, the less these substances will cause harm.

2

WHAT ARE THE EFFECTS OF THESE CHEMICALS?

LEGEND:

SUBSTANCES THAT CAN BE FOUND IN THE HOME

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

2

PRIORITY SUBSTANCES	HEALTH EFFECTS	USES	ASSOCIATED INDUSTRIES	AFFECTED WORKERS
CADMIUM (AND ITS COMPOUNDS)	• causes cancer • damages the lungs and kidneys	• primarily in the production of rechargeable batteries • in pigments for plastics, ceramics, glasses, enamels and artists' colours • as coatings for electronics, steel and aluminum, alloys and stabilizers	• battery manufacturers • manufacturers of plastic products, motor vehicle parts, commercial and industrial machinery, architectural and structural metals, metalworking machinery and other electrical equipment • foundries • smelting or electroplating facilities	• welders cutting, brazing, soldering or welding surfaces that are cadmium coated or plated, textile printers and dyers
CARBON TETRACHLORIDE	• possibly causes cancer	• in chemical manufacturing and research laboratories • as an intermediate in the manufacturing of refrigerants • occasionally as a solvent and metal degreasing agent	• metal and plastic manufacturing	• workers in chemical plants, metal finishing, foundries and in iron and steel manufacturing
CHLOROFORM	• possibly causes cancer	• in the production of a refrigerant (HCFC-22) for air conditioners • in the purification of some antibiotics, alkaloids, vitamins and flavours • as a solvent for lacquers, floor polishes and adhesives • other sources are as a byproduct of the chlorination of drinking water, swimming pools, hot tubs and municipal sewage	• drug manufacturing • recreation industries • building services • water and sewage treatment plants	• sports and fitness instructors and lifeguards, specialized cleaners, chemical technologists and technicians, water and sewage treatment plant operators
CHROMIUM NON-HEXAVALENT Chromium is used in many forms including its most toxic, hexavalent chromium, estimated at 10% of total chromium in outdoor air – see next substance	• causes bronchitis and sinusitis • damages lung tissue	• in making steel and other alloys • in leather tanning, textile production, photography, engraving and lithography, stained glass working • as a pigment in paints, inks and plastics • as an anti-corrosion agent in protective coatings and in chrome plating • in wood preserving • in toner for copying	• cement plants • electroplating companies • leather tanneries • textile producers • stainless steel producers • welding companies and chromate producers	• painters, copy machine maintenance workers, battery makers, candle makers, dye makers, printers, rubber makers, and cement workers

2

PRIORITY SUBSTANCES	HEALTH EFFECTS	USES	ASSOCIATED INDUSTRIES	AFFECTED WORKERS
CHROMIUM HEXAVALENT	• causes lung cancer	• in making steel and other alloys • in refractories and foundry sands • pigments in paints • in wood preservation	• wood preservation plants • printing and support activities • architectural metal manufacturing • auto repair • steel product manufacturing • coating, engraving and heat treating companies	• printers and support workers • stainless steel welders, machinists and pipefitters
1,4-DICHLOROBENZENE (PDCB)	• possibly causes cancer • causes irritation of the eyes, skin and nose • causes headaches, coughing, skin irritation and liver damage	• as an intermediate in pigment and dye production • as an ingredient in the manufacturing of certain pharmaceuticals and resin-bonded adhesives • as a pesticide in mothballs, deodorizers and animal repellants	• mothball and resin-bonded abrasive wheel manufacturers • chemical and pharmaceutical manufacturers	• workers in plants where 1,4-dichlorobenzene is manufactured or used Note: high levels have been found in indoor air where household products containing PDCB such as mothballs are used
1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	• possibly causes cancer	• in the production of vinyl chloride • as a solvent for processing pharmaceuticals	• chemical and pharmaceutical manufacturers • soap, cleaning compound and toilet preparation manufacturers • waste treatment systems	• chemical plant machine operators, chemical process operators, workers in chemical products processing and utilities
DICHLOROMETHANE (METHYLENE CHLORIDE)	• possibly causes cancer • causes respiratory effects and skin irritation	• as a solvent in paint strippers and varnish removers • as a process solvent in the manufacture of drugs of thera peutic value and film coatings • used for metal degreasing in electronics and adhesives manu facturing, and plastics processing • in aerosol propellants • as a urethane foam blowing agent • in the food industry as an extraction medium for spices, caffeine and hops	• commercial paint stripping operations, such as furniture restoration, and body shops • air craft paint stripping, polyurethane foam blowing, manufacturing of pharmaceuticals and chemical intermediates and tablet coating • industrial cleaning and adhesives formulation	• workers involved in paint removal such as workers in auto body shops, furniture refinishers, painters and decorators, and building finishing contractors

2

PRIORITY SUBSTANCES	HEALTH EFFECTS	USES	ASSOCIATED INDUSTRIES	AFFECTED WORKERS
ETHYLENE DIBROMIDE (DIBROMOETHANE)	• probably causes cancer	• as an intermediate for dyes, resins, waxes and gum • as a fumigant	• pesticide manufacturing • pest control operations • petroleum refineries • waterproofing operations	• agricultural workers • workers in chemical and pesticide manufacturing • tree farm and greenhouse workers
FORMALDEHYDE	• causes cancer	• in the production of glues and adhesives in pressed wood products such as particle board and plywood • as a disinfectant and preservative in hospital wards, pathology labs and funeral homes • as an antibacterial agent in anti septics, medicines, fabric softeners, soaps and other personal care products • in plastics and coatings, in textile finishing, such as permanent press coatings on fabrics • in the manufacturing of industrial chemicals, pesticides, fertilizers, latex rubber, photo graphic film and preservatives • as an industrial fungicide, germicide and disinfectant	• wood product manufacturers • furniture and cabinet making companies; construction • hospitals, laboratories and crematoriums • foundries • professional scientific services • chemical manufacturers	• product assemblers and inspectors in wood product manufacturing, including furniture and cabinet making, foundry workers, workers in the textile industry, embalmers, pathology lab workers, health care professionals such as veterinary technicians and assistants
LEAD (AND ITS COMPOUNDS)	• probably causes cancer • affects the nervous and reproductive systems • can cause developmental and learning problems in children	• in the manufacture of lead acid storage batteries • in pigments, coatings, ammunition, solder, casting metals and alloys • in television and computer screens • in ceramic glazes and crystal glassware	• mining, smelting and refining industries; • battery production and recycling • steel welding or cutting operations • printing industries • rubber products and plastics manufacturers • auto and radiator repair shops	• workers in mining, lead smelting and refining industries, battery production and recycling, rubber products and plastics industries, and auto and radiator repair shops, printers, welders, ironworkers, machinists, plumbers and electronics assemblers
MANGANESE (AND ITS COMPOUNDS)	• affects the nervous system • impairs motor skills and can make fast movements and balance more difficult	• in the production of steel and aluminum alloys used in beverage cans • in batteries, matches, fireworks • as pigments and colouring in ceramics and glass	• steel and aluminum alloy manufacturers • battery manufacturers	• workers in the production or processing of steel and alloys, in battery manufacturing

2

PRIORITY SUBSTANCES	HEALTH EFFECTS	USES	ASSOCIATED INDUSTRIES	AFFECTED WORKERS
MERCURY (AND ITS COMPOUNDS)	• irritates the nose, throat and lungs • adversely affects the nervous system • may cause reproductive problems	• in the production of thermometers, barometers, batteries, dental fillings, fluores cent lights and lubrication oils • in the manufacture of electrical equipment, wire and switching devices • another source is its release from fossil-fuel burning power plants	• electricity generating power plants • manufacturers of electrical equipment, batteries, fluorescent lights	• workers in power plants and in electrical equipment, battery and fluorescent light manufacturing facilities
NICKEL (AND ITS COMPOUNDS)	• causes cancer	• in electroplating • in production of rechargeable batteries, industrial plumbing, machinery parts, resistance wiring and chemical catalysts	• machinery and equipment repair and maintenance facilities • architectural and structural metals manufacturers • machine shops • engravers	• welders, construction millwrights, industrial mechanics, boilermak ers, workers involved in plating, metal spraying, machinists and machining and tooling inspectors
NITROGEN OXIDES	• affects the respiratory system • high levels in urban air are associated with higher hospital emissions and increased deaths from respiratory disease	• released as a byproduct from motor vehicle exhaust or the burning of coal, oil and natural gas, especially from power plants • released during industrial processes such as welding, electroplating, engraving, and dynamite blasting	• welding facilities • electroplaters and engravers • industries that use boilers or furnaces that burn fossil fuels	• workers in facilities that produce nitric acid, explosives such as dynamite and TNT, or welded metals
PARTICULATE MATTER 2.5	• irritates the eyes, throat and lungs • aggravates asthma, bronchitis and other lung diseases	• formed from combustion sources including industrial processes, gasoline and diesel engine exhaust, fireplaces, and furnaces	• facilities where diesel engine exhaust is present; • industries that emit particulate matter • sources also include high traffic areas	• workers in facilities where vehicles use diesel fuel, such as underground mining

2

PRIORITY SUBSTANCES	HEALTH EFFECTS	USES	ASSOCIATED INDUSTRIES	AFFECTED WORKERS
POLYCYCLIC AROMATIC HYDROCARBONS A group of over 100 chemicals formed by burning coal, oil, gas, wood, garbage and other organic substances such as charbroiled meat	• some chemicals in this group, such as benzopyrene, probably cause cancer, and some do not • affects lung function • causes skin inflammation	• industrially or in research in small amounts • may be present in asphalt, coal, tar and other bituminous products	• facilities where petroleum or gasoline are burned, such as gas stations and restaurants • roofing or working with coal tar products, sound- and water-proofing, coating pipes, steelmaking, and paving with asphalt	• gas station attendants, firefighters, chefs and cooks and other food establishment workers
TETRACHLOROETHYLENE (PERCHLOROETHYLENE)	• probably causes cancer • may cause nervous system depression and reproductive problems	• as a solvent in dry cleaning and as a sizing and desizing agent in textile processing • as a chemical intermediate in the manufacture of chlorofluorocar bons and rubber coating • in metal degreasing operations • as an ingredient in aerosol products, solvent soaps, printing inks, adhesives, sealants, paint removers, paper coatings, leather treatments, automotive cleaners, polishes, lubricants and silicones, wood cleaners, shoe polish and spot removers	• printing companies • dry cleaners and laundry services, • textile product, textile furnishing and fabric mills • engravers • manufacturers of chemical and consumer products	• workers in metal degreasing, textile processing, dry cleaning and tailoring, printing press operators, and metal fabrication, rubber coating and chemical production workers
TRICHLOROETHYLENE	• probably causes cancer • damages the liver and kidneys • causes headaches, dizziness and fatigue	• in metal degreasing in the automotive and metal industries • as an industrial solvent • as a chemical intermediate to make products such as paint strippers, adhesives and rug cleaning fluids	• metal manufacturers • aerospace industry • iron and steel pipe manufacturing • printing and support activities • textile furnishing and textile product mills • plastic product and footwear manufacturing • chemical and glue manufacturing • sewage treatment plants	• metalworking machine operators, platers, metal sprayers and other workers who do metal degreasing, workers in metal fabrication plants, printing press operators, textile dyeing and finishing machine operators
VINYL CHLORIDE	• causes cancer	• to make polyvinyl chloride, which is then used to make plastic and vinyl products, including auto parts, pipes, medical supplies, packaging, wrapping film, furniture, construction materials, automotive upholstery and parts, wall coverings, and housewares such as shower curtains, plastic bags, window shades and toys	• manufacturers that use polyvinyl chloride to make plastic and vinyl products	• workers involved in PVC resin handling and processing, plumbers, construction workers, workers in auto manufacturing facilities and autobody shops

2

PRIORITY SUBSTANCES	HEALTH EFFECTS	USES	ASSOCIATED INDUSTRIES	AFFECTED WORKERS
VOLATILE ORGANIC COMPOUNDS (VOCS) A group of approx. 1,000 compounds that can easily become vapours or gases. 12 of the ChemTRAC substances listed above are individual VOCs including: **ACETALDEHYDE** **ACROLEIN** **BENZENE** **1,3 - BUTADIENE** **CARBON TETRACHLORIDE** **CHLOROFORM** **1,4 - DICHLOROBENZENE** **1,2 - DICHLOROETHANE** **FORMALDEHYDE** **POLYCYCLIC AROMATIC HYDROCARBONS** **TETRACHLOROETHYLENE** **TRICHLOROETHYLENE**	• combine with nitrogen oxides to create ozone or smog • ozone is linked to asthma and chronic bronchitis and emphysema • increase the risk of heart and respiratory problems • damages liver, kidney and central nervous system • some VOCs such as benzene cause cancer	• as industrial solvents • in household products such as personal care products, air fresheners and cleaners • in furnishing' • in building materials such as paint, varnish and glue • sources also include gasoline, solvents and many household products such as solvents, paints and glues that contain solvents	• dry cleaners • printing companies • various manufacturers	• dry cleaners, printers, workers in various manufacturing industries

Do your own research:
Find out more about these substances, their uses, their health effects and how they're regulated...

- Toronto Public Health's ChemTRAC - "Priority Substances: Health Effects and Sources" **www.toronto.ca/health/chemtrac/substances.htm**
- CAREX Canada **www.carexcanada.ca**
- New Jersey's Right to Know Hazardous Substance Fact Sheets **www.nj.gov/health/eoh/rtkweb/documents**
- Environment Canada Toxic Substances List **www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=0DA2924D-1**
- California Proposition 65 List **www.oehha.ca.gov/prop65/prop65_list/Newlist.html**
- Perkins + Will Precautionary List of Chemicals found in common building materials **http://transparency.perkinswill.com**
- ToxTown **http://toxtown.nlm.nih.gov/text_version/chemicals.php**
- Scorecard **http://scorecard.goodguide.com**

3

Tool Kit Item #3

REPORTING COMPANIES

3

Tool Kit Item #3

REPORTING COMPANIES

Now that we have identified the 25 priority substances of concern, the Environmental Reporting and Disclosure Bylaw can help us find the sources of these pollutants. We know in general the type of industries that use certain substances. For example, funeral services are likely using formaldehyde and dry cleaners are probably using tetrachloroethylene. However, this does not mean that every company in a particular industry uses these chemicals. Some may have chosen other, less harmful substances.

For the first time in Canada small and medium sized companies have been called on to report their use of substances. Toronto companies are required to report their chemical use and release data every year, so the Bylaw will also show us whether the hazardous chemicals being used and released are increasing or decreasing over time. This is because the City of Toronto has lowered the threshold for reporting from Provincial and Federal requirements. This will assist them in evaluating how small emissions may add up once they are mixed into our air to levels that could impact health. Experience with other reporting programs has shown that when companies track their chemicals, they find ways to reduce them. Companies reporting to Canada's National Pollutant Release Inventory (NPRI), for example, have reduced their emissions by 27% since 1993.

Knowing the reporting companies and their time frame for reporting can help you locate sources of hazardous chemicals in your community and track whether pollutants are being reduced. The Bylaw does not require companies to reduce the use and release of these chemicals through pollution prevention plans. However, often companies required to report their chemical use start to better understand and improve the way in which chemicals are managed in their facilities or to seek safe alternatives to their use. With your help, this knowledge can begin a cooperative effort to reduce the presence of these chemicals in our neighbourhoods and reduce worker exposures.

The chemical use and release data is made publicly available on the City's ChemTRAC website **www.toronto.ca/chemtrac/**. On June 25th, 2012, the information for Phase 1 reporting facilities was posted online as well as reviewed in the first annual Tracking and Reducing Chemicals in Toronto report.

PHASE 1

PUBLIC DISCLOSURE DATE **2012**

The types of industries to report first have been called the Phase 1 facilities. They were required to tell the City by June 30, 2011, how much of each of these chemicals they use and release in 2010. The Report on the Phase 1 facilities was released to the public in **June 2012**. The first companies to report are:

- manufacturing industries in general, including companies that make chemical and petroleum products;
- food and beverage manufacturers;
- printing and publishing companies;
- wood industries, such as furniture making companies;
- power generators; and
- the City's own water and sewage treatment plants.

3

PHASE 2

PUBLIC DISCLOSURE DATE **2013**

A second group of industries have been given a little longer to report their chemicals. These Phase 2 reporting companies must report 2011 data by June 30, 2012. The Report on the Phase 2 facilities is scheduled to be released to the public **June 2013**. They include:

- chemical wholesalers;
- waste management & remediation services;
- medical and diagnostic laboratories;
- dry cleaning and laundry services;
- automotive repair and maintenance; and,
- funeral services.

PHASE 3

PUBLIC DISCLOSURE DATE **2014**

The Phase 3 reporting industries include all the companies in Phase 1 and 2 and any other sectors that have not been exempted from the Bylaw. By June 30, 2013, the reporting from all three phases must be complete. The Report on the Phase 3 facilities is scheduled to be released to the public in **June 2014**. They include (but are not limited to):

- Support activities in the transportation sector such as port and harbour operations; motor vehicle towing services, and air traffic control;
- Equipment repair and maintenance;
- Textile mills, leather products, and clothing manufacturing;
- Primary metal and metal product manufacturing;
- Other forms of manufacturing such as electrical equipment, machinery, computer and electronic products, games and toy products, etc.;

Which companies are exempt from the Bylaw?

Some businesses may be considered 'below threshold' or 'exempt' which means that they are not required to report under the Bylaw. If a company is below threshold that means that the business uses or releases a small amount of certain substances or none at all. The highest reporting threshold for most substances is 100 kilograms per year with the exception of Nitrogen Oxides (200 kg/yr) as shown in the table below.

18 CHEMTRAC SUBSTANCES HAVE THRESHOLDS AT OR ABOVE 100 KG/YR	
Acetaldehyde	**100 kg/yr**
Acrolein	**100 kg/yr**
Benzene	**100 kg/yr**
1,3-Butadiene	**100 kg/yr**
Carbon tetrachloride	**100 kg/yr**
Chloroform (Trichloromethane)	**100 kg/yr**
Chromium, Non-hexavalent, and its compounds	**100 kg/yr**
1,2-Dibromoethane (Ethylene dibromide)	**100 kg/yr**
1,4-Dichlorobenzene	**100 kg/yr**
1,2-Dichloroethane (Ethylene dichloride)	**100 kg/yr**
Dichloromethane (Methylene chloride)	**100 kg/yr**
Formaldehyde	**100 kg/yr**
Nickel and its compounds	**100 kg/yr**

3

18 CHEMTRAC SUBSTANCES HAVE THRESHOLDS AT OR ABOVE 100 KG/YR *CONT'D*	
Tetrachloroethylene (Perchloroethylene)	**100 kg/yr**
Trichloroethylene	**100 kg/yr**
Vinyl chloride	**100 kg/yr**
Volatile organic compounds (VOCs), total	**100 kg/yr**
Nitrogen oxides (NOx)	**200 kg/yr**

In addition, there are 7 substances that have a reporting threshold below 100 kg/yr, some as low as 1 kg/yr, because they can be harmful even in very small amounts:

7 CHEMTRAC SUBSTANCES HAVE THRESHOLDS BELOW 100 KG/YR	
Cadmium	**1 kg/yr**
Mercury	**1 kg/yr**
Hexavalent Chromium	**10 kg/yr**
Lead	**10 kg/yr**
Manganese	**10 kg/yr**
Polycyclic Aromatic Hydrocarbons	**10 kg/yr**
Particulate Matter (PM2.5)	**30 kg/yr**

Reference: Toronto Public Health. March 2012. Environmental Reporting and Disclosure Bylaw (Municipal Code Chapter 423): Guide to Reporting. Toronto: City of Toronto. Page 11. http://www.toronto.ca/health/chemtrac/pdf/bylawguide.pdf

For example: A business calculated the use and release of their substances using the ChemTRAC online calculator tools and determined that they release 25 kg/yr of Benzene and 5 kg/yr of Lead. This company is not required to disclose their use and release data under the Bylaw because the amounts are less than the minimum reporting thresholds for these substances. They could voluntarily report to ChemTRAC that the facility is 'below threshold'. Alternatively, some businesses acknowledge that they are below threshold but chose to share their substance data anyway so that the public is aware of their chemical levels. Some businesses use or release minimal or zero substances because they have environmentally friendly practices. It is in the company's best interest to share this good, green news with the public!

Certain businesses are exempt from reporting to the Bylaw. This includes retail stores, medical and dental offices, construction and renovation projects, food and accommodation services, gas stations and other fuel refilling sites, warehouses and some motor vehicle maintenance facilities (ones that don't paint, strip, rebuild or remanufacture parts).

For a more detailed explanation of what counts as exempt or not, please visit this ChemTRAC webpage: **http://www.toronto.ca/health/chemtrac/exempt.htm**

The challenge for the public is how to use the new ChemTRAC data to encourage pollution prevention and reduction and improve air quality in Toronto. Find some inspiration by reviewing **Tool Kit Item #4** to learn more about green business practices in Toronto!

3

Do your own research on how toxics reporting programs work:

- The National Pollutant Release Inventory (shows all the emissions from Canada's largest polluters): **www.ec.gc.ca/inpr-npri/**
- United States Toxics Release Inventory: **www.epa.gov/tri/**
- Massachusetts' Toxic Reduction Act: **http://turadata.turi.org/index.html**
- Ontario's Toxic Reduction Act: **www.ene.gov.on.ca/environment/en/legislation/toxics_reduction_act/index.htm**
- Eugene, Oregon's Toxic Right-to-Know program, one of the first community bylaws that required companies to report their toxics: **www.eugene-or.gov/index.aspx?NID=1833**
- New York's Community Right-to-Know Program: **www.nyc.gov/html/dep/html/businesses/tier2.shtml**

4

Tool Kit Item #4

MODEL COMPANIES SHOW HOW POLLUTION PREVENTION WORKS

4

Tool Kit Item #4

MODEL COMPANIES SHOW HOW POLLUTION PREVENTION WORKS

Pollution Prevention Pays

The Environmental Reporting and Disclosure Bylaw is meant to encourage companies to reduce hazardous air pollutants. The first step towards pollution prevention is measuring which substances are used and released in a facility because companies cannot manage what they do not measure. Some companies are out in front because they have already lowered the amounts of chemicals they discharge to the sewers or release to the air.

Many Toronto companies changed the chemicals they use or the way they use them because of the City's Sewer Use Bylaw, which sets strict standards for discharging pollutants to the sewers. It also requires companies using the sewers to develop pollution prevention plans. This Bylaw has had a big impact on reducing the pollutants going to Toronto's sewage treatment plants and, from there, being discharged into Lake Ontario, the source of our drinking water.

The Environmental Reporting and Disclosure Bylaw does not require pollution prevention plans. However, reporting means that companies must look at the volume of chemicals they are buying, using, releasing and possibly wasting in their facilities. Companies that report to ChemTRAC can voluntarily include an Environmental Statement that publicly shares what they are doing to reduce pollution and improve their practices.

It's like a bank account – adding up what comes in, what's been paid out and what's left over. As a result of this accounting, many companies understand better how chemicals are managed in their facilities and how they can reduce their losses or how they can replace hazardous chemicals with less toxic alternatives. This can save money, improve working conditions and the air inside a facility, and potentially cut out the red tape that comes with reporting chemicals. Just cutting the costs of trucking away and disposing of hazardous waste can save a company thousands of dollars. A cost/benefit analysis done by the state of New Jersey found that for every $1 spent on pollution prevention planning, companies saw a net savings of $5 to $8.

HERE ARE SOME STERLING EXAMPLES OF LEADING TORONTO COMPANIES THAT HAVE DONE THEIR PART TO PREVENT POLLUTION.

Although many companies have saved money by conserving water and energy, the companies we have chosen to highlight have also benefited from reducing their use of hazardous chemicals!

4

EXAMPLE #1
C.J. GRAPHICS

Printing and publishing companies generally use a variety of developers, inks and solvents that release volatile organic compounds (VOCs), the main priority substance of concern in the printing industry. C.J. Graphics, a commercial lithographic printing company, chose to use low VOC vegetable-based inks in its printing instead of regular inks, a choice that minimized its releases of volatile organic compounds (VOCs) from the printing process. The company also reduced VOCs by 3 tonnes per year in their pressroom by installing a distillation solvent recycling system that can recover and reuse solvents used for blanket and roller washing. As well as C.J. Graphics, a number of Toronto printers and publishing companies-- Bowne of Canada, Informco, and Thistle Printing -- have all been recognized for their achievements in preventing pollution.

"C.J. Graphics Inc. Group of Companies has been, and will continue to be, an avid supporter of the Toronto ChemTRAC initiative... We have drastically reduced our dependence on toxic chemicals and have replaced them with ecologically sound alternatives. We are consistently below the parameters required for any of the monitored substances."

- Jay Mandarino, President, G.J. Graphic Inc. Printers and Lithographers

EXAMPLE #2
DECARO MANUFACTURING

In the manufacturing sector, many priority pollutants are used. DeCaro Manufacturing, a smaller Toronto company, successfully reduced its use and emissions of a number of hazardous chemicals. DeCaro is a metal plating facility that manufactures fireplaces, airport weigh scales and other metal products. The company used trichloroethylene in its degreasing process and for cleaning. It reduced its use of trichloroethylene by 2400 kilograms per year by using a caustic bath instead of a solvent degreaser and by switching from trichloroethylene to non-chlorinated or water-based cleaners. DeCaro also reduced toluene and xylene, which are also hazardous. This was done through replacing their spray guns with high pressure low volume spray guns, by replacing spray paint with a drip tray process, and by using water-based paints.

4

EXAMPLE #3
CALSTONE INC.

Calstone Inc., a Scarborough-based designer and manufacturer of quality metal furniture, reduced its use of hazardous chemicals by 60% by installing a vapour spray degreaser to purify its chemicals for reuse in the degreasing of metal components, and by using a soap-based solvent in the vapour spray degreaser. Some of the materials used in the manufacture of finished furniture may release VOCs into the air of our homes or businesses. Calstone's furniture has been tested and met strict standards for VOC and aldehyde emissions. Calstone is also an example of a City of Toronto facility that has made public all the chemicals that it uses.

"Calstone has been a supporter of the ChemTRAC program and Toronto's toxic emissions reduction program from the very beginning. We always have been open about the chemicals we use in our manufacturing facility as we at Calstone believe that it is our duty as manufacturers to minimize the chemical output of our plant. We were using trichloroethylene in our Vapour Degreaser but have switched to a more environmentally friendly soap based solvent, TechKleen NPB. Techkleen NPB has a much lower atmospheric lifetime than other harmful chemicals and almost zero global warming potential. Calstone will be switching to a water-based paint in the near future to further rid the plant of harmful toxins. Calstone congratulates the City of Toronto on the first year of their program and encourages other manufacturers to learn about the chemicals used in their production and work with ChemTRAC to reduce or eliminate them".

- Jim Ecclestone, President and Owner of Calstone, a family owned furniture manufacturer in Scarborough.

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EXAMPLE #4
TEKNION CORPORATION

Teknion Corporation, an international designer, manufacturer and marketer of office furniture based in Toronto, has also made significant reductions in hazardous chemicals through the development of a water-based painting process that eliminates dry epoxy paint and the use of energy-intensive ovens. Another large office furniture manufacturer, Steelcase Canada located in Markham, Ontario, eliminated VOC emissions from its paint facility by switching from spray painting onto metal surfaces to 100% solvent-free powder paint.

EXAMPLE #5
BRIMAC ANODIZING LIMITED

Brimac Anodizing, in Etobicoke, specializes in anodizing aluminum parts for industrial use. Part of the anodizing process used a black dye that contained chromium. Brimac was able to eliminate the use of chromium through the replacement of this dye with an alternative chromium-free product.

EXAMPLE # 6
CANADIAN AUTO COLLISION

Canadian Auto Collision, located in Brantford, stands out as an example of an auto repair shop that has made many of the improvements and changes recommended by the industry association. Automotive repair businesses, many of which are small, release VOCs from paints, from solvents used in cleaning parts and metals and particulate air pollution released during sanding and painting. Canadian Auto Collision has upgraded to high pressure low volume spray guns that make painting more efficient and reduce the VOCs going into the air. The use of water-based paints to repaint cars has also resulted in significant reductions of VOCs. A centralized dust extraction system, installed by the company, has reduced dust and particulate matter by 95%. Overall, Canadian Auto Collision has been able to cut their air emissions by 55%. In order to help small auto repair shops achieve this standard, the Collision Industry Information Assistance has provided information and a website (**www.autobodyhelp.ca**). The website identifies pollution prevention activities that can substantially reduce their costs and liabilities.

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EXAMPLE #7
DRY CLEANERS

Dry cleaning of clothing is usually done with tetrachloroethylene, also known as perchloroethylene or simply perc. Although more dry cleaners use closed systems, tetrachloroethylene may still contaminate the air. Concerns about both health and environmental effects of tetrachloroethylene have led to the development of a number of alternatives. These include wet cleaning, carbon dioxide cleaning and Green Earth, a silicone-based solvent developed by General Electric. A small number of dry cleaners scattered throughout the City – such as Gibson's Cleaners, Parkers Cleaners, Dove Cleaners, Eco Cleaners, Laird Cleaners and Suedemaster Leather Cleaner – are using these alternative methods.

"ChemTRAC not only empowers consumers to make safer, healthier choices but it also encourages businesses to do better. As a business that offers toxic free dry cleaning, being green is not only the right decision, it's the logical business decision. As consumer awareness grows of the impact of the goods and services they buy on the environment and their health, being green is no longer a lifestyle choice but has become a choice for life. As a consumer and resident of this great city, I am proud of our city for giving me the choice and knowledge to make healthier, greener decisions for me and my family."

- Tim Yoo, Eco Cleaners

And the Rest of the Green Leaders are...

A fuller list of companies in the Toronto area that have made significant progress in eliminating or reducing their use of hazardous chemicals are highlighted on a number of resourceful websites. Two direct hands-on programs for business in the Toronto area are profiled below:

1) THE BLOOM CENTRE FOR SUSTAINABILITY
http://techassist.bloomcentre.com

This centre helps small and medium sized manufacturers in the Greater Toronto region with advice and technical assistance on pollution prevention, toxics reduction and energy and water use. Many companies have benefited from their on-site assessments. Not only have they reduced their hazardous wastes, VOCs and toxic chemical use, but they have also saved money in both the long and the short run. The average payback period for investment in pollution prevention has turned out to be less than one year. Case studies, workshops and financial incentives can be found on their website or phone them at 905-822-4133.

2) PARTNERS IN PROJECT GREEN

www.partnersinprojectgreen.com

This initiative is a collaborative between the Greater Toronto Airports Authority and the Toronto Region Conservation Authority. It helps businesses become more sustainable with programs to become more energy efficient, reduce waste, solve transportation problems and collaborate on green purchasing. They also offer free ChemTRAC site visits in conjunction with Toronto Public Health. For more details and to register, email **chemtracvisit@partnersinprojectgreen.com**, visit their website or call 416-661-6600 ex.5595.

Here are some more great online resources that profile green leaders:

- ChemTRAC eLearning Course segment "*Businesses Share Their Stories - Video Case Studies*" - **http://www.toronto.ca/health/chemtrac/elearning/pollutionprevention/page401.html**
- Toronto Region Sustainability Program - **www.trsp.ca/case_studies.htm**
- Environment Canada's Pollution Prevention Successes – **www.ec.gc.ca/p2**

BUSINESS ASSISTANCE

Under the ChemTRAC program, Toronto Public Health has developed pollution prevention information and training sessions for companies. Details are available online: **www.toronto.ca/health/chemtrac/business_resources.htm** Different types of businesses – auto body shops, upholstered furniture manufacturers, commercial laundries, medical labs and many more – can all find detailed information on the ChemTRAC website. By consulting this information, you can find out how to assess the chemicals used in your processes and how to reduce them through good management practices.

Many business associations actively try to help their members reduce their toxics. Some have created how-to guides to give their members solid advice. An example is the Collision Industry Information Assistance that helps auto body repair shops with their site: **www.autobodyhelp.ca**

The City of Toronto has made **Live Green Toronto ChemTRAC Toxics Reduction Grants** available to business associations to develop additional support for greening their practices. Support could include training, education, pilot programs and development of community partnerships. The Toronto Association of Business Improvement Areas (TABIA), through its environmental program greenTbiz, received a ChemTRAC grant to help the small business sector reduce chemicals.
Learn more at **http://greentbiz.org/programs/chemtrac/**.

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Do your own research: Find out more about pollution prevention...

- ChemTRAC Links Page: **http://www.toronto.ca/health/chemtrac/links.htm**
- Environment Canada's Pollution Prevention Planning Handbook: **www.ec.gc.ca/NOPP/DOCS/P2P/hbook/En/index.cfm**
- The Canadian Centre for Pollution Prevention's Environmental Accounting Online Training Tool: **www.learning.c2p2online.com/**
- Canadian Pollution Prevention Information Clearinghouse (CPPIC): **www.ec.gc.ca/cppic/en/index.cfm**
- The Massachusetts Toxics Use Reduction Institute: **www.turi.org**
- Environmental Sustainability Resource Centre: **wrrc.p2pays.org/indsector.asp**
- New York State's Pollution Prevention Program: **www.nysp2i.rit.edu/priority_sector_projects.html**
- Clean Production Action's GreenScreen for Safer Chemicals (U.S.A): **http://www.cleanproduction.org/Greenscreen.php**
- The Quick Chemical Assessment Tool (QCAT) (U.S.A): **http://www.ecy.wa.gov/programs/hwtr/ChemAlternatives/QCAT.html**

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Tool Kit Item # 5

HOW TO RESEARCH CHEMICALS USING CHEMTRAC

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Tool Kit Item # 5

HOW TO RESEARCH CHEMICALS USING CHEMTRAC

You have a right to know about the various chemical substances that are used and released in your community. That is why the Environmental Reporting and Disclosure Bylaw requires Toronto Public Health to share the annual chemical data from reporting businesses to the public. The ChemTRAC website provides a wealth of information including access to the chemical data in a number of formats to make it easier to find what you are looking for. In this section, you will learn more about the various ways to collect information from the ChemTRAC website.

The ChemTRAC website can be accessed at the following link: **www.toronto.ca/chemtrac**. **When you visit this site, which is maintained by Toronto Public Health, the home page will look like the image shown below:**

HOME PAGE

As you will notice, there are a number of tabs along the top of the page. The tab called **'Disclosure Reports'** will bring you to the section of the site that displays chemical use and release data reported by Toronto area businesses in a number of different ways. Each of these formats can help you research important information about chemicals used and released in Toronto.

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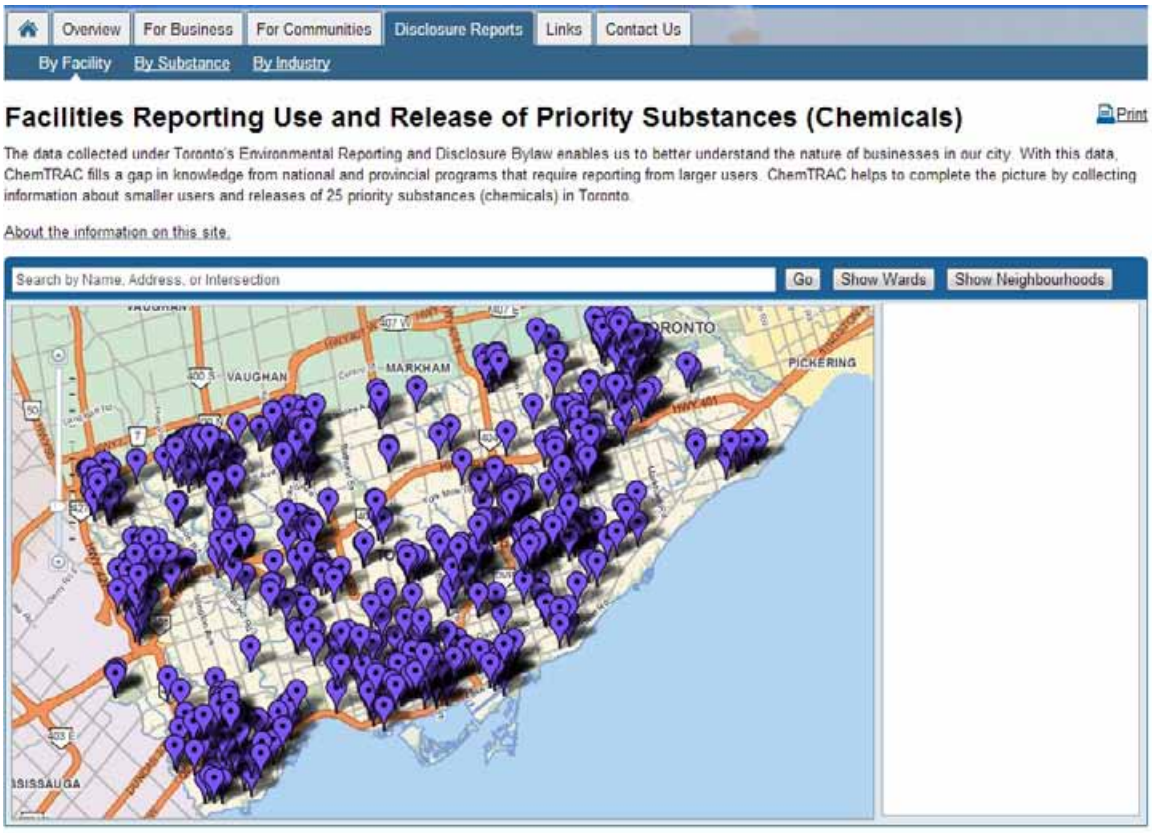
The image below is a screen shot of what you will see when you visit the **'Disclosure Reports'** web page.: **The first thing you will notice when you visit is a large interactive map of Toronto. This map is interactive because it can be used to do the following:**

- **zoom in to view areas of the city in greater detail (and zoom out)**
- **search the map by address, postal code or intersection**
- **choose to 'Show Wards' and/or 'Show Neighbourhoods' to view political and community boundaries including the official name of each area.**
- **click on the various map markers to find out which business it represents.**



INTERACTIVE MAP

The interactive map can be a great place to start your search if you want to search **'By Facility'**. You can also search for information **'By Substance'** and **'By Industry'** as indicated directly below the 'Disclosure Reports' heading. Below you will find a series of questions that will help guide you to the appropriate section of the ChemTRAC website based on your needs and interests.

5 DO YOU WANT TO FIND CHEMICAL USE AND RELEASE INFORMATION IN A SPECIFIC COMMUNITY OR LOCATION IN TORONTO?

STEP 1: From the ChemTRAC homepage, click on the **'Disclosure Reports'** tab or visit the map directly at this link: **http://app.toronto.ca/ctpd/findFacility.html**

STEP 2: Using the search bar provided above the map, enter the address or nearby intersection of the area you would like to scan and press the **'Go'** button. Common searches may include a home address, place of employment, school, community centres, or green spaces.

STEP 3: Each coloured balloon marker on the map represents a single company that has reported to ChemTRAC. Click on any of the nearby balloons. An information bubble will appear that lists the name and address of the company as well as a link to the company's chemical data.

STEP 4: Click on the hyperlink in each bubble called **'Substance use and release'** to find chemical data for each business. In some cases, facilities will not have any chemical data to view. This is often because their amount of substance use and release is below the ChemTRAC reporting threshold.

Once the new window opens, you will find detailed information on the company including:

- **contact information**
- **the industry sector they belong to**
- **the number of employees**
- **an Environmental Statement (if provided)**
- **a chart listing any of the Toxic 25 substances that were used and released at the company for any given year (measured in kilograms (kg).**

HELPFUL TIPS FOR USING THE INTERACTIVE MAP

A) Consider zooming the map in or out until you get the scale of map you need. If you zoom in very close you will see more street details (small street names, outlines of building shapes and their street number). That said, by zooming in you may miss some businesses that fall just outside of the limits of your map window that could be relevant to your search.

B) By clicking on the **'Show Wards'** or **'Show Neighbourhoods'** buttons found at the top right of the map, you can make political and neighbourhood boundary lines visible on the map. The name and reference number for the area are also included. You can click **'Hide Wards'** or **'Hide Neighbourhoods'** to remove the boundary information from your map at any time.

C) There are 44 wards, each with an elected City Councillor that represents the residents of that area at City Hall. Using the name and number provided with the ward boundary on the map, you can look up the Councillor's name and other information at this site: **http://app.toronto.ca/wards/jsp/wards.jsp**. This information can be helpful if you want to

comment on the ChemTRAC data or to inform your local Councillor about any concerns you might have.

D) The neighbourhood boundaries identify the name of the neighbourhood and also shows a number representing the neighbourhood zone number (e.g. Willowdale West (37). Please note that this number is not the same as your Ward number. These neighbourhood names become more visible as you zoom in closer to the neighbourhood level. To find more detail on your Neighbourhood please visit: **http://www.toronto.ca/demographics/profiles_map_and_index.htm.**

DO YOU WANT TO FIND CHEMICAL INFORMATION ON A SPECIFIC COMPANY?

STEP 1: From the ChemTRAC homepage, click on the 'Disclosure Reports' tab or visit the page directly at this link: **http://app.toronto.ca/ctpd/findFacility.html**

STEP 2: Scroll down the page until you find the alphabetized list of companies that reported to ChemTRAC below the interactive map.

595 Facilities Reporting for 2010

0-9,A,B | C,D | E,F | G,H | I,J | K,L | M,N | O,P | Q,R | S,T | U,V | W,X | Y,Z

ERCO Worldwide Research And Development Laboratory	ET Industries Inc	Eastend Bindery Limited
	Eastern Power Limited Administrative Engineering Office	Eco II Manufacturing Inc
		Eglinton Dry Cleaners Ltd
ElectroPack Inc	Eles Designs Kiondo	Emery Oleochemicals Canada Limited
Empire Plaza Cleaners	Ergotech	Ermenegildo Zegna Canada Inc
Enstee Graphics Inc	Estee Lauder Cosmetics Ltd	Estee Lauder Cosmetics Ltd
Euro Breads	Eversoft Fibre And Foam Ltd	Excelsior Steel Processing Ltd
Executive Painting Inc	Express Printing	Extendicare Bayview
F C Printing Graphics	FENZI NORTH AMERICA	FLEXOPARTNERS INC
FOAMCO INDUSTRIES CORPORATION	FPC Flexible Packaging Corp	FURS BY JAMES
Faery Tale Designs	Fairweather Ltd	Falcon Machining And Fabrication Ltd
FedEx Office Canada Limited	FedEx Office Canada Limited	FedEx Office Canada Limited
FedEx Office Canada Limited	FedEx Office Canada Limited	Ferner Wire Goods Company Limited
Fiera Foods Company	Filicetti Foods Inc	Firestone Printing
Flash Reproductions Ltd	Four L Graphics Ltd	Four Star Metal Finishing Ltd
Frank Correnti Cigars Ltd	Furama Bakery	Fusebox Designs

Last updated on January 10, 2011

STEP 3: Click on the appropriate tab that corresponds to the first letter in the company you are searching for.

STEP 4: Once you locate the company name in the alphabetized listing, click on its name.

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STEP 5: The company name is hyperlinked to the interactive map above. Scroll back up to the map in order to see the information bubble for the company you selected.

STEP 6: Click on the hyperlink in each bubble called **'Substance use and release'** to find chemical data for each business.

Once the new window opens, you will find detailed information on the company including:

- **contact information**
- **the industry sector they belong to**
- **the number of employees**
- **an Environmental Statement (if provided)**
- **a chart listing any of the Toxic 25 substances that were used and released at the company for any given year (measured in kilograms (kg).**
- **In some cases, facilities will not have any chemical data to view. This is often because their amount of substance use and release is below the ChemTRAC reporting threshold.**

DO YOU WANT TO KNOW MORE ABOUT A SPECIFIC CHEMICAL THAT IS USED AND RELEASED BY BUSINESSES?

STEP 1: From the ChemTRAC homepage, click on the **'Disclosure Reports'** tab or visit the page directly at this link: **http://app.toronto.ca/ctpd/findFacility.html**

STEP 2: Click on the **'By Substance'** link found directly below the **'Disclosure Reports'** tab.

STEP 3: The **'Chemical Use and Release Report'** alphabetically organizes the 25 priority ChemTRAC substances (chemicals) in an interactive chart. Scroll down the chart and click on the name of any substance you want information on. Because it is hyperlinked, a window will open that provides a short description of the chemical including known and suspected health impacts as well as possible sources of the chemical in our city. Simply click the **'x'** to exit the window and return to the chemical substance chart.

STEP 4: Learn more about which sectors use and release this particular substance by clicking on the arrow ▷ located to the left of the substance's name.

STEP 5: Dig deeper and learn about which specific businesses within a sector use and release this substance by clicking on the arrow to the left of the sector's name.

▷ Dichloromethane (Methylene chloride)	207160	579	49646	257385	4907	9072	0	13979
▽ Formaldehyde	293230	3150	220	296600	4576	0	0	4576
▷ Adhesive Mfg.	0	0	0	0	1	0	0	1
▷ All Other Misc. Chemical Product Mfg.	290078	0	0	290078	10	0	0	10
▽ Asphalt Paving Mixture & Block Mfg.	0	0	0	0	1376	0	0	1376
Albion Road Asphalt Plant	0	0	0	0	613	0	0	613
Bethridge Asphalt Plant	0	0	0	0	380	0	0	380
D Crupi Sons Limited	0	0	0	0	383	0	0	383
▷ Commercial Bakeries & Frozen Product Mfg.	0	1	0	1	1	0	0	1
▷ Flour Mixes & Dough Mfg. from Purchased Flour	0	0	3	3	3	0	0	3
▷ Fossil-Fuel Electric Power Generation	0	2859	0	2859	2859	0	0	2859
▷ Hardwood Veneer & Plywood Mills	5	0	1	6	1	0	0	1
▷ Paint & Coating Mfg.	2596	0	0	2596	1	0	0	1
▷ Pharmaceutical & Medicine Mfg.	0	0	216	216	34	0	0	34
▷ Soap & Cleaning Compound Mfg.	551	0	0	551	0	0	0	0
▷ Universities	0	290	0	290	290	0	0	290
▷ Lead	23104	14	111380	134498	61	0	1070	1131

STEP 6: Click the hyperlinked name of a company if you wish to access additional information. A pop up window will list all ChemTRAC substances used or released by the company as well as their contact information and Environmental Statement (if provided).

DO YOU WANT TO KNOW WHICH CHEMICALS ARE USED AND RELEASED IN THE LARGEST OR SMALLEST QUANTITIES?

STEP 1: From the ChemTRAC homepage, click on the 'Disclosure Reports' tab or visit the page directly at this link: **http://app.toronto.ca/ctpd/findFacility.html**

STEP 2: Click on the **'By Substance'** link found directly below the **'Disclosure Reports'** tab.

STEP 3: Scroll down the chemical substance chart and look at the numbers listed in the various columns categorized under the headings **'Use (kg)'** and **'Release (kg)'**. Sub-headings for **'Use'** include (from left to right) **Processed**, **Manufactured**, **Other**, and **Total**. Sub-headings for **'Release'** include **Air**, **Land**, **Water**, and **Total**.

STEP 4: Compare the amounts listed in each column to find the largest and smallest values. Any substance that has a dash **'-'** indicates that the chemical has not yet been reported by any companies. If the value is zero **'0'** the substance has been reported on but no amount of the substance has been used or released.

5 DO YOU WANT TO KNOW MORE ABOUT A SPECIFIC INDUSTRY/SECTOR INCLUDING WHICH SUBSTANCES THESE BUSINESSES USE AND RELEASE?

STEP 1: From the ChemTRAC homepage, click on the **'Disclosure Reports'** tab or visit the page directly at this link: **http://app.toronto.ca/ctpd/findFacility.html**

STEP 2: Click on the **'By Industry'** link found directly below the **'Disclosure Reports'** tab.

STEP 3: The **'Industry Use and Release Report'** alphabetically displays a long list of industry sectors found in Toronto in an interactive chart. Scroll down the chart to find information on any given sector.

STEP 4: Learn more about which substances (chemicals) any given sector may use or release by clicking on the arrow located to the left of the sector name. If there is any data for this sector, a table will appear below the sector name with a list of substances and the quantities that have been used and/or released.

STEP 5: Dig deeper and learn about which specific businesses use and release this substance by clicking on the arrow to the left of the substance's name. A chart will expand underneath the substance you selected which includes a list of any companies that use and/or release the substance within this particular industry sector.

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▷ Plastic Pipe & Pipe Fitting Mfg								
▷ Plastic Plumbing Fixture Mfg								
▽ Plastics Bag Manufacturing								
▷ Particulate Matter 2.5 (PM 2.5)	0	508	0	508	508	0	0	508
▽ Volatile Organic Compounds (VOCs)	601019	1530	0	602549	592639	6854	0	599493
Eco II Manufacturing Inc	3160	0	0	3160	3160	0	0	3160
Hymopack Ltd	586935	0	0	586935	586935	0	0	586935
Polyc Packaging	1530	1530	0	3060	0	0	0	0
Polyson Polyethylene Products 1986 Ltd	6854	0	0	6854	0	6854	0	6854
T And L Plastic Industries Ltd	2540	0	0	2540	2544	0	0	2544
▷ Plumbing, Heating & AC Equip. & Supplies Whl								
▷ Polystyrene Foam Product Mfg								

STEP 6: Click the hyperlinked name of a company if you wish to access additional information. A pop up window will list all ChemTRAC substances used or released by the company as well as their contact information and Environmental Statement (if provided).

HELPFUL TIPS FOR USING THE INDUSTRY REPORT

A) The sectors shown are very specific in nature (e.g. 'Dry Pasta Manufacturing', 'Plastics Bag Manufacturing') because the list is organized based on the North American Industry Classification System (NAICS). NAICS codes help government classify, define and monitor businesses based on the type of economic activity they are involved in. You can learn more by visiting **http://www.statcan.gc.ca**.

B) The individual amount of a given substance that each company used or released can be compared to the total amount used by the sector, as shown in the shaded row of chemical data listed directly above the individual values. Please keep in mind that some businesses may use or release larger or smaller quantities of a substance for a range of reasons. The size of facilities and how much they manufacture varies and this can affect their substance values.

5 DO YOU WANT TO ACCESS THE ENTIRE CHEMICAL USE AND RELEASE DATASET?

For those who require the full dataset off-line for the purposes of mapping or data analysis, this information can be downloaded from two different City of Toronto websites:

OPTION 1: Download the dataset from the ChemTRAC website by visiting **app.toronto.ca/ctpd/chemicalReport.html**. Select the **'Substance Report'** year you want and click the **'Download'** button located near the top right corner of the chemical chart.

OPTION 2: Download the dataset from the Open Data website **www.toronto.ca/data** where City of Toronto departments share a wide range of datasets with the public. Visit the alphabetized Data Catalogue page and look under the letter **'C'** for **'Chemical Tracking (ChemTRAC)'**. Follow the instructions to access the files.

That's how you can access data from the Environmental Reporting and Disclosure Bylaw and the disclosure reports that companies are required to submit to the City of Toronto.

In the older parts of Toronto, businesses have historically been an important part of the mix in many communities while in outlying areas industries tend to be collected in small industrial parks near housing developments. Either way, pollutants can travel to your neighbourhood. If you are concerned about air pollutants, ChemTRAC and other resources offer the best public information available to help you find out more about them.

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Tool Kit Item # 6

REDUCING POLLUTANTS IN YOUR NEIGHBOURHOOD

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Tool Kit Item #6

REDUCING POLLUTANTS IN YOUR NEIGHBOURHOOD

If you live in a neighbourhood in the City of Toronto, the Environmental Reporting and Disclosure Bylaw and the ChemTRAC program can provide valuable information about pollutants. Here are some ways that you can use the Bylaw to gather information and work with your community and local businesses towards preventing pollution.

IDENTIFY NEARBY SOURCES OF POLLUTION USING CHEMTRAC

In order to exercise your 'right to know' about chemicals used and released in your community, start by visiting the City of Toronto's ChemTRAC website for more information at **www.toronto.ca/health/chemtrac/index.htm**. ChemTRAC identifies all of the companies that have reported their use and release of the 25 priority substances, as required by the Bylaw, across Toronto. Please read **Tool Kit #5** for detailed instructions and tips on using this site to get the chemical information you need. As you will learn from that Tool Kit, you can input an address on the map and it will show all of the companies that have reported nearby. Use your home address or another key landmark such as a nearby intersection to start.

MAKE A RECORD OF THE COMPANIES AND THE CHEMICALS CONTRIBUTING TO POLLUTION

Using the steps in Tool Kit #5 as a guide, write down which companies are reporting to ChemTRAC in your community. Take note of the companies that are sources of chemical releases and which are not. Determine which pollutants are present and how many kilograms (kg) are used and released of each chemical. Learn more about the potential health impacts of each substance by referring to **Tool Kit #2**.

You may notice that there are local companies you know of that are not showing up as ChemTRAC reporters. There could be a number of reasons why this is the case. The Environmental Reporting and Disclosure Bylaw that requires companies to report to ChemTRAC only focuses on 25 priority chemicals. There are many more chemicals released into Toronto, but Toronto Public Health identified these 25 as priority health concerns. Some companies are exempt from the Bylaw and others release one or more of these chemicals in such low quantities that they are below the threshold for reporting. In other cases, some companies may be required to report to ChemTRAC but they were unaware of the by-law.

RESEARCH OTHER COMPANIES THAT MIGHT RELEASE CHEMICALS

You can look up additional information on polluting companies in your community by consulting Canada's **National Pollutant Release Inventory** (NPRI) at **www.ec.gc.ca/inpr-npri/**. NPRI allows you to search by community, substance or facility. If you enter the first three digits of your postal code, for example, NPRI will tell you what companies in your area are releasing pollutants and how much of each chemical they are releasing every year. All 25 of the City's priority pollutants must be reported to NPRI. In addition, you will find hundreds of

other pollutants that aren't covered by the City's Bylaw. However, they are only reported if large amounts are being released. The thresholds for reporting are very high – on average 10 tonnes must be manufactured, processed or released before companies have to report. This means that you will find only the very large companies in your community on this database. Exceptions are made for mercury and lead, which must be reported at lower levels of release.

Ontario's Ministry of the Environment has also begum to require major companies to report their toxic chemical use and releases under the Toxics Reduction Act. You can search this information by looking up the city, facility name, company, sector or substance on an interactive map at the following site: **http://www.ene.gov.on.ca/environment/en/mapping/trais/index.htm**. The data collected by the province, which duplicates most of the NPRI data with the addition of acetone, can be found at: **http://www.ene.gov.on.ca/environment/en/resources/collection/data_downloads/index.htm#Toxics**. Under this Act, companies must also develop pollution prevention plans and share summaries of these plans with the public.

Aside from government run websites, there are a number of non-governmental groups that have designed helpful websites. For example, **Emitter** helps you find the major polluters in your neighbourhood using the same NPRI data but in a different, easy to use format. Emitter gives you the options of finding out the problems using riding boundaries or distances such as "within 5 kilometres". It ranks the polluters on a scale from "good" to "bad". If you click on the company, you will get a link to their NPRI information, their contact information and the contact information for your federal Member of Parliament. See **www.emitter.ca**/.

PollutionWatch is another site worth checking to locate polluting companies in your community and see the historical record. PollutionWatch is a project of the Canadian Environmental Law Association and Environmental Defence. Although the data on PollutionWatch only track pollutants up until 2006, PollutionWatch gives you the ability to look for health effects of certain chemicals, to find out whether pollutants are increasing or not, and ranks companies across Canada with respect to their emissions. This information and more is available at **www.pollutionwatch.org/**.

Lastly, **CAREX Canada** is a great website that profiles known and suspected carcinogens and provides estimates of both environmental and occupational exposure across Canada. In their Tutorials & Tools section you will find training modules and resources such as the eRisk Tool which can help you explore potential lifetime excess cancer risks due to environmental exposure. See **http://www.carexcanada.ca** for more details.

AUDIT YOUR NEIGHBOURHOOD BY DOING A WALK-AROUND

Are the companies now identified in your community and marked on your map the ones you've noticed or been concerned about in your neighbourhood? A good way to check the accuracy of ChemTRAC and other reporting programs like NPRI is to take a walk around the streets of your neighbourhood and find the companies that should have reported. Is the printing company around the corner reporting to ChemTRAC? What about the brewery a couple of streets over?

A good way to audit your community and to keep track of the reporting companies in your neighbourhood and assess local pollution problems is to create a community map. There are easy to use web-based programs such as Batchgeo found at **www.batchgeo.com** or Google's My Maps at **http://earth.google.com/outreach/tutorial_mymaps.html**. Another option is to

6

use a print out map and take it with you as you walk around your neighbourhood. This is a great activity to do with your family, neighbours or community association members to engage them on chemical pollution concerns as well as learn a lot more about your area!

If you find local companies that are not reporting to ChemTRAC, mark them on your map and take down information on the company such as their name, address and the type of business they run. To find out why these companies did not report or to get more information about ChemTRAC, email Toronto Public Health staff at **chemtrac@toronto.ca** or phone the City's customer service representatives about ChemTRAC at **3-1-1** within Toronto city limits (this service operates 24 hours a day, 7 days a week). It might be good news for your neighbourhood because the company has no pollutants and doesn't need to report, or you might have stumbled on a company that didn't know they had to report.

START A DIALOGUE IN YOUR COMMUNITY

Now you know what the air pollution problems in your neighbourhood are. If you find companies that are releasing pollutants into your neighbourhood at levels you find unacceptable, perhaps it's time to talk with your neighbours and local companies. Your strategy will be unique to your neighbourhood and the local situation. Some companies may be very willing to meet regularly with you, and some may require more pressure to make changes. You can be creative in how you pursue your objectives.

HERE ARE SOME IDEAS ON HOW TO GO FORWARD:

- **Form a group or work alone.** If you prefer to do it on your own, even one person's effort can make a big difference. Your voice is stronger if you are a member of a larger group. You may find that there already is a neighbourhood association or a local environmental group involved in an effort to improve local air quality e.g. the South Riverdale Community Health Group. If not, consider creating a group.

- **Decide on a plan and do additional research on the companies.** Do you want to approach one particular company that is located near you? Or do you want to tackle a number of different companies and see what response you get? For more information on individual companies, the Ministry of Environment can tell you what approvals have been given to companies through their permits to operate – called certificates of approval (C of A). You can also search the Internet to see if companies have been in the news for any reason – for example, if they've had a change of ownership or a serious spill.

- **Find the pollution prevention strategies that apply to this type of industry.** If it's a printing company, for example, look up examples of companies that have successfully implemented pollution prevention measures. Refer to **Tool Kit Item #4** for detailed information on pollution prevention case studies, resources and much more. As an example, Toronto Public Health has developed pollution prevention strategies for different industry sectors (**www.toronto.ca/health/chemtrac/gogreen.htm**) and in the United States there is a Toxics Use Reduction Institute dedicated to this work www.turi.org/.

6

HERE ARE SOME IDEAS ON HOW TO GO FORWARD: CONT'D

- **Raise your concerns with the company or companies that you have decided to approach.** You should have a contact name and address from the ChemTRAC website or NPRI. Write a letter or send an email that describes your interest in the air quality in your neighbourhood and how you might work together to improve it. Suggest that the company meet with your or your group keeping in mind that pollution prevention is a win-win for the company and the community. The company may be able to make relatively easy substitutions such as using water-based detergents instead of solvents for degreasing metals. In some cases, companies may have to make an investment in new equipment to reduce pollution. However, our pollution prevention case studies show that many of the companies that made these investments found that the payback period is often short, sometimes less than a year. Companies stand to save money on operating costs, improve conditions for workers in the plant, enhance their reputations as a green business, and, if they're really diligent, reduce their use and emissions of chemicals of concern to the point where they can avoid having to report to ChemTRAC.

- **If the company agrees to meet with you, consider proposing regular meetings.** Alternatively, if the company does not agree to meet with you or does not respond, consider having a meeting in a local community center about local air pollutants and invite the Ministry of Environment, representatives of the company and your Councillor. Call your local community newspaper in advance to advertise the meeting and also to let them know so they can attend and report on the discussion.

- **Inform your political representatives about your concerns.** When discussing pollutants in your neighbourhood, your local councillor should be the most receptive to your concerns. After all, he or she lives there too. Your Member of Provincial Parliament (MPP) should also be kept in the loop about your efforts to reduce pollution since pollution control is essentially the province's responsibility. Your federal Member of Parliament (MP) should also be kept informed. They are your representatives and your concerns should be their concerns.

6 FOR MORE RESOURCES TO ENHANCE THE DIALOGUE IN YOUR COMMUNITY:

GOOD NEIGHBOUR CAMPAIGNS

You can also benefit from the experience of other communities with what have been called "Good Neighbour Campaigns". Information on how other communities have made progress with neighbouring plants and the strategies and resources they used to take action is all available on their website: **www.goodneighbourcampaigns.ca**.

MINISTRY OF THE ENVIRONMENT POLLUTION HOTLINE

Whenever you smell or see a potential pollution problem, contact the Ministry of Environment immediately. Encourage other residents or other members of your organization to do the same. These complaints become part of the public record, create a paper trail and require the Ministry staff to investigate the issue. Complaints can be anonymous. However, it's better to leave your name and phone number so Ministry staff can update you and/or call you back for additional information. If you are calling during regular business hours, the number of the Toronto District Office is **416-326-6700**. To register a complaint after hours or on weekends, call the Pollution Hotline at **1-866-663-8477 (1-866-MOE-TIPS)**. This service is available 24 hours a day, 7 days a week.

TORONTO CANCER PREVENTION COALITION

The Toronto Cancer Prevention Coalition has a great website with lots of facts, studies and initiatives focused on reducing the risks of cancer in Toronto. There is an Environmental and Occupational Carcinogens Working Group, which has a wide ranging membership that includes community members and health, environmental, and labour organizations dedicated to working together to prevent cancer. Learn about their recommendations for action by visiting their website at **http://www.toronto.ca/health/tcpc/environment_occupation.htm** .

7

Tool Kit Item # 7

AUDITING YOUR WORKPLACE

7

Tool Kit Item #7

AUDITING YOUR WORKPLACE

If you work in a company in the City of Toronto, the Environmental Reporting and Disclosure Bylaw and the ChemTRAC program can provide valuable information about toxic pollutants in your workplace.

Under the Bylaw, thousands of companies in the City will publicly report their use and releases of 25 priority substances. Many of these can have serious health effects such as cancer or respiratory problems. This is as much a concern for you if you work for a company using these substances as it is for the surrounding neighbourhood. If you both work and live in the neighbourhood, then you have two good reasons to work towards pollution prevention. Workers will be the first to benefit from reductions brought about by the Bylaw. Here are some ways in which you can use the Bylaw and the City's ChemTRAC program to protect your health and the health of your co-workers.

CHECK WHETHER THE COMPANY YOU WORK FOR IS REPORTING TO CHEMTRAC

If you find your employer is a ChemTRAC reporting company, you will be able to consult the ChemTRAC database at **www.toronto.ca/health/chemtrac/**. **Tool Kit #3** provides an overview of the business sectors required to report to ChemTRAC and when. **Tool Kit #5** shows you how to look up a specific company name using the online ChemTRAC database. This will tell you which of the 25 priority chemicals are being used in your workplace and released into the air and in what volumes. You may want to keep a record of this information and see how it changes from year to year.

Another source of information about toxic chemicals used in your workplace is the Material Safety Data Sheets (MSDSs). In Canada under the Workplace Hazardous Materials Information System (WHMIS), the law requires a Material Safety Data Sheet for most materials or products that are used in the workplace. You can read the MSDS sheets carefully to see if the ChemTRAC chemicals are used in your workplace possibly at levels below the reporting thresholds or if there are other chemicals of concern being used that could be replaced or reduced.

TAKE THIS INFORMATION TO YOUR HEALTH AND SAFETY REPRESENTATIVE OR YOUR JOINT HEALTH AND SAFETY COMMITTEE

You may want to discuss the information reported to ChemTRAC with your health and safety representative or your joint health and safety committee. If you work in a workplace with more than 5 employees and less than 20, you must have a health and safety representative, and if your workplace has 20 or more employees, you must have a joint health and safety committee. Under the Ontario Occupational Health and Safety Act, the committee must be made up equally of both worker and management representatives.

The health and safety representative or committee can look at the use of these chemicals and investigate ways in which they can be reduced or eliminated. In many cases, there are safer chemicals that can replace the ones being used. In fact, in British Columbia the

Occupational Health and Safety Act requires companies that are using carcinogens to look for safer alternatives. Substitutions or reductions for any of these 25 chemicals will make your workplace healthier and safer.

You might point out that it benefits the company to reduce these chemicals so that if neighbouring residents ask about the ChemTRAC chemicals, your company is already taking positive action. Another good reason for your company to reduce these chemicals is to avoid having to report them to the City. In other places where governments have required reporting of toxic chemicals, many companies have been so successful in reducing their use of these chemicals that they no longer have any to report.

If you work in a unionized workplace, contact your national health and safety representative and ask them to help you push your company to do something. Another opportunity to raise concerns about toxic chemicals might be during the collective bargaining process when health and safety issues are being negotiated. If you work in a non-unionized workplace, it will be more challenging to raise your concerns but stressing the benefits to both workers and companies may convince some employers.

KEEP A PERSONAL CHEMICAL EXPOSURE JOURNAL

A personal chemical exposure journal can be another important way to influence companies to reduce hazardous chemicals. The purpose of a journal is to provide a record of hazardous chemicals that you have come into contact with at work. There are many ChemTRAC chemicals that are known to cause cancer or that probably or possibly cause cancer (See **Tool Kit #2**). Others cause respiratory problems. This record of your work history can provide necessary information to doctors, union representatives and the Workplace Safety and Insurance Board (WSIB) if you are seeking compensation for a work-related illness.

When you have found out which chemicals are being used, you can keep track of your exposure to these chemicals in a journal using the template provided here. Make sure you record the product name, supplier, date of the MSDS and the Chemical Abstract Service (CAS) number for every substance you are tracking. By identifying the most hazardous substances in your workplace and recording them, you can start a process to eliminate them or substitute for them with less harmful substances and processes. In some situations, the use of a specific substance is necessary to meet product specifications but in most cases, with more investigation, there are often other solutions such as elimination or substitutions to produce the same results. In the event that elimination or substitution are not possible options, then it is important to apply the **ALARA** principle, which states that exposures should be kept **A**s Low **A**s **R**easonably **A**chievable. This can be achieved by completely enclosing processes and using strict engineering controls. Personal protective equipment should only be used as a last resort.

This template for a Personal Chemical Exposure Journal has been developed by the Canadian Auto Workers union (CAW) and adapted for this Tool Kit. You can use it to record your exposure to hazardous chemicals in your workplace. You might also note what type of exposure you experienced – breathing or skin absorption. This record will be a powerful tool if a number of workers in your workplace keep these journals. Then you can show concrete evidence of your exposures and present a strong argument to your employer for reducing them. The CAW recommends that you keep these Journals in a safe place and tell your family members where you keep them in case of emergency.

PERSONAL CHEMICAL EXPOSURE *JOURNAL*

PERSONAL PROPERTY OF

Name: _____

Address: _____

_____

Postal Code: _____

Phone: _____

Cell: _____

Workplace: _____

Local Union: _____

Emergency Contact: _____

_____

JOURNAL RECORD TIMELINE

Start Date: _____

End Date: _____

EXPOSURE DATA

WORKPLACE AREA LOCATION	CHEMICAL	CHEMICAL ABSTRACT #	DATE

8

Tool Kit Item # 8

GETTING THE TOXIC 25 OUT OF YOUR HOME

8

Tool Kit Item #8

GETTING THE TOXIC 25 OUT OF YOUR HOME

Audit Your Home

Most people don't realize it, but the 25 priority ChemTRAC chemicals profiled in **Tool Kit #2** are not just coming from industries. You may be contaminating the air in your own home with the very same chemicals, thanks to common everyday products. Formaldehyde in nail polish, dichloromethane in paint stripper -- who would have thought cancer-causing substances would be allowed in our products! Air tests have found that pollution inside people's homes can be higher than the pollution outside.

An audit of your own house may be as important to your health as an audit of your community. It can also contribute to the City's efforts to reduce its overall pollution burden. The fewer toxic chemicals going into the air and down the drain means the less total pollution there is in the City. Here are suggestions on how to do your audit:

1. Gather every product in your home that contains any one of the toxic 25 or any other hazardous chemicals you wish to avoid. Look for products with warning labels that are framed in an octagon that looks like a traffic stop sign. This means the contents of the container are dangerous. The yellow octagon will often be on products like furniture polish or windshield washer fluid.

2. Dispose of these products at your local hazardous waste facility. Locations in Toronto and times for household hazardous waste drop offs can be found at **www.toronto.ca/garbage/hhw.htm** The City's website also lists Community Environment Days when household hazardous waste and recyclable goods can be dropped off at a convenient local spot.
   Go to **www.toronto.ca/environment_days/schedule.htm**

3. Replace them, if they are essential, with alternatives containing nontoxic ingredients.

Ready to start? Let's go through the rooms of your house and see what's there.

THE KITCHEN

Household cleaners: Check your cleaning products. The good news is that, in response to popular demand, many companies are now offering non-toxic products. However, if you're still using conventional products, they can be a serious source of Volatile Organic Compounds (VOCs) released into the air of your home when they're used. Cleaning products -- window cleaners, oven and drain cleaners, furniture polish, floor polish and wax, and disinfectants – may contain many other harsh ingredients that can affect your health. Disinfectants may contain formaldehyde, for example.

It's hard to know exactly which cleaning products contain the most harmful chemicals because companies do not have to list ingredients on their labels. Some companies now

make ingredient lists available on their websites, so it may be possible to check out some products. For example, Colgate reveals what's in some of its products at **www.colgate.ca/app/Colgate/CA/EN/HC/HomePage.cvsp** Ingredient disclosure is important, and those products that do list their ingredients are likely to be the better alternatives.

An easier way to find less toxic cleaners is to look for third-party certified products. If Canada's EcoLogo or the US Green Seal are on the labels, then these products are likely free of carcinogens and other toxic chemicals. They should be free of the "toxic 25". EcoLogo-certified products for home use can be found at **www.ecologo.org/en/greenproducts/**. It features companies like NatureClean in Markham that makes non-toxic cleaners for general cleaning, dishwashing, laundry and even body care. NatureClean products are also widely available.

Or make your own non-toxic cleaning products. It may be an "extreme" green solution but it is one way to make sure your cleaner is safe. Most cleaning can be done with very simple things like baking soda, lemon juice and vinegar. Recipes from the David Suzuki Foundation for green cleaning can be found at **http://www.davidsuzuki.org/publications/resources/2011/green-cleaning-recipes/index.php**

Here's one example...

Air Fresheners: Far from "freshening" the air, sprays or plug-in air fresheners release many hazardous chemicals into the air of your home. Fresheners can contain hundreds of different fragrance chemicals, many of them untested, many of them toxic. There's no way of knowing what you're putting into the air. Some products mask existing smells while others coat the nasal passage with an oily film. Opening the windows and bringing in real "fresh" air is one way to deal with odours, or a bowl of baking soda strategically placed. Baking soda absorbs odours naturally. Ditto for the bathroom.

Pesticides: Pesticides are meant to get rid of pests – whether they're weed killers, insect killers, flea products, moth crystals or fertilizer with weed killer. As the word "killer" suggests, they are almost always toxic. The formulas are secret but pesticides can contain polycyclic aromatic hydrocarbons (PAHs). Since the City and then the province of Ontario restricted

the use of harmful cosmetic pesticides for use on lawns or gardens, companies have come up with many non-toxic alternatives that are widely available. If you have old pesticide products stored away, check the active ingredients shown on the package and get rid of them at a hazardous waste depot.

And just as there are alternatives to weed-killers, there are also less toxic ways to get rid of insects. An excellent resource for alternative pesticides (and household cleaners) is the CancerSmart 3.1 Guide available at **www.toxicfreecanada.ca/** Alternatives to pesticides can also be found at: **www.beyondpesticides.org/alternatives/factsheets/index.htm**

THE LAUNDRY

Laundry detergents, fabric softeners and dryer sheets: A University of Washington study of a popular laundry detergent, fabric softener, dryer sheets and air fresheners found 58 different VOCs in the products. Fragrance ingredients in these products are likely sources of some VOCs. Because of this, it make sense to avoid products with fragrance as much as possible.

Look for green-certification labels like Ecolabel or Green Seal to find safer laundry products. Companies like NatureClean, Ecover, Sun & Earth, Seventh Generation and OxyPrime offer products that are less toxic than conventional laundry products. There are even alternatives to chlorine bleaches. Chlorine can lead to the creation of chloroform and other dangerous byproducts such as dioxin. Non-chlorine bleaches include OxyBoost or Ecover's hydrogen-peroxide based alternative.

Or make your own. Here's another suggestion, this time for a green laundry detergent.

8

LIVING ROOM

Furniture: Pressed wood used in furniture or other wood products can contain formaldehyde. Pressed wood can release formaldehyde and other volatile organic compounds (VOCs) into the air of your home. Plastic furniture and toys can expose you and your family to VOCs through their offgassing. This is not a problem with solid wood furniture. As well as solid wood, many other natural materials are now available for flooring, shelving and decks.

Lead paint: If your home was built before 1978 and any of the original paint remains, care should be taken during renovations. Disturbing the lead paint and releasing it into the air as dust can result in unnecessary exposure to lead. To avoid this, hire a professional to renovate your home. Alternatively, if you are doing it yourself, take precautions: isolate the area where you are working by covering doorways and vents with plastic sheeting and tape; cover all furniture with plastic; use a respirator; ventilate the area; and hepavacuum the dust every day. These are all important for avoiding exposure. For more on lead in older homes, see Canada Mortgage and Housing's fact sheet at **www.cmhc-schl.gc.ca/en/co/maho/yohoyohe/inaiqu/inaiqu_007.cfm**

Carpet Cleaners: Carpet cleaners often contain 2-butoxyethanol, a suspected reproductive toxicant. Although it's not on the City's list, it's still one to be careful with. Like other cleaning products, there are companies that make less toxic alternatives. Carpet stains should be removed as quickly as possible with water or club soda. Baking soda and water also work as cleaning agents for carpets.

THE BATHROOM

Personal Care Products: Shampoos, bath products, cleansers, mouthwash, toothpastes – you never know what chemicals might be found in these products. Many contain fragrance, which can be any combination of 3,000 different synthetic chemicals. For help in sorting out the good from the not-so-good, look up your products on the SkinDeep Database. For help in finding less toxic products, see the Guide to Less Toxic Products at **www.lesstoxicguide.ca**

Thermometers: Thermometers have always used mercury to gauge your temperature when you're sick. When it's enclosed, it's safe enough, but if your thermometer breaks and you're replacing it, look for the new mercury-free thermometers.

Polyvinyl Chloride (PVC): Shower curtains, bath toys and many other common plastic products in your home are made of polyvinyl chloride (PVC). Shower curtains release many different VOCs. Avoid purchasing plastic #3, PVC/vinyl. For more nformation, try Greenpeace's PVC Alternatives Database.

THE BEDROOM

Dry Cleaning Clothes: Perchloroethylene, or perc (the same as tetrachloroethylene), is what most dry cleaners use to dry clean your clothes. When clothes come back from the cleaners, they still have residues of perc in them. Studies show that people breathe low levels of this chemical both in rooms where dry-cleaned goods are stored and as they wear them (US EPA). If your clothes have a strong chemical odour when you pick them up, do not accept them until they have been properly dried. If available, clean your "dry clean only" clothes at

a dry cleaning facility that does not use trichloroethylene. Look for dry cleaners that use wet cleaning techniques, carbon dioxide cleaning or Green Earth. Or, safer yet, when possible buy clothes that can be washed and don't require dry cleaning. Spot cleaning products may also use trichloroethylene for their effectiveness.

Shoe cleaners and Waterproofing Sprays: Shoe cleaners can contain dimethicone or trichloroethylene, while waterproofing sprays and shoe cleaning sprays may contain trichloroethylene. Minimize or avoid the use of these products, or use outdoors if you choose to use them.

Permanent Press Fabrics: If you're trying to avoid ironing, you might buy permanent press fabrics. However, be aware that formaldehyde may be added to give clothes that permanent press feature.

Cosmetics: Many brands of nail polish have formaldehyde, while nail polish remover usually contains acetone. Safer water-based nail polishes and polish remover are available from a Canadian company called Suncoat. Information and materials (some bilingual) can be found on Environmental Defence's website **justbeautiful.ca**

Children's Toys and Jewellery: Tests by Health Canada show that children's toys and jewellery can contain lead and cadmium. Children's jewellery which looks silver may actually contain high lead and cadmium levels. Plastic toys may also have lead as an unintentional additive.

THE BASEMENT OR GARAGE

Stored fuels: Fuels such as kerosene for space heaters or gasoline for lawn mowers stored in a garage or basement can be sources of benzene and other hazardous VOCs.

Paints: Paints may contain such toxic ingredients as ethylbenzene and release VOCs. Fortunately, many paint companies now offer low VOC or VOC free paints to make painting a less hazardous task. Any painting that's done in your home should be done with maximum ventilation during painting. It's also important to buy what you are going to use and to avoid having paint left over when possible. Paint supplies and special fuels that are not used immediately should be discarded. Paint cans, when they are being stored, should be tightly sealed so that paint does not continue to release low levels of VOCs. And be careful with aerosol spray paints. They can be particularly harmful to your lungs because the small particles make it easier to inhale the chemicals.

Paint Strippers: Some paint strippers contain the carcinogen methylene chloride (dichloromethane). Try to avoid these products.

Automobile Emissions: Cars housed in attached garages can also be a source of benzene in the home. Canada Mortgage and Housing Corporation (CMHC) found that houses with attached garages had measurable levels of benzene while houses without attached garages had little or no benzene. This is why it is important not to idle your car in a garage. Information on ways to minimize the benzene in homes with attached garages can be found at: **www.cmhc-schl.gc.ca/en/co/maho/yohoyohe/inaiqu/inaiqu_010.cfm**

8 FINISHED YOUR AUDIT?

When you've finished auditing your home and have identified the hazardous products that you no longer want to keep, they need to be disposed of safely. If you live in the City of Toronto, please visit **http://www.toronto.ca/garbage/hhw.htm** for more information on available drop-off and collection services for Household Hazardous Waste. If you live outside of Toronto, please contact your municipal solid waste department.

Do your own sleuthing:

- Toronto Public Health's resource 'Hidden Exposures': **http://www.toronto.ca/health/hphe/pdf/hidden_exposures.pdf**
- Care2 Healthy Home: **http://www.care2.com/greenliving/**
- Global Steward's Your Home and Your Garden sections: **http://globalstewards.org/**
- The New Jersey Department of Environment has a one-page fact sheet that offers alternatives to indoor pesticides: **www.nj.gov/dep/enforcement/pcp/bpo/pem/handouts/Doc13_IndoorPests.pdf**

Wordsworth, Anne, Heather Marshall, and Sarah Miller.
TORONTO TOXIC REDUCTION TOOL KIT.
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Toronto Cancer Prevention Coalition

TORONTO

CHEMTRAC