Environment Canada Environnement Canada

Canadian Environmental Protection Act, 1999

Annual Report

for April 2013 to March 2014

Canada

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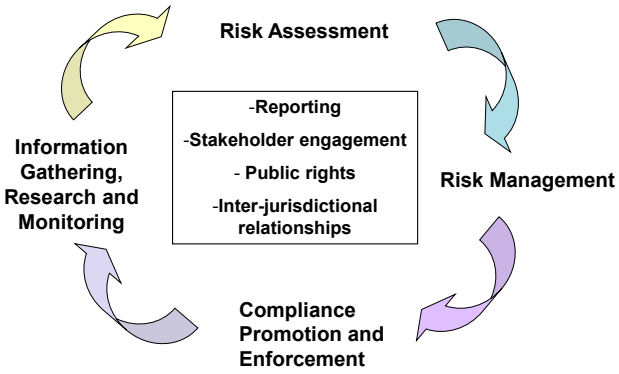
1 Introduction

This annual report provides an overview of the activities conducted and results achieved under the *Canadian Environmental Protection Act, 1999* (CEPA 1999) from April 1, 2013, to March 31, 2014. Both the Minister of the Environment and the Minister of Health jointly administer the task of assessing and managing the risks associated with toxic substances. This report responds to the statutory requirement in section 342 of the Act to provide annual reports to Parliament on the administration and enforcement of the Act.

CEPA 1999 provides authority for the Government of Canada to take action on a wide range of environmental and health risks—from chemicals to air pollution to wastes. For the most part, it functions as an enabling statute, providing a suite of instruments and measures for identifying, assessing and addressing the risks.

The general steps followed to address each risk can typically be organized into a cycle: information is collected to understand risks and inform decisions; risks are assessed to determine if action is required; risk management instruments are put in place to reduce or eliminate risks to the environment and/or human health; these instruments may require compliance promotion and enforcement; and information is once again collected to monitor progress and determine if additional action is required. At each stage in the cycle, stakeholders are engaged, the public has the opportunity to be involved, the government works closely with provincial, territorial and Aboriginal counterparts, and information is reported to the public.

Figure 1: The CEPA management cycle



This report provides information on all stages of the CEPA cycle. Section 2, Addressing Key Risks, covers information gathering, research and monitoring, risk assessment, and risk management for toxics, air pollution, greenhouse gases, water quality and waste. Section 3, Administration, Public Participation and Reporting, covers reporting, stakeholder engagement, public rights and inter-jurisdictional relationships. Section 4 describes compliance promotion and enforcement activities.

2 Addressing Key Risks

2.1 Toxic Substances Harmful to Human Health or the Environment

Parts 5 and 6 of CEPA 1999 includes specific provisions for data collection, assessment and management for controlling toxic substances. Substances include both chemicals and living organisms (specific information on living organisms begins in Section 2.2). For chemicals, part of this included a requirement for the Minister of the Environment and the Minister of Health to sort through, or "categorize," the substances on the Domestic Substances List, an inventory of approximately 23 000 substances manufactured in, imported into or used in Canada on a commercial scale. The categorization process identified for more detailed assessment approximately 4 300 substances that:

- were suspected to be inherently toxic to humans or to the environment, and are persistent (take a very long time to break down) or bioaccumulative (collect in living organisms and end up in the food chain); or
- present the greatest potential for exposure to Canadians.

The Chemicals Management Plan (CMP) is a program to protect Canadians and their environment from exposure to harmful chemicals and living organisms. It includes a number of activities for which the obligations or authorities are spread throughout CEPA 1999. The Chemical Substances website (www.chemicalsubstances.gc.ca) provides more information on activities related to the CMP.

Under the CMP, the government conducts pre-market assessments of health and environmental effects of approximately 500 substances that are new to Canada each year. The CMP also provides one of the most comprehensive approaches in the world to assessing risks from the tens of thousands of substances that came into use before these new substance requirements were in place.

At the core of the CMP is a commitment to address, by 2020, some 4300 substances of potential concern that were already in commerce in Canada when a pre-market notification requirement was introduced under CEPA 1999.

2.1.1 Monitoring, Research, Information Gathering and Risk Assessment Activities

Monitoring

Monitoring and surveillance activities are essential to identify and track levels and trends related to chemicals in the environment and human exposure to those chemicals.

In 2013–2014, a broad range of chemical monitoring activities were undertaken in support of the CMP, the Northern Contaminants Program, the Great Lakes Surveillance Program, the Great Lakes Water Quality Agreement, the Great Lakes Herring Gull Contaminants Monitoring Program, as well as the Arctic Council's Arctic Monitoring and Assessment Programme, the United Nations Environment Programme Stockholm Convention on Persistent Organic Pollutants, and the United Nations Economic Commission for Europe Convention on Long-range Transboundary Air Pollution.

The CMP Monitoring and Surveillance Program involves the collection of data on the concentration of chemical substances in environmental compartments at locations across Canada. Environmental compartments include surface water, sediment, air, aquatic biota and wildlife. Wastewater system influent, effluent and biosolids are also monitored at select locations representing a range of input and treatment system types.

Through the program, many priority substances, including polybrominated diphenyl ethers (PBDEs), other flame retardants, perfluorinated compounds (including PFOS and PFCAs), siloxanes, triclosan, bisphenol A (BPA) and metals, have been measured to provide environmental data for risk assessment and risk management decision making. The collection of data on these substances will establish baseline information and ultimately allow for the analysis of temporal trends—a key element of measuring the

performance of risk management activities.

Health Canada monitoring activities focused on human exposure to contaminants, including measurement of chemicals in household dust, volatile organic compounds in drinking water, a selection of chemicals in indoor air, hexachloro-norborne-based flame retardants in human milk and serum, and phthalates and BPA exposure in pregnant women.

Health Canada released *The Second Report on Human Biomonitoring of Environmental Chemicals: Results of the Canadian Health Measures Survey (CHMS) Cycle 2 (2009–2011)*. This report presents national biomonitoring data on the Canadian population's exposure to chemicals.

In addition to data collection and reporting on a range of chemicals, monitoring efforts in 2013–2014 also included upgrades to monitoring technologies and establishing new sampling techniques and methodologies to detect trace contaminants in the environment.

For more information about monitoring activities, visit www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=F79B71E4-1.

Research

Environment Canada and Health Canada conduct a wide range of research under the authority of CEPA 1999. Among other purposes, this research is designed to fill data gaps in risk assessments; evaluate the impact of toxic substances and other substances of concern on the environment and human health; determine the extent of ecological and human health exposure to contaminants; and provide specialized sampling and analytical techniques for monitoring and for enforcement.

Health Canada undertakes research to support the development of regulations, guidelines and air quality objectives with the goal of reducing population exposures to pollutants and improving human health.

During 2013–2014, research was carried out under a number of programs, including the CMP, the Northern Contaminants Program, the Strategic Technology Applications of Genomics in the Environment Program and the Great Lakes Action Plan.

During 2013–2014, research was initiated on a number of subjects, including the atmospheric degradation of priority chemicals (i.e., flame retardants), and development of analytical methods for determining (alkyl) substituted phenylamine antioxidants in water, wastewater, biosolids, sediments and biotic tissues.

Ongoing research continued on the exposure and toxicity of CMP priority chemicals such as endocrine-disrupting compounds, azo and benzidine dyes, phthalates, flame retardants, perfluoroalkyl substances (PFASs) and nanomaterials (silver). Research also continued on aquatic and atmospheric mercury in the Arctic; endocrine-disrupting compounds including hydroxylated polychlorinated biphenyls (PCBs); emerging metabolites of CMP priority pollutants in humans; volatile organic compounds in residences; levels of metals and emerging organic pollutants in polar bears; toxicity and accumulation of rare earth elements in plants and invertebrates; priority organic chemicals; ecotoxicity of xanthene dyes and non-chlorinated bisphenol (binox); organophosphate esters and phthalates in house dust; effects and toxicity of chemical mixtures; and effects of chemicals on endocrine systems.

A number of research projects were completed in 2013–2014. For some, data analysis is under way, and for others, reports have been or are in the process of being published in peer-reviewed scientific journals. Research subjects include:

- **polycyclic aromatic hydrocarbons:** occurrence in avian tissue; avian mRNA expression; atmospheric measurements using improved tools and techniques;
- **flame retardants:** breakdown and metabolism: occurrence in avian eggs and in St. Lawrence River fish; in ovo effects; presence in house dust; maternal transfer to eggs in avian species; avian cytotoxicity and mRNA expression; investigating non-brominated flame retardants to understand fate and global loadings from long-range transport; toxicity to a series of aquatic organisms of different taxonomic groups; impacts on *Daphnia magna*; fate and presence in remote aquatic environments; potential toxic effects relevant to humans; neurotoxicity;

- **aromatic azo and benzidine substances:** genotoxicity and environmental fate in aquatic environments; chronic toxicity in invertebrates and fish; bioaccumulation, bioavailability and toxicity in aquatic organisms;
- **siloxanes:** improved techniques for predicting atmospheric persistence in air; determination in biota;
- **persistent organic pollutants:** impact on gene expression: levels of different persistent organic pollutants in humans; atmospheric measurements using improved tools and techniques; long-term monitoring to validate models;
- **inorganics:** effects and bioaccumulation potential in soil organisms and aquatic organisms;
- **metals:** speciation, bioaccessibility and transformation in house dust; ecorisk assessment of mercury;
- **perfluoroalkyl substances and their precursor compounds:** characterization; contributions of point and non-point sources; guidance on passive and active air sampling methods; multimedia trends and impacts of long-range atmospheric transport;
- **nanomaterials:** methods to identify and characterize nanoparticle emissions in indoor environments; predicting toxicity based on size and surface characteristics; influence of physicochemical characteristics on toxicity; in vitro studies on the toxicity of silica nanoparticles and factors influencing their potency; toxicity and factors influencing potency; characterization of carbon-based, zinc oxide, titanium dioxide and silver nanoparticles; toxicological effects following exposure; detection in commercial products and the environment;
- **pharmaceutical and personal care products:** bioaccumulation and toxicity; occurrence and fate in wastewater treatment systems and effluents.

Information Gathering and Risk Assessment

New Substances Risk Assessment

Substances that are not on the Domestic Substances List are considered to be new to Canada. New substances may not be manufactured in or imported into Canada unless the Minister of the Environment has been notified with certain prescribed information and the period for assessing the information has expired. New substances include living organisms, and reporting on living organisms is included in Section 2.2 of this report.

In 2013–2014, 506 new substance notifications were received pursuant to s81 of the Act and in keeping with the *New Substances Notification Regulations (Chemicals and Polymers)* and the *New Substances Notification Regulations (Organisms)*.

Some of the 506 new substances notifications related to nanomaterials and substances that have the potential to be manufactured in the nanoscale.

For new substances in products regulated under the *Food and Drugs Act*, 68 notifications for chemical/polymer substances and 3 notifications for living organisms were received and assessed in 2013–2014.

Since September 2001, substances in products regulated under the *Food and Drugs Act* have been subject to the the new substances provisions in CEPA. Substances that were in products that were regulated under the *Food and Drugs Act* and that were in Canadian commerce between January 1, 1987, and September 13, 2001, were placed on an administrative list, called the In Commerce List. The updated Revised "In Commerce List" (R-ICL), containing approximately 3400 substances, was published on Health Canada's website in May 2013. In 2013–2014, 1373 substances on the R-ICL underwent prioritization (identifying substances of higher, medium and lower concern).

Chemicals Management Plan

Under the CMP, Environment Canada and Health Canada continued to gather information and assess the potential ecological and health risks from the remaining high-priority substances of the first phase of the CMP under the Challenge and the Petroleum Sector Stream Approach. They also continued data

collection and assessment work as part of the second phase of the CMP under the Substance Groupings Initiative and the Rapid Screening Approach.

The Challenge

Through the Challenge program of the CMP, the Ministers committed to addressing the 200 highest-priority substances. These 200 substances were divided into 12 smaller groups or "batches" that were addressed sequentially. Each batch of substances in the Challenge progressed through various information gathering, screening assessment, risk management, and compliance promotion and enforcement (where appropriate) stages. To date, 42 of these substances have been found to meet one or more of the criteria in section 64[1] of CEPA 1999. During the 2013–2014 period, risk assessment and risk management work was ongoing to complete the last batch for this initiative.

The Petroleum Sector Stream Approach

The Petroleum Sector Stream Approach includes approximately 170 substances identified as priorities for action through the categorization process and that were set aside to be addressed in a sectoral approach. A large portion of high-priority petroleum substances are used or manufactured during petroleum refining or bitumen/heavy crude oil upgrading activities. Data collection, risk assessment and, where appropriate, risk management are continuing on the substances that are part of this initiative.

During 2013–2014, the Minister of the Environment and the Minister of Health published the draft screening assessment reports for seven substances, including Fuel Oil No. 2, Fuel Oil No. 4, Fuel Oil No. 6 and residuals, as well as aviation fuels. In addition, both Ministers published the final screening assessment reports for 54 substances including site-restricted petroleum and refinery gases, industry-restricted low boiling-point naphthas, petroleum and refinery gases, heavy fuel and gas oils. Details of these assessments are listed in Table 1.

During 2013–2014, information received under a Notice issued under section 71 of CEPA 1999 in December 2011 continued to be analyzed to inform the risk assessment of petroleum substances that may be present in consumer products.

The Substance Groupings Initiative

One of the current key initiatives under the CMP is the Substance Groupings Initiative. This was launched on October 8, 2011, and includes the following nine groups of substances:

- aromatic azo- and benzidine-based substances
- boron-containing substances
- certain internationally classified substances with potential for exposure to individuals in Canada
- certain organic flame retardants
- cobalt-containing substances
- methylenediphenyl diisocyanates and diamines
- phthalates
- selenium-containing substances
- substituted diphenylamines

During 2013–2014, the Minister of Health and the Minister of the Environment published draft Screening Assessment Reports for 244 of the 358 aromatic azo- and benzidine-based substances, including 42 benzidine-based dyes, 5 diarylinde yellow pigments, 33 monoazo pigments, 73 azo disperse dyes, 22 azo solvent dyes, and 69 azo direct dyes and azo reactive dyes.

In 2013–2014, the Minister of the Environment issued two Notices under section 71 of CEPA 1999 to gather information to support the Substance Groupings Initiative. One Notice applied to 23 substances that are part of the Selenium Substance Grouping, and the second applied to 28 Phthalate substances, 14 of which are part of the Phthalates Substance Grouping, and 14 additional substances that are under consideration for inclusion in the grouping.

1 Under section 64 of CEPA 1999, "a substance is toxic if it is entering or may enter the environment in a quantity or concentration or under conditions that

(*a*) have or may have an immediate or long-term harmful effect on the environment or its biological diversity;

(*b*) constitute or may constitute a danger to the environment on which life depends; or

(*c*) constitute or may constitute a danger in Canada to human life or health."

In addition, the departments completed analysis of the information collected from the CEPA section 71 Notices that they had previously issued for Triclosan, Cobalt-containing substances, Methylenediphenyl diisocyanates and diamines, Internationally Classified substances, Substituted diphenylamines and certain organic flame retardants. The information from these data-gathering initiatives will be used to inform ecological and human health risk assessments and, if necessary, risk management of these substances.

The Domestic Substances List Inventory Update

Building on the first phase of the Domestic Substances List Inventory Update (DSL IU), the second phase of the DSL IU was launched in December 2012 with the publication of a section 71 Notice. In total, 626 responses were received, processed and analyzed in 2013–2014.

The updated information on the commercial status of approximately 2700 substances that are remaining priorities under the CMP will support subsequent risk assessment and risk management activities.

The Rapid Screening Approach

The rapid screening approach is utilized for substances of lower concern. This approach uses a series of qualitative and quantitative steps to efficiently evaluate the likelihood that a substance may cause harm, given conservative estimates of exposure. At each step in the rapid screening process, any substance that appears to present a potential for harm will be identified as requiring further assessment. For those substances that pass through all steps of the rapid screening without being identified as requiring further assessment, the government will conclude that the substances do not require risk management.

In April 2013, the Minister of the Environment and the Minister of Health completed and published the final screening assessment report for 533 substances of low concern.

In June 2013, a draft rapid screening assessment for 140 substances of phase 1 of the Inventory update was published in the *Canada Gazette* for a 60-day public comment period. The final screening assessment report published on March 29, 2014, concludes that 117 of the substances do not meet any of the criteria set out under section 64 of CEPA 1999.

Summary of Screening Assessment Progress

Screening assessments are conducted to determine whether substances meet or are capable of meeting any of the criteria set out in section 64 of CEPA 1999. The results of the screening assessments are published in draft form on the Chemical Substances website, and the Ministers of the Environment and of Health publish a notice in the *Canada Gazette*, Part I to indicate that the draft assessments are available for comment. Interested parties can submit written comments during a 60-day public comment period. After taking into consideration comments received, the Ministers publish final assessment reports.

Table 1 lists the 2013–2014 assessment conclusions and proposed measures for 1063 existing substances (note that information on assessments of living organisms is included in Section 2.2 of this report).

Health Canada also continued to accept and review submissions for new substances used in products regulated by the *Food and Drugs Act* in order to determine their potential impacts from release to the environment. Health Canada also continued its *Food and Drugs Act* re-evaluation of food additives and food packaging materials and assessment of food contaminants.

Work also continued on the re-evaluation of previously approved pesticides according to legislated timelines and requirements under the *Pest Control Products Act*, as well as on continuing to monitor health and environmental incidents related to pesticides, analyzing trends and sales data, and taking regulatory action as needed. More information can be found at www.chemicalsubstances.gc.ca.

2.1.2 Risk Management Activities

Along with the results of the screening assessment, the Ministers must publish in the *Canada Gazette* their final recommendation to the Governor in Council by choosing one of the following three "measures": adding the substance to Schedule 1 of CEPA 1999 (the List of Toxic Substances), adding it to the Priority Substances List for further assessment, or proposing no further action in respect of the substance.

Ministers may recommend the addition of a substance to Schedule 1 of CEPA 1999 to the Governor in Council if a screening assessment shows that a substance meets one or more of the criteria set out in section 64 of CEPA 1999. The Governor in Council may then approve an order specifying its addition to Schedule 1. The decision to recommend adding a substance to Schedule 1 obliges the Ministers to develop a "regulation or instrument respecting preventive or control actions" within specific time periods.

Table 1: Summary of existing substance assessment decisions published from April 2013 to March 2014

(NFA: no further action)

Substances (and Number of Substances)	Meet s. 64 Criteria	Proposed Measure	Draft Notice*	Final Notice*
Batch 12 (2 substances reassessed)	No	NFA	Mar. 29, 2014	
Azo Direct Dyes and Azo Reactive Dyes (69 substances)	No	NFA	Mar. 29, 2014	
Rapid screening of substances from Phase One of the Domestic Substances List Inventory Update (117 substances)	No	NFA	Jun. 15, 2013	Mar. 29, 2014
Certain substances on the Domestic Substances List used primarily as pharmaceuticals (28 substances)	No	NFA	Mar. 22, 2014	
Ethylbenzene	Yes	Add to Schedule 1	Feb. 8, 2014	
Hexachloroethane	No	NFA	Feb. 8, 2014	
Ethene	No	NFA	Jan. 25, 2014	
BDTP	Yes	Add to Schedule 1	Jan. 25, 2014	
Industry-restricted petroleum and refinery gases (4 substances)	Yes	Add to Schedule 1	Apr. 28, 2012	Jan. 18, 2014
Tetrabromobisphenol A (TBBPA) and 2 of its derivatives (3 substances)	No	NFA	Nov. 10, 2012	Nov. 30, 2013
Azo Solvent Dyes (22 substances)	Yes (2 substances)	Add to Schedule 1 (for the 2 toxic substances)	Nov. 2, 2013	
Azo Disperse Dyes (73 substances)	Yes	Add to Schedule 1	Nov. 2, 2013	
Monoazo Pigments (33 substances)	No	NFA	Nov. 2, 2013	
Hexanedioic acid, bis(2-ethylhexyl) ester (DEHA)	Yes	Add to Schedule 1	Oct. 12, 2013	
Industry-restricted gas oils (2 substances)	No	NFA	May 12, 2012	Jul. 27, 2013
Industry-restricted heavy fuel oils (5 substances)	No	NFA	Apr. 21, 2012	Jul. 27, 2013
Industry-restricted low boiling-point naphthas (3 substances)	No	NFA	Apr. 21, 2012	Jul. 27, 2013
Acetone	No	NFA	Jul. 6, 2013	
Propene	No	NFA	Jul. 6, 2013	
Biphenyl	No	NFA	Jul. 6, 2013	

Table 1 (Concluded)

Substances (and Number of Substances)	Meet s. 64 Criteria	Proposed Measure	Draft Notice*	Final Notice*
Batch 12 (4 substances)	Yes (mitotane and chlorhexidine acetate)	NFA for 2 substances and add to Schedule 1 for 2 toxic substances	Jul. 6, 2013	
Batch 12 (9 substances)	No	NFA	Jan. 8, 2011	Jun. 29, 2013
Diarylide yellow pigments (5 substances)	No	NFA	Jun. 15, 2013	
Benzidine-based dyes and related substances (42 substances)	No	NFA	Jun. 15, 2013	
1,1-Dichloroethene	No	NFA	Dec. 17, 2011	Jun. 1, 2013
1,2-Dibromoethane	No	NFA	Dec. 17, 2011	Jun. 1, 2013
Site-restricted petroleum and refinery gases (40 substances)	Yes	Add to Schedule 1	Jan. 15, 2011	Jun. 1, 2013
Fuel Oil No. 2	Yes	Add to Schedule 1	Jun. 1, 2013	
52 substances with high hazard potential on the Domestic Substances List	No	NFA**	Jul. 2, 2011	May 25, 2013
Rapid screening of substances of low concern (533 substances)	No	NFA	Jun. 18, 2011	Apr. 20, 2013
Aviation fuels (3 substances)	No	NFA	Apr. 13, 2013	
Fuel Oil No. 4, Fuel Oil No. 6 and Residual Fuel Oil (3 substances)	No	NFA	Apr. 13, 2013	

* The dates are those on which the draft and final notices were published in the *Canada Gazette*, Part I.
** Significant New Activity Notice proposed (see Table 6).

Table 2 lists the substances or groups of substances that the Ministers proposed to be added to Schedule 1 of CEPA 1999 in 2013–2014. Table 3 lists the substances or groups of substances that were added to Schedule 1 in 2013–2014.

Table 2: Proposed orders adding substances to Schedule 1 of CEPA 1999 from April 2013 to March 2014

Substance	Draft Order*
40 site-restricted petroleum and refinery gases	Feb. 15, 2014
4 industry-restricted petroleum and refinery gases	Feb. 15, 2014

* The dates are those on which the draft orders were published in the *Canada Gazette*, Part I.

Table 3: Orders adding substances to Schedule 1 of CEPA 1999 from April 2013 to March 2014

Substance	Final Order*
Perfluorooctanoic acid, which has the molecular formula $C_7F_{15}CO_2H$ (PFOA), and its salts	Nov. 6, 2013
Compounds that consist of a perfluorinated alkyl group that has the molecular formula C_nF_{2n+1} in which n=7 or 8 and that is directly bonded to any chemical moiety other than a fluorine, chlorine or bromine atom (precursors of PFOA)	Nov. 6, 2013
Perfluorocarboxylic acids that have the molecular formula $C_nF_{2n+1}CO_2H$ in which $8 \leq n \leq 20$ (long-chain PFCA) and their salts	Nov. 6, 2013
Compounds that consist of a perfluorinated alkyl group that has the molecular formula C_nF_{2n+1} in which $8 \leq n \leq 20$ and that is directly bonded to any chemical moiety other than a fluorine, chlorine or bromine atom (long-chain PFCA precursors)	Nov. 6, 2013

* The dates are those on which the final orders were published in the *Canada Gazette*, Part II.

The CMP uses a wide range of risk management instruments, including regulations, pollution prevention plans, environmental performance agreements, permits, substance lists, guidelines, codes of practice and significant new activity notification provisions. These instruments can address any aspect of the substance's life cycle, from the research and development stage through manufacture, use, storage, transport and ultimate disposal or recycling.

In addition to implementing existing risk management instruments during the reporting period, the CMP published 8 final risk management instruments to address 14 toxic substances or groups of substances as well as 1 proposed instrument to address another substance.

In general, when a draft risk assessment proposes a conclusion that the substance is "toxic" under CEPA 1999, the CMP develops and publishes a risk management scope at the same time as the draft assessment report. Risk management scopes are used as discussion documents to engage stakeholders on potential risk management actions. A scope briefly describes the health or environmental concern, the activities potentially impacted and the type of risk management actions being considered. In 2013–2014, scopes were published for the following substances:

- mitotane and chlorhexidine acetate (Challenge Batch 12)
- Fuel Oil No. 2 (Petroleum Sector Stream 3)
- BDTP and ethylbenzene (legacy substances)
- Azo Disperse Dyes, Solvent Yellow 77 and Pigment Red 4 (Aromatic Azo and Benzidine-based Substance Grouping)

Similar to the risk management scopes, when the final screening assessment report concludes that a substance is "toxic" under CEPA 1999, a risk management approach document is developed and published at the same time as the final risk assessment report. The risk management approach document provides a more detailed description of the risk management being considered. It builds on the risk management considerations outlined in the risk management scope document and considers new information, including comments, received during the above-mentioned 60-day comment period. The release of a risk management approach document is followed by a 60-day public comment period, providing additional opportunity for stakeholders to comment on the proposed risk management actions. In 2013–2014, risk management approaches were published for the following substances:

- site-restricted petroleum and refinery gases (this covered 40 substances)
- petroleum and refinery gases (4 substances)

Regulations

On June 22, 2013, Environment Canada published proposed *Regulations Amending the PCB Regulations and Repealing the Federal Mobile PCB Treatment and Destruction Regulations*. The amendments address the practical challenges of identifying and removing from service certain electrical equipment containing PCBs by extending their end-of-use timelines to 2025. They also repeal the *Federal Mobile PCB. Treatment and Destruction Regulations*, which are no longer required.

In 2013–2014, Health Canada prepared tris (2-chloroethyl) phosphate (TCEP) regulations for publication in the *Canada Gazette*, Part II under the *Canada Consumer Product Safety Act*. Work also continued to advance a risk management measure and regulations on 2-(2-methoxyethoxy) ethanol (DEGME).

The *PCB Regulations* have been successful in achieving the first of their key objectives, specifically, the destruction of PCBs that were in storage when the Regulations came into force in 2008. The Regulations include limits on how long PCBs can remain in use and in storage, and require their destruction. At the end of 2013, there were 626 tonnes of PCBs still in use and 30 tonnes of PCBs in storage. Since 2008, 2442 tonnes of PCBs have been destroyed.

Government Operations and Federal and Aboriginal Lands

Part 9 of CEPA 1999 provides the authority to make regulations, objectives, guidelines and codes of practice that apply to departments, boards and agencies of the Government of Canada, federal works and undertakings, federal land, Aboriginal land, persons on that land and other persons insofar as their activities involve that land, and Crown corporations.

The *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations* seek to reduce the risk of contaminating soil and groundwater as a result of spills and leaks of petroleum products and allied petroleum products from storage tank systems. The Regulations also establish technical standards for the design and installation of storage tank systems as well as a registry.

In 2013–2014, there were 1 028 new storage tank identifications submitted to Environment Canada through the Federal Identification Registry of Storage Tank Systems. To date, 1 285 regulatees have identified approximately 17 000 storage tanks to Environment Canada through the Federal Identification Registry of Storage Tank Systems database for a total volume capacity of 2.57 billion litres of petroleum and allied petroleum products.

In October 2013, a consultation report summarizing and consolidating the feedback received during face-to-face consultation meetings regarding the proposed revisions to the *Federal Halocarbon Regulations, 2003* was published on Environment Canada's Ozone website.

Pollution Prevention Planning Notices

The provisions within Part 4 of CEPA 1999 allow the Minister of the Environment to issue a "notice" to require designated persons to prepare, implement and report on pollution prevention (P2) plans for toxic substances. P2 Planning Notices provide the flexibility for industry to determine the best methods within their processes and activities to meet the risk management objective within the Notice. For further information on P2 planning, consult www.ec.gc.ca/planp2-p2plan/default.asp?lang=En&n=F7B45BF5-1.

Active Pollution Prevention Planning Notices

During 2013–2014, there were six active P2 Planning Notices covering nonylphenol and its ethoxylates contained in products; inorganic chloramines and chlorinated wastewater effluent; polyurethane and other foam sector (except poly-styrene) – toluene diisocyanates; cyclotetrasiloxane, octamethyl (siloxane D4) in industrial effluents; BPA; and synthetic rubber manufacturing sector – isoprene. More information is available at www.ec.gc.ca/planp2-p2plan/default.asp?lang=En&n=BCAA1E50-1.

Synthetic rubber manufacturing sector – isoprene

A final P2 planning notice to address harmful substances that are released from resin and synthetic rubber manufacturing industries was published in the *Canada Gazette*, Part I on June 9, 2012. The first substance to be addressed is isoprene. More information about the preliminary results of this P2 notice is available at www.ec.gc.ca/planp2-p2plan/default.asp?lang=En&n=2CB665BA.

Polyurethane and other foam sector (except polystyrene) – toluene diisocyanates

All 14 facilities subject to this P2 notice submitted interim progress reports by the November 26, 2013 deadline. More information is available at www.ec.gc.ca/planp2-p2plan/default.asp?lang=En&n=B88E6C97-1.

Cyclotetrasiloxane, octamethyl- (Siloxane D4) in industrial effluents

In December 2013, Environment Canada published a performance report summarizing the information that has been reported by facilities subject to this P2 notice. More information is available at www.ec.gc.ca/planp2-p2plan/default.asp?lang=En&n=8493A396

Environmental Performance Agreements

An Environmental Performance Agreement is negotiated around the key principles and design criteria outlined in Environment Canada's Policy Framework for Environmental Performance Agreements (www.ec.gc.ca/epe-epa/default.asp?lang=En&n=564C0963-1).

Active agreements include the Environmental Performance Agreement on production of hydrochlorofluorocarbons in Canada with E.I. DuPont Canada Company, the Environmental Performance Agreement respecting perfluorinated carboxylic acids (PFCAs) and their precursors in perfluorinated products sold in Canada, the Refractory Ceramic Fibre Environmental Performance Agreement, and the Environmental Performance Agreement Respecting Bisphenol A in Paper Recycling Mill Effluents. Detailed information about these agreements is available online (www.ec.gc.ca/epe-epa/default.asp?lang=En&n=0D8C879E-1).

Environmental Quality Guidelines

Environmental quality guidelines provide benchmarks for the quality of the ambient environment. Where federal priorities align with those of the Canadian Council of Ministers of the Environment (CCME) (i.e., those of the various provincial and territorial jurisdictions), the federal environmental quality guidelines will be tabled with the CCME for consideration as Canadian Environmental Quality Guidelines (CEQGs). Table 4 lists the CEQGs that were published or being developed nationally through the CCME in 2013–2014. During the same period, Environment Canada developed draft Federal Environmental Quality Guidelines for various CMP substances (Table 5).

Environmental Performance Agreement with the Vinyl Council of Canada and the Tin Stabilizers Association

Under this five-year agreement (2008–2013), which expired on March 9, 2013, 33 facilities committed to implement a best management practices guideline to minimize releases of the organotin-based stabilizers used in polyvinyl chloride processing. Environment Canada and the Vinyl Council of Canada are currently discussing options to ensure the continued application of the guideline by all vinyl compounding facilities using tin stabilizers in Canada.

Table 4: Environmental quality guidelines from April 2013 to March 2014

Environmental Compartment	Published	In Progress
Table	• Cadmium	• Manganese • Silver • Zinc • Carbamazepine
Soil	• Barium	• Glycols • Methanol • Nickel • Zinc • Amines

Table 5: Environmental quality guidelines from April 2013 to March 2014

Environmental Compartment	Published	In Progress
Water		• Bisphenol A • Chlorinated alkanes (chlorinated paraffins) • HBCD • PFOS • TBBPA • Triclosan • Vanadium • Chromium (hexavalent) • Iron • Lead • Copper • Naphthenic acids
Sediment		• Bisphenol A • Chlorinated alkanes • HBCD • TBBPA
Fish Tissue		• Chlorinated alkanes • HBCD • PFOS
Wildlife Diet		• Bisphenol A • Chlorinated alkanes • HBCD • PFOS • TBBPA
Bird Egg		• PFOS
Soil		• HBCD • PFOS • TBBPA
Groundwater		• PFOS

Note: Hexabromocyclododecane (HBCD), perfluorooctane sulphonate (PFOS), tetrabromobisphenol-A (TBBPA).

On November 30, 2013, Environment Canada also published the Guidelines for the Reduction of Dyes Released from Pulp and Paper Mills, for the risk management of MAPBAP acetate. The guidelines are intended to limit MAPBAP acetate releases into water from pulp and paper mills by setting retention standards for MAPBAP acetate, performance criteria for the effluent treatment system and containment measures.

Substance-specific Risk Management Results

Mercury

Canada has reduced its domestic sources of anthropogenic (human-induced) mercury releases by 90% since the 1970s. However, transboundary mercury accounts for more than 95% of mercury deposition in Canada. The government is committed to taking further actions at home and internationally to minimize and, where feasible, eliminate anthropogenic mercury releases.

Canada has actively participated on the intergovernmental negotiating committee for the preparation of a global, legally binding treaty on mercury, which was established by the Governing Council of the United Nations Environment Programme in 2009. Negotiations were launched in 2010 and were concluded at the fifth negotiating session in January 2013, with over 140 governments agreeing to the final treaty text of the new Minamata Convention on Mercury. Canada signed the convention as soon as it was open for signature, in October 2013, and is currently in the process of conducting an analysis of its ability to meet the obligations in order to ratify the agreement. The convention will enter into force once 50 countries have ratified it, likely within 2 to 3 years. Information on the Minamata Convention on Mercury can be found at www.mercuryconvention.org/.

Significant New Activity Requirements

A Significant New Activity requirement can be applied to a substance so that any major changes in the way it is used are reported to the government. This ensures that departmental experts can evaluate whether a substance poses a new or increased risk to human health or the environment, and determine if risk management should be considered as a result of the new use.

In 2013–2014, a notice of intent to apply the Significant New Activity provisions of CEPA 1999 was published for 1 substance on the Domestic Substances List, and final orders were published for 66 substances on the Domestic Substances List (Table 6), including 11 substances meeting one or more of the criteria set out in s.64 of CEPA 1999. A person who intends to use, manufacture or import any of these substances for a new activity must provide the prescribed information.

Table 6: Significant New Activity Notices and Orders for existing substances from April 2013 to March 2014

Assessment	Meet s. 64 Criteria	Number of Substances	Notice of Intent*	Final Order*
Quinoline	Yes	1 substance	Nov. 16. 2013	Pending
Batch 6	Yes	1 substance	Nov. 26, 2011	May 8, 2013
Batch 7	Yes	2 substances	Mar. 3, 2012	Aug. 28, 2013
Batch 8	Yes	4 substances	Jul. 28, 2012	Jan. 15, 2014
Batch 9	Yes	4 substances	Sep. 15, 2012	Mar. 12, 2014
Batch 12	No	3 substances	Jan. 8, 2011	Jul. 3, 2013
High Hazard	No	52 substances	Jul. 2, 2011	May 22, 2013

* The dates are those on which the notices of intent and final orders were published in the *Canada Gazette*, Part I and Part II, respectively. Note that registration of final orders usually occurs before the order is published.

Of the 506 notifications for new substances that were assessed under CEPA 1999 in 2013–2014, the Minister issued 9 Significant New Activity Notices (Table 7) on new chemicals and polymers.

Ten SNAcs that had previously been in place were rescinded based on new information received (Table 8).

Table 7: Significant New Activity Notices for new substances from April 2013 to March 2014

Substance	Publication Date*
Germanium dioxide, CAS Registry No. 1310-53-8	May 22, 2013
2-propenoic acid, 2-methyl-, alkyl ester, polymer with ethenylbenzene, methyl 2-methyl-2- propenoate and 2-oxiranylmethyl 2-methyl-2-propenoate, tert-Bu peroxide-initiated (No. 17122)	Jun. 15, 2013
Acetamide, *N,N'*-(ethenylmethylsilylene)bis[N-ethyl-, CAS Registry No. 87855-59-2	Jul. 27, 2013
Multi-wall carbon nanotubes (No. 17192)	Aug. 24, 2013
Acetamide, *N,N'*-(ethenylmethylsilylene)bis[N-ethyl-, CAS Registry No. 87855-59-2	Sep. 11, 2013
Alanine, *N,N*-bis(carboxymethyl)-, trisodium salt, CAS Registry No. 164462-16-2	Sep. 11, 2013
Silane, triethoxy(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)-, CAS Registry No.51851-37-7	Sep. 21, 2013
Dodecanoic acid, 3-[[3-[[[2,2-dimethyl-3-[(1-oxododecyl)oxy] propylidene]amino]methyl]-3,5,5-trimethylcyclohexyl] imino]-2,2- dimethylpropyl ester, CAS Registry No. 932742-30-8 (No. 17420)	Feb. 22, 2014
Silane, trimethoxy[3-(oxiranylmethoxy)propyl]-, hydrolysis products with silica	Mar. 22, 2014

* The dates are those on which the final notices or orders were published in the *Canada Gazette*, Part I.

Table 8: Significant New Activity Notices rescinded between April 2013 and March 2014

Substance	Publication Date*
2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl ester, polymer with 1,1-dichloroethene and alkyl 2-propenoate (No. 16138)	Sep. 21, 2013
Siloxanes and silicones, substituted alkyl Me, di-Me, Me substituted alkyl, polymers with stearyl acrylate, polyfluoro methacrylate and vinyl chloride (No. 14888)	Sep. 21, 2013
2-Propenoic acid, 2-hydroxyethyl ester, telomer with 2-mercaptoethanol, polyalkyleneglycol acrylate, polyalkyleneglycol polyacrylate and 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl 2-propenoate (No. 15312)	Sep. 21, 2013
2-Propenoic acid, 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl ester, polymer with polyalkyleneglycol acrylate (No. 15313)	Sep. 21, 2013
Polyfluoro acrylate, polymer with chloroethene (No. 15314)	Sep. 21, 2013
Polyfluoro acrylate, polymer with chloroethene (No. 15315)	Sep. 21, 2013
2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl ester, telomer with 1-dodecanethiol and octadecyl 2j-propenoate, CAS Registry No. 1259487-19-8 (No. 16266)	Sep. 21, 2013
2-Propenoic acid, 2-methyl-, polymer with 2-hydroxyethyl 2-methyl-2-propenoate, α-(1-oxo-2-propen-1-yl) ω-hydroxypoly (oxy-1,2-ethanediyl) and 3,3,4,4,5,5,6,6,7,7,8,8,8tridecafluorooctyl 2-propenoate, sodium salt, CAS Registry No. 1158951-86-0 (No. 16267)	Sep. 21, 2013
2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with 1-ethenyl-2-pyrrolidinone, 2-propenoic acid and 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl 2-propenoate, sodium salt, CAS No. 1206450-10-3 (No. 16268)	Sep. 21, 2013
2-Propenoic acid, 2-methyl-, methyl ester, polymer with hydrolyzed poly(vinyl acetate) and polyfluorooctyl acrylate (No. 15441)	Sep. 21, 2013

* The dates are those on which the final notices or orders were published in the *Canada Gazette*, Part I

Following notification, when the assessment of a new substance identifies a risk to human health or the environment, CEPA 1999 empowers the Minister of the Environment to intervene prior to or during the earliest stages of its introduction into Canada. In this case, there are three actions that may be taken. The Minister may:

a) permit the manufacture or import of the substance subject to specified conditions; or

b) prohibit the manufacture or import of the substance; or

c) request additional information considered necessary for the purpose of assessment. The notifier shall not manufacture or import the substance until supplementary information or test results have been submitted and assessed.

If the Minister suspects that a significant new activity (SNAc) in relation to the substance may result in the substance's becoming "toxic," a SNAc Notice may be published in the *Canada Gazette*, Part I for the substance.

Of 506 notifications received in 2013–2014, the Minister issued 8 Ministerial Conditions (Table 9), and no prohibitions.

Table 9: Notices of Ministerial Conditions for new substances from April 2013 to March 2014

Substance	Publication Date*
Poly[oxy(methyl-1,2-ethanediyl)], α-sulfo-ω-hydroxy-, C_{12-13}-branched and linear alkyl ethers, sodium salts, CAS Registry No. 958238-81-8 (No. 17072)	Apr. 6, 2013
Poly[oxy(methyl-1,2-ethanediyl)], α-sulfo-ω-hydroxy-, C_{14-15}-branched and linear alkyl ethers, sodium salts, CAS Registry No. 958238-82-9 (No. 17073)	Apr. 6, 2013
Poly[oxy(methyl-1,2-ethanediyl)], α-sulfo-ω-hydroxy-, C_{16-17}-branched and linear alkyl ethers, sodium salts, CAS Registry No. 958238-83-0 (No. 17074)	Apr. 6, 2013
Amines, *N,N,N'*-trimethyl-N'-alkyltrimethylenedi, reaction products with sodium chloroacetate (No. 17160)	Jun. 15, 2013
2-Propanone, reaction products with phenol, CAS Registry No. 72161-28-8 (No. 17202)	Jul. 20, 2013
Formaldehyde, reaction products with bishenol A and diethylenetriamine, CAS Registry No. 72361-54-7 (No. 17269)	Nov. 23, 2013
Benzene, 1,1'-(1-Methylethylidene)bis[3,5-dibromo-4-(2,3dibromopropoxy)-, CAS Registry No. 21850-44-2 (No. 17312)	Nov. 30, 2013
Poly[oxy(methyl-1,2-ethanediyl)], α-sulfo-ω-hydroxy-, branched alkyl ethers, sodium salts (No. 15543a)**	Dec. 21, 2013

* The dates are those on which the final notices or orders were published in the *Canada Gazette*, Part I
** Variation to a previous Ministerial Condition

Export Control List

Under Schedule 3 of CEPA 1999, the Export Control List (ECL) includes substances whose export is controlled because their use in Canada is prohibited or restricted, or because Canada has agreed, through an international agreement that requires notification or consent of the country of destination before export, such as the Rotterdam Convention, to control their export. CEPA 1999 requires exporters to submit prior notice of export with respect to substances on the ECL.

In 2013–2014, 75 export notices were submitted to the Minister of the Environment. Certain exports of substances on the ECL require an export permit. In 2013–2014, two permits were issued by the Minister of the Environment.

On March 29, 2014, the Minister of the Environment published a draft order amending the ECL to move from one part of the ECL to another, two substances or groups of substances that have been added to the Rotterdam Convention.

Table 10: Substances or groups of substances proposed for moving from one part of the ECL to another from April 2013 to March 2014

Substance or Group of Substances	Description
Azinphos-methyl (CAS 86-50-0)	Proposed for addition to Part 1 of the Export Control List
Perfluorooctane sulfonates, perfluorooctane sulfonamides and perfluorooctane sulfonyles, including: • Perfluorooctane sulfonic acid (CAS 1763-23-1) • Potassium perfluorooctane sulfonate (CAS 2795-39-3) • Lithium perfluorooctane sulfonate (CAS 29457-72-5) • Ammonium perfluorooctane sulfonate (CAS 29081-56-9) • Diethanolammonium perfluorooctane sulfonate (CAS 70225-14-8) • Tetraethylammonium perfluorooctane sulfonate (CAS 56773-42-3) • Didecyldimethylammonium perfluorooctane sulfonate (CAS 251099-16-8) • *N*-Ethylperfluorooctane sulfonamide (CAS 4151-50-2) • *N*-Methylperfluorooctane sulfonamide (CAS 31506-32-8) • *N*-Ethyl-*N*-(2-hydroxyethyl) perfluorooctane sulfonamide (CAS 1691-99-2) • *N*-(2-Hydroxyethyl)-*N*-methylperfluorooctane sulfonamide (CAS 24448-09-7) • Perfluorooctane sulfonyl fluoride (CAS 307-35-7)	Proposed for addition to Part 2 of the Export Control List

2.2 Living Organisms

Products of biotechnology that are living organisms are regulated for health and safety purposes by a variety of federal departments and agencies across the government. For example, the Canadian Food Inspection Agency is an important regulator of crop plants and micro-organisms used in animal feeds, fertilizers and veterinary biologics. CEPA 1999 sets the federal standard for assessment and risk management of new and existing living organisms. Other Canadian legislation meeting this standard is listed in Schedule 4 of CEPA 1999. Living organisms imported or manufactured for a use regulated under one of those acts are exempted from the New Substances provisions in CEPA 1999. Living organisms used for other purposes, not covered by existing federal legislation, are regulated under CEPA 1999. These include naturally occurring and genetically modified organisms (such as bacteria, fungi, viruses and higher organisms) used for various environmental, industrial and commercial purposes.

CEPA 1999 establishes an assessment process for living organisms that are new animate products of biotechnology, which mirrors provisions in Part 5 of CEPA 1999 respecting new substances that are chemicals or polymers. In addition, paragraph 74(*b*) of the Act requires that all living organisms on the Domestic Substances List (about 68 existing micro-organisms) undergo a screening assessment to determine whether the living organism is toxic or capable of becoming toxic.

2.2.1 Monitoring, Research and Risk Assessment Activities

Research

Government research on living organisms focuses on determining hazardous characteristics and the pathogenicity potential of various biotechnology microbes in order to support screening assessments. The research is coordinated jointly with regulators at Health Canada and Environment Canada and focuses principally on micro-organisms on the CEPA 1999 Domestic Substances List (DSL).

During 2013–2014, the timeline for completing screening assessments of CEPA 1999 DSL micro-organisms was accelerated to March 2016 (originally set for March 2020). Research focused on supporting the efficient screening assessment of these micro-organisms. This was done through the development of more rapid genomic methods for confirming micro-organism identity and for identifying determinants of pathogenicity by conducting organism-specific testing for determining potential pathogenicity characteristics, and conducting exposure assays for toxicity assessment.

In addition, research continued on a number of subjects, including assessing the exposure effects of a mixture of micro-organisms used for bioremediation of oil-contaminated soil and water, and detection of all microbial species within a microbial consortium. Data summary reports on several fungi (e.g., *Aspergillus*) and bacteria (e.g., *Engerobacter*, *Pseudomonas*, *Bacillus*) were completed. Some of these results have already been incorporated in screening assessment reports. Ultimately, the research outputs will be published in peer-reviewed scientific journals.

Risk Assessment of New Animate Products of Biotechnology

During 2013–2014, 33 notifications were received and assessed pursuant to the *New Substances Notification Regulations (Organisms)* for new animate products of biotechnology, and 8 notifications were completed. The remaining notifications are still within the various stages of the assessment process.

Risk Assessment of Existing Animate Products of Biotechnology

Environment Canada and Health Canada jointly perform the screening assessment of micro-organisms listed on the Domestic Substances List. In 2013–2014, draft Screening Assessments for *Bacillus cereus*, *Pseudomonas fluorescens* and two strains of micro-organisms identified as Priority C (lower hazard) were published in the *Canada Gazette*, Part I for a 60-day public comment period. The final Screening Assessment of eight strains of micro-organisms identified as Priority C was also published in the *Canada Gazette*, Part I, continuing the rapid screening approach for lower-priority organisms (see Table 11). Work continues on the remaining screening assessments for several other Domestic Substances List micro-organisms of high and medium priority.

The Technical Expert Group, composed of independent scientific experts from academia, industry, public advocacy groups and other federal government departments, continued providing advice on the process and validating the scientific basis of screening assessments and their conclusions.

Table 11: Summary of existing living organisms assessment decisions published from April 2013 to March 2014

(NFA: no further action)

Substances (and Number of Substances)	Meet s. 64 Criteria	Proposed Measure	Proposed Measure*	Final Notice*
Pseudomonas fluorescens	No	NFA**	Dec. 7, 2013	
Micro-organisms in Lot 2 of Priority C (2 micro-organisms)	No	NFA	Dec. 7, 2013	
Micro-organisms in Lot 1 of Priority C (8 micro-organisms)	No	NFA	Jan. 12, 2013	Dec. 7, 2013
Bacillus cereus	No	NFA**	Jul. 13, 2013	

* The dates are those on which the draft and final notices were published in the *Canada Gazette*, Part I.

** Significant New Activity Notice proposed (see Table 12)

2.2.2 Risk Management Activities

Significant New Activity Requirements

In 2013–2014, a notice of intent to apply the SNAcs provision was published for two existing living organisms (Table 12).

Table 12: Significant New Activity Notices of Intent and Orders for existing living organisms from April 2012 to March 2013

Assessment	Substances or Number of Substances	Notice of Intent*	Final Order*
Bacillus Cereus	1 substance	Jul. 13, 2013	Pending
Pseudomonas fluorescens	1 substance	Dec. 7, 2013	Pending

* The dates are those on which the notices of intent and final orders were published in the *Canada Gazette*, Part I and Part II, respectively.

In 2013–2014, two new living organisms were subjected to a SNAc Notice (Table 13). No new living organisms were subjected to Ministerial Conditions or Ministerial Prohibition.

Table 13: Significant New Activity Notices for new living organisms from April 2013 to March 2014

Substance	Notice*
Genetically engineered Atlantic salmon (*Salmo salar*) containing a single copy of the opAFP-GHc2 transgene at the EO-1α locus (No. 16528)	Nov. 23, 2013
Pichia species strain (No. 17329)	Jan. 18, 2014

* The dates are those on which the final notices were published in the *Canada Gazette*, Part I.

2.3 Air Pollution and Greenhouse Gases

Emissions of air pollutants threaten the health of Canadians, degrade the environment, contribute to smog and have associated socio-economic impacts. While significant progress has been made in reducing emissions, air pollution continues to have impacts on health, the environment and quality of life in Canada. Emissions originate from numerous domestic sources, such as industry and transportation, as well as transboundary transport of air pollution from other countries.

The government began actively addressing air pollution in the 1970s and 1980s, and continues to develop, amend and implement regulations under CEPA 1999 to reduce air pollutant emissions from vehicles, engines and fuels, and from consumer and commercial products. In addition, federal air emission controls apply to a limited number of industrial sectors such as secondary lead smelters, vinyl chloride plants, asbestos mines and pulp mills.

In October 2012, federal, provincial and territorial environment ministers agreed to begin implementation of a new national Air Quality Management System. Under the Air Quality Management System, the federal government is responsible for developing/updating outdoor air quality standards and implementing new industrial emission requirements using regulatory and non-regulatory instruments under CEPA 1999. More ambitious air quality standards for fine particulate matter and ground-level ozone were published in the *Canada Gazette*, Part I, on May 25, 2013. They will be used by jurisdictions to guide local air quality management actions and for issuing permits to industrial facilities. Government officials have begun developing standards for sulphur dioxide and nitrogen dioxide, and completion is expected in 2015.

A phased-in approach is being taken to implement the industrial emission requirements. The first phase of industrial requirements is to be published in a single, consolidated regulation, the proposed *Multi-Sector Air Pollutants Regulations*, which set emissions limits for industrial boilers and heaters, stationary spark-ignition engines, and kilns used

in cement manufacturing facilities. The proposed regulations will be published in the *Canada Gazette*, Part I in spring 2014.

The government is implementing a sector-by-sector regulatory approach for greenhouse gases. Regulations are already in place for two of Canada's largest sources of emissions: the transportation sector and coal-fired electricity generation.

For additional information about emission-reporting activities, such as the Canadian Environmental Sustainability Indicators, the National Pollutant Release Inventory and the National Greenhouse Gas Inventory Report, visit:

- www.ec.gc.ca/indicateurs-indicators/default.asp?lang=En
- www.ec.gc.ca/inrp-npri/default.asp?lang=En&n=4A577BB9-1
- www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=83A34A7A-1

2.3.1 Monitoring, Research and Risk Assessment Activities

Monitoring

In Canada, atmospheric monitoring is carried out through partnerships and/or collaborations between the provincial, territorial and federal governments. Due to the fact that atmospheric issues such as intercontinental transport of air pollution and the depletion of the ozone layer are a global concern and in many instances require global solutions, partnerships and collaboration with international organizations and agencies are essential.

Ambient (outdoor) air quality monitoring provides the foundation for the evaluation of progress relative to the Canadian Ambient Air Quality Standards (see below), for health research and for assessments of the impact of air pollution on Canadians.

In 2013–2014, a broad range of monitoring activities was undertaken in support of the Clean Air Regulatory Agenda, which focuses on specific pollutants such as particulate matter, ozone, NO_x and SO_2 as well as others.

In June 2013, cooperation between the provincial, territorial and federal governments under the National Air Pollution Surveillance Program was strengthened by the completion of a renewed formal Memorandum of Understanding between the partners.

Efforts continued in tandem under the National Air Pollution Surveillance program and the Canadian Air and Precipitation Monitoring Network to measure air quality at urban, rural and regionally representative sites in order to understand patterns and trends of specific atmospheric pollutants. The Canadian Greenhouse Gas Monitoring Network includes observations of carbon dioxide and other greenhouse gases (GHGs) from 16 measurement sites across Canada. Environment Canada contributed or made available atmospheric monitoring data to the public on national (e.g., Government of Canada Open Data Portal) and international (e.g., WMO World Data Centre for GHGs) databases.

In addition to ongoing data collection and reporting on a wide range of environmental issues, monitoring efforts in 2013–2014 also included upgrades to monitoring technologies, data reporting, data accessibility and database infrastructure.

For more information about monitoring activities, visit www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=F79B71E4-1.

Research

Environment Canada undertakes scientific research that focuses on numerical predication modelling, measurements and atmospheric chemistry studies related to air pollutants and GHGs as well as emissions research and measurements related to the transportation and fuel sectors. These activities ensure that policy and regulatory actions are informed by sound and relevant science and allow decision makers to evaluate that the measures taken achieve their intended effects.

Specifically, air quality research efforts help quantify priority air pollutants and determine trends, improve and validate air quality predictions both in the near term and into the future within the global context, as well as enhance understanding of the impacts of air pollutant emission sources on Canadians and the environment.

Environment Canada's GHG research program focuses on monitoring and modelling of GHGs to quantify sources and sinks in a continental and global context, and to model the climate system response to changing atmospheric concentrations of GHGs.

Health Canada conducts research and assesses the health risks of indoor and outdoor air pollutants to better understand the health impacts posed by these pollutants. This knowledge is used to inform the development of government and private sector air quality management strategies, to support the analysis of the benefits and costs of government regulations, and to assist Canadians in taking action to protect their health.

Health Canada and Environment Canada work jointly on research that links air pollutants to human health. Research completed in 2013–2014 included topics pertaining to health impacts of exposure to particulate matter (including diabetes, respiratory illness, blood vessels, hypertension, black carbon, volatile organic compounds and ammonia emissions from fertilizers) and indoor air quality.

During 2013–2014, a number of research projects were initiated on topics including effects of long-term exposure to fine particulate matter on cancer incidence and mortality in the Canadian Breast Cancer screening cohort; impact of woodsmoke on hospital visits; long-term effects of air pollution on Canadian women; development of a better method to model dry deposition of atmospheric particles; and the delivery of an intensive air monitoring campaign (summer 2013) to measure pollutants within the airshed management system for the Alberta oil sands.

Ongoing research continued on a wide range of air pollution and GHG topics, including health impacts of exposure to air pollutants from a variety of sources; health impacts of long-term exposure to air pollutants; exposure to and better characterization of diesel exhaust particulate; the effectiveness of the Air Quality Health Index in small towns and rural areas; air emissions from refineries/industrial complexes and children's respiratory health; characterization of atmospheric aerosols; exposure to fine particulate matter and nitrogen dioxide and the related breast and prostate cancer risks; levels of semi-volatile organic compounds indoors in residences; GHG sources and sinks; the role of GHGs in the climate system; improving analytical tools for assessing atmospheric aerosols from vehicles; emissions from heavy-duty diesel engines; atmospheric transport and deposition of mercury; understanding and predicting air quality at high resolution in airsheds of particular interest from a human health or environmental perspective (e.g., urban); understanding the potential environmental impact of exhaust emissions from marine engines with the increase in shipping activity in the Arctic; understanding the linkages between air quality and weather; understanding the impact of specific emissions sources on air quality; renewable fuels operation in cold temperature; non-criteria exhaust emissions from new engine technologies; and health impacts of biodiesel fuels.

Health Canada scientists published more than 50 air pollution research papers in 2013–2014. These included reports on intensive health study that was conducted in the vicinity of the Sault Ste. Marie Steel Mill and investigations of the effects of traffic-related air pollutants on heart disease, asthma and stroke. Health Canada, Statistics Canada and Environment Canada scientists published the largest air pollution cohort study in the world, showing a relationship between long-term exposure to air pollution and mortality due to cardiovascular disease and diabetes, even at relatively low levels of air pollution. Research studies also supported the development of Health Canada's air pollution information tools: the Air Quality Health Index, Canada's platform for air quality forecasts; the Air Health Indicator, which tracks trends over time; and the Air Quality Benefits Assessment Tool, which is used to quantify and monetarize air pollution health impacts for standard setting, regulatory impact assessments and other purposes. Several papers were published on the interaction of air pollution and weather and the implications to the health of Canadians. Indoor air studies published during this year included investigations of the benefits of air cleaners, and several studies of levels of metals, phthalates and volatile organic compounds in indoor environment.

Environment Canada scientists published more than 100 research papers related to air pollutants and GHGs in peer-reviewed scientific journals. Environmental research topics included satellite measurements of emissions; development and

evaluation of high-resolution air quality forecasting models; modelling of global and regional climate response to GHGs; detection and attribution analyses of climate change; the carbon cycle in the Earth system; black carbon (measurements, characterization, ship emissions), engine or traffic emissions (furthering understanding of sources and sinks); hybrid and battery electric vehicle operation; atmospheric mercury (sources, concentrations, snowpack, sea ice, deposition); ultrafine particles; deposition and modelling of atmospheric polycyclic aromatic hydrocarbons; particle phase organic compounds; atmospheric aerosols; atmospheric chemistry; and air mass transport of flame retardants and pesticides.

Environment Canada scientists participated in a World Meteorological Organization assessment of global precipitation chemistry and deposition, completed in 2013.

Risk Assessment

Health Canada completed a risk assessment of sulphur dioxide and continued to assess the impacts of nitrogen dioxide in ambient air and of the health impacts associated with emissions from the use of gasoline and diesel fuel in transportation. These documents will be published between 2014 and 2016.

2.3.2 Risk Management Activities

Air Quality Guidelines

The Residential Indoor Air Quality Guidelines summarize the health risks posed by specific indoor pollutants, based on a review of the best scientific information available at the time of the assessment. They summarize the known health effects, detail the indoor sources and provide a recommended exposure level below which health effects are unlikely to occur. When it is not feasible to establish a numeric guideline, guidance documents are developed. Both guideline and guidance documents provide recommendations on strategies to reduce exposure to pollutants.

In 2013–2014, the Minister of Health published the following notices regarding indoor air quality guidelines in the *Canada Gazette*, Part I:

- final residential indoor air quality guideline for naphthalene on June 15, 2013 (www.gazette.gc.ca/rp-pr/p1/2013/2013-06-15/html/notice-avis-eng.html)
- final residential indoor air quality guideline for benzene on September 14, 2013 (www.gazette.gc.ca/rp-pr/p1/2013/2013-09-14/html/notice-avis-eng.html)

Canadian Ambient Air Quality Standards

In 2013–2014, the Ministers of the Environment and of Health established new, more stringent health-based Canadian Ambient Air Quality Standards for particulate matter and ozone under CEPA 1999 *Canada Gazette*, Part I, May 2013, (http://gazette.gc.ca/rp-pr/p1/2013/2013-05-25/html/notice-avis-eng.html). Findings of the Canadian Smog Science Assessment completed by Health Canada and Environment Canada in 2011 guided the development of these new standards.

Vehicle, Engine, Equipment and Fuels Emissions

Canada has implemented and will continue to develop a series of regulations to reduce GHG emissions and smog-forming air pollutant emissions from vehicles, engines and fuels. Currently, there are regulations in place to reduce emissions from passenger cars, light-duty trucks, heavy-duty vehicles such as buses and tractor-trailers, motorcycles, recreational vehicles, construction and agricultural equipment, and small engines such as lawnmowers and chainsaws. Canada has also implemented several fuels regulations to limit air pollutant emissions such as sulphur. Current GHG emissions regulations in place cover on-road heavy-duty vehicles, passenger cars and light-duty trucks. The *Renewable Fuels Regulations* also limit GHG emissions by requiring a certain amount of renewable content in certain fuels.

Greenhouse Gas Emissions Regulations

Canada currently has regulations in place for heavy-duty vehicles for 2014 model years and beyond. The final *Heavy-Duty Vehicle and Engine Greenhouse Gas Emission Regulations* were published on March 13, 2013 in the *Canada Gazette*, Part II and establish progressively more stringent standards over the 2014–2018 model years in alignment with the United States. Throughout 2013–2014,

Environment Canada continued to work with the U.S. to align transportation emission regulations and remained committed to reducing pollutants from the transportation sector through the Canada–U.S. Air Quality Agreement.

Also in alignment with the United States, the proposed amendments to the current *Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations* were published in the *Canada Gazette*, Part I on December 8, 2012. The purpose of the amendments is to further limit GHG emissions from new cars and light trucks beginning with the 2017 model year, building on the existing regulations for model years 2011 to 2016. Over the lifetime operation of the 2017 to 2025 model year vehicles, the proposed regulations are projected to deliver additional GHG reductions of 162 megatonnes, roughly equivalent to one year of GHG emissions from Canada's entire transportation sector. Throughout 2013–2014, Environment Canada undertook extensive consultations with industry stakeholders, provinces and territories to inform the development of the final regulations.

Also in 2013, the Minister of the Environment made an Interim Order modifying the operation of the regulations for model years 2011 to 2016 in order to maintain alignment with evolving U.S. regulations and while the Canadian regulations are being amended.

Air Pollutant Emissions Regulations

On June 8, 2013, Environment Canada published a Notice of Intent to develop regulations to further limit emissions of smog-forming air pollutants from new cars and light trucks and to reduce the sulphur content of gasoline, in alignment with recent U.S. Tier 3 standards that will take effect beginning in 2017. The establishment of the more stringent Tier 3 standards will require amendments to the *On-Road Vehicle* and *Engine Emission Regulations* and the *Sulphur in Gasoline Regulations*. The Notice of Intent, published in *Canada Gazette*, Part I, provided an opportunity to initiate early consultations with provincial, territorial and Aboriginal governments, industry and other stakeholders in order to seek input that is taken into account in the development of these proposed amending regulations.

Renewable Fuels Regulations

On January 1, 2013, Environment Canada began implementation of the Renewable Fuels Electronic Reporting system, which will enable the regulated community to submit electronically the information required under the *Renewable Fuels Regulations*. The first set of compliance period reports were submitted by renewable fuel producers and importers using the electronic reporting system in February 2013. The remaining compliance reports, from petroleum producers and importers and trading system participants, were submitted in April, and audit reports from all regulated parties were submitted by June 30, 2013. Compliance verification of the data submitted is ongoing.

On November 6, 2013, Environment Canada published an amendment to the *Renewable Fuels Regulations* allowing a permanent national exemption from the 2% renewable content requirement in home heating oil, as well as a six-month extension to the exemption from the 2% renewable content requirement for diesel fuel for Canada's Maritime provinces.

These measures were implemented to mitigate potential cost increases for Canadians who use oil to heat their homes and to provide flexibility for suppliers operating in the Maritime provinces to make adjustments required to comply with the Regulations.

The *Renewable Fuels Regulations*, combined with provincial regulations, were originally expected to lead to cumulative GHG emissions reductions of approximately 4 megatonnes per year once fully implemented. Removing heating oil from the Regulations will impact these GHG reductions, but the impact is expected to be less than a tenth of a megatonne per year.

Vehicle and Engine Compliance Program

Environment Canada administers a program to verify compliance with the following vehicle and engine regulations:

- *Heavy-duty Vehicle and Engine Greenhouse Gas Emission Regulations*;
- *Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations*;

- *Off-Road Compression-Ignition Engine Emission Regulations*;
- *Off-Road Small Spark-Ignition Engine Emission Regulations*;
- *On-Road Vehicle and Engine Emission Regulations*; and
- *Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations*.

The administrative requirements for companies subject to the Regulations include, but may not be limited to, the submission of importation declarations, evidence of conformity and annual end-of-model-year reports as well as the obligation to submit notices of defects and the provision of maintenance instructions. Some of the emissions regulations require companies to submit an annual report to demonstrate compliance with the regulations and to enable the Department to monitor the emissions performance of new vehicles offered for sale in Canada. These reports also permit the Department to track emissions credits/deficits. During 2013–2014, over 150 reports were submitted.

The Department also published the NO_x fleet average Performance Report for the 2011 model year fleet, which covers passenger cars and light trucks: www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=F6AC8DAA-1.

Environment Canada also continued to develop its Vehicle and Engine Emissions Reporting Registry (VEERR), an electronic online tool to enable auto-makers to electronically submit their regulatory reports prescribed under the *Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations*. Data collected through the VEERR system also assists Natural Resources Canada to collect and compile the fuel consumption guide. In 2013–2014, Environment Canada initiated work to expand the functionality of the system to collect regulatory reports for heavy-duty vehicle GHGs and for air pollutant regulations.

In 2013–2014, Environment Canada performed a total of 116 emission tests on various types of vehicles and engines; tested four motorcycles following the delivery of U.S. EPA Test Orders; worked in collaboration with manufacturers and importers on 12 specimens as part of the Joint Engineering Evaluation; reviewed 406 submissions for products unique to the Canadian market for the 2013 and 2014 model years; and optimized resources in sharing data and test specimens with Transport Canada and the U.S. EPA. During this period, 39 notices of defect and other notifications were processed, affecting almost 200 000 vehicles and engines.

Environment Canada technical experts also worked in collaboration with enforcement officers, providing technical expertise and contributing to enforcement training sessions across the country. In 2013 and 2014, technical experts participated in 24 field inspections across Canada as part of the Enforcement SPARK Project. See Section 4 for detailed information on compliance and enforcement activities.

Electricity Greenhouse Gas Emission Regulations

The first requirement under the *Reduction of Carbon Dioxide Emissions from Coal-fired Generation Electricity Regulations* was for companies to register their covered units by February 1, 2013. As of March 31, 2014, 9 companies had registered 44 units.

The Regulations set a stringent performance standard of 420 tonnes of CO_2/GWh of electricity produced for new coal-fired electricity generation units and old units that have reached the end of their useful life. The performance standard will come into effect on July 1, 2015.

Pollution Prevention Planning

In 2013–2014, one P2 Planning Notice relating to air pollution continued to be active, covering base metal smelters and refineries, and zinc plants. Information about the notice and performance results is available online (www.ec.gc.ca/planp2-p2plan/default.asp?lang=En&n=BCAA1E501#X-201211061451252).

Environmental Performance Agreements

In 2013–2014, an Environmental Performance Agreement with Rio Tinto Alcan concerning atmospheric emissions of polycyclic aromatic hydrocarbons was ongoing. Information about the agreement and updates is available online (www.ec.gc.ca/epe-epa/defaultasp?lang=En&n=5BE979CD-1#X-201006160806394).

2.4 Water Quality

Water quality is affected in many ways, including by nature's own patterns. The water quality of rivers and lakes changes with the seasons and geographic areas, even when there is no pollution present. It is also affected by human development, including disposal of human wastes, animal wastes and chemical substances into the environment.

Water quality is a shared responsibility with provinces and territories. The federal government addresses water quality under various statutes including the *Fisheries Act*. Work on water quality under CEPA 1999 includes scientific research, monitoring and leadership on the development of guidelines for water quality.

2.4.1 Monitoring, Research and Risk Assessment Activities

Monitoring

In addition to data collection and reporting on a wide range of environmental issues, monitoring efforts in 2013–2014 included upgrades to monitoring technologies and to data reporting and database infrastructure.

The targeted survey of selected emerging disinfection by-products in Canadian drinking water systems from source waters with high saline content was completed, and results are currently being compiled.

For more information about monitoring activities, visit www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=F79B71E4-1.

Research

Both Health Canada and Environment Canada continued their water quality research activities. Health Canada conducts research on drinking water quality in support of the Guidelines for Canadian Drinking Water Quality. Environment Canada's research included analytes in wastewater treatment plant influent and effluent; the environmental fate of azo benzidine compounds and their transformation products; and organophosphorus flame retardants in a variety of environmental compartments; biotoxins in algal blooms in the St. Lawrence River; degradation products from pharmaceuticals in surface waters; impacts of municipal effluents on wild fish in the St. Lawrence River; contaminant levels and toxicity in a system impacted by an abandoned mining facility; bioaccumulation and toxicity of cobalt and selenium under varying water quality parameters.

Health Canada continued research to develop methods for measuring disinfection by-products of emerging concern in drinking water.

2.4.2 Risk Management Activities

In addition to the activities listed below, risk management actions included in Section 2.1 on toxic substances also contribute to the overall improvement of water quality (e.g., the Guidelines for the Reduction of Dyes [MAPBAP Acetate] Released from Pulp and Paper Mills).

Drinking Water Quality Guidelines

Health Canada works in collaboration with the provinces and territories to develop the Guidelines for Canadian Drinking Water Quality and their technical documents. Priorities for developing guidelines are also established in consultation with the provinces and territories and are based on a national perspective.

Health-based guideline values are developed for drinking water contaminants that are found or expected to be found in drinking water supplies across Canada at levels that could lead to adverse health effects.

Guidance documents are also developed in relation to the Guidelines for Canadian Drinking Water Quality to provide general operational or management guidance related to specific drinking water issues (such as boil-water advisories) or to make risk assessment information available when a guideline is not deemed necessary (such as potassium from water softeners).

The Guidelines for Canadian Drinking Water Quality are used by all provinces and territories as a basis to establish their own regulatory requirements regarding the quality of drinking water in their jurisdictions.

Table 14 lists the guidelines that were completed or in progress in 2013–2014.

Table 14: Guideline documents for Canadian drinking water quality from April 2013 to March 2014

Finalized – publication pending	In Progress
• Ammonia • Nitrate • Nitrite • 1,2-dichloroethane • Selenium	• Tetrachloroethylene • Toluene, ethylbenzene and xylenes • pH • Chromium • Benzo(a)pyrene • Lead • Bromate • Manganese • Microcystins • Uranium • Copper • PFOS/PFOA • Atrazine • 2,4-dichlorophenoxylacetic acid • Total organic carbon • Enteric viruses

2.5 Waste

Waste generally refers to any material, non-hazardous or hazardous, that has no further use, and which is managed at recycling, processing or disposal sites.

In Canada, the responsibility for managing and reducing waste is shared among the federal, provincial, territorial and municipal governments. Municipal governments are responsible for collecting and managing waste from homes for recycling, composting and disposal, while provincial and territorial authorities are responsible for the approval, licensing and monitoring of waste management operations.

For its part, Environment Canada exercises responsibilities with respect to international and interprovincial movements of hazardous waste and hazardous recyclable material, releases of toxic substances to the air, land and water, disposal at sea, and waste management activities on federal lands.

2.5.1 Monitoring, Research and Risk Assessment Activities

Disposal at Sea Site Monitoring Program

As required by CEPA 1999, representative disposal at sea sites are monitored to verify that permit conditions are met, and that scientific assumptions made during the permit review and site selection process are correct and sufficient to protect the marine environment. By monitoring disposal sites, Environment Canada is able to verify that the permitting of disposal is sustainable and that permit holders can have continued access to suitable sites. Where monitoring indicates a problem or where the site has reached its capacity over time, management action in the form of closing, moving or altering the site use can occur.

In 2013–2014, monitoring projects were completed at 16 ocean disposal sites nationally (or 19% of actively used sites).

Environment Canada's Quebec Region carried out hydroacoustic surveys at eight disposal sites, two at sites in the Îles-de-la-Madeleine and six in Gaspésie, representing almost half of the most-used sites in the region. All the surveys showed that dredged material had been deposited within the authorized zones, that the volumes of dredged sediment still in place at the disposal sites matched the volumes reported by the proponents, and that management measures put in place remained adequate. The six surveys in Gaspésie also showed that the disposal sites were stable for the long term and no management measures were needed. The two sites in Baie de Plaisance, in the Îles-de-la-Madeleine, required management action, one because of the presence of a commercial species and the other for ship safety. Both disposal sites were closed and a new disposal site will be designated to replace the two sites in question.

Environment Canada's Atlantic Region monitored five disposal sites. This included assessing the dispersiveness of a fisheries waste disposal site located in a small fishing community in Labrador and post-disposal bathymetric surveys at two dredged material disposal sites in Nova Scotia. The bathymetric surveys were conducted primarily for compliance purposes, with results demonstrating consistency with permit requirements. Long-term monitoring was initiated at an intertidal dredged material disposal site in Prince Edward Island to assess the potential for minor improvements to avian habitat, and at a shoreline confined-disposal facility in Nova Scotia to assess long-term structural stability. Activities at these sites in 2013–2014 consisted of collection and interpretation of high-resolution aerial imagery.

Environment Canada's Pacific Region undertook monitoring at two disposal sites in October 2013, Point Grey and Five Finger. Benthic invertebrate sampling and processing was conducted. Surficial sediment samples were also collected for analysis for trace metals, polycyclic aromatic hydrocarbons, PCBs, particle size, moisture, total organic nutrients, and total organic carbon. Sediment was collected at representative stations for the purposes of toxicity testing. Monitoring results are being compared with National Screening Levels to determine compliance with the *Disposal at Sea Regulations*. The results of the surveys will support Environment Canada in disposal site management and will contribute to a better understanding of the effects related to disposal activities both at the disposal sites and adjacent areas.

2.5.2 Risk Management Activities

In addition to the activities listed below, risk management actions described in Section 2.1 on toxic substances also contribute to the overall improvement of waste management.

Controlling the Movement of Hazardous Waste and Hazardous Recyclable Material

CEPA 1999 provides authority to make regulations governing the export, import and transit of waste (including both hazardous and non-hazardous waste) and hazardous recyclable materials. It also provides authority to establish criteria for refusing an export, import or transit permit, should the waste or hazardous recyclable material not be managed in a manner that will protect the environment and human health.

Canada implements its international obligations as a party to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention), the OECD Decision on the Control of Transboundary Movement of Wastes Destined for Recovery Operations, and the Canada–United States Agreement on the Transboundary Movement of Hazardous Waste through the *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations* (EIHWHRMR) and the *PCB Waste Export Regulations, 1996*.

In 2013,[2] Environment Canada processed more than 2 050 notices for proposed imports, exports and transits of hazardous wastes and hazardous recyclable materials under the EIHWHRMR. The notices received covered 17 004 individual waste streams, which exhibited a range of hazardous properties such as being flammable, acutely toxic, oxidizing, corrosive, dangerously reactive and environmentally hazardous. Approximately 40 600 individual transboundary shipments of hazardous waste and hazardous recyclable material were reported in movement documents received by Environment Canada.

2 Due to timelines associated with data processing, export and import quantities set out in this section of the report represent actual movement values that took place during the 2013 calendar year (from January 1, 2013, to December 31, 2013).

More than 99% of imports and 98% of exports of hazardous waste and hazardous recyclable materials occurred between Canada and the United States. The United States is the only country that received, from Canada, shipments of hazardous wastes destined for disposal. The majority of hazardous recyclable materials that were not imported from the United States came from Nigeria, France and the United Kingdom. The hazardous recyclable materials that were not exported to the United States went to Germany, Belgium, Republic of Korea and Mexico.

The quantity of hazardous waste and hazardous recyclable material imported into Canada was 435 951 tonnes (t) in 2013. This represents an increase of more than 90 000 t or 26% over the total 2012 import quantity. Shipments destined for recycling totalled 245 110 t and represented about 56% of all imports in 2013. Hazardous recyclable material imported into Canada in greater quantities were batteries filled with acid, hydraulic fluids that contain metals, wastes having metals or metal carbonyl as constituents, and corrosive fluids. Hazardous wastes imported in greater quantities included wastes having metal constituents, waste containing halogenated organic solvents, unhalogenated solvents and wastes that contain or are contaminated with cyanides.

The quantity of hazardous waste and hazardous recyclable materials exported was 516 174 t in 2013. This represents an increase of approximately 11 000 t or 2% from the 2012 figure. Shipments exported for recycling totalled 422 388 t and represented about 82% of all exports in 2013. Spent sulphuric acid, wastes from the manufacture, formulation and use of wood-preserving chemicals, wastes from oil/water or hydrocarbon/water mixtures or emulsions, aluminum dross and lead-acid batteries made up the majority of hazardous recyclable material exported abroad for recycling. Hazardous wastes exported in greater quantities included corrosive liquids, waste acidic or basic solutions, aluminum dross and waste from oil/water or hydrocarbon/water mixtures or emulsions.

Imports of hazardous recyclable materials in 2013 were shipped to five provinces: Quebec, Ontario, New Brunswick, British Columbia and Alberta. Except for New Brunswick, all of these also received waste for final disposal.

Exports of hazardous recyclable materials in 2013 originated from seven provinces: Quebec, Ontario, New Brunswick, British Columbia, Alberta, Manitoba and Saskatchewan. Except for Saskatchewan, exports of hazardous wastes for final disposal also originated from these same provinces.

Tables 15 and 16 list the quantities imported and exported from 2005 to 2013.

Table 15: Hazardous waste and hazardous recyclable material, imports, 2005–2013 (tonnes)

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Recyclables	174 983	164 903	237 141	262 337	221 778	217 663	243 491	243 434	245 110
Total imports	476 416	408 839	497 890	532 727	490 169	364 162	394 786	345 230	435 951

Table 16: Hazardous waste and hazardous recyclable material, exports, 2005–2013 (tonnes)

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Recyclables	226 380	374 024	358 896	365 468	315 631	357 627	374 207	413 614	422 388
Total exports	327 746	474 538	460 497	482 680	420 865	428 367	460 707	505 461	516 174

Please note that data are revised periodically as new information becomes available. Therefore, information presented here may differ from what was previously published in other reports.

Disposal at Sea

Under the Act, most types of disposal of waste at sea in areas of the sea within Canadian jurisdiction and by Canadian ships in Canadian jurisdiction and in international waters requires a permit issued by Environment Canada.

The CEPA 1999 disposal at sea rules implement the London Convention and the Protocol to the London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter. A permit for disposal at sea will generally be issued only if it is the environmentally preferable and practical option. CEPA 1999 provides additional controls on disposal at sea, including:

- a prohibition on the export of a substance for disposal in an area of the sea under the jurisdiction of a foreign state or in its internal waters;
- a list of six substances for which a disposal at sea permit can be obtained (Schedule 5 of CEPA 1999);
- an assessment framework for reviewing permit applications based on the precautionary principle, which must be followed (Schedule 6 of CEPA 1999); and
- a statutory obligation to monitor selected sites.

For further information, consult www.ec.gc.ca/iem-das.

Canada and other parties to the London Convention and Protocol have been working to reduce barriers to compliance with the treaty. Workshops, guidance and technical assistance are offered to countries to aid their acceding to the London Protocol or to coming into compliance with it. In 2013, Canada participated in a workshop in Argentina for Latin American countries aimed at promoting accession to the Protocol.

Canada participates actively in the development of international guidance relevant to disposal at sea. Current projects include developing best practices for disposal related to offshore mining wastes and developing low-tech assessment guidance for dredged material. Guidance on dredge material assessment was completed in 2013–2014.

Following many years of work by Canada and other Parties, an amendment to the London Protocol was adopted by consensus of the Parties in October 2013 under the Chairmanship of Canada. The amendment is designed to create a global approach for ocean fertilization and potentially for other forms of marine geo-engineering where there is potential to cause harm to the marine environment. Parties, including Canada, will now need to look at ratifying the amendment to ensure domestic consistency with the London Protocol within the next few years. Cooperation with other bodies that are concerned with geo-engineering, including the Convention on Biological Diversity, is ongoing.

Disposal at Sea Permits

In 2013–2014, 84 permits were issued in Canada for the disposal of 5.8 million tonnes of waste and other matter (tables 17 and 18), compared with 91 permits for the disposal of 3.97 million tonnes in 2012–2013. Most of the material permitted for disposal was dredged material that was removed from harbours and waterways to keep them safe for navigation. Also permitted was excavated native till (geological matter) that is disposed of at sea in the lower mainland of British Columbia, where on-land disposal options for clean fill are extremely limited. Fish-processing waste is also permitted in remote communities where there is no access to reuse-and-recycling opportunities.

Table 17: Disposal at sea quantities permitted (in tonnes) and permits issued in Canada from April 2013 to March 2014

Material	Quantity permitted	Permits issued
Dredged material	4 702 750*	39
Geological matter	1 040 000*	7
Fisheries waste	58 005	38
Vessels	–	–
Organic matter	–	–
Total	**5 800 755**	**84**

* Dredged material and geological matter were converted to tonnes using an assumed density of 1.3 tonnes per cubic metre.

Table 18: Disposal at sea quantities permitted (in tonnes) and permits issued by region from April 2013 to March 2014

Material	Atlantic		Quebec		Prairie and Northern		Pacific and Yukon	
	Quantity permitted	Permits issued	Quantity permitted	Permits issued	Quantity permitted	Permits issued	Quantity permitted	Permits issued
Dredged material*	1 300 650	12	647 400	8	0	0	2 754 700	19
Geological matter*	0	0	0	0	0	0	1 040 000	7
Fish waste	56 855	35	1 150	3	0	0	0	0
Vessels	–	–	–	–	–	–	–	–
Organic matter	–	–	–	–	–	–	–	–
Total	**1 357 505**	**47**	**648 550**	**11**	**0**	**0**	**3 794 700**	**26**

* Dredged material and geological matter were converted to tonnes using an assumed density of 1.3 tonnes per cubic metre.

2.6 Environmental Emergencies

Part 8 of CEPA 1999 addresses the prevention of, preparedness for, response to and recovery from an uncontrolled, unplanned or accidental releases into the environment of substances that pose potential or actual harm to the environment or danger to human life or health. Part 8 provides the authority, among other things, for making regulations, guidelines and codes of practice. Part 8 also establishes a regime that makes the person who owns or has the charge, management or control of such a substance liable for restoring the damaged environment and for the costs and expenses incurred in responding to an environmental emergency.

The *Environmental Emergency Regulations* (referred to as the E2 Regulations) are made under Part 8 of CEPA 1999. The Regulations require any person responsible for quantities, as specified in the Regulations, for substances listed in the Regulations, located at a place in Canada, to notify the Minister of the Environment in respect of those quantities and to prepare, document, implement, exercise and update an environmental emergency plan (E2 plan) for the place where the substance is located, if the total quantity of the substance on location including, if some or all of the substance is in a storage container, the maximum capacity of the storage container is equal to or greater than the regulated threshold quantity for the substance.

Environment Canada's Environmental Emergencies website (www.ec.gc.ca/ee-ue/default.asp?lang=En&n=8A6C8F31-1) includes implementation guidelines for E2 plans, a common issues section and online notice filing. The website also provides public access to a database containing basic information about persons or places (e.g., company names and addresses) that are subject to the Regulations.

As of March 31, 2014, approximately 4700 regulatees had filed Notices Regarding the Identification of Substance and Place under the E2 Regulations. Of these regulatees, approximately 2900 were required to prepare E2 plans. The 7 most commonly identified substances were propane, anhydrous ammonia, butane, pentane, gasoline, hydrochloric acid and chlorine.

In 2013–2014, Environment Canada regional activities associated with the implementation of the E2 Regulations included hosting workshops and site visits for the regulated community, covering prevention, preparedness and response aspects for propane, tetrachloroethylene and ammonia, among other substances. Other themed workshops addressed E2 plan content and exercise design.

Environment Canada conducted preliminary public consultations in 2013–2014 in preparation for potential regulatory amendments. Using online surveys, webinars and meetings, Environment Canada solicited comments from current regulatees, potential future regulatees, Aboriginal communities and other interested parties on a number of potential amendments related to improving the protection of the environment and humans, improving the clarity and effectiveness of the E2 Regulations, and harmonizing the E2 Regulations with existing laws and regulations.

3 Administration, Public Participation and Reporting

3.1 Federal, Provincial, Territorial Cooperation

Part 1 of CEPA 1999 requires the Ministers to establish the National Advisory Committee, composed of one representative for the federal Minister of the Environment and one for the federal Minister of Health, representatives from each province and territory, and not more than six representatives of Aboriginal governments from across Canada.

Part 1 also allows the Minister of the Environment to negotiate an agreement with a provincial or territorial government, or an Aboriginal people, with respect to the administration of the Act. It also allows for equivalency agreements, which suspend the application of federal regulations in a province or territory that has equivalent regulatory provisions.

3.1.1 National Advisory Committee

The National Advisory Committee provides a forum for provincial, territorial and Aboriginal governments to advise the Ministers on certain actions being proposed under the Act, enables national cooperative action, and seeks to avoid duplication in regulatory activity among governments. The committee is provided opportunities to advise and comment on initiatives under the Act.

To carry out its duties in 2013–2014, the CEPA National Advisory Committee (NAC) held two teleconference meetings, and the NAC Secretariat corresponded regularly with committee members regarding various federal initiatives implemented under CEPA 1999. These initiatives included:

- updates on the implementation of Canada's CMP, including various risk assessment and risk management activities of the CMP, including:
    - draft screening assessment reports for over 300 substances,
    - final assessment reports for over 60 substances,
    - final decisions on 533 substances that underwent a rapid screening,
    - order applying the SNAc provisions to 56 substances on the Domestic Substances List,
    - proposed order to add 40 petroleum and refinery gases under Stream 1 of the Petroleum Sector Stream Approach to Schedule 1,
    - final order adding PFOA and PFCA to Schedule 1,
    - proposal to amend the volatile organic compound definition on Schedule 1,
    - guidelines for MAPBAP acetate,
    - risk management instruments for PBDEs,
    - state of the science report of DEHA, and
    - notices with respect to certain selenium-containing substances and certain phthalate substances;
- amendments to Schedule 3, the ECL, including the addition of the pesticide Endosulfan;
- Report on Human Biomonitoring of Environmental Chemicals in Canada;
- notice of publication of the *Export of Substances on the Export Control List Regulations*;
- notice of publication of the reviewed 2011 and the 2012 National Pollutant Release Inventory Data;
- opportunity to advise on proposed amendments to the *Environmental Emergencies Regulations* and the proposed multi-sector air pollutant regulations;
- notice of intent to develop regulations to further limit smog-forming emissions from new cars and light trucks and to reduce the sulphur content of gasoline;
- national targets for the Code of Practice for Environmental Management of Road Salts; and
- notice of the publication of the Canadian Ambient Air Quality Standards for $PM_{2.5}$ and ozone.

For more information, please consult www.ec.gc.ca/ceparegistry/gene_info/nac.cfm.

3.1.2 Federal-Provincial/ Territorial Agreements

Canada–Ontario Agreement Respecting the Great Lakes Basin Ecosystem

Since 1971, Canada and Ontario have worked together through the Canada–Ontario Agreement Respecting the Great Lakes Basin Ecosystem (www.ec.gc.ca/grandslacs-greatlakes/default.asp?lang=En&n=B903EE0D-1). This agreement guides the efforts of Canada and Ontario in achieving a healthy, prosperous and sustainable Great Lakes Basin ecosystem for present and future generations, and is an important mechanism for implementing Canada's obligations under the Great Lakes Water Quality Protocol of 2012, which amended the Canada–United States Great Lakes Water Quality Agreement (www.ec.gc.ca/grandslacs-greatlakes/default.asp?lang=En&n=45B79BF9-1).

In 2013–2014, Canada and Ontario continued to collaborate on work to protect and restore the Great Lakes while continuing to negotiate a new, expanded agreement, entitled Canada–Ontario Agreement on Great Lakes Water Quality and Ecosystem Health (COA). The new draft COA covers a broad range of issues of importance to the restoration and protection of Great Lakes water quality and is aligned to meeting the commitments articulated in the Canada–U.S. Great Lakes Water Quality Protocol of 2012.

In recognition of the commitments related to Harmful Pollutants under the new draft Canada–Ontario Agreement on Great Lakes Water Quality and Ecosystem Health, Environment Canada and the Ontario Ministry of the Environment have hired a consultant to summarize past and current research, monitoring and risk management activities and achievements on chemicals identified as Tier I and Tier II under previous Canada–Ontario agreements.

In addition, during 2013–2014, a range of chemical risk management initiatives were delivered under the CMP, as described elsewhere in this report, that supported implementation of the draft Harmful Pollutants Annex Goals under the new draft COA. These included continuing efforts towards the sound management of chemicals in the Great Lakes through the reduction of releases and the enhancement of knowledge to mitigate risk.

Memorandum of Understanding between Canada and Quebec

Memoranda of Understanding and/or Administrative Agreements concerning the pulp and paper sector have been in place between Quebec and the Government of Canada since 1994. The parties currently cooperate through a Memorandum of Understanding for data collection that is in effect until March 2015, whereby Quebec continues to provide a single data-entry portal for regulatees for the following federal regulations:

- *Pulp and Paper Mill Effluent Chlorinated Dioxins and Furans Regulations* made pursuant to CEPA 1999;
- *Pulp and Paper Mill Defoamer and Wood Chip Regulations* made pursuant to CEPA 1999; and
- *Pulp and Paper Effluent Regulations* made pursuant to the *Fisheries Act*.

During this reporting period, 48 reports produced by pulp and paper facilities in Quebec were examined to verify that the facilities were in compliance with the applicable regulations.

Canada–Saskatchewan Administrative Agreement

The Canada–Saskatchewan Administrative Agreement, in force since September 1994, is a work-sharing arrangement covering certain provincial legislation and seven CEPA 1999 regulations, including two regulations related to the pulp and paper sector, two regulations on ozone-depleting substances and two regulations on PCBs. There were no prosecutions under these regulations in Saskatchewan under this agreement in 2013–2014; however, there were two open investigations under the *PCB Regulations*, of which one is currently being prosecuted before the courts. There were also two written warnings issued under the *PCB Regulations*.

To view the agreement, consult www.ec.gc.ca/ee-ue/default.asp?lang=En&n=91B094B6-1.

Canada–Alberta Equivalency Agreement

CEPA 1999 provides for the entering into equivalency agreements where provincial or territorial environmental legislation has provisions that are equivalent to the provisions of regulations made under the Act. The intent of an agreement is to eliminate the duplication of environmental regulations. As a result of the 1994 Agreement on the Equivalency of Federal and Alberta Regulations for the Control of Toxic Substances, the following CEPA 1999 regulations, or parts thereof, do not apply in Alberta:

- *Pulp and Paper Mill Effluent Chlorinated Dioxins and Furans Regulations* (all sections);
- *Pulp and Paper Mill Defoamer and Wood Chip Regulations* [4(1), 6(2), 6(3)(*b*), 7 and 9];
- *Secondary Lead Smelter Release Regulations* (all sections); and
- *Vinyl Chloride Release Regulations, 1992* (all sections).

There are no longer any operating vinyl chloride plants or lead smelters in Alberta, and therefore there are no compliance issues to report under the *Vinyl Chloride Release Regulations, 1992* or the *Secondary Lead Smelter Release Regulations*.

Alberta Environment indicated that, in 2013–2014, there were no reported violations by the four pulp and paper mills regulated under the pulp and paper regulations.

For more information about the agreement, consult www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=5CB02789-1.

Memorandum of Understanding on Environmental Cooperation in Atlantic Canada

The five-year Memorandum of Understanding on Environmental Cooperation among the federal Minister of the Environment and the Ministers responsible for the environment in the four Atlantic provinces expired in June 2013. Efforts are proceeding to establish a new agreement between the parties to continue to cooperate and collaborate in preserving, protecting and enhancing the environment, which includes closer cooperation in fieldwork and capacity development (e.g., training and information sharing). During 2013–2014, a number of joint field operations were initiated, including a pan-Atlantic review of the scrap metal sector.

Environmental Occurrences Notification Agreements

Federal, provincial and territorial laws require, in most cases, notification of the same environmental emergency or environmental occurrence, such as an oil or chemical spill. To reduce duplication of effort, Environment Canada and Fisheries and Oceans Canada entered into environmental occurrences notification agreements with the governments of British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, the Northwest Territories and Yukon.

These notification agreements are supported by the *Release and Environmental Emergency Notification Regulations* under CEPA 1999 and the *Deposit out of the Normal Course of Events Notification Regulations* under the *Fisheries Act*.

The purpose of the notification agreements is to establish a streamlined notification system for persons required to notify federal and provincial/territorial governments of an environmental emergency or environmental occurrence. Under these notification agreements, 24-hour authorities operating for the provinces and territories receive notifications of environmental emergencies or environmental occurrences, on behalf of Environment Canada, and transfer this information to the Department.

In 2013–2014, Environment Canada continued to work with its provincial and territorial counterparts to implement the notification agreements. This work included the establishment of management committees and the development of standard operating procedures for the collection and processing of notifications of environmental occurrences.

To view the notification agreements, consult www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=5200AB4B-1.

3.2 Public Participation

3.2.1 CEPA Environmental Registry

Part 2 of CEPA 1999 provides for the establishment of an environmental registry, whistleblower protection, and the right of an individual to request an investigation and pursue court action.

The CEPA Environmental Registry was launched on Environment Canada's website when the Act came into force on March 31, 2000. Since that time, ongoing efforts have been made to increase the Registry's reliability and ease of use. The Registry encompasses thousands of CEPA-related documents and references. It has become a primary source of environmental information for the public and private sectors, both nationally and internationally, and has been used as a source of information in university and college curricula.

From April 2013 to March 2014, over 240 requests for CEPA-related information were received in the Registry mailbox (ceparegistry@ec.gc.ca) or Environment Canada's general mailbox (enviroinfo@ec.gc.ca).

The Registry is located at www.ec.gc.ca/lcpe-cepa.

Public Consultations

During 2013–2014, there were 38 opportunities posted on the Environmental Registry for stakeholders and the public to consult.

Please see www.ec.gc.ca/lcpe-cepa/eng/participation/default.cfm?n=FBC634F3-1.

3.2.2 CMP-related Consultations

In addition to public consultations on the various risk assessments and risk management measures outlined throughout Section 2, Environment Canada and Health Canada undertook other CMP-related consultations in 2013–2014, including:

- proposed approach for a subset of substances prioritized during categorization
- the proposed risk management instrument for 2-Butanone, oxime (butanone oxime) (August 2013)
- the proposed risk management instrument for products containing polybrominated diphenyl ethers (PBDEs) (September 2013)
- the proposed risk management instrument for perfluorooctane sulfonate, its salts and certain other compounds (PFOS) – Examination of On-going Exemptions (January 2013)

3.2.3 CMP-related Committees

The CMP Stakeholder Advisory Council met twice in 2013–2014. The purpose of the council is to get stakeholder input on the implementation of the CMP, and to foster dialogue on issues pertaining to the CMP between stakeholders and government, and among different stakeholder groups. Issues may include risk assessment, risk management, risk communications, monitoring, research, indicators of success, chemical policy and other cross-cutting integrated activities. Some examples of topics that were discussed in 2013–2014 include publication of the Canadian Health Measures Survey; gathering information on chemicals in products; effectiveness of early stakeholder engagement for the Substance Grouping Initiative; and enhancing transparency in regulatory development.

The CMP Science Committee held its first meeting in Ottawa on February 18–19, 2014. The Science Committee ensures a strong science foundation to CMP by providing external, scientific expertise to Health Canada and Environment Canada on scientific issues. The meeting provided the ten committee members, selected for their expertise in core scientific areas, with the opportunity to deliberate on their first topic: "Capturing and communicating uncertainty." Members also engaged in constructive discussions as they began developing the committee's scientific input for the Government of Canada and identifying their next steps for formulating the Committee Report.

3.3 Reporting

3.3.1 Canadian Pollution Prevention Information Clearinghouse

Part 4 of CEPA 1999 provides the authority for the establishment of a national pollution prevention information clearinghouse to facilitate the collection, exchange and distribution of information regarding pollution prevention.

The Canadian Pollution Prevention Information Clearinghouse (CPPIC) is a public website that provides Canadians with links to over 1 500 resources containing comprehensive information and tools from Canada and around the world to strengthen their capacity to prevent pollution. In 2013–2014, 142 new records were added to the clearinghouse. Fifty-four percent (54%) of the new records are Canadian, and 6% are bilingual. Roughly forty percent of new records (44%) are applicable to manufacturing sectors, while another forty percent (38%) are applicable to private households. Overall, CPPIC records were viewed just over 44 000 times in 2013–2014, a 69% increase over the previous year's views.

3.3.2 State of the Environment Reporting

The Canadian Environmental Sustainability Indicators (CESI) program provides data and information to track Canada's performance on key environmental sustainability issues including climate changes and air quality, water quality and availability, and protecting nature. The environmental sustainability indicators convey the state of Canada's environment in a straightforward and transparent manner. They are used to inform citizens and members of Parliament about current environmental status and trends, and provide policy makers and researchers with comprehensive, unbiased and authoritative information about key environmental issues. The indicators are also the prime vehicle used to measure progress towards the goals and targets of the Federal Sustainable Development Strategy.

The indicators are designed to be relevant to the government's policy priorities: useful and easily understood by decision makers and the public and based on solid methodology that allows for comparison over time. CESI also ensures that the national, regional, local and international trends are readily accessible and presented through the use of graphics, explanatory text and interactive maps through which users can drill down for local data.

The indicators are prepared by Environment Canada with the support of other federal departments, including Health Canada, Statistics Canada, Natural Resources Canada, Agriculture and Agri-Food Canada, and Fisheries and Oceans Canada, as well as relevant provincial and territorial counterparts. The high-quality data used to calculate indicators originate from a variety of sources, including surveys, measurement networks and other research initiatives that are expected to be maintained and updated for the foreseeable future.

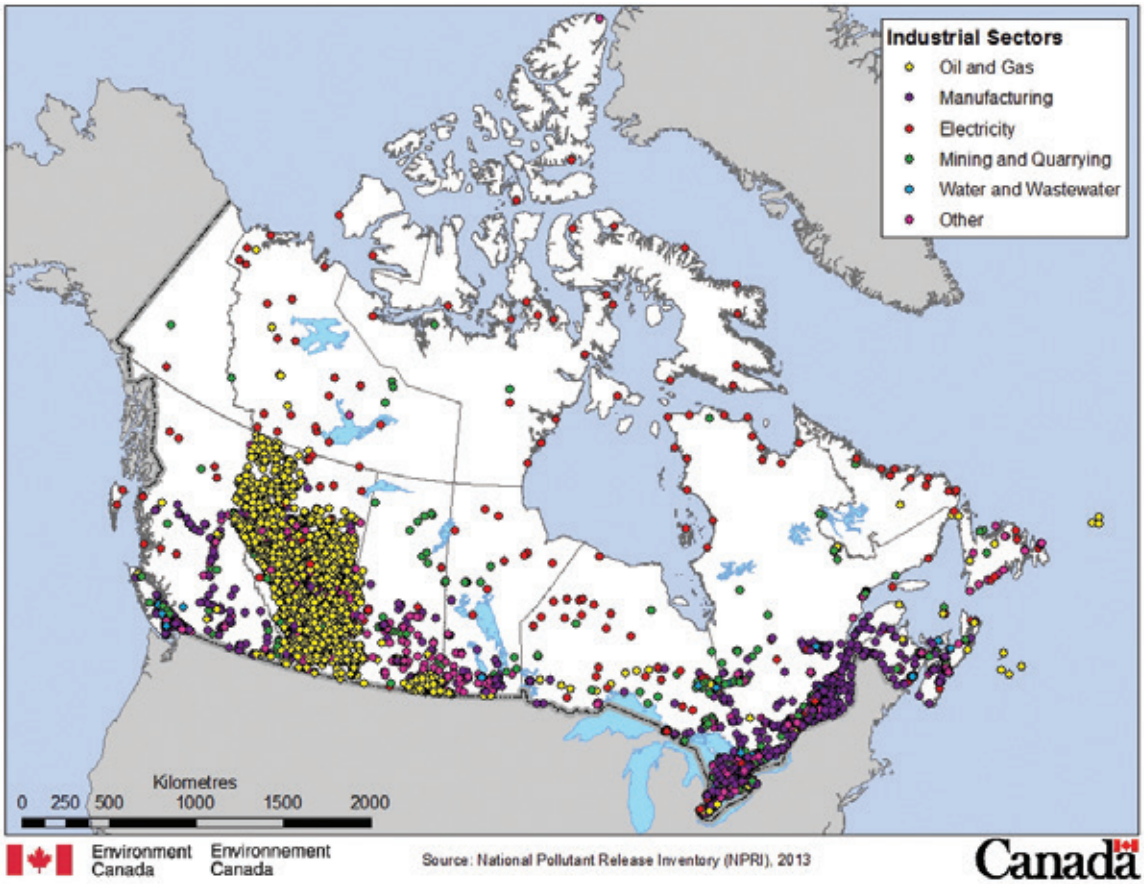
The indicators are published on the CESI website (www.ec.gc.ca/indicateurs-indicators), showing national and regional results along with the methodology explaining each indicator and links to related socio-economic issues and information. CESI provides results and information for more than 40 environmental indicators, including air quality, water quality, toxic substances and exposure to substances of concern.

3.3.3 National Pollutant Release Inventory

The National Pollutant Release Inventory (NPRI) is Canada's legislated, publicly accessible national inventory of pollutant releases (to air, water and land), disposals and transfers for recycling. The NPRI includes information reported by industrial facilities that meet certain criteria and provides the main input to Canada's comprehensive Air Pollutant Emissions Inventory (APEI). Over 7700 facilities, located in every province and territory, reported to the NPRI for 2012 (see Figure 2).

The NPRI supports the identification and management of risks to the environment and human health, including the development of policies and regulations on toxic substances and air quality. Public access to the NPRI through an online data search tool encourages industry to prevent and reduce pollutant releases, and improves public understanding about pollution and environmental performance in Canada.

Figure 2: Location of facilities that reported to the NPRI in 2012



NPRI data that was published in 2013–2014 includes the 2012 NPRI facility-reported data (published in preliminary form in July 2013 and reviewed form in February 2014) and the 2012 national air pollutant emissions data and trends for all sources (published in February 2014). Environment Canada undertook a number of initiatives to respond to the needs of NPRI data users during 2013–2014. For example, the Department held consultations on proposed changes to NPRI reporting requirements, published and consulted on initial results of the first phase of the NPRI Substances Review, and hosted a workshop for data users.

Environment Canada updated Canada's APEI with the latest data for 2012. The APEI includes data for 17 air pollutants, notably smog precursors and selected toxics. The APEI was developed using NPRI facility-reported data and emissions estimates from sources that are not reported to the NPRI (e.g., residential fuel combustion, vehicles, agriculture). The APEI is used to support the development of regulatory instruments (e.g., Base Level Industrial Emissions Requirements, vehicles regulations) and Environment Canada's air quality forecasting. It facilitates the evaluation and tracking of policy effectiveness, informs the public and supports multiple air-quality reporting requirements. A summary of the APEI is provided annually to the United Nations Economic Commission for Europe under the Convention on Long-range Transboundary Air Pollution.

For further information, consult www.ec.gc.ca/inrp-npri.

3.3.4 Greenhouse Gas Emissions Reporting Program

Environment Canada requires annual reporting of GHG emissions from facilities (mostly large industrial operations) through its Greenhouse Gas Emissions Reporting Program (GHGRP).

The GHGRP is part of Environment Canada's ongoing effort to develop, in collaboration with the provinces and territories, a single, domestic, mandatory GHG reporting system, in order to meet the GHG reporting needs of all jurisdictions and to minimize the reporting burden for industry and government.

Key objectives of the GHGRP are to provide Canadians with consistent information on facility-level GHG emissions, support regulatory initiatives, and validate industrial emission estimates presented in the National GHG Inventory. The data collected are also shared with provinces and territories.

In May 2013, the 2011 facility-reported data and related overview report were made publicly available as part of a broader departmental release of GHG information products, which also included the latest National GHG Inventory and updated CESI GHG indicators. Environment Canada received 2012 emission information from 549 facilities, which were prepared for public release, set to occur in spring 2014. The facility-reported data is available through data tables, an online query tool and a downloadable file.

Environment Canada also implemented a new data-sharing agreement with the province of Newfoundland and Labrador to share facility-level GHG information to support their information needs and policy development.

For further information, consult www.ec.gc.ca/ges-ghg.

3.3.5 Single Window Reporting Initiative

In 2013–2014, Environment Canada, in collaboration with various partners, continued to improve and expand its single window, online system for regulatory reporting of air emissions and pollutant releases. The system reduces burden on industry and supports the shared interest across jurisdictions of tracking and reporting progress on the reduction of GHG emissions and pollutant releases. Environment Canada's NPRI and GHGRP (explained above), as well as the CMP and other initiatives and regulations related to CEPA 1999 provisions, are using the Single Window Reporting System for their environmental data collection efforts. This initiative will continue to grow as additional partners integrate their GHG and pollutants reporting requirements into the Single Window Reporting System. For further information, consult https://ec.ss.ec.gc.ca/.

3.3.6 Use of Monitoring and Surveillance to Measure Performance of Risk Management Activities

In 2013–2014, a substance-specific environmental multimedia fact sheet was published on perfluorooctane sulfonate (PFOS) in the Canadian environment. The fact sheet was used to report geographical and temporal analysis of PFOS concentrations in air, water, sediments, fish and bird eggs, and compared the levels with available Federal Environmental Quality Guidelines. The fact sheet also reported the status of concentrations in waste streams such as wastewater and landfill leachate. Certain information was used to report in relation to pollution prevention indicators. For more information, visit www.ec.gc.ca/toxiques-toxics/default.asp?lang=En&n=7331A46C-1.

3.3.7 Environmental Offenders Registry and Enforcement Notifications

The Environmental Offenders Registry contains information on convictions of corporations obtained under certain federal environmental laws including CEPA 1999. The registry contains convictions obtained for offences committed since June 18, 2009—when the *Environmental Enforcement Act* received Royal Assent. This tool allows the media and the public to search for corporate convictions using the name for the corporation, its home province, the province where the offence occurred, or the legislation under which the conviction was obtained. Keywords can also be used to search the registry.

The Enforcement Notifications contain information about successful prosecutions across Canada under the Acts and Regulations administrated by Environment Canada or involving Environment Canada enforcement officers (including CEPA 1999).

The Registry and Notifications can be found online at www.ec.gc.ca/alef-ewe/default.asp?lang=En&n=1F014378-1 and www.ec-gc.ca/alef-ewe.default.asp?lang=En&n=8F711F37-1, respectively.

4 Compliance Promotion and Enforcement

Compliance promotion relates to the planned activities that are undertaken to increase awareness, understanding and compliance with the law and its regulations. Through these activities, information is provided to the regulated communities on what is required to comply with the law, the benefits of compliance and the consequences of non-compliance.

CEPA 1999 provides enforcement officers with a wide range of powers to enforce the Act, including the powers of a peace officer. Enforcement officers can carry out inspections to verify compliance with the Act; conduct investigations of suspected violations; enter premises, open containers, examine contents and take samples; conduct tests and measurements; obtain access to information (including data stored on computers); stop and detain conveyances; search, seize and detain items related to the enforcement of the Act; secure inspection warrants to enter and inspect premises that are locked and/or abandoned or where entry has been refused; seek search warrants; and arrest offenders. CEPA 1999 analysts can enter premises when accompanied by an enforcement officer and can exercise certain inspection powers.

A wide range of enforcement measures are available to respond to alleged violations. Many are designed to achieve compliance without resorting to a formalized legal process such as prosecutions or seeking an injunction. These measures also include directions, tickets, prohibition orders, recall orders, detention orders for ships, and Environmental Protection Compliance Orders. Measures to compel a return to compliance through court action include injunctions to stop or prevent a violation and prosecutions. In addition, a return to compliance can be achieved through Environmental Protection Alternative Measures, a program for diverting offenders away from the formal court process.

4.1 Designations and Training

The number of designated persons within Environment Canada with enforcement powers under CEPA 1999 is as follows:

- 198 CEPA enforcement officers;
- 10 emergency officers from the Environmental Emergencies Program designated as CEPA enforcement officers with limited powers; and
- 176 CEPA analysts.

In December 2010, the bulk of the *Environmental Enforcement Act* (EEA) came into force, amending legislation administered by Environment Canada, including CEPA 1999 and introducing the new *Environmental Violations Administrative Monetary Penalties Act*. In 2013–2014, the Department continued updating internal and external policies and procedures to meet the EEA requirements and to update and develop training accordingly.

The accomplishments related to training of Environment Canada personnel on CEPA 1999 regulations in 2013–2014 include:

- the revision of the current delivery model of the Basic Enforcement Training to enhance its efficiency and effectiveness;
- the delivery of Environmental Enforcement Standardized Training;
- the delivery of Limited Powers/Analyst Designation course;
- the delivery of Vehicles and Engines Regulations Training, which includes the *Regulations Amending the On-Road Vehicle and Engine Emission Regulations*, *Off-road Compression-Ignition Engine Emission Regulations* and *Off-Road Small Spark-Ignition Engine Emission Regulations*, *Marine Spark-Ignition Engine*, *Vessel and Off-Road Recreational Vehicle Emission Regulations*, and *Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations*;

- the continued delivery of online training on various regulations and enforcement tools (*Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations*, storage tanks, CEPA 1999, Environmental Protection Compliance Orders, etc.)

In order to augment the job-related skills of enforcement officers as it pertains to advanced investigative skills and capacity, the Department offered training sessions on forensic interviewing skills.

4.2 Compliance Promotion

In 2013–2014, Environment Canada continued to focus compliance promotion efforts on geographically dispersed, small and medium-sized enterprises (SME) (less than 500 employees), and First Nations.

Environment Canada delivered compliance promotion activities for new and existing control instruments under CEPA 1999. Multiple approaches were used to reach the regulated communities, including workshops, information sessions, presentations, information package emails/mail-outs and through technology such as videos, Twitter and Web banner advertising. Many of these activities were carried out in collaboration with provincial and territorial governments as well as non-governmental organizations.

Health Canada also undertook targeted public outreach and compliance promotion activities, particularly in support of information gathering for the substance groupings initiative, and the second phase of the Domestic Substances List Inventory Update (DSL IU2). This included stakeholder workshops for the CEPA 1999 section 71 Notice issued for DSL IU2 in four locations across the country, as well as stakeholder webinars or webexes for the Notices issued for DSL IU2, Triclosan, Organic Flame Retardants, Selenium and Phthalates substance groupings.

Responding to Inquiries

Compliance promotion officers continued to raise awareness and understanding of the Department's regulatees by responding to over 9500 inquiries on 19 regulations. The majority of inquiries came in via email, and a small proportion came in via telephone and letter.

Promoting Compliance to First Nations

In 2013–2014, Environment Canada continued to work closely with First Nations. Workshops, information sessions and compliance-promotion materials were delivered to First Nations groups and individuals throughout Canada, to increase awareness of their obligations to comply with nine instruments under CEPA 1999 as well as their responsibilities under the *Fisheries Act*.

The Department also organized a number of multi-instrument workshops, conferences, meetings and information booths to reach stakeholders who must comply with more than one instrument. The promotion of the *Storage Tank Regulations* conference, in particular, was a success, and Environment Canada was also asked to present to an "invitation only" event where the focus was on retail gas stations on First Nations lands, which is a key departmental priority.

Promoting Compliance to SMEs

Multi-instrument compliance-promotion activities provide a unique opportunity for stakeholders to obtain, in an efficient and effective way, key information regarding Acts and instruments affecting their activities. Regulatees also benefit from the knowledge and experience of the on site compliance promotion officers, the distribution of printed materials on the legislation, and the identification of contacts for further inquiries. In 2013–2014, Environment Canada reached SMEs through 60 campaigns on the 19 CEPA 1999 regulations through multi-instrument activities and on a per regulation basis.

The Department worked in collaboration with the chief electricians and apprenticeship programs in Nova Scotia, Newfoundland and Labrador, and New Brunswick to distribute information on the *PCB Regulations*, which had been developed to reach electricians and electrical contractors. In Quebec, *PCB Regulations* fact sheets were sent to master electricians. The Master Electricians Professional Association later contacted the Department requesting additional information, which they then distributed to all of their members. The collaboration between the Department and these regional organizations has been an effective and efficient mechanism to provide relevant information to this particular regulated community.

Promoting Compliance Within the Federal Government

Compliance promotion to federal government department and agency regulatees included individual communications, campaigns and multi-instrument activities on the *Federal Halocarbon Regulations* and the *Storage Tank Regulations*, among others.

For example, Environment Canada delivered workshops on the *Federal Halocarbon Regulations, 2003* for federal department regulatees. Attendance at one of these workshops led to a special request by two departments for an additional workshop. These sessions resulted in increased awareness, specific issues being addressed and stronger relationships.

4.3 Enforcement Priorities

Each year, Environment Canada develops a National Enforcement Plan describing the enforcement activities to be carried out in that fiscal year, including activities addressing non-compliance with CEPA 1999. Factors that influence the identification of the priority regulations include the risk to the environment and human health represented by the regulated substance or activity, compliance issues, new and amended regulations, the nature of regulatory provisions, operational complexity and capacity, and domestic and international commitments and obligations.

In 2013–2014, the National Enforcement Plan priorities included the following CEPA 1999 instruments:

- *Off-Road Small Spark-Ignition Engine Emission Regulations*;
- *Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations*;
- *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*; and
- *PCB Regulations.*

The number of planned inspections carried out under the enforcement plan is supplemented by a large number of unplanned inspections resulting from responses to complaints, intelligence gathering, spills or other information. In addition, a number of regulations are identified for regional enforcement focus. The focus placed on regulations in each region is influenced by a number of factors, including geography, the prevalence of the regulated sectors, and provincial and territorial environmental sensitivities.

4.4 Enforcement Activities

4.4.1 Enforcement Statistics

Enforcement activities undertaken during 2013–2014 are summarized in the four following tables. Table 19 provides the number of on-site and off-site inspections for each regulation from April 1, 2013, to March 31, 2014. Table 20 provides the breakdown of investigations for each regulation in regard to which at least one investigation occurred and/or closed from April 1, 2013, to March 31, 2014. Table 21 provides the total number of enforcement measures resulting from inspections and investigations from April 1, 2013, to March 31, 2014, for each regulation. Table 22 provides the number of prosecutions from April 1, 2013, to March 31, 2014, for each regulation.

Table 19: Summary of inspections, from April 1, 2013, to March 31, 2014

	Inspections*		
National	**Total**	**Off-site**	**On-site**
CEPA 1999 – *Canadian Environment Protection Act, 1999*	**4868**	**1910**	**2958**
2-Butoxyethanol Regulations	1	–	1
Benzene in Gasoline Regulations	133	120	13
CEPA 1999 – Section(s)	192	65	127
CEPA Section 56 Notices – P2 Plans	10	5	5
CEPA Section 71 Notices – Toxics	1	–	1
Chromium Electroplating, Chromium Anodizing and Reverse Etching Regulations	48	12	36
Concentration of Phosphorus in Certain Cleaning Products Regulations	38	1	37

Table 19 (concluded)

National	Inspections*		
	Total	Off-site	On-site
Disposal at Sea Regulations	77	39	38
Environmental Emergency Regulations	133	45	88
Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations	298	39	259
Export Control List Notification Regulations	8	–	8
Federal Halocarbon Regulations, 2003	537	326	211
Fuels Information Regulations, No. 1	144	139	5
Gasoline and Gasoline Blend Dispensing Flow Rate Regulations	281	1	280
Gasoline Regulations	3	–	3
Interprovincial Movement of Hazardous Waste Regulations	40	10	30
Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations	5	1	4
National Pollutant Release Inventory	65	27	38
New Substances Notification Regulations (Chemicals and Polymers)	7	2	5
New Substances Notification Regulations (Organisms)	7	1	6
Off-Road Compression-Ignition Engine Emission Regulations	12	–	12
Off-Road Small Spark-Ignition Engine Emission Regulations	22	2	20
On-Road Vehicle and Engine Emission Regulations	8	2	6
Ozone-depleting Substances Regulations, 1998	84	11	73
Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations	1	–	1
PCB Regulations	834	121	713
PCB Waste Export Regulations, 1996	1	–	1
Perfluorooctane Sulfonate and its Salts and Certain Other Compounds Regulations	5	–	5
Pulp and Paper Mill Defoamer and Wood Chip Regulations	24	20	4
Pulp and Paper Mill Effluent Chlorinated Dioxins and Furans Regulations	24	22	2
Release and Environmental Emergency Notification Regulations	4	4	–
Renewable Fuels Regulations	9	9	–
Secondary Lead Smelter Release Regulations	1	–	1
Solvent Degreasing Regulations	15	7	8
Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations	506	42	464
Sulphur in Diesel Fuel Regulations	181	156	25
Sulphur in Gasoline Regulations	43	30	13
Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations	1052	647	405
Vinyl Chloride Release Regulations, 1992	4	4	–
Volatile Organic Compound (VOC) Concentration Limits for Architectural Coatings Regulations	4	–	4
Volatile Organic Compound (VOC) Concentration Limits for Automotive Refinishing Products Regulations	6	–	6

* Inspections relate to the number of regulatees inspected for compliance under each of the applicable regulations (file, subject, act, regulation) using the end date for the reference period. Inspections are defined as the active process of gathering information by visiting sites, taking samples and analyzing records to verify compliance with legislation when no offence is suspected. An on-site inspection is one or more visits to the site of a facility or a plant, or visits at a border crossing, an airport, or port of entry, to conduct any activity/operation/analysis required to verify the regulatee's compliance with a regulation or a permit. An off-site inspection is normally undertaken at the officer's place of work or in another location that is not at the regulated site and involves physical and documentation verification.

Note: Only those regulations under which action was undertaken during the time period are listed in this table.

Table 20: Summary of the breakdown of investigations from April 1, 2013, to March 31, 2014

National	Investigation breakdown*			
	Started FY 2013–2014 and ended FY 2013–2014	Started FY 2013–2014 and still ongoing at the end of FY 2013–2014	Started before FY 2013–2014 but ended in FY 2013–2014	Started before FY 2013–2014 and still ongoing at the end of FY 2013–2014
CEPA 1999 – *Canadian Environment Protection Act, 1999*	**3**	**55**	**33**	**59**
CEPA 1999 – Section(s)	–	15	6	20
Chromium Electroplating, Chromium Anodizing and Reverse Etching Regulations	–	1	–	–
Disposal at Sea Regulations	–	3	2	2
Environmental Emergency Regulations	–	–	–	1
Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations	–	1	3	2
Federal Halocarbon Regulations, 2003	–	1	1	–
Gasoline and Gasoline Blend Dispensing Flow Rate Regulations	–	1	–	1
Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations	–	1	–	–
Off-Road Compression-Ignition Engine Emission Regulations	–	3	–	2
Off-Road Small Spark-Ignition Engine Emission Regulations	–	4	1	3
On-Road Vehicle and Engine Emission Regulations	–	–	–	2
Ozone-depleting Substances Regulations, 1998	1	4	1	2
PCB Regulations	2	4	4	4
Solvent Degreasing Regulations	–	1	–	1
Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations	–	7	6	5
Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations	–	9	9	14
Sulphur in Gasoline Regulations	–	–	1	–
Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations	2	14	8	8

* One investigation may pertain to one or more regulations, therefore it is possible that the data at the regulation level may not add up to the total at the legislation level.

Environmental Protection Compliance Orders

An Environmental Protection Compliance Order (EPCO) is one of the statutory measures that enforcement officers may use to handle offences. Its purpose is to restore an offender to compliance with CEPA 1999 as quickly as possible.

In 2013–2014, 153 regulatees were issued EPCOs, including 83 regulatees subject to the *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*, 17 regulatees subject to the *Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations*, 14 regulatees subject to the *Federal Halocarbon Regulations, 2003*, 13 regulatees subject to the *PCB Regulations*, and an additional 27 regulatees subject to various other regulations under CEPA 1999 as described in Table 21, summarizing the enforcement measures.

Environmental Protection Alternative Measures

An Environmental Protection Alternative Measure (EPAM) is an agreement that is negotiated in order to return a violator to compliance with CEPA 1999. It can be used after a charge has been laid and before the matter goes to trial as an alternative measure for a violation of the Act.

If an EPAM agreement is successfully negotiated, it is filed with the court and becomes a public document. The agreement must also appear in the CEPA Environmental Registry. No EPAMs were negotiated in 2013–2014

Further information on EPAMs is available at www.ec.gc.ca/CEPARegistry/enforcement/EPAMs.cfm.

Table 21: Summary of Enforcement Measures from April 1, 2013, to March 31, 2014

	Enforcement measures – from inspections and investigations*								
	Tickets	Written directions	Written warnings	Injunctions	Ministerial orders	No. of subjects involved in EPCOs**	EPCOs***	EPAMs	Referrals
CEPA 1999 – *Canadian Environment Protection Act, 1999*	–	–	2944	–	–	153	1308	–	42
2-Butoxyethanol Regulations	–	–	8	–	–	–	–	–	–
CEPA 1999 – Section(s)	–	–	42	–	–	4	4	–	–
Chromium Electroplating, Chromium Anodizing and Reverse Etching Regulations	–	–	79	–	–	1	3	–	-
Concentration of Phosphorus in Certain Cleaning Products Regulations	–	–	11	–	–	–	–	–	–
Disposal at Sea Regulations	–	–	2	–	–	1	1	–	–
Environmental Emergency Regulations	–	–	216	–	–	5	57	–	35
Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations	–	–	100	–	–	–	–	–	–
Export Control List Notification Regulations	–	–	16	–	–	–	–	–	–
Federal Halocarbon Regulations, 2003	–	–	84	–	–	14	33	–	–
Fuels Information Regulations, No. 1	–	–	4	–	–	–	–	–	–
Gasoline and Gasoline Blend Dispensing Flow Rate Regulations	–	–	25	–	–	9	9	–	–
Gasoline Regulations	–	–	8	–	–	1	1	–	–
Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations	–	–	5	–	–	–	–	–	–
National Pollutant Release Inventory	–	–	46	–	–	3	15	–	–

Table 21 (concluded)

Off-Road Compression-Ignition Engine Emission Regulations	–	–	2	–	–	–	–	–	–
Off-Road Small Spark-Ignition Engine Emission Regulations	–	–	2	–	–	–	–	–	–
On-Road Vehicle and Engine Emission Regulations	–	–	11	–	–	–	–	–	–
Ozone-depleting Substances Regulations, 1998	–	–	23	–	–	1	2	–	–
PCB Regulations	–	–	252	–	–	13	36	–	1
PCB Waste Export Regulations, 1996	–	–	1	–	–	–	–	–	–
Perfluorooctane Sulfonate and its Salts and Certain Other Compounds Regulations	–	–	2	–	–	–	–	–	–
Release and Environmental Emergency Notification Regulations	–	–	1	–	–	–	–	–	–
Renewable Fuels Regulations	–	–	13	–	–	1	1	–	–
Solvent Degreasing Regulations	–	–	4	–	–	–	–	–	–
Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations	–	–	1639	–	–	82	1093	–	3
Sulphur in Diesel Fuel Regulations	–	–	25	–	–	1	1	–	–
Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations	–	–	321	–	–	17	52	–	3
Volatile Organic Compound (VOC) Concentration Limits for Architectural Coatings Regulations	–	–	2	–	–	–	–	–	–

*Tickets, written warnings, written directions, injunctions, ministerial orders and EPCOs and EPAMs are tabulated at the section level of a regulation. For example, if the outcome of an inspection is the issuance of a written warning that relates to three sections of a given regulation, the number of written warnings is three.

** The number of subjects involved in EPCOs is represented by the number of regulatees issued EPCOs, by the end date, regardless of the number of sections. For example, if one regulatee was issued an EPCO for three sections of the *PCB Regulations*, the number of subjects involved is one. Therefore, it is possible that the data at the regulation level may not add up to the total at the legislation level.

*** There has been a significant increase in the number of EPCOs in 2013–2014 (1308) and 2012–2013 (1190) compared with 2011–2012 (273). The increase in EPCOs is due to an increase of non-compliance in regard to *Storage Tank Systems for Petroleum Products and Applied Petroleum Products Regulations.* The Regulations include a large number of sections in comparison with other regulations. Data on EPCOs are tabulated at the section level of the regulations, so an increase in non-compliance for these multi-section regulations causes a significant increase in the number of EPCOs.

Table 22: Summary of Prosecutions from April 1, 2013, to March 31, 2014

	Prosecutions			
	Started in FY 2013–2014		Concluded in FY 2013–2014	
	Prosecuted Subjects*	Counts**	Convicted Subjects***	Guilty Counts****
CEPA 1999 – *Canadian Environment Protection Act, 1999*	**33**	**128**	**12**	**64**
CEPA 1999 – Section(s)	12	21	2	5
Disposal at Sea Regulations	–	–	1	1
Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations	–	–	1	4
Off-Road Compression-Ignition Engine Emission Regulations	1	2	–	–
Off-Road Small Spark-Ignition Engine Emission Regulations	2	52	–	–
PCB Regulations	1	4	1	8
Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations	3	8	–	–

* Prosecuted subjects (started in 2013–2014): The number of subjects prosecuted, where the charged date falls within the reporting period (i.e., this is the number of prosecutions launched, not the number of prosecutions concluded in the reporting year). This means if one case resulted in the prosecution of two different subjects, the number reported would be two. The number of prosecuted subjects does not necessary correspond to the total at the legislative level, because one investigation might be related to more than one instrument.

** Counts (started in 2013–2014): The number of counts (excluding tickets) is tabulated at the section level of the regulation, by the offence date relating to the regulatee's charge. This is the number of counts with which prosecuted subjects (started in 2013–2014) were charged.

*** Convicted subjects (concluded in 2013–2014): The number of subjects convicted, where the convicted date falls within the reporting period.

**** Guilty counts (concluded in 2013–2014): The number of guilty counts (excluding tickets) is tabulated at the section level of the regulation, by the offence date relating to the regulatee's conviction. This is the number of counts for which convicted subjects were found guilty.

4.5 International Enforcement Cooperation

Enforcement-related activities are carried out under various international and domestic agreements and organizations. Under the auspices of the Commission for Environmental Cooperation's Enforcement Working Group (EWG), Environment Canada's Enforcement Branch engages in cooperative activities with its counterparts at the U.S. Environmental Protection Agency and Mexico's Profepa and Semarnat. The EWG is still working on a protocol to facilitate the exchange of information among the partners. In the meantime, it delivered on a series of related activities such as covert and forensic computer training. These activities support the goal of the three countries' working together to develop and implement a regional approach to intelligence-led enforcement with a specific focus on preventing the illegal movements of electronic waste, non-compliant imports, ozone-depleting substances and hazardous waste. The expected outcome over the next five years will be enhanced and more effective environmental compliance and enforcement, both domestically and as a region. Also, Environment Canada continues to actively participate in INTERPOL's Pollution Crimes Working Group, focused on issues such as capacity building in the area of environmental investigations and stopping the illegal movement of hazardous waste.

Appendix A: Reporting Requirements

This report includes the following mandatory information:

- Section 2 (all subsections) provides examples of the types of research initiatives and their key contributions in the reporting period. Environment Canada and Health Canada scientists published numerous reports, papers, book chapters, articles and manuscripts on subjects related to CEPA 1999. This body of work appeared in books and scientific journals that are available in libraries and from the publishers.
- Section 3.1 describes the activities of the National Advisory Committee. There were no other committees established under paragraph 7(1)(*a*) of CEPA 1999 during the reporting period.
- Section 3.1 also describes the activities under three federal-provincial agreements, including:
    - the Canada–Ontario Agreement Respecting the Great Lakes Basin Ecosystem;
    - the Canada–Saskatchewan Administrative Agreement; and
    - the Canada–Alberta Equivalency Agreement.
- There were no activities under the international air pollution provisions (Division 6 of Part 7) of CEPA 1999 during the reporting period.
- There were no activities under the international water pollution provisions (Division 7 of Part 7) of CEPA 1999 during the reporting period.

Appendix B: Contacts

Further information on CEPA 1999 and related activities can be found online at:

CEPA Environmental Registry website (www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=D44ED61E-1)

Environment Canada's website (www.ec.gc.ca)

Health Canada's website (www.hc-sc.gc.ca)

Chemical Substances website (www.chemicalsubstances.gc.ca)

Environment Canada publications are available from the departmental library or the nearest regional library. Many departmental publications are also available online at www.ec.gc.ca/publications or through Environment Canada's Inquiry Centre:

Inquiry Centre
Environment Canada
10 Wellington Street, 23rd Floor
Gatineau QC K1A 0H
Telephone: 819-997-2800 or 1-800-668-6767
Fax: 819-994-1412
TTY: 819-994-0736
(teletype for the hearing impaired)
Email: enviroinfo@ec.gc.ca

The following media relations contacts are also available to provide information:

Environment Canada
Media Relations
Toll-free within Canada: 1-888-908-8008
Outside Canada: 1-819-934-8008
Email: media@ec.gc.ca

Health Canada
Media Relations
Telephone: 613-957-2983
Fax: 613-952-7747
Email: info@hc-sc.gc.ca
Address Locator 0900C2
Ottawa ON K1A 0K9

For information about the role of the *Canada Gazette* and how to comment on proposed regulations before enactment, consult the *Canada Gazette* website at www.gazette.gc.ca or contact *Canada Gazette* general inquiries:

Email: info.gazette@pwgsc-tpsgc.gc.ca
Telephone: 613-996-1268
Toll-free: 1-866-429-3885
TTY: 1-800-926-9105
Fax: 613-991-3540

www.**ec.gc.ca**

Additional information can be obtained at:

Environment Canada
Inquiry Centre
10 Wellington Street, 23rd Floor
Gatineau QC K1A 0H3
Telephone: 1-800-668-6767 (in Canada only) or 819-997-2800
Fax: 819-994-1412
TTY: 819-994-0736
Email: enviroinfo@ec.gc.ca