
CONTROLLING TOXIC SUBSTANCES UNDER THE 1999 CANADIAN ENVIRONMENTAL PROTECTION ACT: (March, 2005 edition)

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INTRODUCTION

On September 14th, 1999, the revised *Canadian Environmental Protection Act* ("CEPA") received Royal Assent, introducing more than twice as many provisions as its 1988 predecessor. By the spring of 2000, the "lion's share" of these new provisions were brought into force and CEPA 1999 became a long-awaited *fait accompli*. Assessing and managing toxic substances is just one area of the Act that has undergone significant changes. The programs for identifying, assessing and controlling potentially toxic substances have expanded and are now more sophisticated. Accordingly, it is incumbent upon all domestic and foreign businesses that import, manufacture or use chemicals in Canada, to become keenly aware of the new provisions contained in the revised Act. This article will highlight some of the changes characterizing the onset of Part V of the Act ("Controlling Toxic Substances").

THE EVOLUTION OF CEPA 1999

In 1988, the Canadian government consolidated various statutes governing environmental protection and introduced the *Canadian Environmental Protection Act*, a cradle-to-grave approach to assessing and controlling toxic substances. When the 1988 Act was enacted, it required Parliamentary review five years following its passage. Beginning in 1993, significant discussions, analysis and controversy surrounded CEPA and culminated in the introduction of Bill C-74 in 1996. When the federal government called an election in 1997, Bill C-74 died on the order table, but, in 1998, the revised Act was re-introduced as Bill C-32 by the new government.

During Bill C-32's journey through the various levels of Parliamentary review, certain controversial changes relating to the assessment and management of toxic substances were introduced. In responding to Industry's concerns, some of the stronger regulatory provisions were softened. Consequently, in a rare show of dissent, three Liberal MPs voted against the Bill at Third Reading demonstrating a strong concern that the bill had been fatally weakened by these changes. The cradle-to-grave management objectives of CEPA 1999, and, in particular, those provisions in Part V that govern the assessment and management of toxic substances, have, however, remained the same despite these revisions.

CEPA 1999 strengthens the partnership between the Minister of Health and Minister of the Environment in order to achieve "the highest level of environmental quality". In assessing and managing potentially toxic substances, several new elements of identification and assessment have been introduced. Specifically, the Bill articulates a commitment to "virtually eliminate" those toxic substances that are persistent, bioaccumulative and resulting primarily from human activity. In managing other toxic substances, more prevention and control options have been introduced. The Act also provides for the periodic review of decisions of other jurisdictions (both domestic and international) with respect to the assessment and control of potentially toxic substances. Finally, CEPA 1999 introduced a commitment by Environment Canada and Health Canada to categorize before September 14, 2006 all ~23,000 substances on the Domestic Substances List ("DSL").

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Focusing on a discussion of Part V (Controlling Toxic Substances) of the *Canadian Environmental Protection Act 1999*, these important developments, and others, are considered in greater detail below.

DEFINITION OF “TOXIC” UNDER CEPA

Section 64 of CEPA 1999 reintroduces essentially the same definition of “toxic” as its 1988 predecessor, with the exception of the need to expand the environmental impact assessment to include consideration of any impacts on biological diversity. More specifically, s.64 states that 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.”*

Consistent with the Act's philosophy, the definition of “toxic” can more accurately be described as a definition of “risk”, requiring consideration not only of the substance's inherent hazards, but also the extent and nature to which humans and the environment may be exposed to the substance in question. Figure 1 illustrates the risk assessment paradigm behind CEPA's definition of “toxic”.

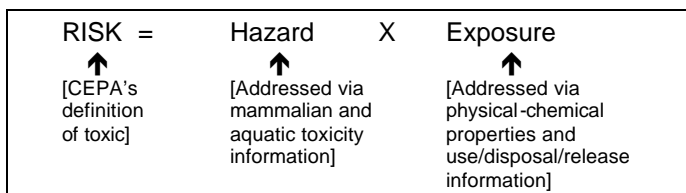


Figure 1. CEPA's Risk Assessment Paradigm

CEPA 1999 emphasizes the need to apply the risk assessment paradigm in a manner that balances between: (a) a weight-of-evidence approach that employs reliable and reproducible science; and (b) the precautionary principle that states “...where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation...” [s.2(1)(a)].

Substances meeting CEPA's definition of “toxic” are placed on the “List of Toxic Substances” in Schedule I of the Act and are subject to additional risk management controls. The risk assessment approaches for substances considered “new” to Canada and those considered to be “existing” in Canada, are discussed below.

ASSESSING “NEW” SUBSTANCES

Consistent with the federal government's creed to “anticipate-and-prevent” rather than “react-and-cure”, the 1988 CEPA introduced the need for notification and assessment of new substances before these substances could be introduced into Canada. This requirement continues in CEPA 1999, with some expansions in policy.

The sole basis for determining what is “new” in Canada, is the substance's presence on, or absence from, the Domestic Substances List (DSL). Substances absent from the DSL are considered to be “new” and may require notification before certain quantities of the substance can be introduced into Canada. The detailed requirements for pre-import and pre-manufacture notification are contained in CEPA's *New Substances Notification Regulations*.

These complex Regulations require the submission of various degrees of information depending on many factors including, but not limited to, the following:

- the amount of substance to be imported or manufactured;
- the physical-chemical characteristics of the substance;
- whether the substance is present on Canada's second national inventory, the Non-Domestic Substances List (NDSL), which carries about 50,000 substances considered to be existing in international commerce; and
- whether the substance's intended use pattern falls within the definition of a “special use category” such as research and development, product development, export-only, or site-limited intermediate.

Depending on the factors listed above, the pre-import/pre-manufacture notification may need to include information related to:

- Physical-Chemical Characteristics
- Acute Mammalian Toxicity

- Sub-Acute Mammalian Toxicity
- Mutagenicity (*in vitro*, *in vivo*)
- Ecotoxicity (Fish, Daphnia and/or Algae)
- Analytical Test Method
- Method of Manufacture, Importation, Transport, Storage, Handling and Use
- Potential for Environmental Release
- Potential for Human Exposure

Section 26(4) of the 1988 CEPA and section 81(8) of CEPA 1999 allows for the Minister of the Environment to grant a waiver for certain prescribed information if the notifier can adequately show that:

- a) the information is not necessary in determining whether or not the substance is toxic, as defined under CEPA;
- b) the substance will be adequately contained such that there is little potential for exposure and, hence, little chance that the substance will be “toxic”, using the Risk Assessment Paradigm; or
- c) it is impracticable or unfeasible to conduct the test that would generate the prescribed information.

Once all of the prescribed administrative, hazard-related, and exposure-related information has been gathered, two copies of the notification are submitted to the New Substances Notification Division of Environment Canada. Environment Canada shares the notification review responsibility with Health Canada in order to assess the substance’s potential impact on the environment and human health. If, within a prescribed period of time, Environment Canada and Health Canada do not suspect that the notified substance meets the CEPA definition of “toxic”, then the import or manufacture may continue beyond prescribed quantities. Furthermore, if the following four criteria have been met, then the substance becomes eligible for addition to the DSL:

- i) The last in the series of prescribed notifications has been submitted;
- ii) The prescribed assessment period has expired;
- iii) The substance is not controlled using notifier-specific restrictions;
- iv) The government has received the notifier’s Notice of Excess Quantity confirming that the maximum volume has been manufactured or imported.

Conversely, if, within the prescribed period of time, the government suspect that the notified substance meets the CEPA definition of “toxic”, then CEPA empowers the government to:

1. prohibit the manufacture or import of the substance until additional information is made available and reviewed (making the substance ineligible for the DSL).
2. permit the manufacture and/or import of the substance subject to certain notifier-specific restrictions (again, making the substance ineligible for addition to the DSL); or
3. prohibit the manufacture or import of the substance for not more than two years during which time federal regulations regarding the manufacture, import and/or use of the substance could be drafted. Once the two-year period had expired, the substance could still be, under certain circumstances, eligible for addition to the DSL.

Significant New Activity Conditions (SNAC)

Under CEPA 1999, substances which do not pose concern based on the notifier’s intended activities but could pose concern if used in another manner, may be subject to certain specified conditions prescribed under the new “Significant New Activity condition” or SNAC provision. A “significant new activity” has been defined as a release of a substance that is significantly *greater* than previous releases into the environment or the release or exposure of the substance in a significantly *different* manner than was the case previously. These provisions are comparable, in theory, with the “Significant New Use Rule” or SNUR, provisions that have been in place in the United States for many years under the *Toxic Substances Control Act* (TSCA).

If additional information is necessary to assess potential risks associated with an activity not otherwise addressed in the notification, then a Significant New Activity condition will be imposed. If a person wishes to manufacture, import, use or dispose of the substance outside the prescribed allowance, then a Significant New Activity Notification must be submitted and assessed in advance of the “new activity”. Unlike the notifier-specific restrictions described above under item 2 above, substance-specific SNAC’s do not prevent DSL listing provided that the other DSL eligibility criteria have been met.

Greenlight Provisions

In the event that Environment Canada and Health Canada complete their assessments of a substance before the assessment period has expired, CEPA 1999 allows the Minister of the Environment to suspend the notification assessment clock, thereby allowing the notifier to immediately begin manufacturing

or importing a substance beyond prescribed quantities. Since CEPA 1999 took effect, there have been several instances where the “greenlight provisions” have been applied and this provision is gaining in popularity.

Notice of Commencement versus Notice of Excess Quantity

Since 1994 when the *New Substances Notification Regulations* were introduced, notifiers expressed concern over the onerous effort to track the annual and accumulated quantities of new substances introduced into Canada, especially in cases where the highest-level notification has already been submitted and reviewed by the government. CEPA 1999 acknowledges this burden and the government has now modified the New Substances Notification Regulations allowing notifiers to submit a Notice of Manufacture or Import (NOMI) in order to facilitate “fast-track” addition of the substance to the DSL, as long as the other DSL eligibility criteria have been met.

DSL Update Timetable

Under the 1988 CEPA, the Minister of the Environment was under no obligation to add an eligible substance to the DSL within a given time period. Since 1994 when the *New Substances Notification Regulations* took effect, notifiers have often seen significant delays in the issuance of DSL updates. CEPA 1999 recognizes this experience and has introduced a requirement for the Minister to add an eligible substance to the DSL within 120 days of eligibility.

Notification Fees

Over the past few years, the Canadian government has introduced cost-recovery fees in an effort to offset the government’s program-spending budgets. This practice is not new and has already been witnessed by industries regulated by the Canadian *Food and Drugs Act* and by the Canadian *Pest Control Products Act*. CEPA 1999 extends this practice to those involved in the import, manufacture and disposal of chemical substances. The New Substances Fees Regulations have been in place since January 1, 2003.

Revised “NSNR 2005” on the Horizon

When the NSN Regulations were introduced in 1994, the government made a commitment to review their implementation and make any necessary improvements. An NSN multistakeholder consultative process was initiated in 1999, and resulted in the

publication of a draft revision to the NSN Regulations in October 2004. It is expected that the revised regulations will be finalized and implemented in the latter half of 2005. The proposed NSNR 2005 maintain the volume-tiered approach to notification; however, the distribution of data requirements has shifted between levels, the assessment periods have been altered slightly, and the up-front testing requirements for the notification of “special use” categories (e.g., R&D, export only, etc.) have been significantly reduced. For substances listed on the Non-Domestic Substances List, the proposed NSNR 2005 introduces significant additions to the list of technical information requirements, and these will likely prompt a significant increase in the cost and overall burden of gaining approval for NDSL-listed substances.

ASSESSING “EXISTING” SUBSTANCES

In addition to the notification and assessment requirements for substances considered “new” to Canada, CEPA 1999 maintains, and, in some cases, extends, the provisions for assessing and controlling substances already existing in Canada. Existing substance reporting and assessment programs include, but are not limited to, the National Pollutant Release Inventory (NPRI), the Priority Substances Assessment Program (PSAP), and the Categorization and Screening of the DSL (CSDSL). These latter two programs are the subjects of the discussion below.

Priority Substances Assessment Program

Under the Priority Substances provisions of CEPA, the Minister of the Environment and Minister of Health must prepare a list of substances that require a more immediate effort to determine whether they are “toxic”. This list is known as the Priority Substances List (“PSL”). Nominations are reviewed by an “Expert Advisory Panel” that is comprised of representatives from major stakeholder groups including the academic community; non-governmental organizations including environmental and health groups; industry; the federal and provincial governments; and the international toxic substance assessment community.

Giving consideration to the substances’ presence in the Canadian environment and either the inherent toxicity, bioaccumulation, or persistence in the environment, the Panel’s review process lead to the identification of 44 Priority Substances for the first Priority Substances List (PSL1). The responsibility to assess these substances was distributed among various Environmental Resource Groups (ERGs) who facilitated

the risk assessment process. After gathering available information from the literature, from domestic and international research communities, and from industry, the ERGs applied the 1988 CEPA definition of “toxic”, and concluded that the priority substance in question was either “CEPA toxic”, not “CEPA toxic” or that there was insufficient information to make a reasonable conclusion. The PSL1 screening assessment process was completed by February 1994 and Figure 2 below summarizes the conclusions reached by the PSL1 ERGs.

In 1995, the Expert Advisory Panel reconvened in order to establish a second Priority Substances List (PSL2). A new series of ERGs were established to facilitate the risk assessment process. Since 1995, the 25 PSL2 substances have been under review, following the same risk assessment principles employed for PSL1 assessment. Figure 3 illustrates the current status of these assessments.

PSL1 Substances Deemed “CEPA Toxic”	PSL1 Substances Not Deemed “CEPA Toxic”
Benzene	Aniline
Benzidine	Bis (2-chlorethyl) ether
Bis (2-ethylhexyl) phthalate	Chlorobenzene
Bis (chloromethyl) ether	Di-n-octyl phthalate
Chlorinated wastewater effluents	Dibutyl phthalate
Chloromethyl methyl ether	1,2-Dichlorobenzene
Creosote-contaminated sites	1,4-Dichlorobenzene
3,3'-dichlorobenzidine	3,5-Dimethylaniline
1,2-Dichlorethane	Methyl tertiary-butyl ether
Dichloromethane	Methyl methacrylate
Effluents from pulp mills using bleaching	Organotin compounds (non-pesticidal)
Hexachlorobenzene	Pentachlorobenzenes
Hexavalent chromium compounds	Styrene
Inorganic arsenic compounds	Tetrachlorobenzenes
Inorganic cadmium compounds	1,1,2,2-Tetrachoroethane
Inorganic fluorides	Toluene
Oxidic, sulphidic and soluble, inorganic compounds	Trichlorbenzenes
Polychlorinated dibenzodioxins	Waste crankcase oils
Polychlorinated dibenzofurans	Xylenes
Polycyclic aromatic hydrocarbons	
Refractory ceramic fibre	
Short chain chlorinated paraffins	
Tetrachloroethylene	
1,1,1-Trichloroethylene	
Trichloroethylene	

Figure 2. Conclusions of the PSL1 Assessment Process

PSL2 Substances Deemed “CEPA Toxic”
Acetaldehyde (Final)
Acrolein (Final)
Acrylonitrile (Final)
Ammonia in the aquatic environment (Final)
1,3-Butadiene (Final)
Chloramines (Final)
Ethylene oxide (Final)
Formaldehyde (Final)
Hexachlorobutadiene (HCBD) (Final)
2-Methoxyethanol, 2-butoxyethanol (Final) ²
N-Nitrosodimethylamine (NDMA) (Final)
Nonylphenol and its ethoxylates (NPE) (Final)
Releases from primary and secondary copper smelters and refineries (Final) ³
Releases from primary and secondary zinc smelters and refineries (Final) ³
Releases of radionuclides from nuclear facilities (impacts on non-human biota) (Draft)
Respirable particulate matter =10 microns (Final)
Road salts (Final)
Textile mill effluents (Final)
PSL2 Substances Not Deemed “CEPA Toxic”
Butylbenzylphthalate (BBP) (Final)
Carbon disulfide (Final)
Chloroform (Final)
N,N-Dimethylformamide (DMF) (Final)
2-Ethoxyethanol (Final) ²
Phenol (Final)
Definitive conclusion not reached
Aluminum chloride, aluminum nitrate, aluminum sulphate
Ethylene glycol

Figure 3. Status of PSL2 Assessments (as of March, 2005)

The main objective of the Priority Substances Assessment Program is to ensure that scientifically valid risk assessments of priority substances are carried out. To accomplish this objective, a process was developed for conducting environmental and human health risk assessments. The process is supposed to enhance openness and transparency; increase the knowledge base of the Ministries by engaging the required expertise outside of government; reduce deficiencies by sharing responsibilities with other stakeholders; and finally, involve risk managers at early stages to ensure timely implementation of risk management measures.

The following is a brief chronology of the process steps that were introduced to address the 1988 CEPA requirements for Priority Substance assessment. With the exception of a prescribed 5-year assessment period for priority substances, the Priority Substances

² Assessed and reported together.
³ Reported together.

Assessment Program has not changed significantly with the introduction of CEPA 1999.

1. Develop a problem formulation strategy to determine the approach and goals of the risk assessment process;
2. Analyze information on the substance's entry into the environment, the concentration to which humans, other animals and plants are exposed, and its effects on organisms or ecosystems;
3. Compare exposure concentration and concentrations causing effects in order to determine whether adverse effects are likely;
4. Prepare a suitable report and provide opportunity for public comment;
5. Obtain ministerial approval of the final report and publish the report in the Canada Gazette; and
6. Develop and implement risk management strategies, for those substances deemed to be toxic.

With the enactment of CEPA 1999, the government expanded the assessment of existing substances beyond the Priority Substances Assessment Program. In an attempt to identify, screen, assess and control larger numbers of substances in a more effective and efficient manner, the government introduced two new programs and initiatives.

Other Jurisdictions' Decisions

In keeping with the government's ever-growing domestic and international commitments to the protection of human health and the environment, CEPA 1999 requires the Ministers of Health and the Environment to screen all substances that have been banned, sun-setted or severely restricted for environmental or health reasons by other provincial or federal agencies in Canada and/or in other OECD countries. In this way, severe actions taken by other jurisdictions would serve to quicken the Canadian assessment for whether the substance should likewise be classified as CEPA toxic and subject to risk management actions in Canada.

DSL Screening and Categorization

The first PSL, published in 1989, listed 44 substances requiring priority assessment. The assessments were completed in 1994. The second PSL was published in 1995 and contains 25 substances

requiring priority assessment. As of February 2003, final published decisions have been issued for only 21 of these 25 substances. At this rate, performing similar risk assessments on the other ~23,000 existing substances on the Domestic Substances List (DSL) was clearly an unrealistic approach to assessing existing substances. In an attempt to address this poor rate of assessment, CEPA 1999 introduced a commitment to categorize before September 14, 2006, all substances on the DSL

Substances on the DSL must be categorized with respect to significant potential for human exposure; and with respect to persistence (P) or bioaccumulation (B) and inherent toxicity (iT) to environmental and human health. Where actual data do not exist to complete this categorization, the government will give consideration to computer-modelled estimates and international discussions on the subject. Those substances categorized as PiT, BiT, and PBiT, or having the potential for significant exposure would be subject to a Screening Level Risk Assessment (SLRA) resulting in either: (i) no further action; (ii) nomination of the substance to the Priority Substances List for a more detailed risk evaluation; or (iii) classification of the substance as "CEPA toxic" with subsequent addition of the substance to the List of Toxic Substances and, eventually, risk management actions being introduced. During debates of Bill C-74 prior to the 1997 election, this was considered an unrealistic goal. Bill C-32, however, retained this provision and the Ministers are now committed to its implementation. In fulfilling this commitment, government departments are actively engaging in dialogue with industry, non-governmental organizations with environmental interests, and other international government authorities.

RISK MANAGEMENT

If a substance has been assessed and determined to be CEPA toxic and has been added to the List of Toxic Substances in Schedule I of CEPA, the substance becomes subject to the Toxic Substances Management Policy ("TSMP"). There are various strategies available to Environment Canada in the regulation of said substances, and these substances may be classified as falling into either of the two following categories:

Track One Substances: Virtual Elimination

Where a substance possesses the following four characteristics, it will be slated for "virtual elimination" under CEPA 1999:

- toxic as defined under S.64 CEPA
- primarily the result of human activity;
- persistent in the environment; and
- bioaccumulative through the food chain.

Substances possessing the above characteristics (*i.e.*, being classified as “anthropogenic PBTs” by scientists and “mega-uglies” by some politicians) are deemed to be the most dangerous toxic substances in Canada. Accordingly, the government has chosen to use aggressive measures to control these substances.

CEPA defines virtual elimination as “the ultimate reduction of the quantity or concentration of the substance in [an environmental release] to levels below the level of quantification” specified by the Ministers of the Environment and Health in the “Virtual Elimination List”. Of interest is the fact that the level of quantification has been defined as “the lowest concentration that can be accurately measured using sensitive, *but routine* [emphasis added] sampling and analytical methods”.

Once a substance has been selected for virtual elimination, those parties identified as being responsible for potential sources of the substance will be directed to prepare and submit plans with respect to the implementation of the substance’s virtual elimination. These plans must demonstrate how Industry will meet the regulatory release limit specified by the Ministers.

Industry has been understandably concerned about this new and innovative provision of CEPA 1999. To allay these fears, the Ministers of the Environment and Health are directed to consider social, economic and technical factors, as well as environmental and health factors, when choosing to virtually eliminate substances. The Ministers have also been directed by the legislation to allow for interim targets and appropriate schedules so that virtual elimination will not be an immediate demand upon Industry.

Furthermore, the definition of virtual elimination in CEPA 1999 has been softened from its originally proposed definition. Instead of requiring the elimination of a substance such that not even the most sophisticated and sensitive equipment could measure it, virtual elimination requires that the substance be limited to the lowest concentration that can be measured by *routine* sampling and analytical methods. Essentially, this change has rendered virtual elimination a risk management program that seeks the *drastic* reduction of such substances rather than their *actual* elimination.

Nevertheless, this controversial change in definition has failed to eliminate the fears of Industry that Environment Canada intends to “chase the last molecule”. Indeed, Industry continues to be concerned that the Ministers of Health and Environment will set the release numbers designated for these dangerous substances without input from affected industries and other scientific sectors. Moreover, some are particularly concerned that the virtual elimination program will impose a huge regulatory overhang on industry without resulting in any demonstrable reduction of environmental or health *risks*. This is because, according to Industry, virtual elimination below the level of quantification does not accurately consider such relevant factors as risk, and social, economic and technical matters. The provisions concerning virtual elimination continue to be among the most contentious and significant additions to CEPA 1999.

Track Two Substances: Life-Cycle Management

For those substances deemed CEPA toxic, yet not persistent, bioaccumulative and primarily resulting from human activity, Environment Canada will adopt a “cradle-to-grave approach” for managing these substances. Within two years after adding such substances to the List of Toxic Substances under Schedule 1 of CEPA, the Governor-in-Council must publish a notice of proposed regulations for these substances in the *Canada Gazette*. These regulations must set out the preventive or control measures that will be implemented for the regulation of such substances.

Once the appropriate life-cycle management strategy has been proposed, the Ministers have a further 18 months to finalize these measures and implement them. Where regulations will be drafted, they will be made by the Governor-in-Council on the recommendation of both the Ministers of Environment and Health. In addition, the National Advisory Committee must be allowed an opportunity to provide advice on any proposed regulation. Such regulations also undergo a 60-day public comment period. These time frames reflect the CEPA 1999 attempt at assessing substances and implementing control measures as efficiently as possible by subjecting reviewers to relatively strict time frames. It should be noted, however, that the time frames are subject to extension for unspecified amounts of time.

There are many strategies available for the regulation of such substances. Of increasing popularity are voluntary arrangements whereby a particular industry sector will undertake to regulate itself and/or

enter into a memorandum of understanding (MOU) with the federal government. Other options include the implementation of monitoring and reporting programs, creating codes of practice for the use and/or manufacture of particular substances, and implementing national standards in production process. Part IV of CEPA 1999 recognizes both voluntary and mandatory "Pollution Prevention Plans".

The crucial element of all of these strategies is the basis of the life-cycle approach (*i.e.*, the "cradle-to-grave" strategy), whereby a toxic substance is managed progressively to reflect greater control at increasing quantities and exposure levels. This approach is coupled with the risk management element of these strategies whereby the process of selecting and implementing management actions considers a wide range of legal, economic and social factors. These factors will dictate long-term environmental goals for Track Two substances. They will also influence the strategies and timelines selected for the achievement of such goals. It is thus essential that at every stage of the substance's manufacture/importation, use and disposal, the resulting effects of the control management action upon health and the environmental concerns are addressed.

CONCLUSION

CEPA 1999 represents the government's response to the dissatisfaction of Industry and environmentalists alike toward the original CEPA 1988. This daunting task has culminated in the creation of a massive piece of complicated legislation. While its precise effect is difficult to predict, it is clear that the extensive changes and additions to the Act impose a significant burden of responsibility for both Industry and the Government of Canada. Specifically, the manufacture, import, use and disposal of "toxic substances" are to be regulated comprehensively and stakeholders will require a heightened awareness of not only the up-front need to identify and address the potential for unacceptable human and environmental risks, but also the "down-stream" need to adhere to an ever-growing list of risk management requirements. One fact is clear: a new level of environmental responsibility has been imposed under CEPA 1999. It now remains to be seen whether Industry and the Canadian government can meet such a high standard.

ACKNOWLEDGMENTS

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