

ENGO Comments in Response to Consultation Document on Bisphenol A (BPA) Proposed Regulations for Industrial Effluents

Submitted to:

Environment Canada
And Health Canada

Submitted by:

Chemical Sensitivities Manitoba
and
Canadian Environmental Law Association

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INTRODUCTION

Bisphenol A (BPA) – Chemical Abstracts Service Registry Number (CAS RN) 80-05-7 is listed in Batch 2 of the Challenge Program under the Chemicals Management Plan. In October 2008, the Government of Canada in its final screening-level risk assessment of BPA, concluded that it was toxic to both human health and the environment.¹ It was also found to be persistent in sediment but not bioaccumulative in organisms under the *Persistence and Bioaccumulation Regulations*. Therefore, it was not subject to virtual elimination under *CEPA 1999*.

The Proposed Risk Management Approach for BPA, published in October 2008, outlined potential risk management actions in an attempt to reduce the risks to human health and the environment.² As indicated in the Proposed Risk Management Approach for BPA, the Government of Canada would consider the development of regulations to establish maximum BPA concentrations in industrial effluents. This would require the government to implement an environmental management system to ensure that best management practices are adopted at facilities where BPA is used.

Chemicals Sensitivities Manitoba and Canadian Environmental Law Association have submitted substantial commentary on the government's assessment of Bisphenol A and its proposals for risk management. The following comments and recommendations outlined below continue to build upon and reiterate these earlier comments. Based on the toxicity of BPA determined through the screening level risk assessment, a management strategy that promotes prevention through elimination or phase out of BPA in consumer products and in industrial application is justified. In the Appendix of this submission, a table outlining the status of proposed management activities on BPA is presented.

At the consultation meeting in November 2009, part of the agenda included feedback on the Environment Canada proposed approach for BPA. Many of the questions raised during the discussion were more applicable to industry. However, many of industry representatives were not in attendance and for those attending, the level of engagement at the meeting, in response to the questions was disappointing. However, it is unclear as to how the government would proceed in getting the more detailed BPA information that is required from industry. It is clear that voluntary measures to seek information from industry are not fully effective. Mandatory information gathering is recommended

¹ Environment Canada and Health Canada. Screening Assessment for The Challenge Phenol, 4,4'-(1-methylethylidene)bis- (Bisphenol A) Chemical Abstracts Service Registry Number 80-05-7 (October 2008). Accessed at: http://www.ec.gc.ca/substances/ese/eng/challenge/batch2/batch2_80-05-7.cfm.

² Environment Canada and Health Canada. Proposed Risk Management Approach for Phenol, 4,4'-(1-methylethylidene) bis (Bisphenol A) Chemical Abstract Service Registry Number (CAS RN): 80-05-7 (October 2008). Accessed at: http://www.ec.gc.ca/substances/ese/eng/challenge/batch2/batch2_80-05-7_rm.cfm.

BPA – APPLICATION & USAGE

BPA, a high volume industrial chemical, has widespread uses in both industrial applications and consumer products. It is used mainly in the production of hard plastics and is an integral component in polycarbonate based plastics which are often used for baby bottles, many consumer products, and medical devices, among other products. It is also an ingredient in the manufacture of epoxy resins which can be used for industrial products such as protective coatings, encapsulation compounds, adhesives and sealants.

The global production of BPA in 2006 was 4 billion kilograms which may have increased since then. In Canada, BPA is not manufactured in quantities over 100 kg but based on information collected under the Chemicals Management Plan - Section 71, 2006, 25 companies imported a total of approximately 500,000 kg of BPA into Canada and 5 companies reported using 100,000 to 1,000,000 kg of BPA in a mixture or in a product. With the high reporting threshold for reporting uses in Canada, it is likely that many uses are not being reported (1,000 kg at a concentration of 50% or higher, or 10,000 kg at any concentration).

IMPACTS OF BPA ON HEALTH AND THE ENVIRONMENT

BPA is especially toxic to aquatic species showing acute and chronic effects on their rate of survival, growth, development and reproduction. Of significance is the effect of low levels of BPA exposure particularly at sensitive or critical life cycle stages. There is evidence to indicate permanent alterations in hormonal, developmental or reproductive toxicity.

The concentration at which these effects have been observed in laboratories, are similar to the concentrations found in wastewaters, receiving waters and sediments in Canada and the USA. And as previously mentioned, BPA is also persistent in sediment.

A recent small Canadian study has shown that BPA harms stem cells in the placenta that nourish the fetus.³ It has claimed that this is the first study to focus on the impact of BPA on cytotrophoblasts – the cells that attach the fetus to the uterus.

PROPOSED GOVERNMENT ACTION ON INDUSTRIAL EFFLUENTS OF BPA

In November 2009, the federal government published a consultation paper for BPA outlining proposed steps to minimize the concentration of BPA in the effluent of industrial waste.⁴ This paper was also intended as a tool for interested parties or stakeholders to give feedback to the government on the BPA regulatory proposal for

³ Nora Benachour and Aziz Aris. "Toxic effects of low doses of Bisphenol-A on human placental cells," *Toxicology and Applied Pharmacology*: Vol. 241, Issue 3, 15 December 2009, pages 322-328.

⁴ Environment Canada. Public Consultation (Environment Canada) November 2009. Bisphenol-A (BPA) Proposed Regulations for Industrial Effluents: Accessed at: <http://www.ec.gc.ca/ceparegistry/documents/participation/pba/tm-toc.cfm>.

industrial effluent and was also used as the discussion document for the November 27, 2009 public consultation meeting.

After reviewing all potential releases of BPA, the government concluded that the main release of BPA to the environment is most likely through its release in effluent from industrial uses in manufacturing, possibly from wastewater and washing residue generated when BPA is used in processing and manufacturing. The reporting threshold for the National Pollutant Release Inventory (NPRI) is high – 1000 kg with a concentration greater than 50% or 10,000 kg. Because of these high reporting thresholds, reported release and transfer data for BPA are likely to be underestimated as the NPRI program does not require all facilities to report to the program. In 2006, the NPRI data indicated that 2 companies released a total of 159 kg of BPA to the air but releases to water have not been reported.

The November 2008 consultation paper indicated that no information was provided on potential substitutes for BPA through the Voluntary Challenge Questionnaire submissions.

Furthermore, the response by stakeholders to the voluntary questionnaire had not resulted in any additional information on the use of control/capture technology possibly being utilized for BPA. The absence of this information suggests that BPA releases to the aquatic environment had not been perceived as an important source of BPA to the environment and therefore, had not received the attention by industry to quantify or track their releases. The lack of regulatory requirements and enforcement activities to ensure compliance to existing programs such as the NPRI, may have compounded the lack of data problem.

In 2008, environmental monitoring of BPA was initiated in more than 35 sites across Canada. Test media included wastewater effluent and waste water sludge; landfill leachate; wildlife; fish; and receiving water downstream of wastewater treatment plants. Data from these sites indicated that 57% of the samples tested had BPA above the detection limit of 0.05 micrograms/litre. With many test sites located in Ontario, freshwater sampling across Canada (2008-2009) showed BPA concentration levels above the No Effect Concentration Level for some sites. Although a site in Saskatchewan was above this level, it was considered an anomaly.

With an environmental objective to prevent or minimize releases of BPA to the aquatic environment and achieve the lowest level of release to water that is technically and economically feasible, the proposed risk management approach outlined in the November, 2009, consultation document focuses on:

- Establishing release limit for discharge from industrial facilities; and
- Establishing an Environmental Management System (EMS) Regulation to ensure the implementation of best management practices at industrial facilities where BPA is used.

The proposed regulations would apply to facilities that manufacture, process or use at least 100 kg of BPA per year – as a pure substance, or contained in an intermediate or as an ingredient used to manufacture an intermediate or a finished product. It would not apply to facilities where only finished products containing BPA are made.

The Final Screening Assessment Report indicated that the Predicted No Effect Concentration (PNEC) was established at 0.175 micrograms/litre for BPA. Based on this value and using a dilution factor of 10, the government established a maximum concentration of 1.75 micrograms/litre for BPA in industrial effluent to the aquatic environment. This would apply at the point of discharge of the industrial effluent regardless of the receiving body (municipal wastewater system or directly to surface water). Only exceedances will be reportable.

With the inclusion of environmental management systems in the industrial effluent regulation, the government hopes that best practices at facilities would be the norm and that these systems would be sufficiently flexible for adoption in their operations.

SPECIFIC COMMENTS & RECOMMENDATIONS TO GOVERNMENT PROPOSALS

1. Management approach

Scope – Absence of Prevention

The risk management approach outlined in the November 2009 document is inadequate as it will not provide the level of protection that is required for the environment.

- This approach is limited as it does not promote pollution prevention which is an integral objective under the Canadian Environmental Protection Act, 1999. Its focus on releases to the environment (end of pipe approach) makes it difficult to promote and implement a source reduction approach.
- BPA is a high production volume chemical in Canada and around the world and has diverse usage as well as a toxic designation. Generally, the lack of reduction targets and timelines from the current level of use and manufacture of BPA make it difficult to determine if the proposals are intended to maintain status quo in Canada or to achieve reductions over time.
- With evidence indicating that BPA may contribute to permanent alterations in hormonal, developmental or reproductive toxicity, the government focus on releases to the aquatic environment only undermines the extensive impacts that BPA releases may have in all environmental media. A comprehensive strategy that addresses BPA releases to air, water and land requires an approach that promotes prevention of BPA at the source is critical.

Reliance of “technically and economic feasibility” to manage BPA releases

- The environmental objective to prevent or minimize releases of BPA to the aquatic environment and to achieve the lowest level of release to water that is technically and

economically feasible is problematic. The government approach should focus on protecting the environment and human health rather than emphasize the need to identify what is technically and economically feasible. These factors seem to have been given priority in the government's consultation document, while there is no apparent consideration given to other important economic factors such as the long term cost to the health care system including occupational health as a result of worker exposure. These financial costs should not be excluded. In addressing BPA releases, there will be the cost to industry to make the necessary changes to their technical processes. However, the government should not allow this cost to override the financial impact associated with the impact of BPA on the environment and human health.

- Protection of the environment can be promoted if adequate consideration is given to a paradigm shift that considers safe alternatives such as non-toxic substitutes rather than the emphasis on finding "technically and economically feasible" solutions. This focus on potential investments in upgrades to technology may continue to contribute to BPA releases to the environment.
- Similarly, the cost that may be associated with disposal methods including treatment for disposal and clean up of potential BPA contaminated areas, have not received adequate consideration in this decision making process.
- The use of the term 'technically and economically feasible' may vary significantly between companies. Therefore, capital expenditure and a temporary reduction in the profit margins for some facilities interested in addressing BPA use and releases may be possible. However, there may be facilities that would conclude that this expenditure is not justified. Industry laggards may not be fully addressed in these proposals.

Absence of Health Effects of BPA

- The consultation document does not consider the impacts on human health from BPA exposure when discussing releases to the environment. This is a significant gap in the consultation document as well as in the proceedings of the meeting. BPA exposure is linked to carcinogenicity, reproductive and developmental toxicity, in addition to aquatic toxicity. For this proposed risk management of BPA, the attempt to separate environmental release and human health effects from BPA exposure, results in a management plan that is not fully comprehensive and one that may impact on the level of coordination between Health Canada and Environment Canada. The public expects these two agencies to engage and effectively manage toxic chemicals such as BPA.

Life cycle consideration of BPA contributes to environmental releases

- The consultation document focuses on industrial releases but fails to take into consideration the life cycle impact of BPA from all stages of production, manufacture, its presence in consumer products and its eventual disposal. A lack of commentary on the life cycle process gives the impression that the manufacture of products containing BPA, possibly have no contribution to BPA releases to the environmental

media. While there was no available data in the document to demonstrate the potential releases of BPA throughout any the production process, it is highly anticipated that there are releases of BPA and other toxic chemicals in the process. The government approach significantly underestimates the full impact of BPA releases to the environment. In effect, the consultation document separates issues such as the possible effects of BPA contaminating food in the aquatic environment and the use of BPA containing sludge on agricultural lands.

Absence of consideration of BPA releases from other sources – consumer products, landfills, recycling process

- The consultation document does not identify other sources for BPA release such as consumer products, landfills, recycling processes, etc. The releases from these sources have not been classified as having the same potential for BPA release as industrial effluent. Collectively, they could represent a major source of BPA release and should not be ignored particularly since this chemical has been classified as being persistent and toxic to aquatic organisms at low levels of exposure. As a result, the government has proposed an incomplete risk management approach on BPA because of the lack of consideration of all potential sources of BPA and does not include the discussions on the human health impacts from BPA exposure.

Establishing a maximum concentration for BPA and necessary upgrades to wastewater treatment plants

- The proposed level of 1.75 micrograms/litre (mg/l) for the maximum concentration of BPA may not be protective to the aquatic environment. We noted that the overall proposal by government to address BPA in the environment does not support the pollution prevention objectives as outlined in CEPA. The establishment of a proposed maximum concentration will entrench the government's approach to focus on an end-of-pipe control measure for BPA.
- The proposed level has assumed that most jurisdictions have wastewater treatment plants with the appropriate technology to effectively treat the wastewater before its release to the environment. Alternatively, there are adequate resources which have not been identified in the consultation document that will ensure treatment plants be upgraded to meet the proposed concentration level for BPA.
- In our previous submissions on BPA, we strongly reiterated the need for establishing elimination targets for BPA from industrial sources and use in consumer products. This recommendation focused action on BPA at the source of production processes rather than at the end of pipe prior to release to the environment. Hence, the establishment of a maximum concentration level will not only facilitate the end of pipe approach but provides very little incentive for a facility to review its use of BPA at all points of production, particularly at source.

The consultation document is considered inadequate in supporting the proposed maximum concentration level for BPA, for several reasons:

- a) It does not include estimated reduction levels expected from the current levels of uses of BPA and if these reductions result from the establishing a maximum concentration.
- b) No proposals to review and lower the maximum concentration over time;
- c) There has been no inclusion on the use of other CEPA tools such as pollution prevention planning by facilities that use and release BPA that promote overall reductions or meet the maximum concentration target;
- d) It is unclear if the proposed maximum concentrations require facilities to reduce their use of BPA over time, to ensure compliance with the proposed target;
- e) Places burden on municipalities that are challenged with shrinking infrastructure budgets, to ensure adequacy of treatment facilities to treat wastewater;
- f) Lacks consideration of regions in Canada where releases of BPA may be significantly higher (hotspots) than other regions. The proposal will not account for the additive impacts of these releases to the environment or population; and
- g) Additional information or plans to address jurisdictions that do not currently have treatment facilities.

Recommendations:

- The management approach to BPA should be comprehensive in scope and should be based on pollution prevention and elimination. The current proposals will not lead to or support the CEPA objective of pollution prevention but rather, they promote an on-going approach based mainly on control measures.
- Given the significant impacts to the environment and to human health, the proposed risk management approach should be **strengthened** to achieve prevention through proposals requiring safe alternatives, source prevention, and pollution prevention plans. Specific timelines and targets for reductions and elimination should be included.
- To support pollution prevention, the proposed maximum concentration should be lowered over time, eventually to reach zero.
- The government's documents should outline the other elements of the BPA risk management approach so as to demonstrate the full scope of measures to be taken on BPA.

- We do not support the establishment of a maximum concentration level for BPA and other CEPA toxic chemicals as it compromises efforts to design effective pollution prevention strategies that require source elimination of BPA.
- We urged the government to include human health in the risk management proposals. The exclusion of human health considerations in the proposal is not supported given the extensive information gathered through the BPA assessment on the impacts of BPA to human health and aquatic environment.
- Measures to address BPA releases to the environment should not rely strictly on what is considered 'technically and economically feasible' at the expense of protection of the environment and human health. The term "technically and economically feasible" should be better defined or clarified in the context of this proposal and it should be ensured that other important economic factors such as long term health care cost and protection of workers, are included in the decision making process.

2. BPA – Usage & Reporting Threshold, NPRI

- The high reporting threshold for usage of BPA required under NPRI, results in small and medium size facilities not reporting release data of BPA. This approach does not provide accurate data on BPA in Canada. Therefore, the number of facilities using and releasing BPA is **underestimated**. This information is crucial when reviewing usage and release patterns for BPA in Canada. At best, the NPRI program provides an indication of potential sources of BPA as there may be other facilities that are not reporting but should be reporting. The compliance rate for reporting to the NPRI program by facility is unclear, despite the mandatory requirement under CEPA.
- The absence of some facilities reporting BPA releases and the lack of reporting releases of BPA to water, result in the release data to all components of the environment very inaccurate. This is a significant information gap.
- The Voluntary Challenge Questionnaire under the Industry Challenge did not appear to provide additional data in these areas, potentially as a result of its voluntary nature. The lack of additional information from the questionnaire and the potential underestimation of BPA releases under NPRI, could possibly result in assumptions being made in the risk assessment and risk management proposals that may not be very accurate.

Recommendations:

- The government should be notified of all uses, releases and transfers for BPA. There should be no threshold - the 100 kg threshold for reporting is considered inadequate.
- The NPRI program requires strengthening in several areas. This would include eliminating the thresholds for reporting to the NPRI, particularly for CEPA toxic chemicals such as BPA. As a result, all releases and transfers should be reported by all facilities.

3. Monitoring (reporting sites)

- The location and number of monitoring sites are integral components of the environmental monitoring program and partially form the basis for deciding the need for further monitoring and regulatory action. There was a general lack of detailed information in this area and the complete list of sites used for BPA monitoring was not revealed. With the understanding that the decisions for site locations were partially based on proximity to industrial sites, historical data and already existing monitoring programs, other factors were not readily apparent.
- It is unknown whether or not Arctic locations were targeted. The consultation document does not provide an adequate description and the criteria used to determine 'pristine locations' with regards to monitoring for BPA and other environmental contaminants.
- It was noted at the November meeting that BPA-based lubricants and epoxy powder coatings are used in the far North – the implications for BPA contamination to the environment from these uses were not known.
- Because of the lack of information about all the monitoring sites, it is not possible to conclude that the BPA monitoring data collected actually give an accurate picture of our aquatic environment and, in particular, the Arctic regions.
- Although monitoring was done in the proximity of industrial sites, it is not known if any of the larger BPA facilities were specifically targeted for monitoring in the current program.
- Once industrial sites had established their BPA monitoring programs, the government's position on subsequent monitoring of some of these sites was not clearly established.
- Monitoring for BPA in the environment and biomonitoring for BPA should be coordinated for the purpose of assessing the effectiveness of risk management efforts. Currently, the on-going biomonitoring programs do not include subsequent monitoring of the same subset of the population.

Recommendations:

- More transparency is required regarding the selection of monitoring sites. The government should provide well documented rationale regarding the choice of the monitoring sites.
- A list of the monitoring sites and the results of the BPA monitoring at those sites should be made available to the public in a useful and electronically available format.
- Monitoring programs for BPA should include more northern communities with and without industry since sources of BPA release may be from degradation of products containing BPA.
- Pristine areas or regions that are not classified as being in the Arctic or in the North, should be clearly defined.
- Longitudinal studies for monitoring should be enhanced or expanded for all monitoring sites.
- Once industry has established their monitoring practices for BPA in their effluent to the aquatic environment, we urge the government to ensure monitoring BPA at those

facilities for validation and comparison purposes. This information should be public knowledge.

- Monitoring exercises should not be used to delay the need for taking preventative actions on BPA releases.

4. Maximum concentration limit of 1.75 micrograms/litre & reporting

- In addition to the comments provided in previous sections expressing our concern of the government's proposal to focus on an end-of-pipe control measure, we have the following comments respecting the government's approach to establish a proposed maximum concentration of 1.75 micrograms/litre of BPA and the accountability mechanisms for industry.
- We question the validity of the dilution factor of 10 used in the estimation of the maximum concentration limit of 1.75 micrograms/litre and whether the dilution factor is sufficiently protective of the environment and human health given that impacts to the aquatic environment have been observed from exposure to BPA at very low levels of concentration.
- The PNEC was based on conservative estimates with the opinion that it is sufficiently protective for the environment. In a very small recent study cited above, BPA at concentrations ranging from 0.0002 to 0.2 micrograms/ml were found to be cytotoxic. The study indicated that these concentrations are similar to the BPA levels found in pregnant women.
- The current proposal for only reporting BPA exceedances is not acceptable. There is a clear need to understand and require the reporting of all BPA releases whether they are permissible releases through NPRI or exceedances. This approach promotes transparency, accountability and allows the government to have a more accurate data set for releases. As a result, the government could identify and investigate areas where there may be several low BPA releases but all within a small geographic region and, as a result, review potential additive impacts.
- The proposed maximum concentration may not possess the necessary triggers to encourage reductions at the source for facilities. Also, the consultation does not provide sufficient commentary on the impacts of the possibility of increased BPA usage in the future on the proposed concentration or the impact increase usage may have on the receiving wastewater treatment plants.
- It was not clearly stated in the consultation document and at the meeting if the maximum concentration limit of 1.75 micrograms/litre would be reviewed in the future and how the concentration would be adjusted if evidence from monitoring or scientific evidence dictated a reduction in the limit is required.

Recommendations:

- Without the inclusion of the possibility of an increase in BPA usage and in light of the new Canadian BPA data, we do not support the proposed maximum concentration limit of 1.75 micrograms/litre for BPA because it may not be sufficiently protective for the aquatic environment and does not promote prevention at the source.

- All BPA emissions to the aquatic environment should be made reportable, not only exceedances.
- In support of reducing the overall use and release of BPA to the environment, the government should outline an approach that clearly states the criteria that would dictate when and how the proposed maximum concentration limit would be revised. The ultimate objective is to reach zero in use and release of BPA within a defined timeframe.

5. Substitutes or Alternatives for BPA

- Alternatives should be promoted and required in the government approach to manage BPA. Currently, very little effort has been focused in this area. The government has relied on the voluntary questionnaire to seek this information but there has been a lack of information from industry on possible alternative/substitutes to this point. The consideration and investigation of alternatives to BPA is urgently required if the objectives for protection of the environment and health are priorities for BPA risk management. Unfortunately, there has been no further elaboration from government on how to promote the need and identification of alternatives, particularly on BPA. It is not known if the government has been actively researching possible BPA alternatives for some applications. Given the recent investment by the government towards a Centre of Excellence in Green Chemistry, the investigation of alternatives to BPA may be an opportunity for exploration for the Centre.
- Also, the consultation document has not provided any consideration of a potential revenue source for innovation to identify and implement substitutes to BPA.

Recommendations:

- Government should enhance their efforts to identify and implement substitutes for BPA, including the establishment of a stakeholder working group to actively investigate safe BPA substitutes for specific applications. Expansion of efforts to collaborate with European countries and other jurisdictions (e.g. Japan) as to their progress with safe BPA substitutes, and explore opportunities at the Centre for Excellence on Green Chemistry, to focus on BPA as a case study, are recommended.
- The Voluntary Challenge Questionnaire should be reviewed as to its effectiveness in gathering critical data such as substitution. A requirement to seek this information should fall under mandatory reporting.

6. Control/Capture Technology & Disposal

- Industry has not supplied any information in this area but in the government's November, 2009 BPA consultation document, there was information on some possible control/capture technologies that are feasible for this industry. However, cost and applicability are major factors when considering these methods for control/capture of BPA.
- The disposal of the by-products and/or waste when utilizing these technologies raises concern such as the presence of captured BPA (chemically changed or not),

nanomaterials, and possible toxic materials used in the process of control/capture processes. It is unclear whether the control/capture technology processes highlighted by the government or other similar applicable processes do not produce other toxic materials. The production of other toxic materials is not acceptable. Rather, the government should take the opportunity to highlight technology that does not rely on the use, production or release BPA.

- The EU is looking at some aspects of BPA control and releases. The information from this effort should be included in the government document.
- Capture/control technology could be less depended upon if levels of free BPA monomer are reduced, when applicable. While these residual levels may be very low in concentration, the proposed maximum concentration of BPA in industrial effluent is also low. There should be concern for the accumulation of these low residual levels of BPA.

Recommendations:

- Government, with stakeholder involvement should develop an effective monitoring program that will include monitoring BPA (using recognized procedures) in the effluent at each facility using or releasing BPA. The results of monitoring should be reviewed with industry prior to the consideration of using capture/control technology. Use of capture/technology control should be time specific to allow for substitutions to be identified.
- Substitution for BPA should be considered before attempting to utilize extensive capture/ control technology.
- The by-products/waste from this technology should be assessed for toxicity. Disposal methods should also be assessed for its impacts on the environment or human health.
- The government should investigate and report on the progress and effectiveness of using control/capture technology for the BPA industry in European countries.

7. Environmental Management Systems (EMS)

The proposed regulation would require facilities to implement an environmental management system (EMS) with the overall objective to manage, reduce or eliminate the release of BPA from industrial effluent through a series of measures. The proposal for a new regulation focused on environmental management system under CEPA is a new development and represents a new direction to address CEPA toxic chemicals.

The outline of a proposed regulation on a management system was noted in the Draft Scope Risk Management on BPA document released for public comment in 2008, and additional information on this management regulation was described in the consultation document and discussed in the November 2009 multi-stakeholder meeting.

Public interest groups have expressed their concern that the overall BPA management proposal is not sufficiently protective of the environment and human health. The proposal described under Section 9.1.4 of the Risk Scope Management Document for

BPA proposed to “develop a management system... to ensure best management practices are adopted at facilities.” We continue to emphasize our concerns that the current proposals do not provide further action that will support prevention, source reduction and elimination and identification of safe alternatives to BPA.

CEPA outlines several key goals on toxic chemicals, including:

...the Government of Canada is committed to implementing pollution prevention as a national goal and as the priority approach to environmental protection;

...the Government of Canada is committed to implementing the precautionary principle that, 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;

...the Government of Canada recognizes that the risk of toxic substances in the environment is a matter of national concern and that toxic substances, once introduced into the environment, cannot always be contained within geographic boundaries;

...the Government of Canada recognizes the responsibility of users and producers in relation to toxic substances and pollutants and wastes, and has adopted the "polluter pays" principle.⁵

The proposals do not fulfill the objectives outlined in the CEPA Preamble.

Furthermore, in a report prepared by the Commission on Environmental Cooperation in 2000 titled, *Guidance Document Improving Environmental Performance and Compliance Environmental Policy: 10 Elements of Effective Environmental Management Systems*, Canada-United States- Mexico agreed that the environmental policy basis for EMS

... should be based upon a documented and clearly communicated policy. This policy should set out the organization's commitment towards a cleaner environment. It should include:

- provision for compliance with environmental requirements;
- commitment to continuous improvement in environmental performance, including in areas not subject to regulation;
- commitment to pollution prevention that emphasizes source reduction;
- commitment to continuous reduction of environmental risks;
- commitment to sharing information with external stakeholders on environmental performance against all EMS objectives and targets.⁶

⁵ *Canadian Environmental Protection Act, 1999* (1999), c. 33.

⁶ Commission on Environmental Cooperation. *Guidance Document Improving Environmental Performance and Compliance Environmental Policy: 10 Elements of Effective Environmental Management Systems*, June 2000.

As such, we urge that the government deliberation on EMS to be reviewed and that the progress to develop this regulation should be taken slowly with additional discussions with stakeholders.

In our opinion, the proposed approach continues to entrench the end of pipe control measures that we have experienced with other toxic chemicals regulated under CEPA -- for example volatile organic compounds, mercury in chlor-alkali plants, lead from smelters, vinyl chloride, PCBs, etc.⁷ Given that the on-going impacts to the environment and human health continue to be documented for these toxic chemicals, there is adequate evidence to suggest that a more rigorous approach based on prevention is needed.

Since BPA has detrimental impacts when released into the environment, particularly in the aquatic environment, the management of industrial sources should be more preventative in eliminating these impacts. The EMS framework does not provide a comprehensive framework that will require source prevention nor does it ensure that emissions throughout the facilities will be adequately addressed. This approach will result in continuing releases to the environment, including aquatic, air, and land. Furthermore, occupational exposure will continue although minimized when there are closed loop processes.

Our concern that these discussions on EMS will contribute to the establishment of a benchmark for Canada in the management of other toxic chemicals when this approach offers minimal action on prevention and elimination and the promotion and identification of safe alternatives. At this point, we are unaware whether there are other jurisdictions around the world that have an EMS regulation in place to address toxic chemicals. Based on the significant amount of discussion about the proposed EMS for BPA at the consultation, it was clear that many details of the proposal remained undefined by government. Many specifics were not provided or clarified by the government.

There are some key elements of the proposals that are of significant interest and should be highlighted for further exploration such as the procedures to monitor, measure, sample and analyze. However, we do not think it necessary to include that information in a regulation that is specific to BPA. The basic information for these activities should be requirements for all toxic chemicals and integrated into comprehensive monitoring programs covering biomonitoring, industrial and environmental monitoring.

There are other elements in the proposal that may add to the growing concerns we have on improving industry's accountability on the use of toxic chemicals and the general lack of progress and interest to find innovative safe alternatives to toxic

⁷ See CEPA Registry. Accessed at <http://www.ec.gc.ca/CEPARRegistry/regulations/>. For example: Volatile Organic Compound (VOC) Concentration Limits for Automotive Refinishing Products Regulations (SOR/2009-197). Accessed at <http://www.ec.gc.ca/CEPARRegistry/regulations/detailReg.cfm?intReg=118>; and Chlor-Alkali Mercury Release Regulations. See: <http://www.ec.gc.ca/CEPARRegistry/regulations/detailReg.cfm?intReg=2>.

chemicals. Limited government oversight of the EMS framework and a lack of full public reporting on a regular basis, are also some areas that are cause for concern. Finally, the draft scope risk management document referenced the need for best management practices but the concept has not been noted or defined in the consultation document. If facilities are required to meet specific targets it is quite critical to outline principles that should be followed and implemented in the strategy.

In our view, several key elements should be taken into account to determine the role and effectiveness of an EMS in achieving the environmental and health objectives established under CEPA, particularly on pollution prevention. The elements that should be incorporated in a regulation focused on industrial sources include:

a) Clear Goals

- Clear goals for reduction and elimination to be achieved by the regulation. Currently, the EMS proposal is focused on supporting the establishment of the maximum concentration level which we have noted in our commentary, does not provide the appropriate triggers and incentives for an elimination framework on BPA.
- These regulations will support “goals for management, reduction and elimination of releases of BPA”. A goal focused on management only is inadequate and promotes the status quo for industry.
- Since the goals of the regulations are critical to supporting the desired outcome, the focus on management should be eliminated.
- Clear goals will allow regulators and the public to assess the effectiveness of the implementation efforts undertaken under the regulations since goals for managing toxic chemicals versus reduction or elimination require different elements for successful implementation of a regulation.
- We do not oppose the goals of reduction in the regulation so long as these reduction efforts result in the eventual phase out and elimination of BPA from industrial sources.

b) Timelines and reporting

- Outline clear timelines and targets for achieving stated goals. The government proposals have not provided this information. The absence of such information will pose challenges for creating accountability and ensuring timely progress.
- The only reporting by facilities that is currently proposed is the reporting of “exceedances” over the proposed maximum concentration. This is not rigorous enough and places the environment and human health at a significant risk.

We urge the government to establish a regulation, with timelines, that aims for elimination of BPA from industrial sources.

c) Process review and public reporting

- Review progress of action within the process, public reporting on the progress, and updates should be included in the proposed regulation. The regulations should be reviewed periodically to ensure progress towards the goals. A 5 year review of the regulation is recommended. Currently, the 5 Year Parliamentary Review of CEPA has proven to be a relevant component of the Act that allows the government the ability to update the Act to address new approaches on the management of toxic chemicals and emerging science, for the protection of health and environment in Canada. Some regulations under CEPA may become outdated and ineffective and therefore, it may be necessary to prescribe periodic updates to regulations developed under CEPA so as to promote greater accountability and progress.

Require evaluation and public reporting on progress every five years. In addition, a process to amend the regulation to meet the goals should be included. The review process would be similar to the approach of a CEPA review.

d) Definitions of practices and other concepts

- The draft scope risk management documents mentions “best management practices” but did not offer a definition. The definition for key concepts and principles are critical in a regulation. Further review of definitions for principles and guidelines will be required in the context of its support of the regulation.
- It is unclear whether concepts such as Best Available Technology (BAT) and Best Environmental Practices (BEP) will be promoted or utilized in this framework. These concepts, if defined appropriately, can be effective contributors to the goals of the regulation. We have seen the adoption of the BAT or BEP in the efforts to eliminate persistent organic pollutants (POPs) under the Stockholm Convention on POPs (including PCBs). However, in these situations where a goal of elimination has been stated, here are many on-going challenges to the global community in applying the BAT and BEP to address POPs. We continue to see the releases of POPs to the environment.

Outline for further review and discussion, definitions for key concepts, principles and guidelines in the regulations.

e) Promotion of non- toxic alternatives

- The consultation document on EMS does include any commentary on the use of alternatives to promote the protection of the environment. This is a significant gap in the overall approach, and specifically in the EMS framework. The best approach to address BPA releases to the environment should include a careful audit of the

facility processes and uses of BPA for the purposes of identifying areas where BPA could be replaced with non-toxic alternatives or processes.

Additional consideration on the use of non-toxic alternatives and processes should be included in the framework.

f) Promotion of transparency and accountability by industry and government to the public

- The current proposal indicates that the EMS will essentially be an internal process, where the plans are developed and maintained by the facility. Facilities will not be required to submit copies of their EMS to government. There will be very limited public knowledge on environmental performance for a facility – only if there is a recorded exceedance of the concentration limit.
- This approach is similar to pollution prevention plans designed by facilities and required under CEPA for specific toxic chemicals or chemical releases. This element of the approach is unsupportable given that such a regulation could potentially replace the use of other more useful CEPA tools to outline regulatory action on toxic chemicals.
- Public interest organizations like ours have expressed concerns about the lack of public access to these plans and the lack of reports on progress made towards pollution prevention in the plants. The EMS framework offers the same approach. This approach does not support greater industry accountability nor does it provide public confidence that the environment and health will be protected.
- The facility will be required to report only exceedances to the government. However, no timeframe to report these exceedances has been outlined and no mechanism for public intervention to review the adequacy of remediation has been included.
- Require transparency in EMS framework by including role of public reporting and review of EMS plans. Furthermore, additional details on the fines and consequences of violation of exceedances to the proposed concentration limits should be required.

g) Provide compliance and enforcement mechanisms

- The current proposals lack details on the compliance and enforcement mechanisms. These are essential elements to the effective implementation of regulations. The absence of these elements will create barriers for effective implementation of the regulations.

Require compliance and enforcement mechanisms in the regulations.

We offer the following additional comments on the EMS proposal.

Third Party verification

The EMS will require third party verification (external) on some elements of the system. While elements of this proposal may be useful, there is concern that the cost may not be financially feasible for small companies. Furthermore, it is possible that this verification may not necessarily assure compliance.

Reporting of Releases

We have made several comments about reporting in other sections of this submission, particularly on reporting exceedances. However, we also want to emphasize the inadequacy of the reporting requirements. Facilities reporting their exceedances will not be required to provide a numeric value on the concentration level of releases prior to the exceedances to demonstrate if the facility has taken effort to reduce its releases over time. It is unclear whether these exceedances will be reported to the public. And if they are, the frequency of reporting and the expected method of communication for these exceedances need to be determined. The proposal indicates that exceedances are reported to the Regional Director of the Environmental Enforcement Division.

Strengthen the reporting mechanism on BPA releases in the proposed regulations including to the public, under CEPA registry and under NPRI.

Recommendations:

- We do not support the use of EMS regulations to address BPA environmental releases at this time, without the elements described above.
- We urge the government to suspend discussion on the use of an EMS regulation based on the current proposal.
- Since the elements of the proposed EMS regulations will entrench the end of pipe control approach to meet maximum concentration levels for BPA, we would urge a stronger approach including the development of a regulation with a goal of ultimate elimination and prevention of BPA.
- We urge the government to establish a special working group to discuss the options for regulations on BPA that would promote prevention. Elements such as pollution prevention, use of BAT and BEP for technology and practices and their roles in achieving these goals would be part of the working group's mandate. Furthermore, the government would outline how appropriate agencies and the various levels of jurisdictions will work to implement the regulation.
- A regulation that supports prevention should include explicit timelines and reporting on progress for implementation and enforcement. These elements have not been proposed for EMS.
- Government should target investments in technologies that promote prevention rather than just controlling BPA.
- Under these regulations, government should promote greater transparency by facilities including its environmental performance.
- Require a compliance and enforcement mechanism in the regulation.

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APPENDIX

Table 1. Proposed risk management for BPA and current status

Risk Management Components⁸	Proposed Government measures	Status
Polycarbonate baby bottles (section 9.1.1)	Proposal to ban the importation, sale and advertising of polycarbonate baby bottles made with BPA monomer.	Regulations proposed. On-going.
Canned infant formula (section 9. 1,2)	Development of stringent migration targets for BPA in infant formula cans.	No proposals to date.
Alternative linings - cans for infant food (section 7.1)	Government will support manufacturers in the evaluation of replacement options for BPA in infant formula can coatings.	No proposals to date.
Other canned food linings	"explore the option of establishing stringent migration targets for canned foods"	No proposals to date.
Industrial releases of BPA for: - industrial users of BPA (section 9.1.4)	Government will consider imposing regulations to minimize the risks from releases of BPA into the environment. Regulations may aim to: "establish maximal bisphenol A concentrations at the effluent; and require ...best management practices are adopted..." (The regulatory proposal will be published in the Canada Gazette, Part I, within approximately 24 months.)	On-going but addressed only industrial effluent to the aquatic environment.
Disposal/recycling of products or materials containing BPA (section 9.1.4.2)	"Work closely with provincial, territorial and municipal counterparts to minimize the quantities of bisphenol A released to the environment, from the disposal or recycling of products." "Options will be explored...regulatory approach at facilities releasing this substance."	No proposals to date.
Information gathering (section 9.2)	Monitoring to continue under the National Pollutant Release Inventory (NPRI)	Ongoing. No additional proposals made to review NPRI program.
Information gathering (section 9.2)	Survey of Class 11, 111, 1V medical devices (in contact with patient or patient bodily fluid) for BPA.	No proposals to date.

⁸ Refers to sections listed in Environment Canada and Health Canada. *Proposed Risk Management Approach for Phenol, 4,4'-(1-methylethylidene) bis (Bisphenol A)* Chemical Abstract Service Registry Number (CAS RN): 80-05-7 (October 2008). Accessed at: http://www.ec.gc.ca/substances/ese/eng/challenge/batch2/batch2_80-05-7_rm.cfm.

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Information gathering (section 9.2)	Domestic Substance List inventory update	No proposals to date.
Monitoring (section 9.2)	<p>1) Exposures to pregnant women - Maternal-Infant Research on Environmental Chemicals (MIREC) Study & Plastics and Personal-care Product Use in Pregnancy</p> <p>2) Canada Health Measures Survey – BPA will be included as a substance for analysis;</p> <p>3) Inclusion of BPA monitoring in the 2009 cycle of the Canadian Total Diet Study (TDS);</p> <p>4) address data gaps for BPA exposure – infant and canned foods included.</p>	Ongoing
Monitoring (section 9.2)	Environmental monitoring of BPA including: wastewater effluent, wastewater sludge, fish landfill leachate, wildlife, receiving waters downstream from wastewater treatment plants.	Ongoing
Research (section 9.2)	Ongoing research: “mechanism of action of BPA and potential fetal exposures to BPA.”	Not known