CGLI Council of Great Lakes Industries

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Attention: GLEC and GLWQA Annex 3 Co-chairs

Re: Comments on draft Binational Strategies for PCBs and HBCD

Dear Mesdames and Sir:

The Council of Great Lakes Industries is pleased to provide the following comments regarding the Chemicals of Mutual Concern Binational Strategy documents for PCBs and HBCD, which were posted for public comment on binational.net on June 20, 2017. The comments provided in this letter supplement comments that CGLI provided earlier in response to an invitation to review an early draft of the strategy documents.

Draft PCB Management Plan

- The draft acknowledges that substantial progress has been made in reducing both PCB quantities in use and PCBs in the environment. The draft also projects that PCB levels in fish will be less than fish consumption advisory levels in the year 2030 to 2035 timeframe. However, the draft does not detail (1) how PCB management practices that are already in place have contributed toward the achievement of GLWQA objectives, (2) identify the shortcomings of existing measures, or (3) why additional management action is necessary to achieve unfulfilled GLWQA objectives. These details are needed to justify the recommendation that additional PCB management is necessary to achieve GLWQA objectives.
- The draft acknowledges reductions in PCB use, deposition, and presence in various legacy sinks within the Great Lakes basin, but does not explain the significance of PCBs that remain or potentially may remain. The draft gives the impression that remaining levels are as important as the much larger quantities that have already been addressed. To justify additional management action, the draft must describe how reducing the quantity of any remaining materials will achieve the objectives of the GLWQA.
- The draft speculates that "there are potentially a large number of unreported PCB sources in both nations that may be releasing PCBs into the environment." No basis for this statement or evidence that supports it is provided.
- The draft does not explain the significance of the "non-liquid" PCB sources identified in the draft. For example, the draft does not compare quantities of non-liquid PCB sources

to liquid sources that already have been removed via management actions and explain how management of non-liquid PCB sources will achieve the objectives of the GLWQA. Finally, the draft does not recommend measures for managing "non-liquid" PCB sources, or analyze the associated costs and benefits. Simply claiming that non-liquid PCB sources exist in the region is insufficient.

- The discussion in Section 3 of the draft regarding "exceedances of or non-compliance with environmental guidelines" does not reflect the fish PCB level decay rates that have been observed within the Great Lakes region for decades. Nor does this discussion reference predictions in Section 2.4 and Figure 2-6 that levels will be below fish consumption protocol levels in the year 2030 to 2035 timeframe. Section 3 should be modified to incorporate these references. In addition, this information should be included in Section 5, Risk Mitigation and Management Options. The fact that fish PCB levels have declined so dramatically reflects heavily on the need or justification for additional management actions.
- The discussion in Section 6, Conclusions, downplays the progress made and the projected attainment of levels below fish consumption guidance limits. It contains several statements regarding actions that are needed to reduce risks, such as reviewing and possibly updating standards, TMDLs, and equipment phase-out mandates. However, nothing in the text of the draft supports, substantiates or justifies these measures as a means of further reducing PCB risks.
- On page 45, the first "recommended actions" bullet calls for update of the domestic water quality standard for PCBs, then notes that this action was found not to be needed in the most recent six-year review. What has changed to suggest revision is needed now?

Draft HBCD Management Plan

- The last sentence of the Executive Summary opening paragraph states that, "formal Federal risk mitigation measures and management activities have yet to come into effect within the United States and Canada." However, in the introduction, the draft describes "EPA's final action plan for HBCD" and presents it in Appendix B; and mentions "ECCC's Proposed Risk Management Approach for HBCD" and presents it in Appendix C. In addition, U.S. EPA recently published a document (Scope of the Risk Evaluation for Cyclic Aliphatic Bromides Cluster) that will lead further risk mitigation measures in the U.S. These efforts constitute "formal Federal risk mitigation measures and management activities" and should be fully acknowledged in the strategy document.
- The statement of page 2 regarding HBCD persistence is not correct and is misleading and there have been multiple studies conducted to demonstrate HBCD can biodegrade. Degradation of HBCD[1] has been reported in freshwater sediments and soils. Using OECD test guidelines 307 and 308, it was demonstrated that the rate of loss of HBCD at 20°C was appreciably faster under anoxic conditions in both media. Relative to biologically sterile controls, biotransformation of HBCD was faster in the presence of microorganisms and DT50 values ranged from 11 to 32 days (aerobic) and 1.1 to 1.5 days (anaerobic) in sediment. In soil, half-lives under aerobic and anaerobic conditions were 63 and 6.9 days, respectively. Subsequently another study was condcuted[2] on the degradation of ^{14}C-HBCD in activated sludge and in digester sludge, freshwater sediments and soil. The study was primarily designed for detecting transformation

products. In freshwater aquatic sediment HBCD was observed to be subject to primary degradation with half-lives of 66 and 101 days in anaerobic and aerobic sediment at 20 °C, respectively. The half-lives of the individual diastereoisomers in sediment under aerobic conditions were estimated to be 128, 92 and 72 days for the α-, γ- and β-isomer, respectively. The main transformation product was 1,5,9-cyclododecatriene (CDT) which was formed via a step-wise reductive dehalogenation of HBCD. Degradation rate constants for HBCD, under anaerobic conditions in sewage sludge have also been reported[3] . Results from this study demonstrated showed that (+/-)-β-HBCD and (+/-)-γ-HBCD diastereoisomers degraded faster than (+/-)-α-HBCD by an estimated factor of 1.6 and 1.8, respectively.

- The use rates and phase-out discussion in Section 2.4.1 incomplete and needs to include the latest information. For example, production of HBCD and several other flame retardant materials have been voluntarily phased out by manufacturers who are not waiting for the "market demand to decline." Also, U.S. EPA's Work Plan Chemicals Program has released several preliminary reviews on many flame retardants, finding that 50 are unlikely to pose a risk to human health. Personnel active in the industry trade association North American Flame Retardant Alliance (NAFRA) have worked extensively in this area and should be directly involved in the development of the HBCD management strategy document.
- The description in Section 3.1 of existing HBCD management programs in the U.S. needs to be updated to include passage of the Lautenberg Chemical Safety Act; the fact that HBCD, a cyclic aliphatic bromide cluster, is among the 10 top chemicals to receive initial evaluation under the LCSA; and that U.S. EPA has just published the Scope of the Risk Evaluation for Cyclic Aliphatic Bromides Cluster. Placing high priority on the review of flame retardant materials, thereby speeding agency review/approval, provides the important layer of protection obtainable through use of these products, helping to save lives, and substantially reduce fire risks.
- Section 4.1, Gaps and Need for Action, states that "additional monitoring for HBCD in environmental media is needed in the Great Lakes Basin." No source, justification, or reference for this statement is provided. Resources required, costs, benefits or how the information would be used in a management context, should be examined and provided.
- In several places, the draft justifies the need for enhanced HBCD action plans on large scale "knowledge gaps" and unavailability of information regarding this substance. The Scope of the Risk Evaluation for Cyclic Aliphatic Bromides Cluster recently released by U.S. EPA provides many references. The risk evaluation that U.S. EPA will undertake as part of its initial 10 substances to be evaluated under TSCA Section 6(b)(2)(A) requirements will provide many more. The "gaps" identified in the draft Strategy document should acknowledge information currently available and that yet to come through this process.

Thank you again for the opportunity to review these drafts. CGLI looks forward to working with the EC3 team on continued development of the CMC management strategies. Please contact me with questions or requests for additional information.

Sincerely,

Dale K. Phenicie
Technical and Projects Director

References:

1. Davis, J. W.; Gonsior, S.; Marty, G.; Ariano, J., The transformation of hexabromocyclododecane in aerobic and anaerobic soils and aquatic sediments. *Water Research* **2005,** *39*, (6), 1075-1084.
2. Davis, J. W.; Gonsior, S. J.; Markham, D. A.; Friederich, U.; Hunziker, R. W.; Ariano, J. M., Biodegradation and Product Identification of [14C]Hexabromocyclododecane in Wastewater Sludge and Freshwater Aquatic Sediment. *Environmental Science & Technology* **2006,** *40*, (17), 5395-5401.
3. Gerecke, A., C.; Giger, W.; Hartmann, P., C.; Heeb, N., V.; Kohler, H.-P., E.; Schmid, P.; Zennegg, M.; Kohler, M., Anaerobic degradation of brominated flame retardants in sewage sludge. *Chemosphere* **2006,** *64*, (2), 311-7.