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Sent: Friday, January 22, 2010 1:10 PM
To: djacobson@istc.illinois.edu
Cc: Cain.Alexis@epa.gov
Subject: Great Lakes Mercury Strategy Comments

Dear Ms. Jacobson:

The Draft Great Lakes Mercury Emission Reduction Strategy developed by the Great Lakes States and the U.S. EPA clearly identifies key U.S. mercury emission sources contributing to mercury pollution in the Great Lakes region. While Canadian and American initiatives will inevitably be different, it is important to note that our approaches to reducing mercury emissions are comparable with Canada having taken action on many of the sources identified in the Draft Great Lakes Mercury Emission Reduction Strategy. Some examples of Canadian actions include:

Fossil Fuel Electric Power Generation

In 2006, the Canadian Council of Ministers of the Environment endorsed *Canada-wide Standards for Mercury Emissions from Coal-fired Electric Power Generation Plants*. These standards include provincial caps on mercury emissions with the 2010 provincial cap representing a 60% national capture of mercury from burned coal based on 2002-2004 emissions baseline (for existing facilities) and capture or emission rate for mercury to be based on best available control technology (for new facilities).

Mercury Cell Chlor-Alkali Industry

While Canada regulated mercury emissions from the chlor-alkali industry in 1990 with the *Chlor-Alkali Mercury Release Regulations*, the last of Canada's chlor-alkali plant closed in 2008.

Metals Production

In 2000, the Canadian Council of Ministers of the Environment set *Canada-wide Standards for Mercury Emissions* for base-metal smelting, and in 2001, Environment Canada published Codes of Practice for both integrated and non-integrated steel mills. In April 2006, Environment Canada published a *Notice requiring the preparation and implementation of Pollution Prevention Plans in respect of specified toxic substances released from base metals smelters and zinc plants* and an *Environmental Code of Practice for Base Metals Smelters and Refineries*; both documents contain provisions with respect to the management of mercury emissions. In 2007, Environment Canada published a *Notice requiring the preparation and implementation of Pollution Prevention Plans in respect of mercury releases from mercury switches in end-of-life vehicles processed by steel mills*.

Products & Processes that Deliberately Use Mercury

Canada is in the process of developing a regulation to prohibit mercury-containing products where alternatives exist and to set limits and require labelling and reporting for products where alternatives do not exist. Furthermore, Environment Canada published a draft pollution prevention plan on dental amalgam to further reduce the risk of mercury releases from the dental industry.

Portland Cement

While guidelines were established by the Canadian Council of Ministers of the Environment in 1996 to reduce mercury and other emissions from kilns using some hazardous or non-hazardous wastes as supplementary fuels, these guidelines were later withdrawn and no further action has been taken. As of 2007, these supplementary fuels represent less than 10% of the Canadian cement industry's total fuel supply.

Waste Incinerators

In the *Canada-wide Standards for Mercury Emissions* set in 2000 that addressed the base-metal smelting sector, Canada also set targets for mercury emissions from waste incineration.

Environment Canada is currently developing a risk management strategy for mercury that will provide a consolidated description of these actions and will outline potential new initiatives to reduce mercury emissions. We will be glad to share this strategy once it is published.

In addition to the general comments above, more specific technical comments are included in the attached document.

<<Technical comments for the GLRC mercury strategy.doc>>

I hope that this information is useful to you and your team and look forward to seeing the Final Great Lakes Regional Collaboration (GLRC) Strategy. The work and research that have been put into the development of this strategy are evident and we appreciate the accuracy and level of detail of the information presented. The proposed recommendations are well-formulated and based on sound science, and we look forward to the resulting outcomes of the GLRC Strategy.

Best regards,

Vincenza Galatone
Executive Director, Chemicals Management Division

Technical Comments for the Great Lakes Mercury Emission Reduction Strategy

Section 1.1 Origins and Scope of this Report

While the broader Great Lakes region includes waters and watersheds from eight U.S. States and the province of Ontario, the scope of this report is limited to the U.S. States. However, the second paragraph of the summary refers to the Great Lakes Binational Toxics Strategy which addresses the broader Great Lakes region. In order to avoid confusion, it is suggested that the Executive Summary state that the GLRC Strategy does not specifically include mercury emission inventory or reduction activities from Ontario.

Section 3.1 Sources of Mercury in the Global Environment

Please indicate a year for the data on Chart A and include a description on how the global emission data are obtained. The methodology used in each country to estimate mercury emissions should be consistent in order to put global data together and compare them.

Section 3.3 Mercury Deposition to the Great Lakes Region

Figure B is based on 1999 emission inventory. Please indicate if current mercury emissions inventory is comparable to 1999 and include a year for the inventory data for Canada.

For the deterministic model used to evaluate mercury deposition and summarized in Table B, it may be beneficial to indicate how the model is calibrated with real measurements to confirm the accuracy of the modeled results.

Fourth paragraph suggested text: *For example, while Asian contributions are the highest overall, during April, the **second** highest mercury contributions are from the 'others' category, which includes sources in the southern hemisphere.*

Section 3.5 Conclusion: Sources of Mercury to the Great Lakes

Many conclusions are derived from different data sets, for example 1995, 1999, 2000 and 2005 emission data are all used. The methodologies used in these emission data sets should be consistent to make them comparable. Since so many data years and data sets are included, it may be useful to have a comparison table similar to Table C which would document the emissions for each year cited in the report and for the major sectors specified in Table C.

The last conclusion makes reference to the decline of emissions in North America. It may be pertinent to include in Section 3 a yearly emission comparison to support this statement.

Section 5.6.1 (Portland Cement Manufacturing) Background

Second paragraph: The temperatures identified in the second paragraph, "under high temperature (1600 to 1800 °F)," are not representative of current kiln operation. Usual temperature is approximately 1450 °C or 2640 °F.

Third paragraph suggested text: *The high temperatures required in the kiln are achieved predominately by the firing of fuels (typically coal, waste or hazardous waste). The fuel type and mix within the cement manufacturing sector can vary widely. ... Typically, wet processes require kilns to consume more fuel in order to dry out the feed material prior to the calcinations process.*

Section 5.6.1.a. Processes that emit mercury

Second paragraph suggested text: *Mercury is emitted from the burning of fuels, the pyroprocessing of feeds such as limestone and clay, and the addition of aluminates.*