

**Compiled Canadian Comments on the
Draft Guidance on Best Available Techniques and Best Environmental Practices (BAT/BEP) for Mercury Emissions
under the Minamata Convention on Mercury**

GENERAL COMMENTS

Environment Canada

- There is still some revision/strikethrough text in the documents.
- The documents could benefit from more diagrams showing the variations on the different equipment/processes.
- Question – the addition of bromine is mentioned for furnaces to capture Hg in some documents. Are Br emissions of any concern (ozone depleting)?
- There's some inconsistency between documents in terms of table/figure titles occurring before/after the figure itself.
- In the case studies document, the sections and figures are numbered starting at 7. Is this intended to align with other documents, or is the case studies document intended to be the 7th section? I notice there are only six documents online. Figure 8.1 is referenced twice in the text, but there is no such figure. The next case study starts the figures as Figure 1.

Government of Manitoba

- It is suggested that a summary of BAT & BEP in a tabular form can be inserted at the end of each chapters (5 source categories) for easy reference and comparison purposes (similar to the table provided within the Non-ferrous metal sub-group)

SaskPower

- Membership of the expert committee that developed these documents is not discussed. It is not clear what jurisdictions and stakeholder sectors were represented;
- There is a tendency to present the best case for mercury control options by presenting what is possible in some cases with little or no discussion about the limits for these. This is particularly noticeable in the introduction document. There are some exceptions; e.g. considerable discussion is provided on the limitations of mass balance monitoring for mercury, but there is no corresponding discussions for mercury CEMs which also have considerable issues. There should be more discussions about the limits of the various techniques discussed.
- There are occasional inconsistencies between the introduction and coal plant documents; e.g. discussion of corrosion potential for halogen-based oxidizing additives in the coal plant document, but not in the introduction.

July 31, 2015

- Generally, only U.S., European and Japanese reference methods are cited. While Environment Canada’s protocol is mentioned for mass balance monitoring, I did not see any other Canadian reference methods referred to; e.g. there are differences in the Canadian reference method for Ontario Hydro testing from the ASTM method cited.
- There are several editorial items that should be addressed. Generally, these appear consistent with a certain piece of text being written by people for whom English is not their first language.

Cement Association of Canada

- In general, the Best Available Techniques and Best Environmental Practices (BAT/BEP) to control, and where feasible, reduce mercury emissions that are described in this document are relatively broad and seem appropriate for the purpose of such a document. However, it should be noted that the proposed BAT-BEP identified in the guidance document vary significantly in terms of their effectiveness and their implementation costs. Some of these measures, such as scrubbers, should not be considered a BAT-BEP, but should rather be identified as a potential type of control instrument being part of a future policy framework.

INTRODUCTION

Stakeholder	Page Number	Section/Subsection	Comment
Government of Manitoba	2	1.1 or 1.2	Introductory chapter can include some description on (a) identifying the target audience/s of the guidance document (b) rationale for the selection of 5 source categories listed in Annex D
Environment Canada	11	1.8.2.1.1	US EPA Method 29 - Metals Emissions from Stationary Sources. Basel technical guidelines for mercury reference EPA Method 0060: Determination of Metals in Stack Emissions. EPA SW-846 Method 0060 is used to determine the concentration of metals in stack emissions from hazardous waste incinerators and similar combustion processes. For clarity, please add reference to Method 0060.
Environment Canada	12	1.8.2.1.1	Under Method ASTM D6784- 02 (Reapproved 2008) Delete "(250°F)" – Standard units are metric
Environment Canada	19	1.8.4.1	<i>"In a system with multiple emission sources and limited data from outlet stacks or ducts, the mass balance approach may provide more useful and representative information... ."</i> The use of "more" does not indicate what it is relative to. Suggest deletion.

COAL-FIRED POWER PLANTS AND INDUSTRIAL BOILERS

See attachment with embedded comments.

NON-FERROUS SMELTING AND REFINING

Stakeholder	Page Number	Section/Subsection	Comment
Mining Association of Canada	8	2.2.1	<p>The statement “... each zinc refinery will purchase zinc concentrates from several different mines. The mercury content from an individual mine can vary between 1 and 200 ppm” is not quite correct.</p> <p>Suggest rephrasing the latter sentence as follows: “The mercury content of a typical zinc mine concentrate will vary between 1 and 200 ppm but may range as high as 1,000 ppm.”</p>
Environment Canada	21	3.2.1	<p>Typo: “Mercury can be recovered by mixing the solids with calcium oxide, and then heating to distil away the mercury which can then be deal dealt with in accordance with the Convention”</p>

WASTE INCINERATION

See attachment with embedded comments.

CEMENT CLINKER PRODUCTION

Stakeholder	Page Number	Section/Subsection	Comment
Cement Association of Canada	21	5	<p>Another important comment is related to the following statement: “<i>The performance level associated with best available techniques and best environmental practices in new and existing installations for control of mercury emissions to air is below 0.03 mg Hg/Nm³ as a daily average, or average over the sampling period, at reference conditions 273 K, 101,3 kPa, 10 per cent oxygen and dry gas.</i>”</p> <p>We believe that the time period associated with BAT/BEP at a level of 0.03 should be longer, such as a monthly or an annual average. The Minamata Convention is concerned with overall releases of mercury to the environment and its monitoring provisions specify yearly reporting; consequently, it would seem that a longer timeframe for determining BAT/BEP is appropriate.</p> <p>The possible increase in mercury release to the environment for exceeding the limit on a daily average but maintaining the limit on a monthly or 30-day rolling average is small compared to the cost of controls necessary to maintain this limit on a daily average. It is quite conceivable that plants that average less than 0.013 mg Hg/Nm³ on a monthly basis (approximate USA NESHAP limit, the most restrictive regulation world-wide) will at times exceed the 0.03 mg Hg/Nm³ if measured on a daily average.</p>
Environment Canada	28	7.1	<p>Typo: “... Consequently, they are volatised in the preheater and leave it remain in the gas phase. These physie physico-chemical properties...”</p>