Northwest Territories Environment and Natural Resources

Ms. Rachel Crapeau
Chairperson
Snap Lake Environmental Monitoring Agency
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October 14, 2015

Dear Ms. Crapeau:

Update on Incinerator Adaptive Management at Snap Lake Mine

The Government of the Northwest Territories (GNWT) Department of Environment and Natural Resources (ENR) is providing this letter as an update to the follow-up actions associated with the latest incinerator stack testing at the De Beers Canada Inc. (De Beers) Snap Lake Mine.

Background

De Beers installed two new Ketek incinerators at their Snap Lake site in 2013 to manage the site's solid waste. In accordance with their commitment to stack sampling new incinerators, they conducted stack sampling in July of 2014, and provided the results to ENR, Environment Canada (EC), and the Snap Lake Environmental Monitoring Agency (SLEMA) in January of 2015 (stack test report). The stack test report indicated that emissions from both incinerators were in exceedance of the Canadian Council of Ministers of the Environment (CCME) Canada-Wide Standards for Dioxins and Furans (CWS). De Beers investigated the incinerator operations to ascertain the causes of these exceedances. In the stack test report and in follow up conversations with ENR, they identified deficiencies in incinerator operation that included insufficient minimum chamber temperatures, and air flow restrictions from residual ash, both of which resulted from operators failing to follow standardized work practices. De Beer's implemented corrective actions (adaptive management response) to rectify these issues.

De Beers committed to employ best management practices and adaptive management based on the findings of the stack test report.

ENR Involvement

ENR has committed to developing a legislative framework for air quality management in the NWT, with a priority focus on regulatory tools for incinerator emissions. This development process is currently underway.

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In the meantime, ENR continues to focus on ensuring that discharges of contaminants to the environment are minimized by working closely with De Beers to address incinerator management. ENR and De Beers met on July 15 and again on August 25, 2015 to discuss incinerator operations, issues, and to assess/review their adaptive management measures.

At the July meeting, De Beers indicated that the incinerator manufacturer and the stack testing consultants participated in the investigation into the root causes of the stack test failures. The determinations were that improper operations, including ash accumulation, were leading to inconsistent and insufficient incinerator temperatures (temperature faults), ultimately resulting in the emissions exceedances. Minimum chamber temperatures are a key factor in the destruction of dioxins and furans from the emissions stream. De Beers indicated that they had addressed these items through operator retraining and revising the Safety Health and Environment Operating Procedure (SHEOP). ENR requested that evidence be provided to demonstrate that these operational issues were being addressed and that they were effective, starting specifically with reviewing the incinerator temperature data that is monitored and recorded by the minute on a data logger.

De Beers compiled the temperature data from October 2014 to July 2015, and presented the analysis to ENR and EC on August 25, 2015. The data analysis indicated that temperature faults were occurring less than 2% of the operating time. De Beers indicated that in the event of an observed temperature fault, the environment department addresses it by contacting site services to investigate and address any potential issues. ENR was satisfied that incinerator operations were sufficiently effective over this data time period to result in achievement of minimum chamber temperatures greater than 98% of the time.

Next Steps

ENR requested that De Beers conduct this data analysis every 6 months to demonstrate continued appropriate performance of the incinerators, and to capture any trends. As part of their commitment to adaptive management, De Beers agreed they would conduct the data analysis again for the July to December 2015 data set, and then annually thereafter.

De Beers also committed to meeting every 6 months with ENR and EC to provide updates on the mitigative measures, such as the measures being taken with site services operators, the types of issues they're encountering, results of the quarterly visits from the incinerator manufacturers, and so on.

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Closure

ENR is pleased with the progress to date on the Snap Lake incinerator adaptive management measures, and will continue to work with De Beers to ensure appropriate incinerator management.

Should you have any questions or comments, please do not hesitate to contact Ms. Aileen Stevens, Air Quality Programs Coordinator, at aileen_stevens@gov.nt.ca.

Sincerely,

Diep Duong
A/Director, Environment Division

Cc:	P. di Pizzo	SLEMA
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