



June 10, 2014

Marc Casas
Regulatory Officer
Mackenzie Valley Land and Water Board
7th Floor - 4910 50th Avenue
P.O. Box 2130
Yellowknife, NT
X1A 2P6

Dear Mr. Casas,

**Re: DeBeers Canada Inc.
DeBeers Gahcho Kue Project
Draft Land Use Permit - MV2005C0032
Draft Water Licence – MV2005L2-0015
Request for Review and Comment**

The Department of Environment and Natural Resources has reviewed the application and draft Land Use Permit at reference based on its mandated responsibilities under the *Environmental Protection Act*, the *Forest Management Act*, the *Forest Protection Act*, the *Waters Act* and the *Wildlife Act* and has the following comments and recommendations for the consideration of the Board.

Draft Water Licence Comments

Topic 1: Scope

Comment(s):

A Board Staff comment indicates that the scope is tied to a table in the Updated Project Description. The paragraph in the licence references the Updated Project Description, but not the specific table.

Recommendation(s):

- 1) Include specifics on the table that is being referred to, i.e. Table x.x, Section Y.

Topic 2: Part C and Schedule 2 (Security)

Comment(s):

Schedule 2 includes provision for scheduling payment of security installments. GNWT provided recommendations on the timing of security payments during the public hearing.

Recommendation(s):

- 1) GNWT recommends that the first payment amount be scheduled in conjunction with construction. The total construction liability could be scheduled as two equal payments over the two year construction period: one occurring prior to starting construction and the second prior to year 2.
- 2) GNWT recommends the next payment be required prior to mining and milling, which is expected to be year 1 of operations.
- 3) GNWT recommends the next payment be scheduled for year 4 of operations, which is expected to coincide with the end of mining in the Hearne Pit.

Topic 3: Part E Clause 8

Comment(s):

As worded, this clause is unclear. The clause should be re-worded to clarify whether a revised Standard Operating Procedures (SOP) is to be submitted annually or in response to changes to the approved SOP or at the request of the Board.

Recommendation(s):

- 1) Clarify the intended timing.

Topic 4: Part F Clauses 2 and 3

Comment(s):

These clauses refer to modifications under Part G, Item 1. GNWT expects that the reference should be to Part F, Item 1.

Recommendation(s):

- 1) Confirm the reference.

Topic 5: Part G Clauses 4 and 5

Comment(s):

Clause 4 refers to a Construction Water Management Plan which is to be in place to address the Dyke Construction and Drawdown phases of the project. Clause 5 refers to an Operational Water Management Plan which shall be in place 60 days prior to discharge from the Water Management Pond.

The transition from one phase to the next is not clear, i.e. when does Kennady Lake cease being Kennady Lake and become a Water Management Pond. A clear transition point should be determined.

Recommendation(s):

- 1) The Water Licence Reasons for Decision should clearly define when it is anticipated that Kennady Lake becomes the Water Management Pond.

Topic 6: Part I Clause 2

Comment(s):

Clause 2 requires the Licensee to adhere to the AEMP Design Plan submitted April 16, 2014 until a revised plan is approved by the Board.

A revised plan should be submitted for Board approval soon after Licence issuance.

Recommendation(s):

- 1) A revised AEMP Design Plan should be submitted for Board approval within 30 days of the Licence issuance.

Topic 7: Schedule 6, Clause 1. c) iv.

Comment(s):

This clause requires a description of procedures to analyze and interpret data including integrating the results of individual monitoring streams. Weight of evidence analysis is identified as a potential method.

ENR agrees with the general intent of this clause, but notes that different methods are available for integrating the results of different lines of evidence. Whatever methodology is chosen, it is key that the analysis does not lose sight of the implicit management goals for the ecosystem. For example, the CCME's guiding principle for developing long term exposure guidelines is protecting all the species all the time. CCME guidelines derived using an SSD approach assumes that 95% of the species will be protected to a no effect level and that low-level effects could occur on

the most sensitive species. Selecting CCME guidelines implies this level of protection and management is desired for the exposure area. Weight-of-evidence evaluations often place greater emphasis on larger changes to abundance or community structure in exposed ecosystems than on surface water chemistry or toxicity. This can result in misleading results because the inherent variability in natural systems means that changes in the abundance of individual species or the structure of communities can only be detected when large changes occur in the receiving environment. Therefore, analyses and interpretation of monitoring data should focus on the most sensitive indicators of effects, rather than relying exclusively on a weight-of-evidence.

The GNWT feels that specifically referring to a “weight of evidence approach” may limit the analytical methods that are used by the proponent, and would prefer that reference to a specific method is not used.

Recommendation(s):

- 1) Remove the portion of the sentence “such as a weight-of-evidence analysis”. This is something that should be reviewed and approved as part of the AEMP development process.

Topic 8: SNP 01

Comment(s):

Physical parameters are only measured twice during drawdown of Kennady Lake – once at the beginning of the discharge period and once on the final day of discharge. Weekly monitoring occurs for water elevation in “Lake N11”.

GNWT notes that daily inline monitoring will occur for physical parameters during discharge into N11 (SNP 02). Nevertheless, GNWT believes that more frequent monitoring should also be conducted at SNP 01 within “Lake N11” during dewatering to ensure that mixing is occurring as predicted and the water quality objectives are being achieved. GNWT recommends weekly monitoring for pH, TSS and turbidity.

Recommendation(s):

1. Include weekly monitoring for pH, TSS and turbidity during drawdown of Kennady Lake.

Topic 9: SNP 03

Comment(s):

Physical parameters are only measured twice during drawdown of Kennady Lake – once at the beginning of the discharge period and once on the final day of discharge. Weekly monitoring occurs for water elevation in “Area 8”.

GNWT notes that daily inline monitoring will occur for physical parameters during discharge into Area 8 (SNP 04). Nevertheless, GNWT believes that more frequent monitoring should also be conducted at SNP 03 within “Area 8” during dewatering to ensure that mixing is occurring as predicted and the water quality objectives are being achieved. GNWT recommends weekly monitoring for pH, TSS and turbidity.

Recommendation(s):

1. Include weekly monitoring for pH, TSS and turbidity during drawdown of Kennady Lake.

Draft Land Use Permit Comments

Topic 1: 26(1)(i) Storage, Handling, and Disposal of Refuse or Sewage

Comment(s):

ENR notes that the Mackenzie Valley Land and Water Board (the Board) authorizes the proponent’s disposal of site refuse described in MV2005C0032, Part C Section 26(1)(i) conditions 49-52, through the proponent’s Waste Management Plan. In addition, ENR notes that the Board approves of the proponent’s Waste Management Plan as per condition 49. Since the primary method of waste disposal in the Waste Management Plan is by incineration, the Board is ultimately authorizing the incineration of waste in the NWT.

As is consistent with the MVLWB, *Guidelines for Developing a Waste Management Plan*, on page 19 it states:

“Waste Combustion equipment Incineration of waste may include the use of an incinerator. If incineration is employed, the incineration device must be designed and operated to treat the waste types and quantities. Further, proponents shall ensure that any on site incinerator meets the requirements of the Canada-wide Standards for Dioxins and Furans xiii and the Canada-wide Standards for Mercury Emissions xiv. Proponents who use incineration may be required to provide an incineration management plan and design and operate the facility in a manner that is consistent with Environment Canada’s Technical Document for Batch Waste Incineration (2009) xv and may seek additional guidance on incinerator management by referencing Operating and Emission Guidelines for Municipal Solid Waste Incinerators (1989) xvi.”
(MVLWB)

ENR notes that the only way to ensure that efforts to operate and maintain the incinerator are effective and that the formation and release of point source toxic, persistent and bio-accumulative compounds to the environment, such as dioxins, furans and mercury, are in compliance with the Canadian Council Ministers of the Environment (CCME) Guidelines for Canada Wide Standards

(CWS) for Dioxins, Furans and Mercury Emissions, is through formalized stack testing. This is the most effective form of quantitative testing available.

Recommendation(s):

- 1) As the Board authorizes the disposal of waste, ENR recommends that the proponents Land Use Permit include the following condition under 26(1)(i):
 - a) The Permittee shall conduct stack testing every other year for any incineration device(s), in accordance with national standard stack testing protocols, during typical operations to ensure representative performance of the unit. Stack testing results (Certificate of Analysis) shall be provided to the board annually, 60 days after the completion of the test.
 - b) The Permittee shall include in its annual submission to the board and inspector, the stack testing report by a competent professional, in addition to but not limited to the following:
 - i. the batch operational loads used in the test: batch operational loads will include volumes or weights of each waste stream used during stack testing.
 - ii. Certificate of Analysis from an ISO 17025 accredited facility. The results shall be compared to the CCME CWS for Dioxins, Furans and Mercury Emissions.
 - c) Any exceedance of the CCME standards shall require the development of an adaptive management response plan to address incineration deficiencies.

Topic 2: Draft land Use Permit

Comment(s):

A Wildlife and Wildlife Habitat Protection Plan (WWHPP) outlines the steps necessary to protect personnel, wildlife and wildlife habitat within the Project Development Area (PDA), also commonly described as a project's direct "footprint A WWHPP is a management tool to develop and implement clear procedures for employees and contractors in the field, to promote due diligence and to ensure compliance.

Condition 47 states: **Revised Wildlife Habitat Protection Plan**

Prior to the commencement of the land-use operation, the Permittee shall submit a revised *Wildlife Habitat Protection Plan* to the Board. The Permittee shall not commence this land-use operation until this Plan has been approved

by the Board. The habitat protection measures outlined in the plan shall be for approval by the Board.

Condition 48 states: **Wildlife Habitat Protection Plan**

The Permittee shall operate in accordance with the approved habitat protection measures in the *Wildlife Habitat Protection Plan* and shall annually review the plan and make any necessary revisions to reflect any changes in operations or as directed by the Board. Revisions to the Plan shall be submitted to the Board and any revisions to the habitat protection measures outlined in the Plan shall be for approval by the Board.

Recommendation(s):

1) Condition 47: **Revised Wildlife Habitat Protection Plan**

Prior to the commencement of the land-use operation, the Permittee shall submit a revised *Wildlife and Wildlife Habitat Protection Plan* to the Board. The Permittee shall not commence this land-use operation until this Plan has been approved by the Board. The habitat protection measures outlined in the plan shall be for approval by the Board.

2) Condition 48: **Wildlife Habitat Protection Plan**

The Permittee shall operate in accordance with the approved habitat protection measures in the *Wildlife and Wildlife Habitat Protection Plan* and shall annually review the plan and make any necessary revisions to reflect changes in operations or as directed by the Board. Revisions to the plan shall be submitted to the Board and any revisions to the habitat protection measures outlined in the plan shall be for approval by the Board.

Comments and recommendations were provided by ENR technical experts in Environment Division, Water resources and the North Slave Region and were coordinated and collated by the Environmental Assessment and Monitoring Section (EAM).

If you have any questions or concerns, please do not hesitate to contact Patrick Clancy, Environmental Regulatory Analyst at 920-6118 or email at patrick.clancy@gov.nt.ca.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Clancy', written in a cursive style.

Patrick Clancy
Environmental Regulatory Analyst
Environmental Impact Assessment
Conservation, Assessment and Monitoring Division
Department of Environment and Natural Resources
Government of the Northwest Territories