

1.0 Introduction

The following concordance table outlines the changes made in the De Beers Canada Inc. (De Beers) draft Water Licence, submitted as part of the 2013 Water License Amendment Application, in comparison with the approved 2012 licence.

Four categories are used to highlight the changes:

1. Deleted Conditions
2. Altered Conditions
3. Moved Conditions
4. Added Conditions

This document is intended to facilitate the review of the proposed draft licence by highlighting changes with respect to the current licence.

Part A: Definitions:

Original Definition of Modification: in respect of a structure, means a change, other than an expansion, that does not alter the purpose or function of a structure.

Proposed Revised Definition of Modification: in respect of a structure previously approved by the Board means a change that does not alter the purpose or function of that structure.

Reason: To remove ambiguity in the definition.

Part B: General Conditions

No proposed changes to Part B.

Part C: Conditions Applying to Security Requirements

No proposed changes to Part C.

Part D: Conditions Applying to Construction

Proposed Addition for 2013 Amendment: Changes to the construction of Engineered structures can be made on approval of the Inspector and notice to the Board.

Reason: removed in 2011 water license to “align with other projects”; however, small scale changes should be able to be approved by the Inspector to avoid unnecessary operational constraints and without wasting the Board’s time and resources.

Part E: Conditions applying to Waste Management

Original Condition in 2012 Licence in Part E, Item 3: The Licensee shall ensure that all structures designed to contain, withhold, retain, or divert Water or Waste are inspected annually during the summer months by a Professional Engineer, in accordance with the approved relevant Final Detailed Designs, as-built reports, and management and monitoring plans. The results of the annual inspection shall be reported as follows:

- a) The *Engineer's Field Inspection Report* shall be submitted to the Board within 60 (sixty) days of the inspection; it shall include a covering letter from the Licensee outlining an implementation plan for addressing each of the Engineer's recommendations; and
- b) The Engineer's full *Geochemical and Geotechnical Inspection Report* shall satisfy the requirements of Schedule 4, Item 1 and be submitted to the Board by March 31 of the year following the inspection.

Proposed Altered Condition for 2013 Amendment: The Licensee shall ensure that all structures designed to contain, withhold, retain, or divert Water or Waste are inspected annually during the summer months by a Professional Engineer, in accordance with the approved relevant

Final Detailed Designs, as-built reports, and management and monitoring plans. The results of the annual inspection shall be reported as follows:

- a) The *Engineer's Field Inspection Report* shall be submitted to the Board within 60 (sixty) days of the inspection; it shall include a covering letter from the Licensee outlining an implementation plan for addressing each of the Engineer's recommendations; and
- b) The combined Engineer's and Geoprofessional's full *Geochemical and Geotechnical Inspection Report* shall satisfy the requirements of Schedule 4, Item 1 and be submitted to the Board by March 31 of the year following the inspection.

Reason: Clarity and correctness: the Engineer is responsible for the Geotechnical Inspection Report but not for the Geochemical Inspection Report. The Geoprofessional is responsible for the Geochemical Inspection Report

Original Condition in 2012 Licence Part E, Item 10: The Licensee shall perform a risk assessment of the North Pile Facility to evaluate the adequacy of current operational procedures and monitoring efforts to ensure that impacts to the Receiving Environment are prevented or minimized. Results of the risk assessment shall be submitted to the Board by September 15, 2012 accompanied by recommendations for changes to the management of the North Pile Facility and a schedule of implementation.

Remove Condition

Reason: The requirement has been satisfied.

Original Condition in 2012 Licence Part E, Item 13a): The *Engineer's Field Inspection Report* shall be submitted to the Board within 60 (sixty) days of the inspection; it shall include a covering letter from the Licensee outlining an implementation plan for addressing each of the Engineer's recommendations

Proposed Altered Condition for 2013 Amendment: The *Engineer's Field Inspection Report* shall be submitted to the Board within 60 (sixty) days of the inspection; it shall include a covering letter from the Licensee outlining an implementation plan for addressing each of the Engineer's priority recommendations

Reason: Differentiates between necessity items and suggestions

Part F: Conditions applying to Water and Wastewater management

Original Condition in 2012 Licence Part F, Item 8: Effluent from the Sewage Treatment Plant shall be tested prior to mixing with the effluent from the Water Treatment Plant at Surveillance Network Program Station Number 02-16i and will meet the following effluent quality requirements

Proposed Altered Condition for 2013 Amendment: Effluent from the Sewage Treatment Plant shall be tested prior to mixing with the effluent from the Water Treatment Plant at Surveillance Network Program Station Number 02-16j and will meet the following effluent quality requirements

Reason: Station 02-16 renamed to reflect relocation of the Sewage Treatment Plant. All grab sample and monthly average limits remain unchanged from the 2012 licence.

Original Table in 2012 Licence Part F, Item 9 a: as per licence.

Amended Table in 2012 Licence Part F, Item 9 a:

Parameter	Average Monthly Limit (mg/L) June 14 th , 2012	Max Grab (mg/L) June 14 th , 2012	Loading (kg/yr)	Comments
Total Suspended Solids	7	14		No change
Ammonia as N ¹	10	20	187,000	Revised based on review of EQC
Nitrite as N	1	3	161,000	Previously 0.5/1.0 mg-N/L; Revised based on review of EQC
Nitrate as N ¹	14	32		Based on development of SSWQO and EQC
Chloride ¹	378	607		Based on development of SSWQO and EQC
Fluoride ¹	2.43	3.73		Based on development of SSWQO and EQC
Sulphate	427	640		Previously 75/150; Based on review of EQC
Aluminum ²	0.1	0.2		No change
Arsenic ²	n/a	n/a		Previously 0.007/0.014 mg/L; removed based on review of EQC
Chromium	n/a	n/a		Previously 0.01/0.02 mg/L; removed based on review of EQC
Copper	n/a	n/a		Previously 0.003/0.006 mg/L; removed based on review of EQC
Lead ²	n/a	n/a		Previously 0.005/0.01 mg/L; removed based on review of EQC
Nickel	n/a	n/a		Previously 0.05/0.1 mg/L; removed based on review of EQC
Zinc ²	n/a	n/a		Previously 0.01/0.02 mg/L; removed based on review of EQC
F1 Fractions	n/a	n/a		Removed based on review of EQC
F2 Fractions	n/a	n/a		Removed based on review of EQC

Reasons:

¹Following requirements in current Water Licence, SSWQO were determined and EQC revised based on SSWQO.

² Following the last WL Hearing the Board stated that, if DBCI had asked, the following would have been removed as EQC from the WL: aluminum, arsenic, lead, zinc. As per the EQC document, AML and MDL for aluminum be retained, but EQC for other metals and metalloids and for extractable petroleum hydrocarbons be eliminated from the Water Licence

Original condition in 2012 Licence Part F, Item 9b: Any Water or Waste from the Project that enters the Receiving Environment shall have a pH between 6.0 and 9.0, except surface runoff which shall have a pH between 5.0 and 9.0.

Proposed Amended Condition for 2013 Amendment Part F, Item 9b: Any Water or Waste from the Project that enters the Receiving Environment except for bog and seepage sites shall have a pH between 6.0 and 9.0, except surface runoff which shall have a pH between 5.0 and 9.0.

Reason: changed to reflect baseline bog and seepage values as reported in the acid rock drainage annual report which have reported values below 4.0 at 02-07 and 02-09.

Original condition in 2012 Licence Part F, Item 12: The Licensee shall direct all Water or Waste from the Project that does not meet the effluent quality criteria specified under Part F, Item 9 to the Water Treatment Plant or Water Management Pond. The Inspector may authorize the divergence of Water to an alternate location if necessary. The Licensee shall notify the Board in writing within twenty-four (24) hours of this authorization being granted.

Proposed Altered Condition for 2013 Amendment Part F, Item 12: The Licensee shall direct all Water or Waste from the Project that does not meet the effluent quality criteria specified under Part F, Item 9 to the Water Treatment Plant or Water Management Pond. This does not include stations that are considered land locked and do not present a threat to the receiving environment. The Inspector may authorize the divergence of Water to an alternate location if necessary. The Licensee shall notify the Board in writing within twenty-four (24) hours of this authorization being granted.

Reason: To prevent regulatory (i.e., of no environmental concern) non-compliance for TSS, copper, aluminum, and zinc due to regional variability at stations SNP stations 02-04.1, 02-04.2, 02-05, 02-06, 02-07.1, 02-07.2, 02-07.3, 02-07.4, 02-07.5, 02-07.6, 02-09, 02-09.2, 02-09.3, 02-09.4, 02-09.5, Water Management Pond.

Original Condition in 2012 Licence Part F, Item 13 The calculated whole lake average of total dissolved solids (TDS), (as described in the Surveillance Network Program) at sampling locations comprising Surveillance Network Program Station Number 02-18 shall remain below 350 mg/L at all times.

Proposed Altered Condition for 2013 Amendment Part F, Item 13: Whole-lake average TDS Water Licence limit of 350 milligrams per litre (mg/L) be removed, and an AML of 684 mg/L and an MDL of 1,003 mg/L for TDS be added to the Water Licence and applied at end-of-pipe: average TDS concentrations from samples collected over a 30-day period in treated effluent should remain below 684 mg/L (the AML) and the maximum concentration in any grab sample should remain below 1,003 mg/L (the MDL).

Reason: A SSWQO has been developed for TDS and it is proposed that the approach for managing TDS be consistent with other parameters in the Water Licence: the in-lake compliance limit be removed from the Water Licence and replaced with an end-of-pipe limit (i.e., an EQC) that would maintain TDS concentrations in Snap Lake below the SSWQO. An EQC for TDS would provide the Mine with more operational control than is presently the case, as it would be clear what the TDS concentration in the treated effluent must be to maintain Snap Lake TDS concentrations below the SSWQO. A TDS EQC rather than a whole-lake-average is also better aligned with the AEMP Response Framework and proposed Action Levels.

Original Condition in 2012 Licence Part F, Item 15: The Licensee shall submit for approval by December 31, 2013 a Strontium Response Plan that satisfies the requirements of Schedule 5, Item 2.

Proposed to remove condition

Reason: The requirement has been satisfied.

Original condition in 2012 Licence Part F, Item 16: The Licensee shall submit for approval by December 31, 2013 a TDS Response Plan that satisfies the requirements of Schedule 5, Item 3.
Proposed to remove condition

Reason: The requirement has been satisfied.

Original condition in 2012 Licence Part F, Item 17: The Licensee shall submit for approval by December 31, 2013 a Nitrogen Response Plan that satisfies the requirements of Schedule 5, Item 4.

Proposed to remove condition

Reason: The requirement has been satisfied.

Original condition in 2012 Licence Part F, Item 19 the Licensee shall implement the plans referred to in Part F, Items 15, 16, and 17 as and when approved by the Board.

Proposed Revised Condition for 2013 Amendment Part F, Item 19 the Licensee shall implement the plans referred to in the approved Nitrogen and TDS Response Plans as approved by the Board.

Reason: To reflect changes to Part F, Items 15, 16 and 17.

Part G: Conditions Applying to the Aquatic Effects Monitoring Program

Suggested change in Part G to combine the AEMP Design Plan and reevaluation into one document.

Part H: Conditions Applying to Contingency Plans

No proposed changes to Part H.

Part I: Conditions Applying to Closure and Reclamation

No proposed changes to Part I.

Part J: Conditions Applying to Modifications

No proposed changes to Part J.

Schedule 1, Part B

Original condition in 2012 Licence Schedule 1, Part B, s) A summary of all work carried out under the approved *Water Management Plan* (required as per Part F, Item 5) during the previous calendar year including **iv.:** results from the hydrogeological modeling of the quantity and sources of TDS in Minewater. The model results shall be compared to previous predictions of Minewater discharge, and any changes in input parameters or assumptions shall be clearly described.

Proposed Revised Condition for 2013 Amendment Schedule 1, Part B s): A summary of all work carried out under the approved *Water Management Plan* (required as per Part F, Item 5) during the previous calendar year including **iv.:** results from the hydrogeological modeling of the quantity and sources of TDS in minewater shall be completed every 3 years. Between the three years, De Beers will compare actual data to predictions, if there was divergence with data above predictions that would trigger further investigation. However, if data were at or below predictions, further investigation would not be necessary within the 3 years.

Reason: Modeling is used to support long-range planning and models. The models are calibrated with field monitoring results used to determine compliance and trends in the results are used to guide year-to-year tactical planning. As such, a frequency of three years is appropriate for updating the models.

Proposed SNP Revisions

02-02: North Pile Drainage collection ditch:

- Remove requirement for flow temperature, pH, conductivity and turbidity monitoring as flows are not continuous.
- Revise to monitoring when flows are observed.

02-03: Core Facilities Area Collection Ditch near the Water Management Pond

- Remove requirement for flow temperature, pH, conductivity and turbidity monitoring as flows are not continuous.
- Revise to monitoring when flows are observed.

02-17: Temporary WTP (Auxiliary)

- Change station to inactive as all flow is discharged into the pH adjustment tank and measured at SNP Station 02-17B.

Stations 02-02, 02-03, 02-04, 02-05, 02-06, 02-07, 02-08, 02-09, 02-10, 02-11, 02-12, 02-13, 02-14

- Since monitoring commenced in 2004 there have been no hits of BTEX, F1-F2 at any of the SNP stations.