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Violet Camsell-Blondin, Chair  
Wek'eezhii Land and Water Board  
#1, 4905 – 48<sup>th</sup> Street  
Yellowknife, NT X1A 3S3  
Canada

9 June 2016

Dear Ms. Camsell-Blondin:

**Subject: W2015L2-0001 SNP Edits and Corrections**

The Surveillance Network Plan (SNP) for Water Licence W2015L2-0001 contains administrative errors and omissions that have previously been brought to the WLWB's attention. The W2015L2-0001 [Reasons for Decision](#) note that errors are present in the SNP and that "*The Board will consider revision to the SNP following the Water Licence Renewal*".

DDMI has completed a thorough review of the SNP and has enclosed a "track changes" version of the errors and omissions contained within the SNP. DDMI is not requesting any changes to the SNP monitoring program itself, rather are requesting that the SNP section of the Water License document be updated to edit and correct administrative errors which are currently contained within it.

Additionally, there are three DDMI requests for clarification related to the SNP outstanding, including:

1. [October 21, 2015](#) Letter seeking clarification of TPH vs F3 Analysis related to hydrocarbon monitoring
2. [October 21, 2015](#) Letter seeking clarification of the inclusion of Dissolved Metals in the 6-day effluent parameter suite.
3. [October 22, 2015](#) Letter seeking clarification of the frequency of sewage parameters at 1645-18 and 1645-18B.

DDMI is confident that the above requests for clarification will be addressed through the process of correcting the administrative errors and omissions in the SNP. Finally, DDMI requests that the WLWB provide a definition of Total Petroleum Hydrocarbons within Part B of the SNP.

Prior to inclusion of a revised SNP in W2015L2-0001, DDMI would appreciate the opportunity to review a final draft of the revised SNP. If you have questions regarding the above request please contact the undersigned.

Yours sincerely



David Wells  
Superintendent - Environment  
Encl. Tracked Changes Version of SNP

Cc: Sarah Elsasser, WLWB



## Annex 1: Surveillance Network Program

**Comment [DW1]:** Suggest the addition of a revision table as suggested in the draft W2015L2-0001 DDMI Comments

### Part A - Reporting Requirements

1. The Licensee shall within 30 days following the month being reported, submit to the Board all data and information in an electronic and printed format acceptable to the Board required by the "Surveillance Network Program" including the results of the approved QA/QC plan.

### Part B - Flow and Volume Measurement Requirements

Unless otherwise noted, all flow and volume measurements shall be recorded monthly and recorded in cubic metres.

1. The daily volume of water obtained from Lac de Gras for all purposes.
2. The daily volume of water dewatered from the A21 ~~Pits~~Pit-.
3. The volume of water obtained from all sources for use in the process plant.
4. The volume of effluent recycled from the Processed Kimberlite Containment Facility.
5. The volumes of the solids in tonnes and liquid fractions in cubic metres of each Waste ~~pumped~~ transferred to the Processed Kimberlite Containment Facility.
6. The volume of effluent discharged from the Processed Kimberlite Containment Facility.
7. The volume of effluent discharged from the North Inlet Facility to the Treatment Facilities.
8. The daily volume of effluent discharged into Lac de Gras at SNP Station Numbers ~~s~~ 1645-18 and 1645-18B.
9. The volume of dredged sediments deposited into the Dredged Sediment Containment Facility or the North Inlet Facility.
10. The daily volume of Minewater and seepage pumped from A154, A418 and A21 open pits to the North Inlet Facility and/or Lac de Gras.
11. The daily volume of treated Sewage effluent discharged from the Sewage Disposal Facilities.
12. The volume of Sewage solids removed from the Sewage Disposal Facilities.
13. The volume of water pumped from the run-off collection ponds to: ~~the~~
  - a. Processed Kimberlite Containment Facility
  - b. North Inlet

**Comment [DW2]:** Not all waste is pumped to the PKC. FPK is pumped, CPK is trucked.

**Comment [DW3]:** Effluent is discharged from two SNP stations

**Comment [DW4]:** Collection Ponds are moved to either the PKC, North Inlet or LDG (with approval) . Suggested change reflects operations

a-c. ~~Lac de Gras~~

~~13-14.~~ The volume of ice or frozen sediments removed from the Pit(s) areas.

~~14-15.~~ ~~The daily volume of water dewatered from the inland lakes.~~

**Comment [DW5]:** This clause related to initial construction and the original licence. No future in land lakes are to be dewatered. This clause can be removed.

### **Part C - Sampling and Analysis Requirements**

1. The field pH, sample temperature, and ambient wind and weather conditions shall be recorded at all locations at the time of sampling.
2. The Licensee shall increase sampling if exceedances of the Effluent Quality Requirements occur or as directed by an Inspector.
3. All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of "Standards Methods for the Examination of Water and Wastewater", or by such other methods approved by an Analyst.
4. All analyses shall be performed in a laboratory accredited by the Canadian Association for Laboratory Accreditation (CALA) for the specific analyses to be performed or as approved by an Analyst.
5. The Licensee shall implement the Quality Assurance/Quality Control QA/QC Plan that includes field and laboratory procedures and requirements as approved by an Analyst under Licence N7L2-1645.
6. The Licensee shall annually review the approved the quality assurance/quality control (QA/QC) plan and modify the Plan as necessary. Proposed revisions shall be submitted to an Analyst for approval.
7. The QA/QC plan referred to in SNP Part C, Item 5, ~~Part F, Items 20 and 21~~ and shall be implemented as approved by an Analyst.

**Comment [DW6]:** This is the QA/QC Plan for waste management structures and the A21 Dike.

### **NOTES:**

<sup>1</sup>ICP-MS Metal Scan shall include at a minimum, the following regulated parameters:  
Aluminum, Cadmium, Chromium, Copper, Lead, Nickel, Zinc

Once Annually the ICP shall also include the following monitored parameters:  
Manganese, Molybdenum, Selenium, Strontium, Uranium

Total metals shall be analyzed unfiltered ~~and preserved as per the laboratory requirements.~~ ~~and dissolved~~  
~~Dissolved metals should~~ ~~shall be filtered~~ using a 0.45 micron filter ~~and preserved as per the laboratory requirements.~~

**Comment [DW7]:** Suggested changes add clarity to the difference between preservation methods for total and dissolved metal samples prior to analysis

<sup>2</sup>Major ions include the following parameters:

Calcium, Chloride, Sulphate, Magnesium, Fluoride, Potassium, Alkalinity, Hardness, Total Dissolved Solids

<sup>3</sup>Field parameters include the following measurements:  
pH, Conductivity, Temperature

<sup>4</sup>pH analyzed in the laboratory

<sup>5</sup>Nutrients include the following parameters:

Total Ammonia, Nitrite-Nitrogen, Nitrate-Nitrogen, Total Kjeldahl Nitrogen, Total Phosphorus, Total Dissolved Phosphorus, Ortho Phosphorus.

<sup>6</sup>TPH is defined as.....

#### **Part D - Other Monitoring Requirements**

1. The Licensee shall measure and record the following data:

- a) Precipitation, measured and recorded in hourly and daily totals;
- b) Evaporation, which is calculated from the parameters list below with hourly and daily averages:
  - i. Wind speed at approximately 2.0 meters above the water surface including daily minima and maxima;
  - ii. Wind direction on an hourly basis;
  - iii. Air temperature at approximately 0.75 and 2.0 metres above the water surface including daily minima and maxima;
  - iv. Relative humidity at approximately 0.75 and 2.0 metres above the water surface;
  - v. Water temperature at two levels approximately 1 and 2 metre depths;
  - vi. Net solar radiation over the water surface; and
  - vii. Water level; and
- c) The weather data for evaporation calculations shall be measured and recorded at a site located at or near the PKC Facility as approved by an Inspector.

2. The Licensee shall implement the location, methods, and frequency for measuring and recording the meteorological data identified in Part D, Item 1 of the SNP as approved under Licence N7L2-1645.

3. The methods and frequency referred to in Part D, Item 1 of the SNP shall be implemented as and when approved by the Board.

4. The quantity of ore processed shall be measured in tonnes and recorded monthly.

5. The quantity of Waste Rock, coarse tailings, and till shall be measured in tonnes and recorded monthly and their disposal locations recorded monthly.

6. The Licensee shall install and monitor a minimum of one (1) SNP station for monitoring the Lac de Gras background references for the regulation of the dredging and dike Construction activities. This station shall not be located near developmental activities or the inlets of any rivers or streams and shall be sampled in accordance with SNP ~~Part B, Item 3~~ Part H, Item 31.

**Comment [DW8]:** DDMI requires that the WLWB define TPH as the carbon range is different between analytical laboratories, regulators and guidelines

<http://www.mvlwb.ca/Boards/WLWB/Registry/2015/W/2015L2-0001/Diavik%20-%20SNP%20-%20Clarification%20-%20TPH%20vs%20F3%20-%20Oct%202015.pdf>

**Comment [DW9]:** Reference is to wrong section of the Water License

7. In the event that a second dredge is required during the Construction of the Water Retention Dikes, the Licensee shall establish additional SNP Stations for the second dredge in the same manner as those identified (SNP Stations 1645-~~6682~~, 1645-~~6783~~, and 1645-~~6884~~) for the monitoring of a single dredge. These stations shall be numbered in sequence and monitored in accordance with SNP Station 1645-~~4855~~.

**Comment [DW10]:** Updated to reflect current in lake A21 SNP Stations

**Part E – Site Descriptions and Sampling Requirements**

Location of sampling sites and specific monitoring requirements are as follows:

**NOTE:** The description of the SNP Stations is approximate and subject to the approval of an Inspector.

**SNP Site Quick Reference Table**

SNP Site #	Description	Status
1645-1	Mine water Discharge	INACTIVE
1645-2	Outflow decant from F1	INACTIVE
1645-3	Lac de Gras inflow from F1 Wetlands	INACTIVE
1645-4	Discharge from Sewage Disposal Facility	INACTIVE
1645-5	Outflow from disposal pond	INACTIVE
1645-6	Prior to entering Lac de Gras at the stream outflow from the Sewage disposal	INACTIVE
1645-7	Upstream of the confluence between the ice scrapings disposal area runoff and the stream from the Sewage outflow	INACTIVE
1645-8	Down slope of the semi-permeable dike in D1 drainage way	INACTIVE
1645-9	Treated mine water pumped directly to Lac de Gras	INACTIVE
1645-10	Station applying to treated Effluent Discharge to monitor Sewage Discharge from North Construction Camp	INACTIVE
1645-11	Sewage Discharge	ACTIVE
1645-12	West Cell – North Inlet Facility	INACTIVE
1645-13	North Inlet – Influent prior to treatment	ACTIVE
1645-14	North Inlet Treatment Plant treated effluent prior to mixing with PKC treated effluent	INACTIVE
1645-15	Process Plan slurry Discharge to PKC facility	INACTIVE
1645-16	PKC pond water within the PKC	ACTIVE
1645-17	PKC Treatment Plant Effluent prior to mixing with North Inlet Treatment Plant treated effluent	INACTIVE
1645-18/18B	Main effluent Discharge to Lac de Gras from NIWTP (point of compliance)	ACTIVE
1645-19	Effluent mixing zone in Lac de Gras	ACTIVE
1645-20	Northwest of clarification pond	INACTIVE
1645-21	West of Clarification pond (drainage course) between Pond 2 and Pond 3.	INACTIVE
1645-22	North of Quarry and till areas (drainage course) on the South side of North Inlet Facility	INACTIVE

1645-23	North perimeter road (drainage course) between road and North Inlet Facility.	INACTIVE
1645-24	East of perimeter road (drainage course)	INACTIVE
1645-25	East PKC Dike area (drainage course)	INACTIVE
1645-26	West PKC Dike area (drainage course)	INACTIVE
1645-27	Airstrip Drainage Course	INACTIVE
1645-28	Groundwater GW1 between the North Rock Pile and North Inlet	INACTIVE
1645-29	Groundwater GW2	INACTIVE
1645-30	Groundwater GW3 Northwest of Till Disposal Area	INACTIVE
1645-31	Groundwater GW4 West of the PKC	INACTIVE
1645-32	Groundwater – South of PKC, between the Ammonium Nitrate Storage and Pond 7	INACTIVE
1645-33	Groundwater nearest to Bulk Fuel Storage	ACTIVE
1645-34	Near intake structure for De-watering of Lake E1	INACTIVE
1645-35	Near intake structure of De-watering of Lake E6	INACTIVE
1645-36	Near intake structure for De-watering of Lake E7	INACTIVE
1645-37	Near intake structure for De-watering of Lake E8	INACTIVE
1645-38	Near intake structure for De-watering of Lake E10	INACTIVE
1645-39	Near intake structure for De-watering within the dike enclosure of A154	INACTIVE
1645-40	Near intake structure for dike pool watering – A418	INACTIVE
1645-41	A21 <del>SNP Station: Near intake structure for dike pool watering</del> <del>pool dewatering</del>	ACTIVE
1645-42	Collection Pond <del>4</del>	ACTIVE
1645-43	A21 SNP Station: Collection Pond	INACTIVE
1645-44	Collection Pond <del>7</del>	ACTIVE
1645-45	Collection Pond <del>10</del>	ACTIVE
1645-46	Collection Pond <del>11</del>	ACTIVE
1645-47	Collection Pond <del>12</del>	ACTIVE
1645-48	Clarification pond (Pond 3)	INACTIVE
1645-49	Mine water removed from A154 Pit	INACTIVE
1645-50	Mine water removed from A418 Pit	INACTIVE
1645-51	<del>Mine Water Removed from Sump</del> A21 <del>Open Pit (sump)</del> SNP Station	ACTIVE
1645-52	Seepage collected from inside toe of the A154 Dike	INACTIVE
1645-53	Seepage collected from inside toe of the A418 Dike	INACTIVE
1645-54	<del>A21 SNP Station</del> -Seepage collection from inside toe of A21 Dike.	ACTIVE
1645-55	A21 SNP reference station in Lac de Gras	ACTIVE
1645-56	Station applying to dredging and dike Construction	INACTIVE
1645-57	Station applying to dredging and dike Construction	INACTIVE
1645-58	Station applying to dredging and dike Construction	INACTIVE
1645-59	Station applying to dredging and dike Construction	INACTIVE
1645-60	Station applying to dredging and dike Construction	INACTIVE
1645-61	Station applying to dredging and dike Construction	INACTIVE
1645-62	Station applying to dredging and dike Construction	INACTIVE
1645-63	Station applying to dredging and dike Construction	INACTIVE

1645-64	Station applying to dredging and dike Construction	INACTIVE
1645-65	Station applying to dredging and dike Construction	INACTIVE
1645-66	Near intake structure for De-watering of North Inlet.	INACTIVE
1645-67	Collection Pond <u>1</u>	ACTIVE
1645-68	Collection Pond <u>2</u>	ACTIVE
1645-69	Collection Pond <u>5</u>	ACTIVE
1645-70	Station applying to dredging and dike Construction	INACTIVE
1645-71	Station applying to dredging and dike Construction	INACTIVE
1645-72	Station applying to dredging and dike Construction	INACTIVE
1645-73	Station applying to dredging and dike Construction	INACTIVE
1645-74	Collection Pond <u>13</u> <del>as described in DDMI's request for additional SNP sites (December 7, 2006).</del>	ACTIVE
1645-75	A154/A418 underground water (9290 Pump Station and Dewatering sumps)	ACTIVE
1645-75b	A154/A418 underground water (9105 Pump Station)	ACTIVE
1645-76	Collection Pond <u>3</u>	ACTIVE
1645-77	PKC Seepage	ACTIVE
1645-78	PKC Seepage	ACTIVE
1645-79	PKC Seepage	ACTIVE
1645-80	PKC Seepage	ACTIVE
1645-81	Surface Runoff during Freshet	ACTIVE
1645-82	A21 SNP <del>dredging and dike construction reference station in Lac de Gras referred to as A21-A in the CEMP</del>	ACTIVE
1645-83	A21 SNP <del>dredging and dike construction reference station in Lac de Gras referred to as A21-B in the CEMP</del>	ACTIVE
1645-84	A21 SNP <del>dredging and dike construction reference station in Lac de Gras referred to as A21-C in the CEMP</del>	ACTIVE
1645-85a	<u>Clarifier 1</u> Sludge <del>Sampling from the</del> North Inlet Water Treatment Plant	ACTIVE
1645-85b	<u>Clarifier 2</u> Sludge <del>Sampling from the</del> North Inlet Water Treatment Plant	ACTIVE
1645-86a	<u>Clarifier 3</u> Sludge <del>Sampling from the</del> North Inlet Water Treatment Plant	ACTIVE
1645-86b	<u>Clarifier 4</u> Sludge <del>Sampling from the</del> North Inlet Water Treatment Plant	ACTIVE

**Comment [DW11]:** [http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SNP%20Amendment%20Request%20-%20May%2016\\_14.pdf](http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SNP%20Amendment%20Request%20-%20May%2016_14.pdf)

**STATIONS APPLYING TO TREATED EFFLUENT DISCHARGE**

**Surveillance Network Program (SNP) Station 1645-11 (Active)**

Description:	Sewage Discharge
Location:	South Sewage Treatment Plant
Sampling Frequency:	Annually
Sampling Parameters:	BOD <sub>5</sub> , pH <sup>4</sup> , Faecal Coliforms, Nutrients <sup>5</sup> , Oil and Grease, Temperature, Total Suspended Solids
Rationale for Station:	To verify that Sewage treatment planting is operating effectively

**Surveillance Network Program (SNP) Station 1645-13 (Active)**

Description:	North Inlet – Influent prior to treatment	
Location:	North Inlet Water Treatment Plant	
Sampling Frequency:	Every six (6) days <u>to correspond with the sampling of Effluent (1645-18 and 1645-18B)</u>	<u>Monthly to correspond with the sampling of Effluent (1645-18 and 1645-18B)</u>
Sampling Parameters:	Total Arsenic, <del>Dissolved Organic Carbon, Dissolved Oxygen</del> , Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total <del>and Dissolved</del> ), Major Ions <sup>2</sup> , pH <sup>4</sup> , Nutrients <sup>5</sup> , Total Mercury, <del>Total Organic Carbon</del> , Total Suspended Solids, Turbidity, Total Petroleum Hydrocarbons (TPH)	<u>Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters<sup>3</sup>, ICP-MS Metal Scan<sup>1</sup>(Total and Dissolved), Major Ions<sup>2</sup>, pH<sup>4</sup>, Nutrients<sup>5</sup>, Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity, Total Petroleum Hydrocarbons (TPH)</u>
Rationale for Station:	To monitor influent water quality prior to North Inlet Water Treatment Plant. Helps to determine treatment plant efficiency, and, in the event of poor effluent quality, can help determine the source of the problem. Also provides information regarding water quality in the north inlet, which can inform closure planning.	

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**Comment [DW12]:** See request to move from bi-weekly to 6-day sample along with reason. Due to alignment with 6-day sampling the analysis should correspond with 1645-18 and 1645-18B sample requirements  
[http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SNP%20Amendment%20Request%20-%20May%2016\\_14.pdf](http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SNP%20Amendment%20Request%20-%20May%2016_14.pdf)

**Surveillance Network Program (SNP) Station 1645-16 (Active)**

Description:	PKC pond water within the PKC
Location:	PKC Reclaim Barge
Sampling Frequency:	Sampled Monthly
Sampling Parameters:	Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total and Dissolved), Major Ions <sup>2</sup> , pH <sup>4</sup> , Nutrients <sup>5</sup> , Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity, Total Petroleum Hydrocarbons (TPH)

**Comment [DW13]:** Suggest moving 1645-16 to the PKC Section Below



Rationale for Station:	Monitor water quality within PKC pond
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**Surveillance Network Program (SNP) Station 1645-18/18B (Active)**

Description:	Main effluent Discharge to Lac de Gras from NIWTP (point of compliance)			
Location:	North Inlet Water Treatment Plant <u>1 – 1645-18</u> <u>North Inlet Water Treatment Plant 2 – 1645-18B</u> <u>Splitter box location</u>			
Sampling Frequency:	Every six (6) days	<u>Monthly</u>	<u>Every (7) days</u>	Quarterly or monthly
Sampling Parameters:	Total Arsenic, <del>Dissolved Organic Carbon, Dissolved Oxygen</del> , Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> ( <del>Total and Dissolved</del> ), Major Ions <sup>2</sup> , pH <sup>4</sup> , Nutrients <sup>5</sup> , Total Mercury, <del>Total Organic Carbon</del> , Total Suspended Solids, Turbidity, Total Petroleum Hydrocarbons (TPH)	<u>Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters<sup>3</sup>, ICP-MS Metal Scan<sup>1</sup>(Total and Dissolved), Major Ions<sup>2</sup>, pH<sup>4</sup>, Nutrients<sup>5</sup>, Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity, Total Petroleum Hydrocarbons (TPH)</u>	Additionally, If effluent from Sewage Treatment Facilities are directed to Lac de Gras...  Faecal Coliforms, BOD <sub>5</sub> , Oil and Grease	1. In accordance with Part H, Item <del>7-30</del> (a) and (b) <sup>a</sup>  2. Chronic toxicity <sup>b</sup>
Rationale for Station:	This information is required to confirm compliance with EQC, and can also provide information about effectiveness of treatment plant.			

<sup>a</sup> Samples of effluent shall be provided to an accredited bioassay laboratory for the purpose of performing the following acute toxicity tests at the specified frequencies:

- i. Tests required under Part H, Item 7-30 (a) and (b) of the Water Licence shall be performed quarterly unless and until a result of >50% mortality in 100% effluent is obtained for a test organism; at that time the frequency of the acute toxicity test will increase to monthly. If the monthly acute toxicity tests show less than or equal to 50% mortality in 100% effluent for 12 consecutive tests, the frequency of testing can again be reduced to quarterly. Note that acute toxicity for these tests is defined using the LC50 value; the Board may alter this definition for acute toxicity if deemed necessary (e.g., based on results of round whitefish testing). If a result of >50% mortality in 100% effluent is obtained, the Licensee must report both the LC50 and the LC20 values in the SNP reports required under ~~SNP Part E~~ SNP Part A, Item 1.
- ii. The Licensee shall submit a revised round whitefish toxicity testing protocol, based on a directive to be provided by the Board. The purpose of the testing is to evaluate the relative sensitivity of round whitefish to ammonia compared to rainbow trout. The Board will provide further instructions regarding toxicity testing with round whitefish following submission of these results to the WLWB; and,

**Comment [DW14]:** See letter June 15, 2015 outlining concerns with SNP Schedule:

[http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20Surveillance%20Network%20Program%20-%20Letter%20from%20DDMI%20re%20Inconsistencies%20-%20Jun%2015\\_15.pdf](http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20Surveillance%20Network%20Program%20-%20Letter%20from%20DDMI%20re%20Inconsistencies%20-%20Jun%2015_15.pdf)

See letter October 21, 2015

[http://www.mvlwb.ca/Boards/WLWB/Registry/2015/W2015L2-0001/Diavik%20-%20SNP%20-%20Clarification%20-%20Dissolved%20Metals%20-%20Oct%202015\\_15.pdf](http://www.mvlwb.ca/Boards/WLWB/Registry/2015/W2015L2-0001/Diavik%20-%20SNP%20-%20Clarification%20-%20Dissolved%20Metals%20-%20Oct%202015_15.pdf)

**Comment [DW15]:** See approved change:

[http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SNP%20Program%20-%20Amendment%20Request%20-%20Sewage%20Sampling%20-%20Board%20Decision%20Package%20and%20Issuance%20-%20Jun%202017\\_12.pdf](http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SNP%20Program%20-%20Amendment%20Request%20-%20Sewage%20Sampling%20-%20Board%20Decision%20Package%20and%20Issuance%20-%20Jun%202017_12.pdf)

See letter October 22, 2015

[http://www.mvlwb.ca/Boards/WLWB/Registry/2015/W2015L2-0001/Diavik%20-%20SNP%20-%20Clarification%20-%20201645-18%20Sewage%20Sampling%20Frequency%20-%20Oct%202015\\_15.pdf](http://www.mvlwb.ca/Boards/WLWB/Registry/2015/W2015L2-0001/Diavik%20-%20SNP%20-%20Clarification%20-%20201645-18%20Sewage%20Sampling%20Frequency%20-%20Oct%202015_15.pdf)

**Comment [SS16]:** Now item 30 (a) and (b)

Also noted by the GNWT

[http://www.mvlwb.ca/Boards/WLWB/Registry/2015/W2015L2-0001/Diavik%20-%20SNP%20-%20Clarification%20-%20SNP%20Discrepancies%20Correspondence%20-%20Sep%2015\\_15.pdf](http://www.mvlwb.ca/Boards/WLWB/Registry/2015/W2015L2-0001/Diavik%20-%20SNP%20-%20Clarification%20-%20SNP%20Discrepancies%20Correspondence%20-%20Sep%2015_15.pdf)

**Comment [DW17]:** Updated. Part E 1 from W2007L2-0003 was moved to Part A 1 in W2015L2-0001

~~iii. Toxicity test with the amphipod, *Hyaella azteca* according to the testing protocol approved by the Board under Part H, Item 8 of the Licence shall be performed monthly until further notice.~~

~~iv-iii. Toxicity test with the amphipod, *Hyaella azteca*, according to the testing protocol approved by the Board (under Part H, Item 8 W2007L2-0003) of the Licence shall be performed on a quarterly basis unless and until a result of >50% mortality in 100% effluent is obtained; at that time, the frequency of the acute toxicity test will increase to monthly. If the monthly acute toxicity tests show less than or equal to 50% mortality in 100% effluent for 12 consecutive tests, the frequency of testing can again be reduced to quarterly.~~

b Bioassay samples shall be provided to an accredited bioassay laboratory for the following analyses:

- i. Chronic toxicity to the early life stages of salmonid fish (as per Environment Canada’s Environmental Protection Series Biological Test Method EPS/1/RM/28); and
- ii. Chronic toxicity to the crustacean, *Ceriodaphnia dubia* (as per Environment Canada’s Environmental Protection Series Biological Test Method EPS/1/RM/21); and
- iii. Chronic toxicity to the alga, *Pseudokirchneriella subcapitata* ~~*Raphidocelis subcapitata*~~ (as per Environment Canada’s Environmental Protection Series Biological Test Method EPS/1/RM/25).

**Comment [DW18]:** Reference is incorrect. Part H, Item 8 of W2007L2-0003 is not present in W2015L2-0001. See corrected wording below based on previous board directions.

**Comment [DW19]:** Change from monthly to quarterly as per WLWB Approved Change #7: [http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SNP%20Program%20-%20DDMI%20Proposed%20SNP%20Changes%20-%20WLWB%20Decision%20Package%20-%20May%2022\\_09.pdf](http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SNP%20Program%20-%20DDMI%20Proposed%20SNP%20Changes%20-%20WLWB%20Decision%20Package%20-%20May%2022_09.pdf)

(under Part H, Item 8 W2007L2-0003 added for clarity as this section is not in W2015L2-0001.

Statement “of the License” removed to reflect above addition

**Formatted:** Font: Bold

**Comment [DW20]:** The current version (2207) of Environment Canada’s Environmental Protection Series Biological Test Method EPS/1/RM/25 uses *Pseudokirchneriella subcapitata*.

[http://publications.gc.ca/collections/collection\\_2010/ec/En49-7-1-25-eng.pdf](http://publications.gc.ca/collections/collection_2010/ec/En49-7-1-25-eng.pdf)

This error was previously noted by EC to the WLWB  
[http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SNP%20Program%20-%20DDMI%20Proposed%20SNP%20Changes%20-%20EC%20Comments%20-%20Apr%203\\_09.pdf](http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SNP%20Program%20-%20DDMI%20Proposed%20SNP%20Changes%20-%20EC%20Comments%20-%20Apr%203_09.pdf)

**Comment [DW21]:** Safety note is similar to A21 Stations 1645-55, 82, 83, 84

**Surveillance Network Program (SNP) Station 1645-19 (Active)**

Description:	Effluent mixing zone in Lac de Gras	
Location:	60 meters from the effluent Discharge	
Sampling Frequency:	Water Sampled Monthly <a href="#">provided safe access via open water or sufficient ice thickness</a> at three (3) stations located at a sixty (60) metre radius from the diffuser. Samples shall be collected at surface and at five (5) metre intervals to depth at each station and analyzed <sup>c</sup>	Sediments sampled annually at each of the three (3) sites
Sampling Parameters:	Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total and Dissolved), Major Ions <sup>2</sup> , pH <sup>4</sup> , Nutrients <sup>5</sup> , Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity	Total Metals (strong acid Digestion), Total Organic Carbon, Simultaneous Extracted Metals <sup>d</sup> , Acid Volatile Sulphide, Total Ammonia, PAH’s, Hydrogen Sulfide
Rationale for Station:	To assess whether water quality objectives are being met at the edge of the initial dilution zone.	

~~<sup>e</sup> Additionally, monthly water samples must be provided to an accredited bioassay laboratory for the purpose of performing a chronic toxicity test with the amphipod, *Hyalella azteca*, according to the testing protocol approved by the Board under H, Item 9.~~

<sup>d</sup> Methods for analysis for Simultaneous Extracted Metals and Acid Volatile Sulphide shall be approved by the Analyst.

**Comment [DW22]:** Board directive from Oct 2008 discontinued this requirement

[http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SEES%20Phase%201Results%20-%20Board%20Decision%20Package%20-%20Oct%2022\\_08.pdf](http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SEES%20Phase%201Results%20-%20Board%20Decision%20Package%20-%20Oct%2022_08.pdf)

**STATIONS APPLYING TO SURFACE RUNOFF AND GROUNDWATER**

**Surveillance Network Program (SNP) Station 1645-33 (Active)**

Description:	Groundwater nearest to Bulk Fuel Storage
Location:	South of Main Tank Farm
Sampling Frequency:	Checked weekly for Groundwater flow and sampled monthly.
Sampling Parameters:	Total Ammonia, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , pH <sup>4</sup> , Total Petroleum Hydrocarbons
Rationale for Station:	To monitor water down gradient of Bulk Fuel Storage

**Surveillance Network Program (SNP) Station 1645-81 (Active)**

Description:	Surface Runoff during Freshet
Location:	Emulsion Plant and <del>Ammonia</del> Ammonium Nitrate Storage Building
Sampling Frequency:	Checked weekly for Groundwater flow and sampled monthly. <del>Last data collected pre-2008.</del>
Sampling Parameters:	Total Ammonia, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , pH <sup>4</sup> , Total Petroleum Hydrocarbons
Rationale for Station:	To monitor surface runoff water quality and identify the presence of any contaminants from the Emulsion Plant and the Ammonia Nitrate Storage building in the receiving environment

**STATIONS APPLYING TO DEWATERING COLLECTION PONDS**

**Surveillance Network Program (SNP) Station 1645-42 (Active)**

Description:	Collection Pond		
Location:	Pond 4		
Sampling Frequency:	<del>Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector</del> Monthly if water is present	Once prior to the commencement of Discharge to Lac de Gras	Daily during Discharge to Lac de Gras
Sampling Parameters:	Total Ammonia, Field Parameters <sup>3</sup> , <del>Total</del> ICP-MS Metal Scan <sup>1</sup> , Major Ions <sup>2</sup> , Nitrate, Nitrite, pH <sup>4</sup> , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons (TPH)	TSS, pH <sup>4</sup> , Turbidity

**Comment [DW23]:** Updated in this section are mainly for consistency in the description of the collection pond

**Comment [DW24]:** See WLWB approved change #5:  
[http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SNP%20Program%20-%20DDMI%20Proposed%20SNP%20Changes%20-%20WLWB%20Decision%20Package%20-%20May%2022\\_09.pdf](http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SNP%20Program%20-%20DDMI%20Proposed%20SNP%20Changes%20-%20WLWB%20Decision%20Package%20-%20May%2022_09.pdf)

**Comment [DW25]:** See WLWB approved change #4:  
 See WLWB approved change #5:  
[http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SNP%20Program%20-%20DDMI%20Proposed%20SNP%20Changes%20-%20WLWB%20Decision%20Package%20-%20May%2022\\_09.pdf](http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SNP%20Program%20-%20DDMI%20Proposed%20SNP%20Changes%20-%20WLWB%20Decision%20Package%20-%20May%2022_09.pdf)

Rationale for Station:	<del>To monitor water quality of Pond 4</del> <u>To monitor water quality of the PKC West Dam embankment runoff and PKC Facility seepage, if present.</u>
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**Surveillance Network Program (SNP) Station 1645-44 (Active)**

Description:	Collection Pond		
Location:	Pond 7		
Sampling Frequency:	<del>Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector</del> <u>Monthly if water is present</u>	Once prior to the commencement of Discharge to Lac de Gras	Daily during Discharge to Lac de Gras
Sampling Parameters:	Total Ammonia, Field Parameters <sup>3</sup> , <u>Total</u> ICP-MS Metal Scan <sup>1</sup> , Major Ions <sup>2</sup> , Nitrate, Nitrite, pH <sup>4</sup> , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons (TPH)	TSS, pH <sup>4</sup> , Turbidity
Rationale for Station:	<del>Pond 7, commissioned in fall 2009, collects surface runoff from a portion of the road to the ammonium nitrate storage and provides secondary containment for part of the PKC South Cell. Monthly monitoring can be used to identify the source of any effluent quality problems.</del> <u>To monitor water quality of the Ammonium Nitrate Storage Area and PKC Facility seepage and runoff, if present.</u>		

Comment [DW26]: See 1645-42

Comment [DW27]: See 1645-42

**Surveillance Network Program (SNP) Station 1645-45 (Active)**

Description:	Collection Pond		
Location:	Pond 10		
Sampling Frequency:	<del>Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector</del> <u>Monthly if water is present</u>	Once prior to the commencement of Discharge to Lac de Gras	Daily during Discharge to Lac de Gras
Sampling Parameters:	Total Ammonia, Field Parameters <sup>3</sup> , <u>Total</u> ICP-MS Metal Scan <sup>1</sup> , Major Ions <sup>2</sup> , Nitrate, Nitrite, pH <sup>4</sup> , Total	Total Petroleum Hydrocarbons (TPH)	TSS, pH <sup>4</sup> , Turbidity

Comment [DW28]: See 1645-42

Comment [DW29]: See 1645-42

	Phosphorus, Total Suspended Solids, Turbidity		
Rationale for Station:	<p><del>This pond receives runoff from the plant site area. Monthly monitoring provides information about the chemistry of the runoff and can be used to identify the source of any effluent quality problems. To monitor water quality of the Maintenance Building and Processing Plant runoff, if present.</del></p>		

**Surveillance Network Program (SNP) Station 1645-46 (Active)**

Description:	Collection Pond		
Location:	Pond 11		
Sampling Frequency:	<u>Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector. Monthly if water is present</u>	Once prior to the commencement of Discharge to Lac de Gras	Daily during Discharge to Lac de Gras
Sampling Parameters:	Total Ammonia, Field Parameters <sup>3</sup> , Total ICP-MS Metal Scan <sup>1</sup> , Major Ions <sup>2</sup> Nitrate, Nitrite, pH <sup>4</sup> , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons (TPH)	TSS, pH <sup>4</sup> , Turbidity
Rationale for Station:	<u>This pond receives runoff from the plant site area. Monthly monitoring provides information about the chemistry of the runoff and can be used to identify the source of any effluent quality problems. To monitor water quality of the Accommodations, South Tank Farm and Warehouse Laydown runoff, if present.</u>		

Comment [DW30]: See 1645-42

Comment [DW31]: See 1645-42

**Surveillance Network Program (SNP) Station 1645-47 (Active)**

Description:	Collection Pond		
Location:	Pond 12		
Sampling Frequency:	<u>Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector. Monthly if water is present</u>	Once prior to the commencement of Discharge to Lac de Gras	Daily during Discharge to Lac de Gras
Sampling Parameters:	Total Ammonia, Field Parameters <sup>3</sup> , Total ICP-MS Metal Scan <sup>1</sup> , Major Ions <sup>2</sup> Nitrate, Nitrite, pH <sup>4</sup> , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons (TPH)	TSS, pH <sup>4</sup> , Turbidity
Rationale for Station:	<u>This pond receives runoff from the plant site area. Monthly monitoring provides information about the chemistry of the runoff and can be used to identify the source of any effluent quality problems. To monitor water quality of the Process Plant ROM (Run of Mine), and Waste</u>		

Comment [DW32]: See 1645-42

Comment [DW33]: See 1645-42



	<u>Transfer Area runoff, if present.</u>
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**Surveillance Network Program (SNP) Station 1645-67 (Active)**

Description:	Collection Pond		
Location:	Pond 1		
Sampling Frequency:	<u>Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector. Monthly if water is present</u>	Once prior to the commencement of Discharge to Lac de Gras	Daily during Discharge to Lac de Gras
Sampling Parameters:	Total Ammonia, Field Parameters <sup>3</sup> , Total ICP-MS Metal Scan <sup>1</sup> , Major Ions <sup>2</sup> , Nitrate, Nitrite, pH <sup>4</sup> , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons (TPH)	TSS, pH <sup>4</sup> , Turbidity
Rationale for Station:	<u>To monitor water quality of Pond 1. Since this pond collects water from the Waste Rock pile drainage area, the information can be used to identify any issues with Waste Rock pile drainage. To monitor water quality of the South Haul Road, North Country Rock Pile, Backfill and Crusher Plants, East PKC Dam embankment runoff, and PKC Facility seepage, if present.</u>		

Comment [DW34]: See 1645-42

Comment [DW35]: See 1645-42

**Surveillance Network Program (SNP) Station 1645-68 (Active)**

Description:	Collection Pond		
Location:	Pond 2		
Sampling Frequency:	<u>Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector. Monthly if water is present</u>	Once prior to the commencement of Discharge to Lac de Gras	Daily during Discharge to Lac de Gras
Sampling Parameters:	Total Ammonia, Field Parameters <sup>3</sup> , Total ICP-MS Metal Scan <sup>1</sup> , Major Ions <sup>2</sup> , Nitrate, Nitrite, pH <sup>4</sup> , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons (TPH)	TSS, pH <sup>4</sup> , Turbidity
Rationale for Station:	<u>To monitor water quality of Pond 2. Since this pond collects water from the Waste Rock pile drainage area, the information can be used to identify any issues with Waste Rock pile drainage. To monitor water</u>		

Comment [DW36]: See 1645-42

Comment [DW37]: See 1645-42

	<u>quality of the North Country Rock Pile runoff, if present.</u>
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**Surveillance Network Program (SNP) Station 1645-69 (Active)**

Description:	Collection Pond		
Location:	Pond 5		
Sampling Frequency:	<u>Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector. Monthly if water is present</u>	Once prior to the commencement of Discharge to Lac de Gras	Daily during Discharge to Lac de Gras
Sampling Parameters:	Total Ammonia, Field Parameters <sup>3</sup> , Total ICP-MS Metal Scan <sup>1</sup> , Major Ions <sup>2</sup> , Nitrate, Nitrite, pH <sup>4</sup> , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons (TPH)	TSS, pH <sup>4</sup> , Turbidity
Rationale for Station:	<u>To monitor water quality of Pond 5. To monitor water quality of the South Haul Road, PKC East Dam embankment runoff, and PKC Facility seepage, if present.</u>		

Comment [DW38]: See 1645-42

Comment [DW39]: See 1645-42

**Surveillance Network Program (SNP) Station 1645-74 (Active)**

Description:	Collection Pond <del>as described in DDMI's request for additional SNP sites (December 7, 2006).</del>		
Location:	Pond 13		
Sampling Frequency:	<u>Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector. Monthly if water is present</u>	Once prior to the commencement of Discharge to Lac de Gras	Daily during Discharge to Lac de Gras
Sampling Parameters:	Total Ammonia, Field Parameters <sup>3</sup> , Total ICP-MS Metal Scan <sup>1</sup> , Major Ions <sup>2</sup> , Nitrate, Nitrite, pH <sup>4</sup> , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons (TPH)	TSS, pH <sup>4</sup> , Turbidity
Rationale for Station:	<u>To continuously monitor water quality in Pond 13. To monitor the water quality of the Main Underground Portal Ore and Waste Storage Pad runoff, if present.</u>		

Comment [DW40]: See 1645-42

Comment [DW41]: See 1645-42



**Surveillance Network Program (SNP) Station 1645-76 (Active)**

Description:	Collection Pond		
Location:	Pond 3		
Sampling Frequency:	Once prior to the commencement of the Discharge at a minimum of three (3) stations evenly spaced along a longitudinal transect at the centerline of the clarification pond collected at surface, and at two (2) metre intervals to depth	Daily during periods of Discharge	Every two (2) weeks during periods of Discharge and once on the final day of Discharge
Sampling Parameters:	pH <sup>4</sup> , Field Parameters <sup>2</sup> , ICP-MS Metal Scan <sup>3</sup> (Total), Major Ions <sup>2</sup> , Total Ammonia, Nitrite, Total Petroleum Hydrocarbons (TPH), Total Phosphorus, Nitrate, Total Suspended Solids, Turbidity	Total Suspended Solids, Total Phosphorus, Turbidity	pH <sup>4</sup> , Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>3</sup> (Total), Major Ions <sup>2</sup> , Total Ammonia, Nitrite, Total Petroleum Hydrocarbons (TPH), Total Phosphorus, Nitrate, Total Suspended Solids, Turbidity
Rationale for Station:	To monitor water quality of Pond 3, replacing SNP station 1645-48. Since this pond collects water from the Waste Rock pile drainage area, the information can be used to identify any issues with Waste Rock pile drainage.		

**Comment [DW42]:** Pond 3 is part of the original clarification pond (1645-48). This change was requested by DDMI  
[http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SNP%20Program%20-%20DDMI%20Proposed%20SNP%20Changes%20-%20Feb%2019\\_09.pdf](http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SNP%20Program%20-%20DDMI%20Proposed%20SNP%20Changes%20-%20Feb%2019_09.pdf)

The parameters and methods for 1645-76 should be the same as the other collection ponds. What is presented here is the requirements for 1645-48 which is no longer active.

Previously approved changes for Pond 3 (1645-76) are presented below and were present in other versions of the SNP for W2007L2-0003.

**Surveillance Network Program (SNP) Station 1645-76 (Active)**

Description:	Collection Pond		
Location:	Pond 3		
Sampling Frequency:	<u>Sampled monthly when water is present and ice cover does not prevent the collection of pond samples, or as directed by the Board or Inspector</u>	<u>Once prior to the commencement of Discharge to Lac de Gras</u>	<u>Daily during Discharge to Lac de Gras</u>
Sampling Parameters:	<u>Total Ammonia, Field Parameters<sup>3</sup>, Total ICP-MS Metal Scan<sup>1</sup>, Major Ions<sup>2</sup>, Nitrate, Nitrite, pH<sup>4</sup>, Total Phosphorus, Total Suspended Solids, Turbidity</u>	<u>Total Petroleum Hydrocarbons (TPH)</u>	<u>TSS, pH<sup>4</sup>, Turbidity</u>

**Comment [DW43]:** See 1645-42

**Comment [DW44]:** See 1645-42

<u>Rationale for Station:</u>	<u>To monitor water quality of the North Country Rock Pile, Inert Landfill, North and West PKC Dam embankment runoff, and PKC Facility Seepage, if present.</u>
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**STATIONS APPLYING TO ~~DREDGING AND DIKE CONSTRUCTION~~ DEWATERING OF THE UNDERGROUND MINE**

**Surveillance Network Program (SNP) Station 1645-75 (Active)**

Description:	A154/A418 underground water (9290 Pump Station and Dewatering sumps)
Location:	North Inlet Water Treatment Plant
Sampling Frequency:	Every two (2) weeks
Sampling Parameters:	Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Nutrients <sup>5</sup> , pH <sup>4</sup> , Total Suspended Solids, Turbidity, Total Petroleum Hydrocarbons
Rationale for Station:	This information helps understand how Minewater affects the quality of Water entering the treatment plant, provides information on the changes in Minewater quality over time and may inform closure planning.

**Surveillance Network Program (SNP) Station 1645-75b (Active)**

Description:	A154/A418 underground water (9105 Pump Station)
Location:	Fresh Air Raise/Return Air Riser
Sampling Frequency:	Every two (2) weeks
Sampling Parameters:	Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Nutrients <sup>5</sup> , pH <sup>4</sup> , Total Suspended Solids, Turbidity, Total Petroleum Hydrocarbons (TPH)
Rationale for Station:	This information helps understand how Minewater affects the quality of Water entering the treatment plant, provides information on the changes in Minewater quality over time and may inform closure planning.

**STATIONS APPLYING TO THE PROCESSED KIMBERLITE CONTAINMENT FACILITY**

**Surveillance Network Program (SNP) Station 1645-77 (Active)**

Description:	PKC Seepage
Location:	East PKC Dam
Sampling Frequency:	Checked weekly, sampled monthly

**Comment [DW45]:** Suggest moving 1645-16 under this heading

Sampling Parameters:	Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total and Dissolved), Major Ions <sup>2</sup> , pH <sup>4</sup> , Nutrients <sup>5</sup> , Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity
Rationale for Station:	To monitor PKC Seepage chemistry

**Surveillance Network Program (SNP) Station 1645-78 (Active)**

Description:	PKC Seepage
Location:	East PKC Dam
Sampling Frequency:	Checked weekly, sampled monthly
Sampling Parameters:	Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total and Dissolved), Major Ions <sup>2</sup> , pH <sup>4</sup> , Nutrients <sup>5</sup> , Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity
Rationale for Station:	To monitor PKC Seepage chemistry



**Surveillance Network Program (SNP) Station 1645-79 (Active)**

Description:	PKC Seepage
Location:	South PKC Dam
Sampling Frequency:	Checked weekly, sampled monthly.
Sampling Parameters:	Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total and Dissolved), Major Ions <sup>2</sup> , pH <sup>4</sup> , Nutrients <sup>5</sup> , Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity
Rationale for Station:	To monitor PKC Seepage chemistry

**Surveillance Network Program (SNP) Station 1645-80 (Active)**

Description:	PKC Seepage
Location:	West PKC Dam
Sampling Frequency:	Checked weekly, sampled monthly.
Sampling Parameters:	Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total and Dissolved), Major Ions <sup>2</sup> , pH <sup>4</sup> , Nutrients <sup>5</sup> , Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity
Rationale for Station:	To monitor PKC Seepage chemistry

**STATIONS APPLYING TO THE NIWTP CLARIFER SLUDGE SAMPLING PROGRAM**

**Surveillance Network Program (SNP) Station 1645-85a (Active)**

Description:	Sludge Sampling from the North Inlet Water Treatment Plant
Location:	Clarifier 1, North Inlet Water Treatment Plant
Sampling Frequency:	<del>Every two (2) weeks</del> Monthly. Sampled with 1645-86a. Offset with 1645-85b and 1645-86b by two weeks.
Sampling Parameters:	Total Petroleum Hydrocarbons (TPH)
Rationale for Station:	To monitor hydrocarbon levels in North Inlet Water Treatment Plant Sludge to ensure sediment and water quality is suitable for aquatic life

**Comment [DW46]:** Suggested wording adds clarity to approved frequency

[http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SNP%20Amendment%20-%20Board%20Directive%20and%20Reasons%20for%20Decision%20-%20Jul%2008\\_14.pdf](http://www.mvlwb.ca/Boards/WLWB/Registry/2007/W2007L2-0003/W2007L2-0003%20-%20Diavik%20-%20SNP%20Amendment%20-%20Board%20Directive%20and%20Reasons%20for%20Decision%20-%20Jul%2008_14.pdf)

**Comment [DW47]:** Clarification is still needed on if F3 and TPH are both required?

[http://www.mvlwb.ca/Boards/WLWB/Registry/2015/W2015L2-0001/Diavik%20-%20SNP%20-%20Clarification%20-%20TPH%20vs%20F3%20-%20Oct%2020\\_15.pdf](http://www.mvlwb.ca/Boards/WLWB/Registry/2015/W2015L2-0001/Diavik%20-%20SNP%20-%20Clarification%20-%20TPH%20vs%20F3%20-%20Oct%2020_15.pdf)

**Surveillance Network Program (SNP) Station 1645-85b (Active)**

Description:	Sludge Sampling from the North Inlet Water Treatment Plant
Location:	Clarifier 2, North Inlet Water Treatment Plant
Sampling Frequency:	<del>Every two (2) weeks</del> Monthly. Sampled with 1645-86b. Offset with

**Comment [DW48]:** See 1645-85a

	<a href="#">1645-85a and 1645-86a by two weeks.</a>
Sampling Parameters:	Total Petroleum Hydrocarbons (TPH)
Rationale for Station:	To monitor hydrocarbon levels in North Inlet Water Treatment Plant Sludge to ensure sediment and water quality is suitable for aquatic life

**Surveillance Network Program (SNP) Station 1645-86a (Active)**

Description:	Sludge Sampling from the North Inlet Water Treatment Plant
Location:	Clarifier 3, North Inlet Water Treatment Plant
Sampling Frequency:	<a href="#">Every two (2) weeks Monthly. Sampled with 1645-85a. Offset with 1645-85b and 1645-86b by two weeks.</a>
Sampling Parameters:	Total Petroleum Hydrocarbons (TPH)
Rationale for Station:	To monitor hydrocarbon levels in North Inlet Water Treatment Plant Sludge to ensure sediment and water quality is suitable for aquatic life

Comment [DW49]: See 1645-85a

**Surveillance Network Program (SNP) Station 1645-86b (Active)**

Description:	Sludge Sampling from the North Inlet Water Treatment Plant
Location:	Clarifier 4, North Inlet Water Treatment Plant
Sampling Frequency:	<a href="#">Every two (2) weeks Monthly. Sampled with 1645-85b. Offset with 1645-85a and 1645-86a by two weeks.</a>
Sampling Parameters:	Total Petroleum Hydrocarbons (TPH)
Rationale for Station:	To monitor hydrocarbon levels in North Inlet Water Treatment Plant Sludge to ensure sediment and water quality is suitable for aquatic life

Comment [DW50]: See 1645-85a

**STATIONS APPLYING TO THE A21 CONSTRUCTION AND DEVELOPMENT**

**Surveillance Network Program (SNP) Station 1645-41 (Active)**

Description:	A21 SNP Station: Near intake structure for dike pool <a href="#">watering</a> <a href="#">dewatering</a>			
Location:	A21			
Sampling Frequency:	Once prior to commencement of Discharge at a minimum of five (5) stations evenly spaced along a longitudinal transect as approved by an Inspector. At each station, samples must be collected	Daily during Dewatering	Every six (6) days during Dewatering	Once on the final day of Dewatering at each of the five (5) sites

	at surface and at two (2) metre intervals			
Sampling Parameters:	pH <sup>4</sup> , Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Total Suspended Solids, Turbidity, Nutrients <sup>5</sup> , Total Petroleum Hydrocarbons (TPH)	pH <sup>4</sup> , Total Suspended Solids, Turbidity, Total Phosphorus	Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Nutrients <sup>5</sup> , Total Petroleum Hydrocarbons (TPH)	pH <sup>4</sup> , Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Total Suspended Solids, Turbidity, Nutrients <sup>5</sup>
	Note: Additional sampling may be required at the request of an Inspector			
Rationale for Station:	To monitor water quality during A21 development			

**Surveillance Network Program (SNP) Station 1645-51 (Active)**

Description:	Sump A21 SNP Station
Location:	A21 Open Pit
Sampling Frequency:	Every two (2) weeks Note: Will only apply at the time A21 Pit is developed
Sampling Parameters:	Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Nutrients <sup>5</sup> , pH <sup>4</sup> , Total Suspended Solids, Turbidity, Total Petroleum Hydrocarbons (TPH)
Rationale for Station:	To monitor water quality during A21 development

**Comment [DW51]:** Suggest moving/creating A21 Open Pit Mining Heading below

**Surveillance Network Program (SNP) Station 1645-54 (Active)**

Description:	A21 SNP Station. Seepage collection from inside toe of A21 Dike.	
Location:	To be determined	
Sampling Frequency:	Once prior to Discharge Note: Will only apply when A21 pit is developed	Daily during Discharge:
Sampling Parameters:	Total Ammonia, pH <sup>4</sup> , Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Nutrients <sup>5</sup> , Turbidity, Total Suspended Solids, Total Dissolved Solids, Total Petroleum Hydrocarbons (TPH)	Field Parameters <sup>3</sup> , Total Suspended Solids, Total Phosphorus, Turbidity, Total Ammonia

**Comment [DW52]:** Suggest moving/creating A21 Open Pit Mining Heading below

Rationale for Station:	To monitor water quality during A21 development
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**Surveillance Network Program (SNP) Station 1645-55 (Active)**

Description:	A21 SNP reference station in Lac de Gras
Location:	Northing: 7151091, Easting: 537393
Sampling Frequency:	Sample daily using approved depth integrated sampler (provided safe boating conditions)
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	Reference station for regulation of dredging and dike Construction activities during A21 development

**Surveillance Network Program (SNP) Station 1645-82 (Active)**

Description:	A21 SNP reference station in Lac de Gras referred to as A21-A in the CEMP
Location:	200 m from the dike center line Northing: 7149416, Easting: 534620
Sampling Frequency:	Sample daily using approved depth integrated sampler (provided safe boating conditions)
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	Reference Station during A21 development

**Comment [DW53]:** This reference is from CEMP Version 2 and is not present in future versions of the CEMP

**Comment [DW54]:** Location from approved version 4.2 of CEMP. No change to location in CEMP version 5.0

**Surveillance Network Program (SNP) Station 1645-83 (Active)**

Description:	A21 SNP reference station in Lac de Gras referred to as A21-B in the CEMP
Location:	200 m from the dike center line Northing: 7149025, Easting: 534537
Sampling Frequency:	Sample daily using approved depth integrated sampler (provided safe boating conditions)
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	Reference Station during A21 development

**Comment [DW55]:** This reference is from CEMP Version 2 and is not present in future versions of the CEMP

**Comment [DW56]:** Location from approved version 4.2 of CEMP. No change to location in CEMP version 5.0

**Surveillance Network Program (SNP) Station 1645-84 (Active)**

Description:	A21 SNP reference station in Lac de Gras referred to as A21-C in the CEMP
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**Comment [DW57]:** This reference is from CEMP Version 2 and is not present in future versions of the CEMP

Location:	200 m from the dike center line <a href="#">Northing: 7148677, Easting: 534181</a>
Sampling Frequency:	Sample daily using approved depth integrated sampler (provided safe boating conditions)
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	Reference Station during A21 development

### **INACTIVE STATIONS**

#### **Surveillance Network Program (SNP) Station 1645-1 (Inactive)**

Description:	Minewater Discharge
Rationale for Status:	Class "B" Licence no longer active

#### **Surveillance Network Program (SNP) Station 1645-2 (Inactive)**

Description:	Outflow decant from F1
Rationale for Status:	Class "B" Licence no longer active

#### **Surveillance Network Program (SNP) Station 1645-3 (Inactive)**

Description:	Lac de Gras inflow from F1 Wetlands
Rationale for Status:	Class "B" Licence no longer active

#### **Surveillance Network Program (SNP) Station 1645-4 (Inactive)**

Description:	Discharge from Sewage Disposal Facility
Rationale for Status:	Class "B" Licence no longer active

#### **Surveillance Network Program (SNP) Station 1645-5 (Inactive)**

Description:	Outflow from disposal pond
Rationale for Status:	Class "B" Licence no longer active

#### **Surveillance Network Program (SNP) Station 1645-6 (Inactive)**

Description:	Prior to entering Lac de Gras at the stream outflow from the Sewage disposal
Rationale for Status:	Class "B" Licence no longer active

**Surveillance Network Program (SNP) Station 1645-7 (Inactive)**

Description:	Upstream of the confluence between the ice scrapings disposal area runoff and the stream from the Sewage outflow
Rationale for Status:	Class "B" Licence no longer active

**Surveillance Network Program (SNP) Station 1645-8 (Inactive)**

Description:	Down slope of the semi-permeable dike in D1 drainage way
Rationale for Status:	Class "B" Licence no longer active

**Surveillance Network Program (SNP) Station 1645-9 (Inactive)**

Description:	Treated Minewater pumped directly to Lac de Gras
Rationale for Status:	Class "B" Licence no longer active

**Surveillance Network Program (SNP) Station 1645-10 (Inactive)**

Description:	Station applying to treated Effluent Discharge to monitor Sewage Discharge from North Construction Camp
Rationale for Status:	Class "B" Licence no longer active.

**Surveillance Network Program (SNP) Station 1645-12 (Inactive)**

Description:	West Cell – North Inlet Facility
Location:	N/A
Sampling Frequency:	Monthly
Sampling Parameters:	Total Ammonia, Turbidity, Field Parameters <sup>3</sup> , Nitrate, Total Suspended Solids, Nitrate, Total Phosphorus, ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , pH <sup>4</sup>
Rationale for Station:	Station applying to treated Effluent Discharge to monitor water in the West Cell of the North Inlet Facility
Rationale for Status:	West dike never constructed, intermediate SNP station deemed unnecessary.

**Surveillance Network Program (SNP) Station 1645-14 (Inactive)**

Description:	North Inlet Treatment Plant treated effluent prior to mixing with PKC treated effluent
Location:	N/A

Sampling Frequency:	Every (6) days during periods of Discharge to Lac de Gras
Sampling Parameters:	Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total and Dissolved), Major Ions <sup>2</sup> , pH <sup>4</sup> , Nutrients <sup>5</sup> , Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity
Rationale for Station:	Station applying to treated Effluent Discharge to monitor water quality of treated effluent.
Rationale for Status:	Station was never established

#### Surveillance Network Program (SNP) Station 1645-15 (Inactive)

Description:	Process Plan slurry Discharge to PKC facility
Location:	Process Plant
Sampling Frequency:	Sampled monthly during periods of Discharge
Sampling Parameters:	Volume Percent Solids
Rationale for Station:	Station applying to treated Effluent Discharge to monitor slurry Discharge.
Rationale for Status:	Diavik proposes to move SNP Station 1645-15 to Section C, Flow and Volume Measurement Requirements as it would support other measurements of the Surveillance Network Program.

#### Surveillance Network Program (SNP) Station 1645-17 (Inactive)

Description:	PKC Treatment Plant Effluent prior to mixing with North Inlet Treatment Plant treated effluent	
Location:	N/A	
Sampling Frequency:	Every six (6) days	Quarterly
Sampling Parameters:	Total Arsenic, Dissolved Organic Carbon, Dissolved Oxygen, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total and Dissolved), Major Ions <sup>2</sup> , pH <sup>4</sup> , Nutrients <sup>5</sup> , Total Mercury, Total Organic Carbon, Total Suspended Solids, Turbidity	BOD <sub>5</sub> , Faecal Coliforms, Total Petroleum Hydrocarbons (TPH)
Rationale for Station:	To monitor PKC Effluent water quality	
Rationale for Status:	The PKC Effluent is discharged into North Inlet and the two treated effluent streams do not mix	

#### Surveillance Network Program (SNP) Station 1645-20 (Inactive)

Description:	Northwest of clarification pond
Location:	NW of Pond 2
Sampling Frequency:	Checked weekly, sampled monthly. Last data collected in August 2009.
Sampling Parameters:	N/A
Rationale for Station:	To monitor Groundwater down gradient of Water Retention Structures.
Rationale for Status:	Lack of data from current Station. SNP station will be replaced by monitoring requirements in SNP Part D, Item 8.

**Surveillance Network Program (SNP) Station 1645-21 (Inactive)**

Description:	West of Clarification pond (drainage course) between Pond 2 and Pond 3.
Location:	West of Ponds 2 and 3
Sampling Frequency:	Checked weekly, sampled monthly. Last data collected in August 2009
Sampling Parameters:	N/A
Rationale for Station:	To monitor Groundwater down gradient of Water Retention Structures
Rationale for Status:	Lack of data from current Station. SNP station will be replaced by monitoring requirements in SNP Part D, Item 8.

**Surveillance Network Program (SNP) Station 1645-22 (Inactive)**

Description:	North of Quarry and till areas (drainage course) on the South side of North Inlet Facility
Location:	North of Till Stockpile
Sampling Frequency:	Checked weekly, sampled monthly. Last data collected in October 2008
Sampling Parameters:	N/A
Rationale for Station:	To monitor potential surface ARD
Rationale for Status:	To date, there has not been any observed Seepage from the NCRP. Any Seepage event will be reported in the Annual Seepage Report.

**Surveillance Network Program (SNP) Station 1645-23 (Inactive)**

Description:	North perimeter road (drainage course) between road and North Inlet Facility.
Location:	North of Waste Rock Pile
Sampling Frequency:	Checked weekly, sampled monthly. Last data collected in October 2011.
Sampling Parameters:	N/A
Rationale for Station:	To monitor potential surface ARD



Rationale for Status:	To date, there has not been any observed Seepage from the NCRP. Any Seepage event will be reported in the Annual Seepage Report.
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**Surveillance Network Program (SNP) Station 1645-24 (Inactive)**

Description:	East of perimeter road (drainage course)
Location:	South of Pond 1
Sampling Frequency:	Checked weekly, sampled monthly. Last data collected pre 2008.
Sampling Parameters:	N/A
Rationale for Station:	To monitor surface runoff and Seepage down gradient of Water Retention structures.
Rationale for Status:	Lack of data from current Station. SNP station will be replaced by monitoring requirements in SNP Part D, Item 8.

**Surveillance Network Program (SNP) Station 1645-25 (Inactive)**

Description:	East PKC Dike area (drainage course)
Location:	East of Pond 5 towards the bay
Sampling Frequency:	Checked weekly, sampled monthly. Last data collected in September 2008.
Sampling Parameters:	N/A
Rationale for Station:	To monitor surface runoff and Seepage down gradient of Water Retention Structures
Rational for Status:	Lack of data from current Station. SNP station will be replaced by monitoring requirements in SNP Part D, Item 8.

**Surveillance Network Program (SNP) Station 1645-26 (Inactive)**

Description:	West PKC Dike area (drainage course)
Location:	West side of Pond 4
Sampling Frequency:	Checked weekly, sampled monthly. Last data collected in September 2008
Sampling Parameters:	N/A
Rationale for Station:	To monitor surface runoff and Seepage down gradient of Water Retention Structures
Rationale for Status:	Lack of data from current Station. SNP station will be replaced by monitoring requirements in SNP Part D, Item 8.

**Surveillance Network Program (SNP) Station 1645-27 (Inactive)**

Description:	Airstrip Drainage Course
Location:	North of Airstrip
Sampling Frequency:	N/A
Sampling Parameters:	N/A
Rationale for Station:	Station applying to surface runoff and Groundwater to monitor water quality of drainage course
Rationale for Status:	Drainage course dried up following Construction of airstrip

**Surveillance Network Program (SNP) Station 1645-28 (Inactive)**

Description:	Groundwater GW1 between the North Rock Pile and North Inlet
Location:	North of Waste Rock Pile
Sampling Frequency:	Checked weekly for Groundwater flow and sampled monthly. Last data collected Pre 2008.
Sampling Parameters:	Total Ammonia, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , pH <sup>4</sup> , Total Petroleum Hydrocarbons
Rationale for Station:	To monitor potential Groundwater ARD
Rationale for Status:	To date, there has not been any observed Seepage from the NCRP. Any Seepage event will be reported in the Annual Seepage Report.

**Surveillance Network Program (SNP) Station 1645-29 (Inactive)**

Description:	Groundwater GW2
Location:	North of Pond 2
Sampling Frequency:	Checked weekly for Groundwater flow and sampled monthly. Last data collected pre 2008
Sampling Parameters:	Total Ammonia, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , pH <sup>4</sup> , Total Petroleum Hydrocarbons
Rationale for Station:	To monitor Groundwater down gradient of Water Retention Structures
Rationale for Status:	Lack of data from current Station. SNP station will be replaced by monitoring requirements in SNP Part D, Item 8.

**Surveillance Network Program (SNP) Station 1645-30 (Inactive)**

Description:	Groundwater GW3 Northwest of Till Disposal Area
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Location:	N/A
Sampling Frequency:	Checked weekly for Groundwater flow and sampled monthly.
Sampling Parameters:	Total Ammonia, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , pH <sup>4</sup> , Total Petroleum Hydrocarbons
Rationale for Station:	Station applying to surface runoff and Groundwater to monitor Groundwater quality
Rationale for Status:	Area covered by Till Pile

**Surveillance Network Program (SNP) Station 1645-31 (Inactive)**

Description:	Groundwater GW4 West of the PKC
Location:	South of Pond 4
Sampling Frequency:	Checked weekly for Groundwater flow and sampled monthly. Last data collected pre 2008.
Sampling Parameters:	Total Ammonia, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , pH <sup>4</sup> , Total Petroleum Hydrocarbons
Rationale for Station:	To monitor Groundwater down gradient of Water Retention Structures
Rationale for Status:	Lack of data from current Station. SNP station will be replaced by monitoring requirements in SNP Part D, Item 8.

**Surveillance Network Program (SNP) Station 1645-32 (Inactive)**

Description:	Groundwater – South of PKC, between the Ammonium Nitrate Storage and Pond 7
Location:	South of Pond 7 and Emulsion Plant
Sampling Frequency:	Checked weekly for Groundwater flow and sampled monthly. Last data collected pre 2008.
Sampling Parameters:	Total Ammonia, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , pH <sup>4</sup> , Total Petroleum Hydrocarbons
Rationale for Station:	To monitor water down gradient of Water Retention Structure and Emulsion Plant
Rationale for Status:	Diavik will create a runoff monitoring and collection program to area surrounding Emulsion Plant and Ammonium Nitrate Storage Building during freshet. New monitoring station is referenced as 1645-81.

**Surveillance Network Program (SNP) Station 1645-34 (Inactive)**

Description:	Near intake structure for De-watering of Lake E1		
Location:	N/A		
Sampling Frequency:	Once prior to commencement of de-watering	Daily during de-watering	Once on the final day of de-watering
Sampling Parameters:	Total Ammonia, Total Suspended Solids, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Total Phosphorus, Nitrate, Nitrite, Turbidity	Total Suspended Solids, pH <sup>4</sup> , Turbidity	Total Ammonia, Total Suspended Solids, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , pH <sup>4</sup> , Total Phosphorus, Nitrate, Nitrite, Turbidity
Rationale for Station:	To monitor water quality during de-watering		
Rationale for Status:	Work is completed, Station no longer applicable.		

**Surveillance Network Program (SNP) Station 1645-35 (Inactive)**

Description:	Near intake structure of De-watering of Lake E6		
Location:	N/A		
Sampling Frequency:	Once prior to commencement of de-watering	Daily during de-watering	Once on the final day of de-watering
Sampling Parameters:	Total Ammonia, Total Suspended Solids, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Total Phosphorus, Nitrate, Nitrite, Turbidity	Total Suspended Solids, pH <sup>4</sup> , Turbidity	Total Ammonia, Total Suspended Solids, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , pH <sup>4</sup> , Total Phosphorus, Nitrate, Nitrite, Turbidity
Rationale for Station:	To monitor water quality during de-watering		
Rationale for Status:	Work is completed, Station no longer applicable.		

**Surveillance Network Program (SNP) Station 1645-36 (Inactive)**

Description:	Near intake structure for De-watering of Lake E7		
Location:	N/A		
Sampling Frequency:	Once prior to commencement of de-watering	Daily during de-watering	Once on the final day of de-watering
Sampling Parameters:	Total Ammonia, Total Suspended Solids, Field Parameters <sup>3</sup> , ICP-MS	Total Suspended Solids, pH <sup>4</sup> ,	Total Ammonia, Total Suspended Solids, Field Parameters <sup>3</sup> , ICP-MS Metal

	Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Total Phosphorus, Nitrate, Nitrite, Turbidity	Turbidity	Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , pH <sup>4</sup> , Total Phosphorus, Nitrate, Nitrite, Turbidity
Rationale for Station:	To monitor water quality during de-watering		
Rationale for Status:	Work is completed, Station no longer applicable.		

**Surveillance Network Program (SNP) Station 1645-37 (Inactive)**

Description:	Near intake structure for De-watering of Lake E8		
Location:	N/A		
Sampling Frequency:	Once prior to commencement of de-watering	Daily during de-watering	Once on the final day of de-watering
Sampling Parameters:	Total Ammonia, Total Suspended Solids, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Total Phosphorus, Nitrate, Nitrite, Turbidity	Total Suspended Solids, pH <sup>4</sup> , Turbidity	Total Ammonia, Total Suspended Solids, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , pH <sup>4</sup> , Total Phosphorus, Nitrate, Nitrite, Turbidity
Rationale for Station:	To monitor water quality during de-watering		
Rationale for Status:	Work is completed, Station no longer applicable.		

**Surveillance Network Program (SNP) Station 1645-38 (Inactive)**

Description:	Near intake structure for De-watering of Lake E10		
Location:	N/A		
Sampling Frequency:	Once prior to commencement of de-watering	Daily during de-watering	Once on the final day of de-watering
Sampling Parameters:	Total Ammonia, Total Suspended Solids, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Total Phosphorus, Nitrate, Nitrite, Turbidity	Total Suspended Solids, pH <sup>4</sup> , Turbidity	Total Ammonia, Total Suspended Solids, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , pH <sup>4</sup> , Total Phosphorus, Nitrate, Nitrite, Turbidity
Rationale for Station:	To monitor water quality during de-watering		
Rationale for Status:	Work is completed, Station no longer applicable.		

**Surveillance Network Program (SNP) Station 1645-39 (Inactive)**

Description:	Near intake structure for De-watering within the dike enclosure of A154			
Location:	N/A			
Sampling Frequency:	Once prior to commencement of Discharge at a minimum of five (5) stations evenly spaced along a longitudinal transect as approved by an Inspector. At each station, samples must be collected at surface and at two (2) metre intervals	Daily during Dewatering	Every six (6) days during Dewatering	Once on the final day of Dewatering at each of the five (5) sites
Sampling Parameters:	pH <sup>4</sup> , Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Total Suspended Solids, Turbidity, Nutrients <sup>5</sup>	pH <sup>4</sup> , Total Suspended Solids, Turbidity, Total Phosphorus	Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Nutrients <sup>5</sup> , Oil and Grease	pH <sup>4</sup> , Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Total Suspended Solids, Turbidity, Nutrients <sup>5</sup>
	Note: Additional sampling may be required at the request of an Inspector			
Rationale for Station:	To monitor water quality during de-watering			
Rationale for Status:	Work is completed, Station no longer applicable.			

**Surveillance Network Program (SNP) Station 1645-40 (Inactive)**

Description:	Near intake structure for dike pool watering – A418			
Location:	N/A			
Sampling Frequency:	Once prior to commencement of Discharge at a minimum of five (5) stations evenly spaced along a longitudinal transect as approved by an Inspector. At each station, samples	Daily during Dewatering	Every six (6) days during Dewatering	Once on the final day of Dewatering at each of the five (5) sites

	must be collected at surface and at two (2) metre intervals			
Sampling Parameters:	pH <sup>4</sup> , Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Total Suspended Solids, Turbidity, Nutrients <sup>5</sup>	pH <sup>4</sup> , Total Suspended Solids, Turbidity, Total Phosphorus	Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Nutrients <sup>5</sup> , Oil and Grease	pH <sup>4</sup> , Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Total Suspended Solids, Turbidity, Nutrients <sup>5</sup>
	Note: Additional sampling may be required at the request of an Inspector			
Rationale for Station:	To monitor water quality during de-watering			
Rationale for Status:	Work is completed, Station no longer applicable.			

**Surveillance Network Program (SNP) Station 1645-43 (Inactive)**

Description:	A 21 SNP Station: Collection Pond		
Location:	Pond 6		
Sampling Frequency:	Monthly if water is present	Once prior to the commencement of Discharge to Lac de Gras	Daily during Discharge to Lac de Gras
Sampling Parameters:	Total Ammonia, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> , Major Ions <sup>2</sup> , Nitrate, Nitrite, pH <sup>4</sup> , Total Phosphorus, Total Suspended Solids, Turbidity	Total Petroleum Hydrocarbons (TPH)	TSS, pH <sup>4</sup> , Turbidity
Rationale for Station:	To monitor water quality during A21 development		
Rationale for Status:	The approved Construction Environmental Management Plan, Version 2.0, indicates that Pond 6 is no longer necessary.		

**Surveillance Network Program (SNP) Station 1645-48 (Inactive)**

Description:	Clarification pond (Pond 3)
Location:	West side of the North Rock Pile

Sampling Frequency:	Once prior to the commencement of the Discharge at a minimum of three (3) stations evenly spaced along a longitudinal transect at the centerline of the clarification pond collected at surface, and at two (2) metre intervals to depth	Daily during periods of Discharge	Every two (2) weeks during periods of Discharge and once on the final day of Discharge
Sampling Parameters:	pH <sup>4</sup> , Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Total Ammonia, Nitrite, Oil and Grease, Total Phosphorus, Nitrate, Total Suspended Solids, Turbidity	Total Suspended Solids, Total Phosphorus, Turbidity	pH <sup>4</sup> , Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Total Ammonia, Nitrite, Oil and Grease, Total Phosphorus, Nitrate, Total Suspended Solids, Turbidity
Rationale for Station:	To monitor water quality of Pond 3.		
Rationale for Status:	Pond is no longer large enough for three (3) stations along centre-line transect. It is now covered by SNP Station 1645-76.		

#### Surveillance Network Program (SNP) Station 1645-49 (Inactive)

Description:	Mine water removed from A154 Pit
Location:	N/A
Sampling Frequency:	Every two (2) weeks
Sampling Parameters:	Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Nutrients <sup>5</sup> , pH <sup>4</sup> , Total Suspended Solids, Turbidity, Oil and Grease
Rationale for Station:	Station applying to Dewatering to monitor water quality from A154 Pit
Rationale for Status:	Inactive after the closure of the A154 Open Pit

#### Surveillance Network Program (SNP) Station 1645-50 (Inactive)

Description:	Mine water removed from A418 Pit
Location:	A418 Open Pit
Sampling Frequency:	Not currently Monitored. Last data collected in June 2012 every two (2) weeks. Note: Will only apply at the time A418 Pit is developed.
Sampling Parameters:	Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Nutrients <sup>5</sup> , pH <sup>4</sup> , Total Suspended Solids, Turbidity, Oil and Grease



Rationale for Station:	Monitor quality of Pit Water
Rationale for Status:	With the closure of A418 Open Pit, there is no need for this station. Any water

**Surveillance Network Program (SNP) Station 1645-52 (Inactive)**

Description:	Seepage collected from inside toe of the A154 Dike	
Location:	A154 Dike	
Sampling Frequency:	Not Currently monitored. Last data collected in 2008. Sample once prior to Discharge:	Daily during Discharge:
Sampling Parameters:	Total Ammonia, pH <sup>4</sup> , Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Nutrients <sup>5</sup> , Turbidity, Total Suspended Solids, Total Dissolved Solids, Oil and Grease	Field Parameters <sup>3</sup> , Total Suspended Solids, Total Phosphorus, Turbidity, Total Ammonia
Rationale for Station:	Monitor Lake water Seepage through open pit dikes prior to Discharge to Lac de Gras	
Rationale for Status:	Seepage through open pit dikes is considered intermediate and inconsistent and is discharged to North Inlet, not to Lac de Gras.	

**Surveillance Network Program (SNP) Station 1645-53 (Inactive)**

Description:	Seepage collected from inside toe of the A418 Dike	
Location:	A418 Dike	
Sampling Frequency:	Not Currently monitored. Data collection was never established. Sample once prior to Discharge:	Daily during Discharge:
Sampling Parameters:	Total Ammonia, pH <sup>4</sup> , Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Nutrients <sup>5</sup> , Turbidity, Total Suspended Solids, Total Dissolved Solids, Oil and Grease	Field Parameters <sup>3</sup> , Total Suspended Solids, Total Phosphorus, Turbidity, Total Ammonia
Rationale for station:	Monitor Lake water Seepage through open pit dikes prior to Discharge to Lac de Gras	
Rationale for Status:	Seepage through open pit dikes is considered intermediate and inconsistent and is discharged to North Inlet, not to Lac de Gras.	

**Surveillance Network Program (SNP) Station 1645-56 (Inactive)**

Description:	Station applying to dredging and dike Construction
Rationale for Status:	Fixed Dredging/Diking Station located 200 meters east from the

	centerline of the North Inlet East Dike
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**Surveillance Network Program (SNP) Station 1645-57 (Inactive)**

Description:	Station applying to dredging and dike Construction
Rationale for Status:	Removed as per approved Dredging TSS Management and In Lake Construction Plan

**Surveillance Network Program (SNP) Station 1645-58 (Inactive)**

Description:	Station applying to dredging and dike Construction
Location:	N 7.152.057, E 537.073
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	N/A
Rationale for Status:	Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan.

**Surveillance Network Program (SNP) Station 1645-59 (Inactive)**

Description:	Station applying to dredging and dike Construction
Location:	N 7.152.210, E 537.342
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids Turbidity
Rationale for Station:	N/A
Rationale for Status:	Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan.

**Surveillance Network Program (SNP) Station 1645-60 (Inactive)**

Description:	Station applying to dredging and dike Construction
Location:	N 7.152.587, E 537.575
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	N/A
Rationale for Status:	Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan.

**Surveillance Network Program (SNP) Station 1645-61 (Inactive)**

Description:	Station applying to dredging and dike Construction
Location:	N 7.153.263, E 537.666
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	N/A
Rationale for Status:	Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan.

**Surveillance Network Program (SNP) Station 1645-62 (Inactive)**

Description:	Station applying to dredging and dike Construction
Location:	N 7.153.562, E 537.079
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	N/A
Rationale for Status:	Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan.

**Surveillance Network Program (SNP) Station 1645-63 (Inactive)**

Description:	Station applying to dredging and dike Construction
Location:	N 7.153.744, E 536.463
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	N/A
Rationale for Status:	Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan.

**Surveillance Network Program (SNP) Station 1645-64 (Inactive)**

Description:	Station applying to dredging and dike Construction
Location:	N 7.153.768, E 536.173
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity

Rationale for Station:	N/A
Rationale for Status:	Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan.

**Surveillance Network Program (SNP) Station 1645-65 (Inactive)**

Description:	Station applying to dredging and dike Construction
Location:	N 7.153.740, E 535.756
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	N/A
Rationale for Status:	Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan.

**Surveillance Network Program (SNP) Station 1645-66 (Inactive)**

Description:	Near intake structure for De-watering of North Inlet.		
Location:	N/A		
Sampling Frequency:	Once prior to commencement of de-watering	Daily during de-watering	Once on the final day of de-watering
Sampling Parameters:	Total Ammonia, Total Suspended Solids, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , Total Phosphorus, Nitrate, Nitrite, Turbidity	Total Suspended Solids, pH <sup>4</sup> , Turbidity	Total Ammonia, Total Suspended Solids, Field Parameters <sup>3</sup> , ICP-MS Metal Scan <sup>1</sup> (Total), Major Ions <sup>2</sup> , pH <sup>4</sup> , Total Phosphorus, Nitrate, Nitrite, Turbidity
Rationale for Station:	Station applying to Dewatering to monitor water quality before, during, and at the end of De-watering North Inlet.		
Rationale for Status:			

**Surveillance Network Program (SNP) Station 1645-70 (Inactive)**

Description:	Station applying to dredging and dike Construction
Location:	N 7.151.848, E 537.057
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	To monitor suspended solids and turbidity caused by dredging and dike

	Construction.
Rationale for Status:	Station referenced as 1645-A in Figure 1 of the April 12, 2005 DDMI request for additional SNP Stations.

**Surveillance Network Program (SNP) Station 1645-71 (Inactive)**

Description:	Station applying to dredging and dike Construction
Location:	N 7.151.369, E 536.765
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	To monitor suspended solids and turbidity caused by dredging and dike Construction.
Rationale for Status:	Station referenced as 1645-B in Figure 1 of the April 12, 2005 DDMI request for additional SNP Stations.

**Surveillance Network Program (SNP) Station 1645-72 (Inactive)**

Description:	Station applying to dredging and dike Construction
Location:	N 7.151.319, E 536.414
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	To monitor suspended solids and turbidity caused by dredging and dike Construction.
Rationale for Status:	Station referenced as 1645-C in Figure 1 of the April 12, 2005 DDMI request for additional SNP Stations.

**Surveillance Network Program (SNP) Station 1645-73 (Inactive)**

Description:	Station applying to dredging and dike Construction
Location:	N/A
Sampling Frequency:	Sample daily using approved depth integrated sampler
Sampling Parameters:	Total Suspended Solids, Turbidity
Rationale for Station:	Background reference station for the regulation of dredging and dike Construction association with A418 Pit
Rationale for Status:	Station referenced as 1645-55B in Figure 1 of the April 12, 2005 DDMI request for additional SNP Stations - Relocated background reference Station (N 7.152.720 E 538.765)

