Appendix 12

Meadowbank 2021 Water Management Plan Version 10

MEADOWBANK GOLD MINE

2021 WATER MANAGEMENT PLAN

MARCH 2022

VERSION 10

EXECUTIVE SUMMARY

Agnico Eagle Mines Ltd. Meadowbank Division (Agnico) is operating the Meadowbank Gold Mine (the Mine), located on Inuit-owned surface lands in the Kivalliq region approximately 70 km north of the Hamlet of Baker Lake, Nunavut. The mine is subject to the terms and conditions of both the Project Certificate issued in accordance with the Nunavut Land Claims Agreement Article 12.5.12 on December 30, 2006, and the Nunavut Water Board Water Licence No. 2AM-MEA1530 issued in May 2020.

The Water Management Plan is updated on a yearly basis as required by the Nunavut Water Board Water License 2AM-MEA1530. This document presents an updated version of the Water Management Plan 2020 and provides a revised site-wide Water Balance. Recommendations obtained during the 2020 Meadowbank Annual Report Review have been included in the 2021 Water Management Plan.

The 2021 Water Management Plan includes the 2021 Water Quality Forecast Update (Appendix C), the 2021 Freshet Action Plan (Appendix D) and the 2021 Ammonia Management Plan (Appendix E). The Freshet Action Plan details the RSF seepage issue at ST-16 and the Assay Road seepage as well as providing revised monitoring.

This water management plan update considers changes in the observed natural pit water inflows, updated tailings deposition parameters, mine and milling life schedule and production rate, tailings management strategy and pit backfilling strategy.

The significant updates to this plan are:

- Update of water balance and water quality forecast model as per latest tailings deposition plan (including in-pit deposition)
- Addition of quantitative water-related objectives/target as per the TSM Water Stewardship Protocol

The water management objectives are to keep the different water types separated to the extent practical; to control and minimize contact water; minimize freshwater usage to the extent practical; meet discharge criteria before any site contact water is released to the downstream environment ; achieve a reduction in freshwater intake per tonne mined and ensure no events of non-compliance related to freshwater withdrawal criteria and effluent loading limits. The water balance update is based on these objectives and quantitative targets have been added to the plan to help Operation track progress of actions taken to achieve this target and help identify corrective action to be implemented.

The revised Water Balance determines the demand and storage requirements of water over the life of the mine. The storage strategies and required transfers are presented. Closure related elements remain at a conceptual stage and will be further detailed in the ICRP update until their designs are presented in the Final Mine Closure and Reclamation Plan to be submitted prior to final closure in accordance with the current Type A Water License.

The freshwater reduction per tonne milled objective is achieved by reclaiming contact water from the inactive tailings deposition area while transferring water from the active deposition area to the inactive pit. It is planned to use Pit E as the main area for tailings deposition in 2022 with opportunities to deposit either in the North Cell or South Cell to improve the landforms for closure purposes. For the remainder of mill operations, reclaim water is planned to be pumped from the in-pit.

The current concept for Portage and Goose Area flooding at closure is to remove as much water as possible from each pit by using a water treatment plant (WTP) and to reflood the area using a combination of passive and active water inflow (from Third Portage Lake). This is a conservative assumption that will be revised in the ICRP and FCRP as further data become available on the water treatment design for the in-pit water. Different flooding sequence concepts are being looked at for the reflooding of the Portage and Goose Area to ensure the closure objectives will be met. The final elevation of the reflooding will be the elevation of Third Portage Lake which is around 133.7 masl based on available data. The Goose dike will be breached to allow reconnection of the area with Third Portage Lake when the closure objectives for pit flooding will have been achieved. The pit water quality will need to have stabilized and been consistently acceptable for discharge to the receiving environment.

The flooding of the Vault Pit area will involve a combination of passive flooding (runoff) and active flooding at closure using water from Wally Lake. The final elevation of the reflooding will be 139.9masl for Phaser and Vault Lake. The Vault dike will be breached to allow reconnection of the area with Wally Lake when the closure objectives for pit flooding will be achieved. The pit water quality will need to have stabilized and been consistently acceptable for discharge to the receiving environment. BB Phaser Pit and Phaser Lake will be flooded exclusively from their watershed run off inflows until the target elevation of Wally Lake is reached.

A water quality forecasting model update is included in this report. The report identifies certain contaminants of concern which may require removal treatment in order for the pit water quality to meet water quality objectives. These parameters are aluminum, arsenic, cadmium, chromium, copper, iron, lead, nickel, selenium, thallium, chloride, fluoride, sulphate, and total ammonia/total nitrogen equivalent. Treatment options for the pit water are being assessed as per the schedule outlined in the Meadowbank Water Quality Forecasting Update Technical Note rev. 00 (SNC, 2022). Update on the pit flooding and water treatment concept will be provided in the next ICRP update and the final design will be submitted as part of the FCRP.

DOCUMENT CONTROL

Version	Date (YM)	Section	Page	Revision
1	March 2014	ALL	-	Revision for the 2012 Water Management Plan (by SNC) according to the updated Life of Mine and water management strategies
2	March 2015	ALL	-	Revision for the 2013 Water Management Plan (by Agnico) according to the updated Life of Mine and water management strategies
3	October 2015	ALL	-	Update of sections according to Water License renewal conditions
4	March 2016	ALL	-	Revision of the 2014 Water Management Plan (by Agnico) according to the updated Life of Mine and water management strategies
5	March 2017	ALL	-	Revision of the 2015 Water Management Plan (by Agnico) according to the updated Life of Mine and water management strategies
6	March 2018	ALL	-	Revision of the 2016 Water Management Plan (by Agnico) according to the updated Life of Mine and water management strategies
7	March 2019	ALL	-	Revision of the 2017 Water Management Plan (by Agnico) according to the updated Life of Mine and water management strategies
8	March 2020	ALL	-	Revision of the 2018 Water Management Plan (by Agnico) according to the updated Life of Mine and water management strategies
9	April 2021	ALL	-	Revision of the 2019 Water Management Plan (by Agnico) according to the updated Life of Mine and water management strategies
10	April 2022	ALL	-	Revision of the 2020 Water Management Plan (by Agnico) according to the updated Life of Mine and water management strategies. Addition of quantitative water management targets

Approved by:

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Alexandre Lavallee – Environment & Critical Infrastructure Superintendent

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1 INTRODUCTION

Agnico Eagle Mines Ltd. (Agnico) has been operating the Meadowbank Gold Mine since 2008, officially beginning production in 2010. The mine is located approximately 70km north of the Hamlet of Baker Lake, Nunavut. The mine is subject to the terms and conditions of both the Project Certificate issued in accordance with the Nunavut Land Claims Agreement Article 12.5.12 on December 30, 2006, and the Nunavut Water Board Water License No. 2AM-MEA1530 issued on May 2020.

This document presents an updated version of the Water Management Plan 2020 and provides a revised site-wide water balance that determines the demand and storage requirements of water over the life of the mine (LOM). The storage strategies and required transfers are presented. Closure related elements remain at a conceptual stage and will be further detailed in the Final Mine Closure and Reclamation Plan to be submitted prior to final closure in accordance with the current Type A Water License.

This water management plan update considers changes in the observed natural pit water inflows, updated tailings deposition parameters, mine and milling life schedule and production rate, tailings management strategy, and pit backfilling strategy.

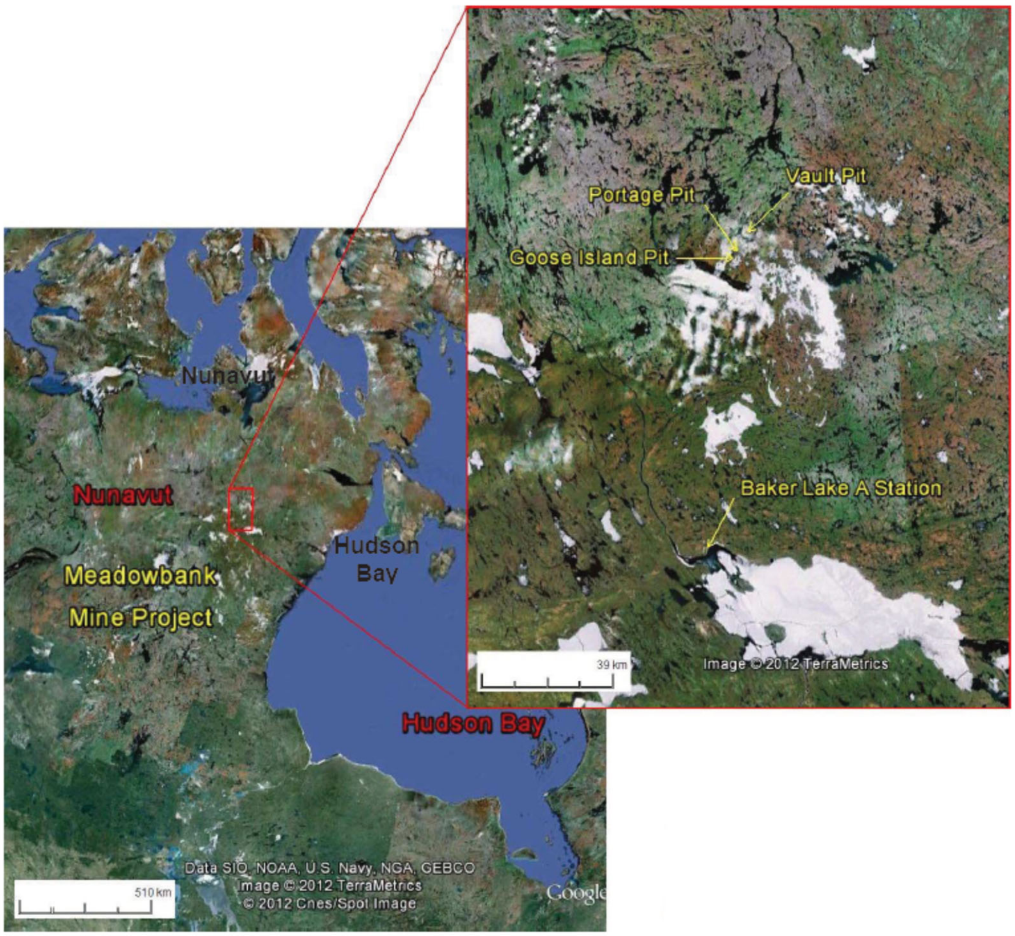
The significant updates to this plan are:

- Update of water balance and water quality forecast model as per latest tailings deposition plan (including in-pit deposition)
- Addition of quantitative water-related objectives/targets as per the TSM Water Stewardship Protocol

2 BACKGROUND INFORMATION

2.1 SITE CONDITIONS

The location of the Meadowbank mine site is shown below in Figure 2.1. A close-up is also provided to show the location of the Baker Lake A Station used to obtain meteorological data.



Source: Google Earth Pro, 2012

Figure 2.1: Meadowbank mine location

2.1.1 Climate

The Meadowbank mine is located within a low Arctic Eco climate described as one of the coldest and driest regions of Canada. Arctic winter conditions occur from October through May, with temperatures ranging from +5°C to -40°C. Summer temperatures range from -5°C to +25°C with isolated rainfall increasing through September (Table 2-1).

Table 2-1: Estimated average monthly climate data – Baker Lake

Month	Max. Air Temp. (°C)	Min. Air Temp. (°C)	Rainfall (mm)	Snowfall (mm)	Total Precip. (mm)	Lake Evap. (mm)	Min. Relative Humidity (%)	Max. Relative Humidity (%)	Wind Speed (km/h)	Soil Temp. (°C)
January	-29.1	-35.5	0	6.9	6.9	0	67.1	75.9	16.3	-25.5
February	-27.8	-35.2	0	6.0	6.1	0	66.6	76.5	16.0	-28.1
March	-22.3	-30.5	0.0	9.2	9.2	0	68.4	81.4	16.9	-24.9
April	-13.3	-22.5	0.4	13.6	14.0	0	71.3	90.1	17.3	-18.1
May	-3.1	-9.9	5.2	7.7	12.8	0	75.7	97.2	18.9	-8.0
June	7.6	0.0	18.6	3.1	21.7	8.8	62.6	97.2	16.4	2.0
July	16.8	7.2	38.6	0.0	38.6	99.2	47.5	94.3	15.1	10.5
August	13.3	6.4	42.8	0.6	43.4	100.4	59.2	97.7	18.4	9.3
September	5.7	0.9	35.2	6.7	41.9	39.5	70.8	98.6	19.3	3.6
October	-5.0	-10.6	6.5	22.6	29.1	0.1	83.1	97.4	21.4	-2.8
November	-14.8	-22.0	0.2	16.2	16.4	0	80.6	91.1	17.9	-11.7
December	-23.3	-29.9	0	9.4	9.5	0	73.3	82.7	17.7	-19.9

Note: Data from Baker Lake A station is available from 1946 to 2011. During this period, the data quality is good, with the exception of years 1946 to 1949, and 1993, which were removed from the compilation.

The long-term mean annual air temperature for Meadowbank is estimated to be approximately -11.1°C. Air temperatures in the Meadowbank area are, on average, about 0.6°C cooler than Baker Lake air temperatures, and extreme temperatures tend to be larger in magnitude. This climatic difference is thought to be the effect of a moderating maritime influence at Baker Lake.

The prevailing winds at Meadowbank for both the winter and summer months are from the northwest. A maximum daily wind gust of 93 km/h was recorded on September 1, 2009. Light to moderate snowfall is accompanied by variable winds up to 70 km/h, creating large, deep drifts and occasional whiteout conditions. Skies tend to be more overcast in winter than in summer.

Table 2-1 presents monthly rainfall, snowfall and total precipitation values for the mine site. August is the wettest month, with a total precipitation of 43.4 mm, and February is the driest month, with a total precipitation of 6.1 mm. During an average year, the total precipitation is 249.6 mm, split between 147.5 mm of rainfall and 102.1 mm of snowfall precipitation.

2.1.2 Faults

Two main faults are inferred in the Portage deposit area and included in the groundwater model (Golder, 2011) used to estimate groundwater inflows and brackish water upwelling to the pits during mine life. These are the Bay Zone Fault and the Second Portage Fault shown in Figure 2.2 by bright blue lines.

The Second Portage fault trends to the northwest under Central Dike and the Tailings Storage Facilities (TSF), roughly parallel to the orientation of Second Portage Lake. This fault is a potential pathway for the Central Dike Seepage.

The Bay Zone Fault trends from South to North and crosses Third Portage Lake, Goose Pit and Portage Pit. This fault is a potential pathway for water infiltration from Third Portage Lake into Goose Pit.

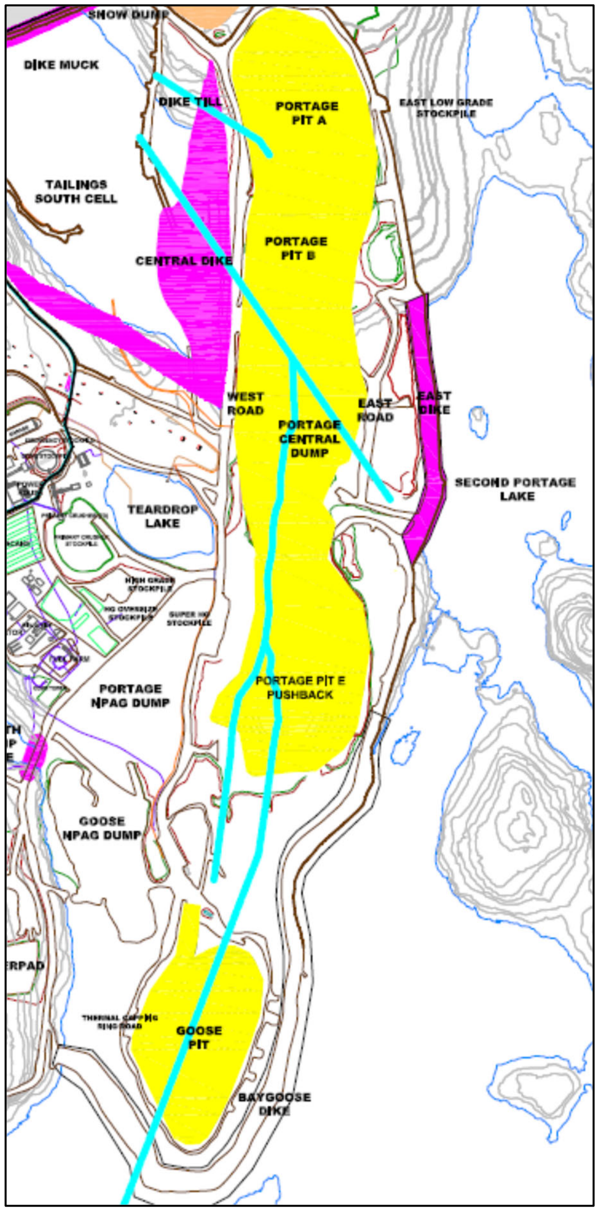


Figure 2.2: Portage Pit area – fault location

2.1.3 Permafrost

The Meadowbank Gold Mine is in an area of continuous permafrost. Lake ice thicknesses of between 1.5 m and 2.5 m have been encountered during geotechnical investigations performed mid to late spring. Taliks (areas of permanently unfrozen ground) could be expected where water depth is and/or has been greater than about 2 to 2.5 m. Based on thermal studies and measurements of ground temperatures (Golder, 2003), the depth of permafrost at site is estimated to be in the order of 450 to 550 m, depending on proximity to lakes. The depth of the active layer ranges from about 1 to 1.5 m based on depth of overburden, vegetation and organics, and proximity to lakes.

Based on ground conductivity surveys and compilation of regional data, the ground ice content is expected to be low. Locally on land, ice lenses and ice wedges are present, as indicated by ground conductivity, and by permafrost features such as frost mounds. These areas of local ground ice are generally associated with low-lying areas of poor drainage.

2.1.4 Hydrology

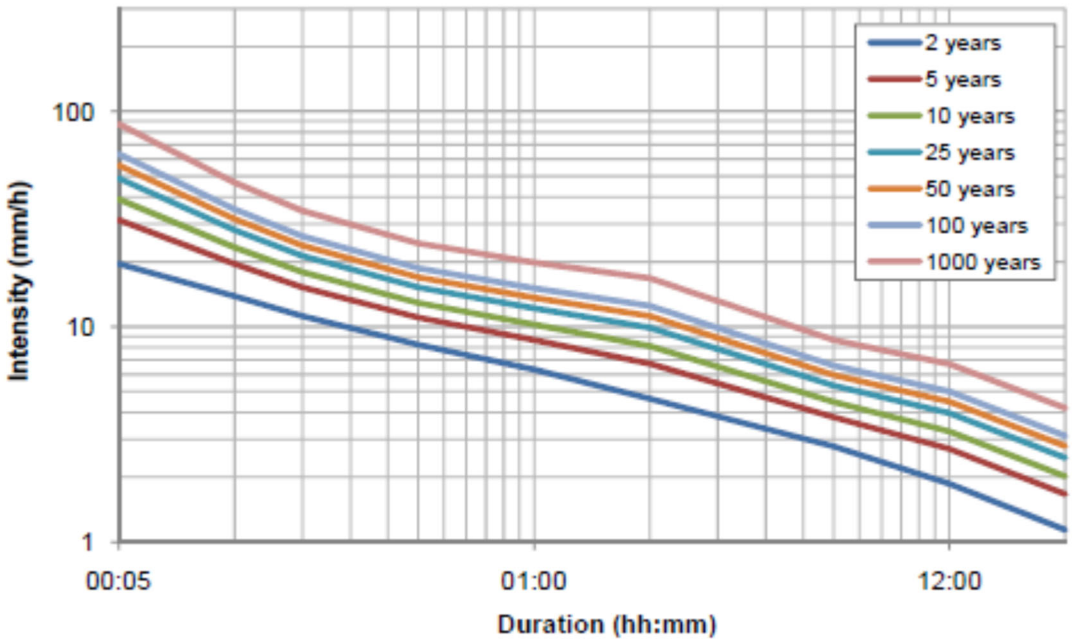
As shown above in Table 2-1, the Baker Lake A meteorological station was used to tabulate the monthly precipitation data. Using this data, SNC-Lavalin completed a Log-Pearson 3 probability distribution to determine the annual precipitation for different return periods. The results of this statistical analysis are presented in Table 2-2.

Table 2-2: Total annual precipitation for varying return periods

Return Period (years)	Precipitation (mm)
2	246
5	295
10	322
20	345
100	391

Source: SNC-Lavalin 2012 Water Management Plan (SNC, 2013)

Intensity duration frequency curves (IDF) computed by SNC-Lavalin (SNC, 2013) from the Baker Lake A meteorological station are presented in Figure 2.3. These IDF curves are for precipitations of short duration (5min-24hrs) based on data between 1987 and 2006.



Source: SNC-Lavalin Water Management Plan 2013 (SNC,2013)

Figure 2.3: Baker Lake A meteorological IDF curves

The beginning of freshet (spring period) varies from year to year however it has been observed that the winter snow accumulation (October to May) usually begins to melt at the beginning of June and continues throughout the month.

2.2 MINING OPERATION DESCRIPTION

The Meadowbank Gold Mine consists of several gold-bearing deposits within close proximity to one another. The three main deposits are Vault (Vault, Phaser and BB Phaser), Portage (South, Center and North Portage deposits), and Goose. Mining of these pits is completed and no mining activity was done in 2021 at the Meadowbank site.

The South Portage deposit is located on a peninsula and extends northward under Second Portage Lake (2PL) and southward under Third Portage Lake (3PL). The North Portage deposit is located on the northern shore of 2PL. The South, Center and North Portage deposits are mined as a single pit, termed the Portage Pit, which extends approximately 2 km in a north-south direction. Portage Pit is isolated from the Second Portage Lake by the East Dike built in 2008-2009 and the Bay-Goose Dike (Pit E) built from 2009 to 2011.

The Goose deposit lies approximately 1 km to the south of the Portage deposit, and beneath 3PL. The pit is isolated from the Second Portage Lake and the Third Portage Lake by the Bay-Goose Dike and the South Camp Dike constructed in 2009-2010.

The Vault deposit is located adjacent to Vault Lake, approximately 6 km north of the Portage deposits. The deposit is isolated from the Wally Lake by the Vault Dike built in 2013.

2.2.1 Portage Pit Area

The Portage area located between the Third Portage Lake (3PL) and Second Portage Lake (2PL) contains most of the infrastructure of the Meadowbank mine site including but not limited to the Portage Rock Storage Facility (RSF), the North and South Tailings Storage Facilities (NC & SC TSF), the mill, the camp and the Stormwater Management Pond. The East Dike was constructed to isolate the north portion of the Portage Pit from the 2PL. Subsequent renaming of the pits led to the nomenclature for each pit (A, B, C, D and E). Mining activities in the Portage area ended in October 2019. Figure 2.4 presents the evolution of the Portage Pit and Figure 2.5 shows the Portage Pit Area and surrounding infrastructures.

Inflow of water into the bottom benches of Pit C and D has been observed before these pits were backfilled. Several areas of these pits are in an inferred talik area and cross a regional fault (Golder, 2009). The water inflow is thus likely a combination of ground and surface water. Pits A and B are in the permafrost and a minimal amount of water has been observed historically. Some water inflow is observed from the Pit E south wall since 2015. This inflow is mixed with other water sources at the bottom of Pit E.

On May 17th, 2019 Agnico received approval of amendment No.3 to the Meadowbank Type A water license 2AM-MEA1526 which permitted in-pit tailings disposal to take place within the Portage Pit. Since 2020 tailings have been deposited in Pit E. An updated Tailings Deposition Plan has been prepared for the 2021 revision of the Water Management Plan. The updated deposition plan is presented in the 2021 version of the Mine Waste Rock and Tailings Management Plan. The latest life of mine exercise presents milling operations until 2026. For more information regarding in-pit tailings disposal please refer to the Waste Rock & Tailings Management Plan.

2.2.1.1 Tailings Storage Facility

The Tailings Storage Facility (TSF) is located with the Portage Pit Area and consists of the South Cell and the North Cell. These cells are delimited by tailings retaining dikes that were progressively built as capacity was required. More detailed information on the TSF can be found in the Waste Rock and Tailings Management Plan.

Stormwater Dike, constructed in 2009-2010, is an internal dike (El. 150m) that divides the TSF in the North and South Cell.

The peripheral structures of the North Cell are SD1, SD2, RF1 and RF2 built to El. 150 m from 2009 to 2010. In 2018, a North Cell Internal Structure (NCIS) was built in the northern part of the North Cell over the existing tailings (variable El. from 152 to 154 m) to increase the tailings storage capacity.

The peripheral structures of the South Cell are SD3, SD4, SD5 and Central Dike built to El. 145 m from 2012 to 2018.

The diversion ditches (East and West), located around the perimeter of the North Cell TSF and the Portage RSF, are designed to collect the non-contact water runoff from the surrounding watershed. The ditches are divided in two sections – the west and east sections, to divert non-contact water respectively to Third Portage Lake and to NP2 Lake. On the west end of the diversion ditches, an Interception Sump was constructed in 2014-2015. The objective of the interception sump is to collect runoff water from the west section of the diversion ditches and to retain it until the total suspended solids in the water have reached the criteria allowing discharge to the environment.

As part of the construction of the NCIS, a ditch was built during the summer of 2018 in the rockfill capping located downstream of the NCIS, but within the TSF footprint, in order to avoid ponding of water against the structure. One sump was also built in a natural topographic low point at the north area of the cell and upstream of RF2, within the tailings footprint areas.

2.2.1.2 Stormwater Management Pond

The Stormwater Management Pond (SMP) is a small, shallow and fishless, water body adjacent to Portage Pit (Figure 2.5). Treated sewage effluent is discharged to this pond as well as water containing hydrocarbon products. The pond also collects freshet flows within its catchment area, including most of the Primary Crusher area.

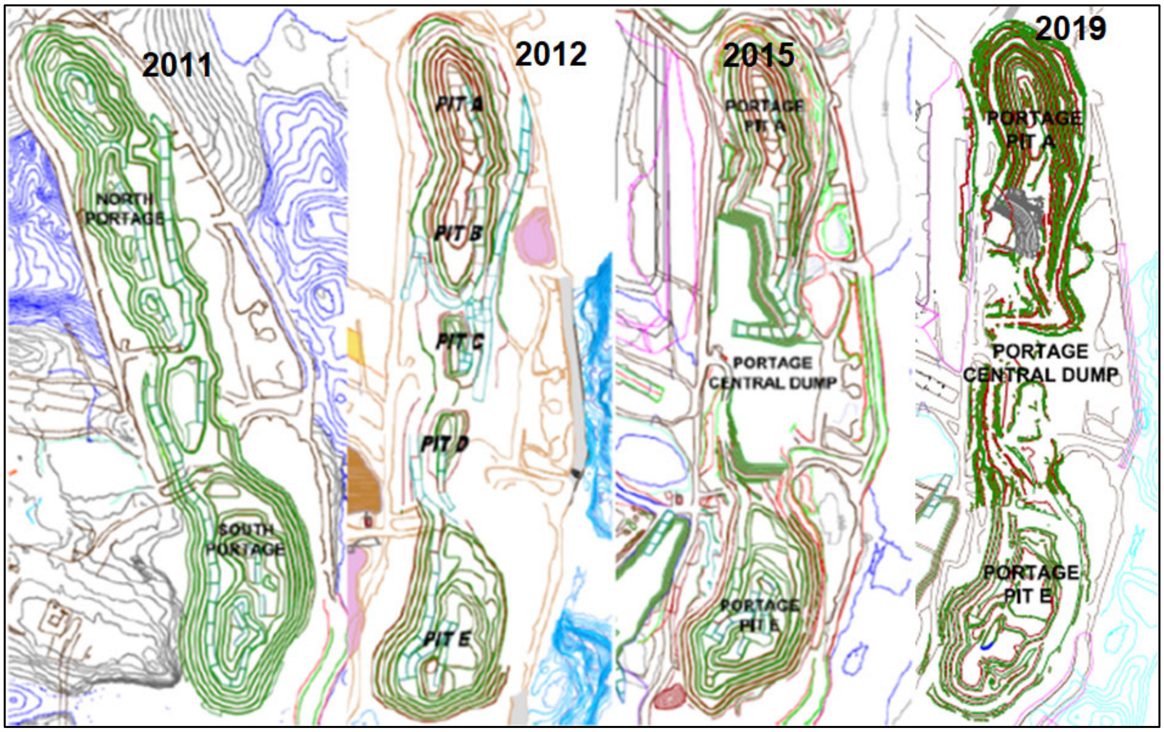


Figure 2.4: Portage Pit terminology

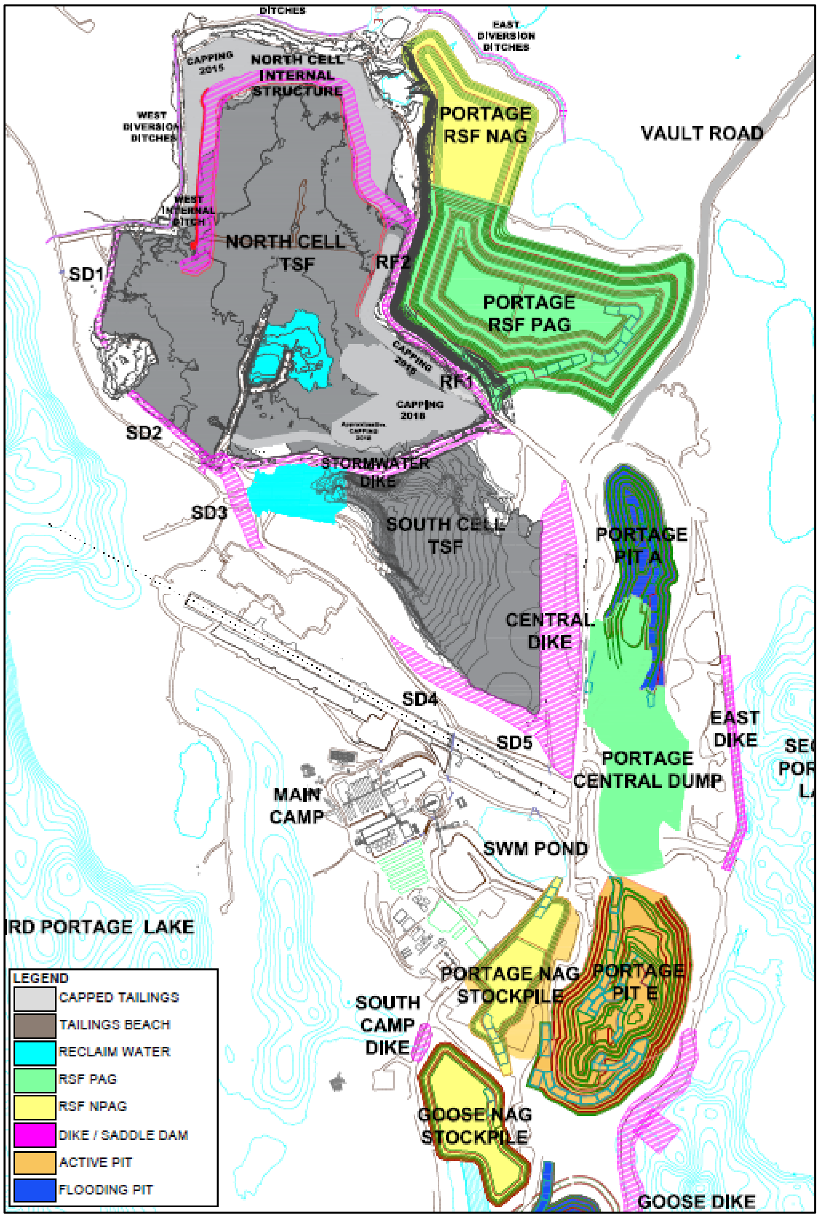


Figure 2.5: Portage Pit area map

2.2.2 Goose Pit Area

The Goose Pit area is located within the dewatered portion of 3PL. Mining in Goose Pit began in 2012 and was completed in April 2015. On May 17th, 2019 Agnico received approval of amendment No.3 to the Meadowbank Type A water license 2AM-MEA1526 which permitted in-pit tailings disposal to take place within the Goose Pit. The Goose Pit area and surrounding infrastructures are illustrated in Figure 2.6. For more information regarding in-pit tailings disposal please refer to the Waste Rock & Tailings Management Plan.

The majority of Goose Pit is located within a talik zone. Historically, the main water inflow into Goose Pit has been observed from the fractured quartzite rock formation located in the South and West wall. No major water inflow has been observed from the eastern wall associated with the iron formation type rock with small volcanic lenses. Between the quartzite and iron formation, there is a large band of ultramafic rock (soapstone).

Since mining was completed in 2015, pumping of water out of the pit has ceased and the inflows are collected in the pit as part of the natural flooding process. Since July 5th, 2019 tailings have also been deposited in the pit. Water is transferred as required from Goose Pit to Pit A. The beginning of water treatment and active flooding of the Goose Pit is planned once tailings disposal is completed.

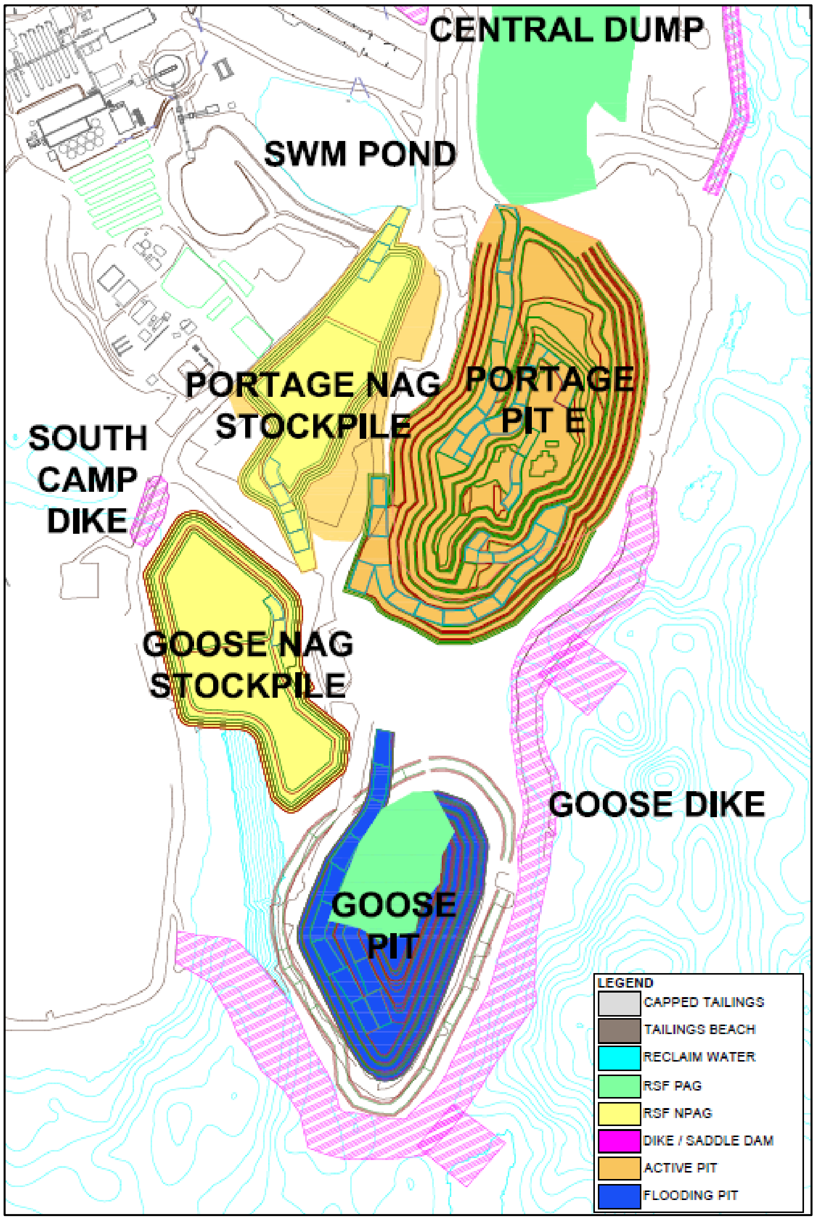


Figure 2.6: Goose Pit area map

2.2.3 Vault Pit Area

The infrastructure of the Vault Pit area includes the Vault RSF, ore and marginal pads, Vault Dike, Vault Pit, Phaser Pit, BB Phaser Pit, Vault attenuation pond and the emergency shelter. Figure 2.7 illustrates the Vault Pit area and surrounding infrastructure.

The Vault Pit, which is located under the former Vault Lake, required the construction of Vault Dike in order to isolate the mining area from Wally Lake and allow dewatering. Dewatering was undertaken in 2013 and 2014. This allowed for mining of Vault Pit and the creation of the Vault Attenuation Pond (ATP).

The Vault pit began pre-mining operations in 2013 with active mining started in 2014 and completed in March 2019. The dewatering of Phaser Lake occurred during summer 2016 in preparation for mining activity in Phaser Pit and BB Phaser Pit. Phaser Pit mining activities were completed in October 2018. BB Phaser mining began in early 2018 and was completed in June 2019.

The Vault Attenuation Pond is comprised of four internal ponds named Pond A, B C & D. These ponds promote natural settling of the suspended solids. Water levels of these ponds are measured by surveying with a GPS at the location indicated by the red crosses on Figure 2.7.

The majority of the water migrating into the pits of the Vault area has been observed to be runoff from the surrounding area during the freshet period. A localized water venue from the East wall of Vault Pit was historically above the 109 masl catch bench. During mining operations this inflow was collected in a sump located at the toe of the wall and then pumped into the Vault Attenuation Pond.

Water pumped from Vault Pit during mining operations was directed to the Vault Attenuation Pond (ATP). When required, the water was discharged into Wally Lake in accordance with the Water License and the MDMER. Agnico monitors the water quality of the Vault Attenuation Pond and discharge at sampling locations ST-25 and ST-10 respectively in accordance with the Water License. Water treatment for TSS has not been required to date to meet MDMER and Water license criteria prior to discharging in Wally Lake

Since mining operations in Vault area are completed there is no more active water management in that area. Passive reflooding is ongoing until active reflooding will begin during closure. As a result, no further discharges to Wally Lake are planned.

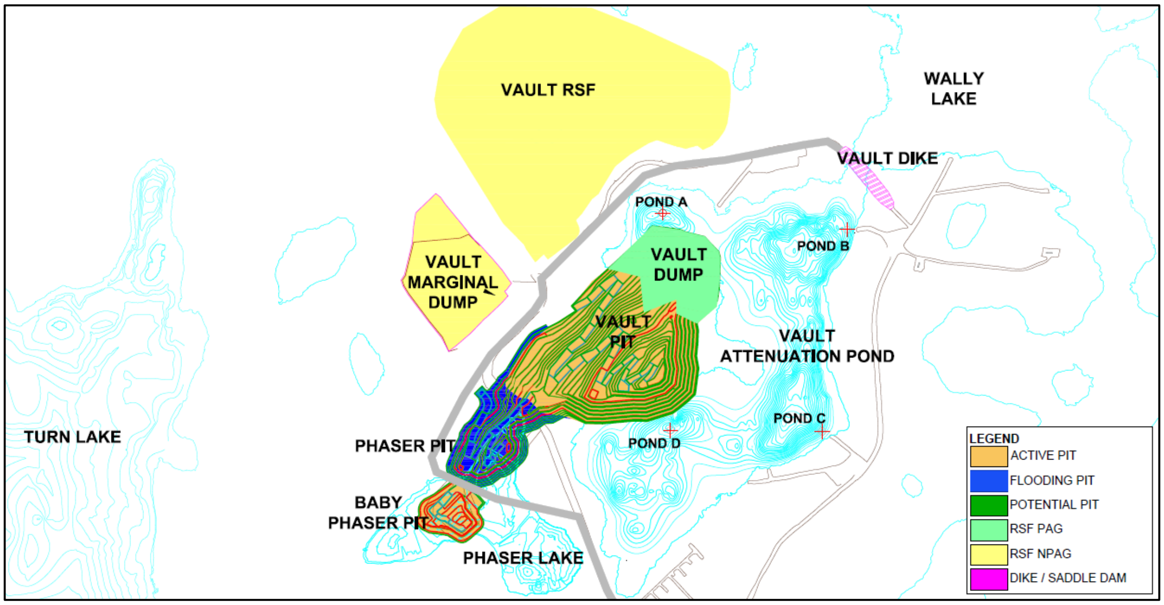


Figure 2.7: Vault Pit area map

2.3 LIFE OF MINE DESCRIPTION

The life-of-mine (LOM) is summarized in Table 3.1 of the 2021 Whale Tail Project Waste Rock Management Plan. The Meadowbank Process Plant will be operational until 2026.

3 WATER MANAGEMENT PLAN AND WATER BALANCE

3.1 WATER MANAGEMENT OBJECTIVES AND TARGETS

The water management objectives for the Meadowbank Site are:

- Keep the different water types (i.e. contact, non-contact, and freshwater) separated to the extent practical
- Control and minimize contact water through diversion and containment
- Minimize freshwater usage by reclaiming the contact water to the extent practical
- Meet discharge criteria before any site contact water is released to the downstream environment
- Reduction in freshwater intake per tonne mined
- No events of non-compliance;
    - Regulatory/Water License water quality criteria (effluent loading limits);
    - Regulatory/Water License freshwater withdrawal criteria.

The water management targets are summarized in Table 3-1. These targets are aligned with the water objectives of the Meadowbank Complex and go beyond the License limit. These targets strive to minimize risk, conserve freshwater, and minimize water usage. The 2022 targets assume continued improvements in the amount of reclaim water withdrawn from the pits to reuse in the Mill which will decrease the amount of freshwater used per tonne processed and increase the amount of water in recirculation. Higher production rates in 2022 will require slightly more fresh water withdrawn from 3PL. The lowered 2022 target for fresh water discharge (East Dike to 2PL) was determined using the improved flow measurements from East Dike.

Table 3-1: 2022 Targeted water hourly consumption per month – for Mill and Camp usage

WATER OBJECTIVE	TARGET 2021	TARGET 2022
Fresh Water Withdrawn from 3PL (Mill and Camp)	781,839 m^3	807,000 m^3
Contact Water Withdrawn from Pit (reclaim water to Mill)	2,939,048 m^3	3,508,822 m^3
Freshwater per tonne processed	0.22 m^3/t	0.20 m^3/t
Water discharge (treated)	0 m^3	0 m^3
Water discharge (fresh)	89,000 m^3 (East Dike to 2PL)	70,000 m^3 (East Dike to 2PL)

Water in recirculation (water recycled / total water use)	78.4%	81.3%

3.2 WATER MANAGEMENT STRATEGY

To achieve the above water management objectives and targets the following key strategies are implemented in the Water Management Plan.

- Two levels of catchment disturbance have been defined for the area, namely undisturbed and disturbed. Areas that have been disturbed as part of the mine development are considered disturbed catchments, while the areas left unaffected are considered undisturbed catchments.
- For the purpose of mine water management, runoff from undisturbed areas is considered non-contact water, while runoff from disturbed catchment areas is considered contact water. Surface water that is diverted around the mine facilities, or groundwater that does not emerge into a mine facility, is considered non-contact water. Any non-contact water that mixes with contact water becomes contact water.
- Conveyance and storage of contact water is controlled by either channels or containment structures (i.e., sumps and ponds). Sumps are installed in low points surrounding pits, the WRSF, and the TSF. Contact water is diverted in various sumps and water collection ponds and is conveyed to the TSF or the in-pit area.
- Contact water stored in the in-pit is reclaimed for the milling process
- East Dike seepage is discharged into Second Portage Lake (when discharge criteria is met) or otherwise sent to the in-pit area.
- The collected water will be treated prior to discharge if the water quality does not meet the discharge criteria established in the Water License 2AM-MEA1530.
- Non-treated effluent from the Vault Attenuation Pond can be discharged in Wally Lake if discharge criteria are met.
- Non-contact water is intercepted and directed away from disturbed areas by means of natural catchment boundaries and/or man-made diversion structures or pumping systems and will be allowed to flow or to be discharged to the neighboring waterbodies.
- As per the Water License 2AM-MEA1530, (Part E, Condition 10) Agnico will conduct weekly inspections of all water management structures during periods of flow. This is part of the Freshet Action Plan (Appendix D).

3.3 WATER MANAGEMENT SYSTEM AND WATER BALANCE

The water management system includes the following components below. Additional water management system components can be put in place if required to adapt effectively to the site conditions and met the water management objectives and targets.

The water management system includes the following components:

- Tailings Storage Facility (North Cell and South Cell) and associated dikes (SD1, SD2, SD3, SD4, SD5, Stormwater Dike, Central Dike, NCIS)
- In-pit tailings disposal area (Portage Pit and Goose Pit)
- Four water retention dikes (East Dike, Bay-Goose Dike, South Camp Dike, Vault Dike)
- Water diversion channel around the North Cell of the TSF (East and West Diversion)
- Seepage Management System (Mill Seepage, Central Dike Seepage, East Dike Seepage)
- Stormwater Management Pond
- Sump for WRSF and TSF contact water management
- Reclaim system to the Process Plant
- Freshwater intake and pump system
- Culverts
- Sewage treatment plant (STP)
- Pipelines and associated pump system
- Potable WTP

As per the requirements of Water License 2AM-MEA1530 (Part E, condition 7) the Water Management Plan includes a yearly updated Water Balance according to the water management strategy and the applicable LOM.

The Water Balance is presented in Appendix A of this report. In this Water Management Plan version, revisions/modifications were made to the Water Balance for optimization purposes including:

- Fresh water consumption revision;
- Total daily mill water requirements;
- Updated tailings deposition plan showing the deposition calendar for In-Pit Tailings Disposal;
- Flooding sequence and volumes updated as per the latest flooding concept
- Reclaim flow modification since modification of the system in 2021
- Update to the seepage section.

3.3.1 Fresh Water from Third Portage Lake

Fresh water from Third Portage Lake is pumped from a fresh water barge. The two primary consumers of fresh water are the mill and the camp. The amount pumped from the barge is tracked in the water balance and reported in the Annual Report as per the requirement of the Type A Water License. The freshwater withdrawal limit for Third Portage Lake as per the Type A Water License is 4,935,000 m^3 per year.

The freshwater consumed at the process plant is used as part of the milling process and is then discharged in the TSF as slurry with the tailings. Depending on the time of year, 35 – 75% of the total water volume discharged into the pits is available to be recirculated back to the process plant.

The fresh water used in the camp includes laundry facilities, cleaning, cooking, and drinking water consumption. Most of the camp fresh water is returned as sewage treatment effluent to the Stormwater Management Pond, which ultimately is transferred to the TSF or Portage Pit.

3.3.2 Tailings Deposition Strategy and Reclaim Water

The water management objective related to tailings deposition is to minimize the freshwater per tonne processed while maximizing the water in recirculation. This is achieved by reclaiming contact water from the inactive tailings deposition area while transferring water from the active deposition area to the inactive pit. More information on the tailings deposition plan can be found in the waste rock and tailings management plan.

For the remainder of mill operations, reclaim water will continue to come from the in-pit disposal pits Pit A and Pit E.

3.3.3 North Cell

Water inflows in the North Cell include run-off, water from tailings deposition, and water transfers from various sumps (Western Interception Sump, WEP, SD1-2, NCIS, ST-16). As per the design specifications, the level of the North Cell reclaim pond must be maintained with a two-meter freeboard with the peripheral water retaining structures, which are at 150.0masl elevation. This strategy requires transfers from the North Cell to the South Cell from May to October. Until the closure objectives of the cell are achieved, the strategy is to transfer the water accumulating in the North Cell to the South Cell as to minimize water accumulation in that cell. The current water management concept at closure is to have two outlets from the North Cell (one to the South Cell and one to the Western Diversion Ditch). To ease the water management of the North Cell there is an opportunity to build as a progressive closure item the outlet from the North Cell to the South Cell.

Runoff water (non-contact water) from the surrounding North Cell TSF watershed area is captured in the diversion ditches located north of the North Cell TSF. Water from the Western Diversion

Ditch is conveyed to the Western Interception Sump. From there, it is pumped into the North Cell or redirected to Third Portage Lake via the West Diversion Ditch if water quality allows.

3.3.4 South Cell

The water management strategy is to keep the water level at a minimum.

Water inflows in the South Cell include run-off, water from tailings deposition, and water transfers from the North Cell, Stormwater Management Pond, and various sumps (SD3-4-5). As per the design specifications, the level of the South Cell reclaim pond must maintain a two-meter freeboard with the peripheral impermeable structures, which are at 145.0masl elevation. Therefore, the pond must respect an elevation of 143.0masl. Water is transferred from the South Cell to Pit A and are planned to comply with the freeboard requirement and to minimize water accumulation. Water management strategies within the Water Balance reflect the tailings deposition plan presented in the 2021 Mine Waste and Tailings management plan (Agnico, 2022).

Until the closure objectives of the cell are achieved, the strategy is to transfer the water accumulating in the South Cell to Pit A. The water transfers are included in the pit flooding process.

3.3.5 Portage Pit

The Portage Pit is part of the in-pit tailings disposal facility. The water management strategy is to maximize the reclaim to the mill to maximize tailings storage capacity.

As part of the closure concept and to achieve the closure objectives, Portage Pit water will be treated, and the pit will be reflooded. The pit flooding strategy and sequence will continue to be refined until the FCRP submission based on the Water Quality Forecast completed each year (Appendix C).

The Portage Pit inflow is modelled based on measured onsite data including the Central Dike seepage water, Goose Pit transfer, pit wall inflow, runoff water, groundwater and a contribution from the East Dike seepage water (which is pumped back to Second Portage Lake when discharge criteria are met).

It is likely that the water inflow is filling up the porosity voids of the Portage Central Dump to some extent (former Pit C and Pit D).

3.3.6 Goose Pit

Goose Pit is part of the in-pit tailings disposal facility. The water management strategy is to transfer water from Goose Pit to Portage Pit as required while keeping the level of Goose Pit high enough to promote settling and reduce the amount of TSS sent to the Portage Pits.

As part of the closure concept and to achieve the closure objectives, Goose Pit water will be treated, and the pit will be reflooded. The pit flooding strategy and sequence will continue to be refined until the FCRP submission based on the Water Quality Forecast completed each year (Appendix C).

The Goose Pit natural inflow is modelled based on measured onsite data including pit wall inflow, runoff water, and groundwater. It was historically observed that the pit inflow diminishes during the winter due to the freezing of the pit walls.

3.3.7 Vault Pits Area

No active water management is occurring in the Vault Area. The current strategy to manage water is to let the area flood passively until the beginning of closure. There is the possibility of discharging water to Wally Lake using the approved discharge, but this is not currently needed as per the water balance.

As part of the closure concept and to achieve the closure objectives, Vault area will be reflooded. The pit flooding strategy and sequence will continue to be refined until the FCRP submission based on the Water Quality Forecast completed each year (Appendix C).

The Vault area natural inflow is modelled based on measured onsite data including pit inflow and runoff water.

3.3.8 Stormwater Management Pond

The Stormwater Management Pond inflow includes treated sewage effluent, runoff, and transfers from trucks containing hydrocarbon contaminated water. The pond water is transferred as required to either the South Cell or the Portage Area.

3.3.9 Mill Seepage Collection System

In November 2013, Agnico observed seepage discharging west of the access road in front of the Assay Lab shown on Figure 3.1. The source was determined to be a leak from internal containment structures within the mill. Third Portage Lake (3PL), approximately 200 m to the west, was identified as a possible sensitive receptor. Remedial measures were undertaken immediately, and this included construction of an impermeable interception/collection trench downstream of the seepage flow path. A comprehensive monitoring system was implemented which included installation of monitoring wells, a recovery well (MW 203) and a water sampling program. Repairs (sealing) were completed within the mill (containment structures) in 2014 to eliminate the source of contaminants.

Seepage collected in the trench and recovery well is pumped back to the mill to be used as process water. The pumping occurs in the warmer months beginning when freshet starts. The recovery well is pumped year-round when water is available.

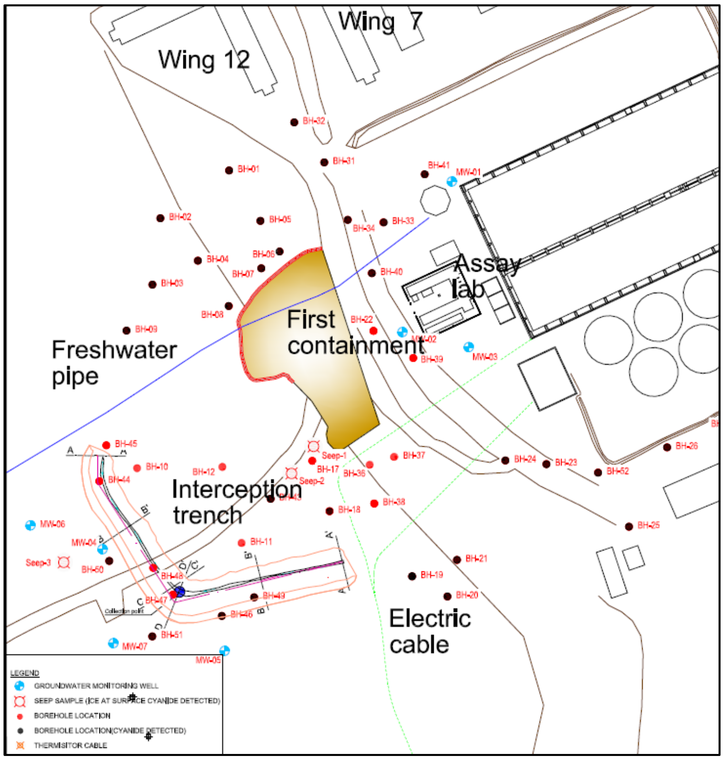


Figure 3.1: Mill seepage area

3.3.10 Portage RSF Water Management

The Portage Rock Storage Facility water management system consists of three sumps located behind the Portage waste dump to collect contact water (WEP-1, WEP-2, and ST-16). The location of these sumps is indicated on Figure 3.2. Water collected from WEP-1 and WEP-2 is pumped to the ST-16 sump and then transferred to the North Cell.

Low contaminant levels are still observed by the sampling program. The Freshet Action Plan (Appendix D) presents more information on the history, long term monitoring plan, and remedial actions for this location.

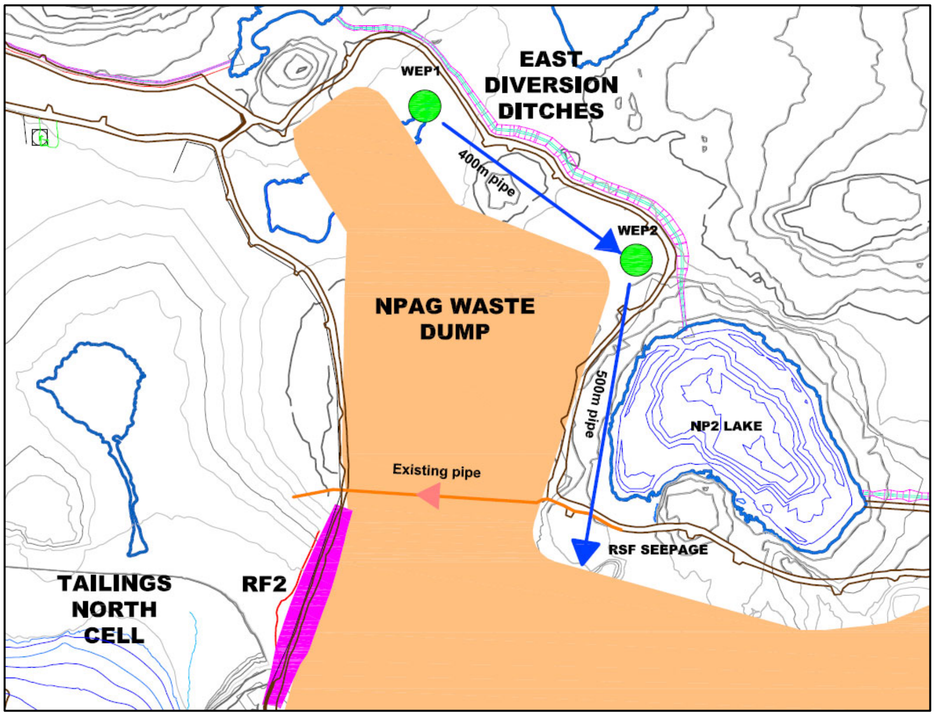


Figure 3.2: RSF seepage area

3.3.11 East Dike Seepage Collection

The East Dike seepage system collects the East Dike seepage from Second Portage Lake (2PL). The seepage is collected in two pumping stations (as illustrated in Figure 3.3) and is discharged, as a combined flow, through a diffuser, to 2PL (in accordance with the Water License and the MDMER criteria). When the discharge does not meet the discharge criteria (mainly TSS), the seepage water is pumped to the Portage Pit area (usually at freshet and after large precipitation events in summer) specifically in the Portage Central Waste Rock area, where the water flows in the rock backfill pores towards Pit B and Pit E.

At closure, this seepage water will be an inflow for the natural reflooding process.

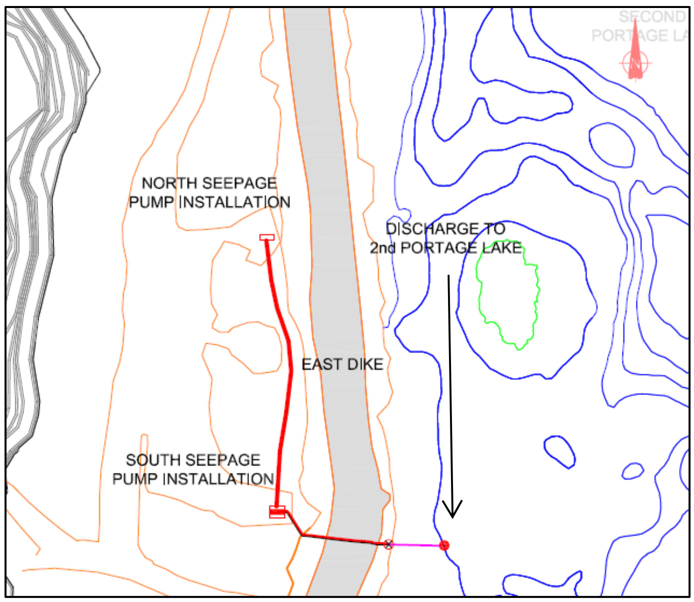


Figure 3.3: East Dike pumping system

3.3.12 Central Dike Seepage

The Central Dike downstream area collects the Central Dike seepage. The source of that seepage includes water from the TSF and a regional component. The water from Central Dike downstream is pumped to either the in-pit area or the TSF (as illustrated in Figure 3.4) as to maintain the water level at El.115 m.

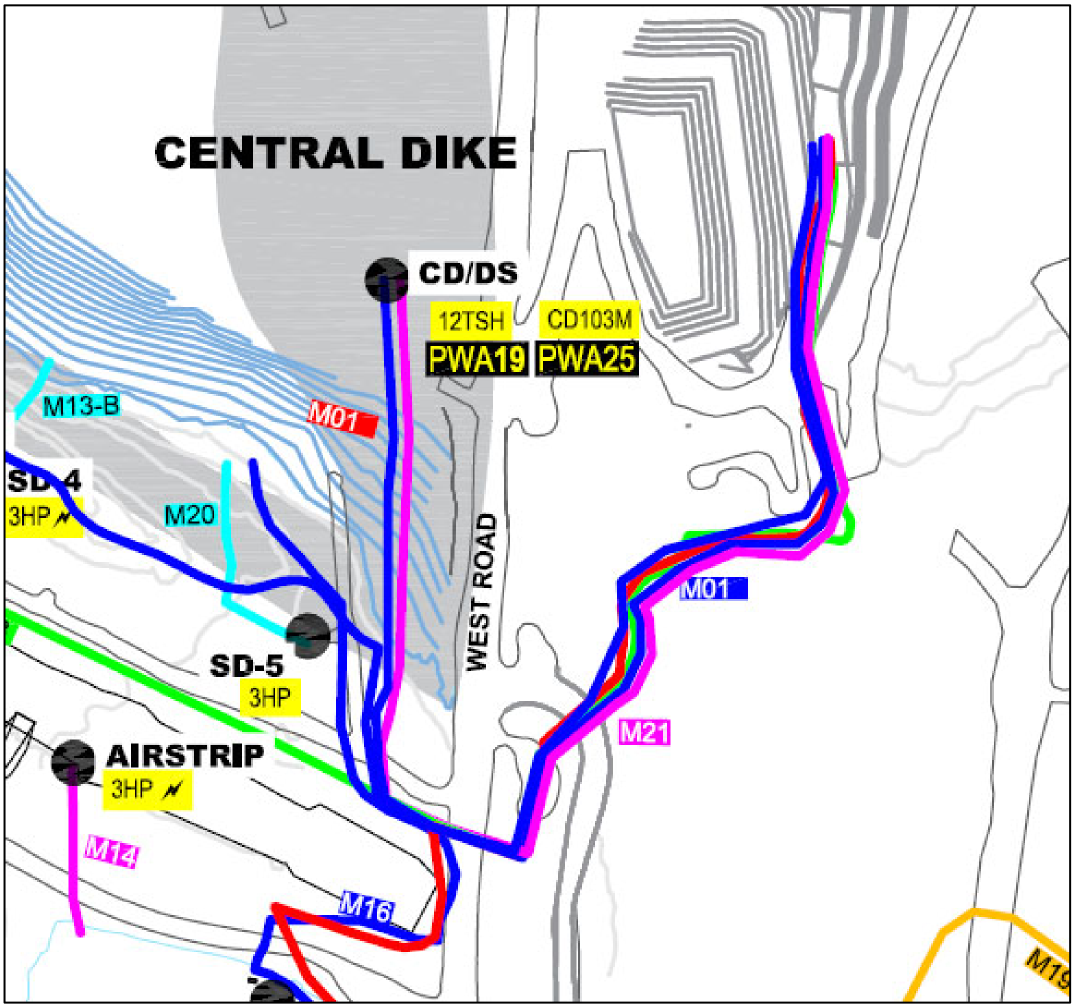


Figure 3.4: Central Dike seepage pumping system

3.4 PIT FLOODING – CLOSURE CONCEPT

This section presents the pit flooding concept for closure. Agnico will provide at least 30 days' notice to the Nunavut Water Board and Inspector prior to starting the flooding of each pit from water obtained from Third Portage Lake and Wally Lake.

As prescribed in the Nunavut Water Board Water License No. 2AM-MEA1530 (Part E, Conditions 1 and 2), the use of water from Third Portage Lake, for all purposes, including flooding of the pits, shall not exceed […] a maximum of 4,935,000 m^3 starting in 2018 through to the expiry of the License 2AM-MEA1530. The use of water from Wally Lake shall not exceed a total 4,185,000 m^3 per year starting in 2018 through the expiry of the License 2AM-MEA1530.

The reflooding concept for the Vault area includes passive flooding until the beginning of closure and then active flooding using water from Wally Lake.

The reflooding concept of the Portage and Goose area includes water from tailings deposition activity, passive flooding, water transfers from the pit, water treatment, and active flooding from Third Portage Lake. More details on the treatment strategy including the discharge location and assimilative capability of the receiver is required to advance the Portage Area flooding concept.

Updates on the pit flooding concept will be provided in the next update of the ICRP and the final pit flooding strategy will be submitted as part of the FCRP.

3.4.1 Portage and Goose Area Flooding

The Portage and Goose area will be connected as one waterbody once the area is flooded at closure (at water elevation 131.0 masl). Figure 3.5 shows a concept of the the extent of the flooded area at closure.

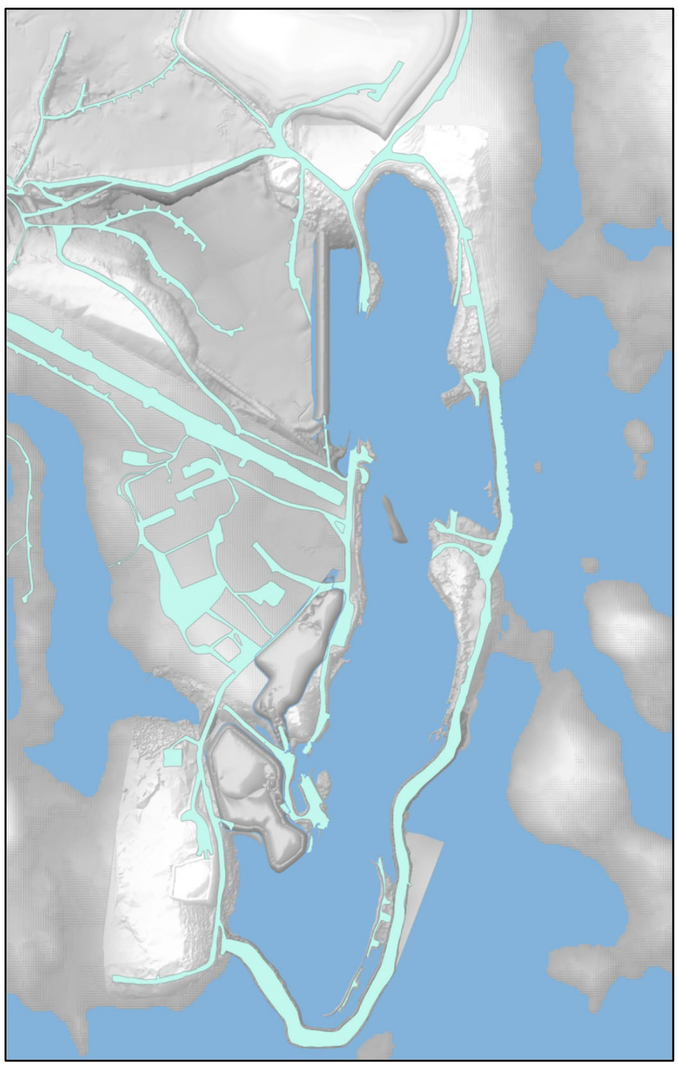


Figure 3.5: Flooded Portage and Goose area at closure

The current concept for Portage and Goose pits flooding at closure is to remove as much water as possible from each pit by using a water treatment plant (WTP) and to reflood the area using a combination of passive and active water inflow (from Third Portage Lake). This is a conservative assumption that will be revised in the ICRP and FCRP as further data become available on the water treatment design for the in-pit water. Different flooding sequence concepts are being looked at for the reflooding of the Portage and Goose Area to ensure the closure objectives will be met. The flooding sequence will be informed by the water treatment strategy that is being established. The location of the discharge, type of treatment, discharge criteria of the effluent, and quantity of water that can be discharged per year are variables that are being studied as part of the design of the closure strategy and that could impact the pit reflooding strategy. Work on the water treatment design is ongoing as per the schedule outlined in the Meadowbank Water Quality Forecasting Update Technical Note rev. 00 completed by SNC (March, 2022). An update on the pit flooding concept will be provided in the next ICRP update and the final design will be submitted as part of the FCRP.

Agnico is committed to update the Water Quality Forecast Model using up to date data on a yearly basis and to use this model to inform on the water treatment design and re-flooding sequence.

The final elevation of the reflooding will be the elevation of Third Portage Lake which is around 133.7 masl based on available data. The Bay-Goose dike and South Camp dike will be breached to allow reconnection of the area with Third Portage Lake when the closure objectives for pit flooding will have been achieved. The pit water quality will need to have stabilized and been consistently acceptable for discharge to the receiving environment. It is not planned to breach East Dike and reconnect the area with Second Portage Lake as per the current closure concept.

Details of the complete mechanical flooding system will be available in the Final Reclamation and Closure Plan and is currently involving syphon systems. Table 3-2 shows the main assumptions and data for the Portage and Goose Area flooding concept.

Table 3-2: Portage and Goose Area flooding profile

Pit Flooding Profile – Portage and Goose Area				
Year	Treated Water Volume (m^3)	Natural Inflow Water Volume (m^3)	Active Flooding Water Volume (m^3)	Volume of water in Pit (at end of year)
2027	14,016,000	617,560	0	11,760,476
2028	12,194,300	617,560	339,729	1,221,050
2029	0	617,560	4,000,000	6,610,357
2030	0	617,560	4,000,000	11,937,428
2031	0	617,560	4,000,000	17,264,499
2032	0	617,560	4,010,959	22,602,529
2033	0	617,560	4,000,000	27,929,600
2034	0	617,560	4,000,000	33,256,672
2035	0	617,560	4,000,000	38,583,743
2036	0	617,560	4,010,959	44,588,440
2037	0	617,560	4,000,000	49,915,511
2038	0	617,560	1,983,562	52,441,596
Total	**26,210,300**	**35,654,516**	**38,345,205**	**52,441,596**

3.4.2 Vault Area Flooding

The Vault Pit area is composed of many basins in the former lake (Vault Atteunation Pond) and two pits that are all linked together (Vault Pit and Phaser Pit). The flooding of the Vault Pit area will involve a combination of passive flooding (runoff) and active flooding using water from Wally Lake (while respecting the Water License limit). The concept for the reflooding system is currently including a syphon system. **Error! Reference source not found.** shows the main assumptions and data for the Vault Area flooding concept.

The final elevation of the reflooding will be 139.9masl for Phaser and Vault Lake. The Vault dike will be breached to allow reconnection of the area with Wally Lake when the closure objectives for pit flooding will have been achieved. The pit water quality will need to have stabilized and been consistently acceptable for discharge to the receiving environment.

BB Phaser Pit and Phaser Lake will be flooded exclusively from their watershed run off inflows until the target elevation of Wally is reached.

Table 3-3: Vault Area flooding profile

Pit Flooding Profile – Vault Area (Vault, Phaser, and BB Phaser Pits)				
Year	Treated Water Volume (m^3)	Natural Inflow Water Volume (m^3)	Active Flooding Water Volume (m^3)	Volume of water in Pit (at end of year)
2035	3,180,540	326,350	0	0
2036	0	326,350	2,340,317	6,671,374
2037	0	326,350	3,673,650	10,842,844
2038	0	326,350	3,673,650	14,842,844
2039	0	326,350	3,673,650	18,842,844
2040	0	326,350	3,673,650	22,842,844
2041	0	326,350	3,673,650	26,842,844
2042	0	326,350	2,218,817	29,842,844
Total	**3,180,540**	**2,610,000**	**22,927,384**	**29,842,844**

4 MEADOWBANK WATER QUALITY FORECASTING UPDATE

An updated water quality forecast report is presented in Appendix C. That update is a continuation of a series of yearly water quality modelling updates, which began in 2012, and will continue until mine closure, as per the Water License part E item 7. The purposes of the report are to identify, through a mass balance approach, the contaminants of concern during the pit flooding process, and to inform water treatment design and requirements for closure activities. This update builds on the work of previous years as new monitoring data is available. Forecasted model values of the prior years are compared with the actual sample results from the following years for model accuracy purposes.

The latest water quality forecast identified that treatment may be required for arsenic, copper, nickel, iron, total ammonia, total dissolved solids (TDS), pH, and total suspended solids (TSS) as the pit water quality may exceed water quality objectives, based on the completely mixed assumption. For the Vault area, ammonia and nitrate are the parameters of concern, but no actual or forecasted concentration exceeds the Type A Water License discharge requirements for this area.

As the aforementioned parameters may be of concern, treatment options for the pit water are being assessed as per the schedule outlined in the Meadowbank Water Quality Forecasting Update Technical Note rev. 00 (SNC, 2022). Updates on the pit flooding and water treatment concept will be provided in the next ICRP update and the final design will be submitted as part of the FCRP.

Agnico is committed to implementing the following strategy related to the water quality forecast:

1. Continue the current monthly monitoring program of all inflows and outflows of the North and South Cells TSF Pond for cyanide, a complete total and dissolved metal scan, ammonia, nitrate, fluoride, chloride, sulfates, total dissolved solids (TDS) and total suspended solids. This will provide an indication of the runoff quality that accumulated in these ponds following the end of tailings deposition in these areas.
2. Considering that deposition of the tailings is now occurring in the pits, regularly monitor pit water quality (Portage and Goose), when the site can be safely accessed, and analyze for cyanide, total and dissolved metals, ammonia, nitrate, chloride, fluoride, sulphates, total dissolved solids (TDS), and total suspended solids (TSS). This information will be useful in developing and calibrating a water quality forecast model of the pit water quality based on loadings from the mill effluent, surface runoff, and possible pit seepages. Consider measuring the conductivity of water in the pits at different depths to detect if there is any stratification occurring in the pit lakes.
3. Once Portage and Goose Pits are hydraulically connected, it is recommended to sample the water at different points in the pit area in order to evaluate the mixing efficiency over

the entire area. The samples should be taken at different depths over the entire area of the flooded pits before and after the filling season.

4. Continue to sample and analyze, as per the Water License requirement, water from the Vault Pit, Vault Attenuation Pond, Phaser Pit, and Phaser Attenuation Pond.
5. Perform a bench scale water treatment test to evaluate the contaminant removal efficiency using treatment approaches such as lime neutralization, coagulation/flocculation with aluminum sulphate or ferric sulphate, and coagulation/flocculation with proprietary coagulants designed for metal removal, as well as alternative treatment options.

5 REFERENCES

1. Agnico (2022) – 2021 Mine Waste and Tailings Management Plan
2. Environment Canada (2011a) - National Climate Data and Information Archive, http://climat.meteo.gc.ca/advanceSearch/searchHistoricData_f.html.
   14. Nunavut Water Board, Water Licence NO: 2AM-MEA0815, June 9 2008 to May 3 2015.
3. Golder Associates Ltd. (Golder), 2003. Report on Permafrost Thermal Regime Baseline Studies, Meadowbank Project. December 18, 2003.
4. Golder (2009) – Meadowbank Gold Project Updated Water Management Plan. Golder Associates Limited. July 2009.
5. SNC (2013) – Water Management Plan 2012. SNC Lavalin. March 2013.
6. SNC (2022) – Meadowbank Water Quality Forecasting Update for the 2021 Water Management Plan. March 2022.

APPENDIX A – 2021 WATER BALANCE UPDATE

	Month	Nbr days	Fresh Water 3rd Portage Lake				Reclaim Tailings Water						Mill							
			Fresh Water Flow (m^3/h)	Total Fresh Water Volume (m^3)	Total Camp Water Volume (m^3)	Total Mill Fresh Water Volume (m^3)	Reclaim Water Flow (m^3/h)	Total Reclaim Water Volume (m^3)	Enter 1 for the origin				Mill Throughput (t)	Water Content (m^3)	Mill Process Water (m^3)	Enter 1 for the destination				
									NC	SC	PIT E	PIT A				NC	SC	GOOSE	PIT E	PIT A
Q1	January-21	31	169	125,901	2,639	123,262	319	237,647				1	321,759	4,376	365,285				1	
	February-21	28	130	87,438	2,334	85,104	306	205,445				1	290,338	3,310	293,859				1	
	March-21	31	118	87,890	2,376	85,514	303	225,082				1	311,487	3,725	314,321				1	
Q2	April-21	30	108	77,671	2,297	75,374	238	171,699				1	246,082	2,083	249,156				1	
	May-21	31	132	98,397	2,536	95,861	279	207,375				1	313,291	3,310	306,546				1	
	June-21	30	114	81,913	2,408	79,505	330	237,348				1	321,462	3,561	320,414				1	
Q3	July-21	31	162	120,687	2,665	118,022	262	195,016				1	313,418	3,310	316,348	1				
	August-21	31	131	97,785	2,721	95,064	324	240,812				1	331,671	3,980	339,856	0.61			0.39	
	September-21	30	129	93,228	3,000	90,228	355	255,378			0	1	326,619	4,573	350,179				1	
Q4	October-21	31	150	111,367	2895	108,472	264	196,739			0.8285	0.1715	247,126	3,424	308,635				1	
	November-21	30	76	54,695	2942	54,695	409	294,348			0.864	0.136	332,683	3,695	352,738				1	
	December-21	31	57	42,371	2648	42,371	366	268,664			0	1	214,589	3,310	314,345				1	
2021 AVERAGES & TOTALS			**123**	**1,079,342**	**31461**	**1,053,471**		**2,735,553**					**3,570,525**	**42,657**	**3,831,682**					
Q1	January-22	31	67	52,266	2500	49,766	361	266,541			0	1	207,804	1,927	318,234				1	
	February-22	28	100	67,250	2660	64,590	435	292,538			1		336,250	3,564	360,692				1	
	March-22	31	90	67,250	2945	64,305	393	292,538			1		336,250	4,035	360,878				1	
Q2	April-22	30	93	67,250	2850	64,400	406	292,538			1		336,250	2,858	359,796				1	
	May-22	31	90	67,250	2945	64,305	393	292,538			1		336,250	3,060	359,902				1	
	June-22	30	93	67,250	2850	64,400	406	292,538			1		336,250	8,406	365,344				1	
Q3	July-22	31	90	67,250	2945	64,305	393	292,538			1		336,250	7,398	364,240				1	
	August-22	31	90	67,250	2945	64,305	393	292,538			1		336,250	4,035	360,878				1	
	September-22	30	93	67,250	2850	64,400	406	292,538			1		336,250	4,708	361,645				1	
Q4	October-22	31	90	67,250	2945	64,305	393	292,538			1		336,250	4,977	361,819				1	
	November-22	30	93	67,250	2850	64,400	406	292,538			1		336,250	4,977	361,914				1	
	December-22	31	90	67,250	2945	64,305	393	292,538			1		336,250	4,977	361,819				1	
2022 AVERAGES & TOTALS			**90**	**792,016**	**34230**	**757,786**		**3,484,454**					**3,906,554**	**54,920**	**4,297,160**					
Q1	January-23	31	95	70,367	2945	67,422	411	306,095			1		351,833	4,785	378,302				1	
	February-23	28	105	70,367	2660	67,707	455	306,095			1		351,833	3,729	377,531				1	
	March-23	31	95	70,367	2945	67,422	411	306,095			1		351,833	4,222	377,739				1	
Q2	April-23	30	98	70,367	2850	67,517	425	306,095			1		351,833	2,991	376,602				1	
	May-23	31	95	70,367	2945	67,422	411	306,095			1		351,833	3,202	376,718				1	
	June-23	30	98	70,367	2850	67,517	425	306,095			1		351,833	8,796	382,408				1	
Q3	July-23	31	95	70,367	2945	67,422	411	306,095			1		351,833	7,740	381,257				1	
	August-23	31	95	70,367	2945	67,422	411	306,095			1		351,833	4,222	377,739				1	
	September-23	30	98	70,367	2850	67,517	425	306,095			1		351,833	4,926	378,537				1	
Q4	October-23	31	95	70,367	2945	67,422	411	306,095			1		351,833	5,207	378,724				1	
	November-23	30	98	70,367	2850	67,517	425	306,095			1		351,833	5,207	378,819				1	
	December-23	31	95	70,367	2945	67,422	411	306,095			1		351,833	5,207	378,724				1	
2023 AVERAGES & TOTALS			**96**	**844,400**	**34675**	**809,725**		**3,673,140**					**4,222,000**	**60,234**	**4,543,099**					
Q1	January-24	31	95	70,917	2945	67,972	415	308,488			1		354,583	4,822	381,282				1	
	February-24	29	102	70,917	2755	68,162	443	308,488			1		354,583	3,759	380,408				1	

	Month	Nbr days	Fresh Water 3rd Portage Lake				Reclaim Tailings Water						Mill							
			Fresh Water Flow (m^3/h)	Total Fresh Water Volume (m^3)	Total Camp Water Volume (m^3)	Total Mill Fresh Water Volume (m^3)	Reclaim Water Flow (m^3/h)	Total Reclaim Water Volume (m^3)	Enter 1 for the origin				Mill Throughput (t)	Water Content (m^3)	Mill Process Water (m^3)	Enter 1 for the destination				
									NC	SC	PIT E	PIT A				NC	SC	GOOSE	PIT E	PIT A
	March-24	31	95	70,917	2945	67,972	415	308,488			1		354,583	4,255	380,714				1	
Q2	April-24	30	98	70,917	2850	68,067	428	308,488			1		354,583	3,014	379,568				1	
	May-24	31	95	70,917	2945	67,972	415	308,488			1		354,583	3,227	379,686				1	
	June-24	30	98	70,917	2850	68,067	428	308,488			1		354,583	8,865	385,419				1	
Q3	July-24	31	95	70,917	2945	67,972	415	308,488			1		354,583	7,801	384,260				1	
	August-24	31	95	70,917	2945	67,972	415	308,488			1		354,583	4,255	380,714				1	
	September-24	30	98	70,917	2850	68,067	428	308,488			1		354,583	4,964	381,518				1	
Q4	October-24	31	95	70,917	2945	67,972	415	308,488			1		354,583	5,248	381,707				1	
	November-24	30	98	70,917	2850	68,067	428	308,488			1		354,583	5,248	381,802				1	
	December-24	31	95	70,917	2945	67,972	415	308,488			1		354,583	5,248	381,707				1	
2024 AVERAGES & TOTALS			**97**	**851,000**	**34770**	**816,230**		**3,701,850**					**4,255,000**	**60,705**	**4,578,785**					
Q1	January-25	31	96	71,083	2945	68,138	416	309,213			1		355,417	4,834	382,185				1	
	February-25	28	106	71,083	2660	68,423	460	309,213			1		355,417	3,767	381,403				1	
	March-25	31	96	71,083	2945	68,138	416	309,213			1		355,417	4,265	381,616				1	
Q2	April-25	30	99	71,083	2850	68,233	429	309,213			1		355,417	3,021	380,467				1	
	May-25	31	96	71,083	2945	68,138	416	309,213			1		355,417	3,234	380,585				1	
	June-25	30	99	71,083	2850	68,233	429	309,213			1		355,417	8,885	386,331				1	
Q3	July-25	31	96	71,083	2945	68,138	416	309,213			1		355,417	7,819	385,170				1	
	August-25	31	96	71,083	2945	68,138	416	309,213			1		355,417	4,265	381,616				1	
	September-25	30	99	71,083	2850	68,233	429	309,213			1		355,417	4,976	382,422				1	
Q4	October-25	31	96	71,083	2945	68,138	416	309,213			1		355,417	5,260	382,611				1	
	November-25	30	99	71,083	2850	68,233	429	309,213			1		355,417	5,260	382,706				1	
	December-25	31	96	71,083	2945	68,138	416	309,213			1		355,417	5,260	382,611				1	
2025 AVERAGES & TOTALS			**97**	**853,000**	**34675**	**818,325**		**3,710,550**					**4,265,000**	**60,847**	**4,589,722**					
Q1	January-26	31	55	40,877	2945	37,932	239	177,814			1		204,384	2,780	218,525				1	
	February-26	28	61	40,877	2660	38,217	265	177,814			1		204,384	2,166	218,197				1	
	March-26	31	55	40,877	2945	37,932	239	177,814			1		204,384	2,453	218,198				1	
Q2	April-26	30	57	40,877	2850	38,027	247	177,814			1		204,384	1,737	217,578				1	
	May-26	31	55	40,877	2945	37,932	239	177,814			1		204,384	1,860	217,606				1	
	June-26	30	57	40,877	2850	38,027	247	177,814			1		204,384	5,110	220,950				1	
Q3	July-26	31	55	40,877	2945	37,932	239	177,814			1		204,384	4,496	220,242				1	
	August-26	31	55	40,877	2945	37,932	239	177,814			1		204,384	2,453	218,198				1	
	September-26	30	57	40,877	2850	38,027	247	177,814			1		204,384	2,861	218,702				1	
Q4	October-26	31	55	40,877	2945	37,932	239	177,814			1		204,384	3,025	218,770				1	
	November-26	30	57	40,877	2850	38,027	247	177,814			1		204,384	3,025	218,865				1	
	December-26	31	55	40,877	2945	37,932	239	177,814			1		204,384	3,025	218,770				1	
2026 AVERAGES & TOTALS			**56**	**490,521**	**34675**	**455,846**	**244**	**2,133,766**					**2,452,605**	**34,990**	**2,624,603**					
Q1	January-27	31	0	0	2945	-2,945	0	0					0	0	-2,945					
	February-27	28	0	0	2660	-2,660	0	0					0	0	-2,660					
	March-27	31	0	0	2945	-2,945	0	0					0	0	-2,945					
	April-27	30	0	0	2850	-2,850	0	0					0	0	-2,850					

	Month	Nbr days	Fresh Water 3rd Portage Lake				Reclaim Tailings Water						Mill							
			Fresh Water Flow (m^3/h)	Total Fresh Water Volume (m^3)	Total Camp Water Volume (m^3)	Total Mill Fresh Water Volume (m^3)	Reclaim Water Flow (m^3/h)	Total Reclaim Water Volume (m^3)	Enter 1 for the origin: NC	SC	PIT E	PIT A	Mill Throughput (t)	Water Content (m^3)	Mill Process Water (m^3)	Enter 1 for the destination: NC	SC	GOOSE	PIT E	PIT A
Q2	May-27	31	0	0	2945	-2,945	0	0					0	0	-2,945					
	June-27	30	0	0	2850	-2,850	0	0					0	0	-2,850					
Q3	July-27	31	0	0	2945	-2,945	0	0					0	0	-2,945					
	August-27	31	4	2,976	2945	31	0	0					0	0	31					
	September-27	30	4	2,880	2850	30	0	0					0	0	30					
Q4	October-27	31	4	2,976	2945	31	0	0					0	0	31					
	November-27	30	4	2,880	2850	30	0	0					0	0	30					
	December-27	31	4	2,976	2945	31	0	0					0	0	31					
2027 AVERAGES & TOTALS			2	14,688	34675	-19,987	0	0					0	0	-19,987					
Q1	January-28	31	4	2,945	2945	0	0	0					0	0	0					
	February-28	29	4	2,755	2755	0	0	0					0	0	0					
	March-28	31	4	2,945	2945	0	0	0					0	0	0					
Q2	April-28	30	4	2,850	2850	0	0	0					0	0	0					
	May-28	31	4	2,945	2945	0	0	0					0	0	0					
	June-28	30	4	2,850	2850	0	0	0					0	0	0					
Q3	July-28	31	4	2,945	2945	0	0	0					0	0	0					
	August-28	31	4	2,945	2945	0	0	0					0	0	0					
	September-28	30	4	2,850	2850	0	0	0					0	0	0					
Q4	October-28	31	4	2,945	2945	0	0	0					0	0	0					
	November-28	30	4	2,850	2850	0	0	0					0	0	0					
	December-28	31	4	2,945	2945	0	0	0					0	0	0					
2028 AVERAGES & TOTALS			4	34,770	34770	0	0	0					0	0	0					
Q1	January-29	31	4	2,945	2945	0	0	0					0	0	0					
	February-29	28	4	2,660	2660	0	0	0					0	0	0					
	March-29	31	4	2,945	2945	0	0	0					0	0	0					
Q2	April-29	30	4	2,850	2850	0	0	0					0	0	0					
	May-29	31	4	2,945	2945	0	0	0					0	0	0					
	June-29	30	4	2,850	2850	0	0	0					0	0	0					
Q3	July-29	31	4	2,945	2945	0	0	0					0	0	0					
	August-29	31	4	2,945	2945	0	0	0					0	0	0					
	September-29	30	4	2,850	2850	0	0	0					0	0	0					
Q4	October-29	31	4	2,945	2945	0	0	0					0	0	0					
	November-29	30	4	2,850	2850	0	0	0					0	0	0					
	December-29	31	4	2,945	2945	0	0	0					0	0	0					
2029 AVERAGES & TOTALS			4	34,675	34675	0	0	0					0	0	0					
Q1	January-30	31	4	2,945	2945	0	0	0					0	0	0					
	February-30	28	4	2,660	2660	0	0	0					0	0	0					
	March-30	31	4	2,945	2945	0	0	0					0	0	0					
Q2	April-30	30	4	2,850	2850	0	0	0					0	0	0					
	May-30	31	4	2,945	2945	0	0	0					0	0	0					
	June-30	30	4	2,850	2850	0	0	0					0	0	0					

	Month	Nbr days	Fresh Water 3rd Portage Lake				Reclaim Tailings Water						Mill							
			Fresh Water Flow (m^3/h)	Total Fresh Water Volume (m^3)	Total Camp Water Volume (m^3)	Total Mill Fresh Water Volume (m^3)	Reclaim Water Flow (m^3/h)	Total Reclaim Water Volume (m^3)	Enter 1 for the origin				Mill Throughput (t)	Water Content (m^3)	Mill Process Water (m^3)	Enter 1 for the destination				
									NC	SC	PIT E	PIT A				NC	SC	GOOSE	PIT E	PIT A
Q3	July-30	31	4	2,945	2945	0	0	0					0	0	0					
	August-30	31	4	2,945	2945	0	0	0					0	0	0					
	September-30	30	4	2,850	2850	0	0	0					0	0	0					
Q4	October-30	31	4	2,945	2945	0	0	0					0	0	0					
	November-30	30	4	2,850	2850	0	0	0					0	0	0					
	December-30	31	4	2,945	2945	0	0	0					0	0	0					
2030 AVERAGES & TOTALS			4	34,675	34675	0	0	0					0	0	0					
Q1	January-31	31	4	2,945	2945	0	0	0					0	0	0					
	February-31	28	4	2,660	2660	0	0	0					0	0	0					
	March-31	31	4	2,945	2945	0	0	0					0	0	0					
Q2	April-31	30	4	2,850	2850	0	0	0					0	0	0					
	May-31	31	4	2,945	2945	0	0	0					0	0	0					
	June-31	30	4	2,850	2850	0	0	0					0	0	0					
Q3	July-31	31	4	2,945	2945	0	0	0					0	0	0					
	August-31	31	4	2,945	2945	0	0	0					0	0	0					
	September-31	30	4	2,850	2850	0	0	0					0	0	0					
Q4	October-31	31	4	2,945	2945	0	0	0					0	0	0					
	November-31	30	4	2,850	2850	0	0	0					0	0	0					
	December-31	31	4	2,945	2945	0	0	0					0	0	0					
2031 AVERAGES & TOTALS			4	34,675	34675	0	0	0					0	0	0					
Q1	January-32	31	4	2,945	2945	0	0	0					0	0	0					
	February-32	29	4	2,755	2755	0	0	0					0	0	0					
	March-32	31	4	2,945	2945	0	0	0					0	0	0					
Q2	April-32	30	4	2,850	2850	0	0	0					0	0	0					
	May-32	31	4	2,945	2945	0	0	0					0	0	0					
	June-32	30	4	2,850	2850	0	0	0					0	0	0					
Q3	July-32	31	4	2,945	2945	0	0	0					0	0	0					
	August-32	31	4	2,945	2945	0	0	0					0	0	0					
	September-32	30	4	2,850	2850	0	0	0					0	0	0					
Q4	October-32	31	4	2,945	2945	0	0	0					0	0	0					
	November-32	30	4	2,850	2850	0	0	0					0	0	0					
	December-32	31	4	2,945	2945	0	0	0					0	0	0					
2032 AVERAGES & TOTALS			4	34,770	34770	0	0	0					0	0	0					
Q1	January-33	31	4	2,945	2945	0	0	0					0	0	0					
	February-33	28	4	2,660	2660	0	0	0					0	0	0					
	March-33	31	4	2,945	2945	0	0	0					0	0	0					
Q2	April-33	30	4	2,850	2850	0	0	0					0	0	0					
	May-33	31	4	2,945	2945	0	0	0					0	0	0					
	June-33	30	4	2,850	2850	0	0	0					0	0	0					
Q3	July-33	31	4	2,945	2945	0	0	0					0	0	0					
	August-33	31	4	2,945	2945	0	0	0					0	0	0					

	Month	Nbr days	Fresh Water 3rd Portage Lake				Reclaim Tailings Water						Mill							
			Fresh Water Flow (m^3/h)	Total Fresh Water Volume (m^3)	Total Camp Water Volume (m^3)	Total Mill Fresh Water Volume (m^3)	Reclaim Water Flow (m^3/h)	Total Reclaim Water Volume (m^3)	Enter 1 for the origin				Mill Throughput (t)	Water Content (m^3)	Mill Process Water (m^3)	Enter 1 for the destination				
									NC	SC	PIT E	PIT A				NC	SC	GOOSE	PIT E	PIT A
	September-33	30	4	2,850	2850	0	0	0					0	0	0					
Q4	October-33	31	4	2,945	2945	0	0	0					0	0	0					
	November-33	30	4	2,850	2850	0	0	0					0	0	0					
	December-33	31	4	2,945	2945	0	0	0					0	0	0					
2033 AVERAGES & TOTALS			4	34,675	34675	0	0	0					0	0	0					
Q1	January-34	31	4	2,945	2945	0	0	0					0	0	0					
	February-34	28	4	2,660	2660	0	0	0					0	0	0					
	March-34	31	4	2,945	2945	0	0	0					0	0	0					
Q2	April-34	30	4	2,850	2850	0	0	0					0	0	0					
	May-34	31	4	2,945	2945	0	0	0					0	0	0					
	June-34	30	4	2,850	2850	0	0	0					0	0	0					
Q3	July-34	31	4	2,945	2945	0	0	0					0	0	0					
	August-34	31	4	2,945	2945	0	0	0					0	0	0					
	September-34	30	4	2,850	2850	0	0	0					0	0	0					
Q4	October-34	31	4	2,945	2945	0	0	0					0	0	0					
	November-34	30	4	2,850	2850	0	0	0					0	0	0					
	December-34	31	4	2,945	2945	0	0	0					0	0	0					
2034 AVERAGES & TOTALS			4	34,675	34675	0	0	0					0	0	0					
Q1	January-35	31	4	2,945	2945	0	0	0					0	0	0					
	February-35	28	4	2,660	2660	0	0	0					0	0	0					
	March-35	31	4	2,945	2945	0	0	0					0	0	0					
Q2	April-35	30	4	2,850	2850	0	0	0					0	0	0					
	May-35	31	4	2,945	2945	0	0	0					0	0	0					
	June-35	30	4	2,850	2850	0	0	0					0	0	0					
Q3	July-35	31	4	2,945	2945	0	0	0					0	0	0					
	August-35	31	4	2,945	2945	0	0	0					0	0	0					
	September-35	30	4	2,850	2850	0	0	0					0	0	0					
Q4	October-35	31	4	2,945	2945	0	0	0					0	0	0					
	November-35	30	4	2,850	2850	0	0	0					0	0	0					
	December-35	31	4	2,945	2945	0	0	0					0	0	0					
2035 AVERAGES & TOTALS			4	34,675	34675	0	0	0					0	0	0					
Q1	January-36	31	4	2,945	2945	0	0	0					0	0	0					
	February-36	29	4	2,755	2755	0	0	0					0	0	0					
	March-36	31	4	2,945	2945	0	0	0					0	0	0					
Q2	April-36	30	4	2,850	2850	0	0	0					0	0	0					
	May-36	31	4	2,945	2945	0	0	0					0	0	0					
	June-36	30	4	2,850	2850	0	0	0					0	0	0					
Q3	July-36	31	4	2,945	2945	0	0	0					0	0	0					
	August-36	31	4	2,945	2945	0	0	0					0	0	0					
	September-36	30	4	2,850	2850	0	0	0					0	0	0					
	October-36	31	4	2,945	2945	0	0	0					0	0	0					

	Month	Nbr days	Fresh Water 3rd Portage Lake				Reclaim Tailings Water						Mill							
			Fresh Water Flow (m^3/h)	Total Fresh Water Volume (m^3)	Total Camp Water Volume (m^3)	Total Mill Fresh Water Volume (m^3)	Reclaim Water Flow (m^3/h)	Total Reclaim Water Volume (m^3)	Enter 1 for the origin				Mill Throughput (t)	Water Content (m^3)	Mill Process Water (m^3)	Enter 1 for the destination				
									NC	SC	PIT E	PIT A				NC	SC	GOOSE	PIT E	PIT A
Q4	November-36	30	4	2,850	2850	0	0	0					0	0	0					
	December-36	31	4	2,945	2945	0	0	0					0	0	0					
2036 AVERAGES & TOTALS			**4**	**34,770**	**34770**	**0**	**0**	**0**					**0**	**0**	**0**					

	Month	Nbr days		North Cell				South Cell							
			Mill Throughput cumulative (t)	Runoff Volume (m^3)	Total Free Water Volume (m^3)	Cummulative Tailings Deposited (m^3)	Cumulative Volume (Tailings + Pond) (m^3)	Runoff Volume (m^3)	Total Free Water Volume (m^3)	Cummulative Tailings Deposited (m^3)	Cumulative Volume (Tailings + Pond) (m^3)	Pit A Inflow (m^3)	Volume Pumped from 3rd Portage (m^3)	INFLOW	OUTFLOW
Q1	January-21	31	34,626,782	0	37,750	14,909,319	14,993,209	0	-3,694	11,172,268	11,166,914	-57,763		-38,607	237,647
	February-21	28	34,917,120	0	37,750	14,909,319	14,993,209	0	-3,319	11,172,268	11,166,914	-175,249		-151,944	205,445
	March-21	31	35,228,607	0	37,750	14,909,319	14,993,209	0	-2,784	11,172,268	11,166,914	-122,926		-106,653	225,082
Q2	April-21	30	35,474,689	0	37,750	14,909,319	14,993,209	0	-2,623	11,172,268	11,166,914	261,831		280,813	171,699
	May-21	31	35,787,980	0	38,482	14,909,319	14,994,834	0	5,262	11,172,268	11,177,530	2,480		564,383	207,375
	June-21	30	36,109,442	76665	83,890	14,909,319	14,993,209	40,982	158,730	11,172,268	11,330,998	-48,953		481,783	237,348
Q3	July-21	31	36,422,860	7700	321,151	15,110,228	15,431,379	-10,260	65,357	11,172,268	11,237,625	184,819		466,000	195,016
	August-21	31	36,754,531	42862	476,635	15,239,920	15,716,555	8,951	88,151	11,172,268	11,260,419	511,699		688,989	240,812
	September-21	30	37,081,150	21238	476,635	15,239,920	15,716,555	5,933	134,880	11,172,268	11,307,148	16,245		126,221	255,378
Q4	October-21	31	37,328,276	-13	395,607	15,239,920	15,716,555	-22	229,520	11,172,268	11,413,868	57,459		264,946	33,741
	November-21	30	37,660,959	0	200,187	15,239,920	15,716,555	0	213,330	11,172,268	11,417,475	63,526		224,635	40,031
	December-21	31	37,875,548	0	166,822	15,239,920	15,716,555	0	196,166	11,172,268	11,417,475	5,343		104,562	268,664
2021 AVERAGES & TOTALS				148451				45,584				698512	0		
Q1	January-22	31	38,083,352	0	214,486	15,239,920	15,716,555	0	172,442	11,172,268	11,422,184	2,480		75,048	266,541
	February-22	28	38,419,602	0	214,486	15,239,920	15,716,555	0	154,948	11,172,268	11,422,184	2,240		183,680	0
	March-22	31	38,755,852	0	214,486	15,239,920	15,716,555	0	129,956	11,172,268	11,422,184	2,480		203,360	0
Q2	April-22	30	39,092,102	0	214,486	15,239,920	15,716,555	0	122,459	11,172,268	11,422,184	2,400		211,200	0
	May-22	31	39,428,352	0	215,217	15,239,920	15,718,180	0	235,815	11,172,268	11,408,083	2,480		320,877	0
	June-22	30	39,764,602	76665	476,635	15,239,920	15,716,555	42,909	421,679	11,172,268	11,593,947	53,245		439,668	0
Q3	July-22	31	40,100,852	7700	476,635	15,239,920	15,716,555	11,465	258,535	11,172,268	11,430,803	7,564		507,642	11,024
	August-22	31	40,437,102	42862	476,635	15,239,920	15,716,555	30,938	265,324	11,172,268	11,437,591	10,720		393,932	33,007
	September-22	30	40,773,352	21238	476,635	15,239,920	15,716,555	14,584	284,609	11,172,268	11,456,877	28,085		316,179	57,838
Q4	October-22	31	41,109,602	-13	395,607	15,239,920	15,716,555	0	270,366	11,172,268	11,456,864	2,480		218,240	75,884
	November-22	30	41,445,852	0	200,187	15,239,920	15,716,555	0	247,599	11,172,268	11,456,864	2,400		196,800	88,801
	December-22	31	41,782,102	0	166,822	15,239,920	15,716,555	0	227,677	11,172,268	11,456,864	2,480		203,360	95,919
2022 AVERAGES & TOTALS				148451				99,896				119054	0		
Q1	January-23	31	42,133,935	0	214,486	15,239,920	15,716,555	0	173,604	11,172,268	11,456,864	2,480		203,360	106,691
	February-23	28	42,485,769	0	214,486	15,239,920	15,716,555	0	165,066	11,172,268	11,456,864	2,240		183,680	0
	March-23	31	42,837,602	0	214,486	15,239,920	15,716,555	0	108,147	11,172,268	11,456,864	2,480		203,360	111,524
Q2	April-23	30	43,189,435	0	214,486	15,239,920	15,716,555	0	96,763	11,172,268	11,456,864	2,400		211,200	120,708
	May-23	31	43,541,269	0	215,217	15,239,920	15,718,180	0	270,495	11,172,268	11,442,763	2,480		320,877	125,300
	June-23	30	43,893,102	77826	476,635	15,239,920	15,716,555	42,909	457,521	11,172,268	11,629,789	53,245		439,668	129,825
Q3	July-23	31	44,244,935	20794	476,635	15,239,920	15,716,555	11,465	307,471	11,172,268	11,479,739	7,564		507,642	139,604
	August-23	31	44,596,769	56114	476,635	15,239,920	15,716,555	30,938	327,513	11,172,268	11,499,780	10,720		393,932	155,096
	September-23	30	44,948,602	26452	476,635	15,239,920	15,716,555	14,584	352,012	11,172,268	11,524,280	28,085		316,179	173,498
Q4	October-23	31	45,300,435	0	395,607	15,239,920	15,716,555	0	327,371	11,172,268	11,524,280	2,480		218,240	185,440
	November-23	30	45,652,269	0	200,187	15,239,920	15,716,555	0	285,130	11,172,268	11,524,280	2,400		196,800	192,574
	December-23	31	46,004,102	0	166,822	15,239,920	15,716,555	0	221,768	11,172,268	11,524,280	2,480		203,360	194,214
2023 AVERAGES & TOTALS				181187				99,896				119054	0		
Q1	January-24	31	46,358,685	0	214,486	15,239,920	15,716,555	0	158,405	11,172,268	11,524,280	2,480		203,360	194,882
	February-24	29	46,713,269	0	214,486	15,239,920	15,716,555	0	158,405	11,172,268	11,524,280	2,240		188,480	0

	Month	Nbr days	Mill Throughput cumulative (t)	North Cell Runoff Volume (m^3)	North Cell Total Free Water Volume (m^3)	North Cell Cummulative Tailings Deposited (m^3)	North Cell Cumulative Volume (Tailings + Pond) (m^3)	South Cell Runoff Volume (m^3)	South Cell Total Free Water Volume (m^3)	South Cell Cummulative Tailings Deposited (m^3)	South Cell Cumulative Volume (Tailings + Pond) (m^3)	Pit A Inflow (m^3)	Volume Pumped from 3rd Portage (m^3)	INFLOW	OUTFLOW
	March-24	31	47,067,852	0	214,486	15,239,920	15,716,555	0	158,405	11,172,268	11,524,280	2,480		203,360	195,306
Q2	April-24	30	47,422,435	0	214,486	15,239,920	15,716,555	0	158,405	11,172,268	11,524,280	2,400		211,200	204,730
	May-24	31	47,777,019	0	215,217	15,239,920	15,718,180	0	152,060	11,172,268	11,510,179	2,480		320,877	205,133
	June-24	30	48,131,602	77826	476,635	15,239,920	15,716,555	42,909	236,222	11,172,268	11,697,205	53,245		439,668	205,456
Q3	July-24	31	48,486,185	20794	476,635	15,239,920	15,716,555	11,465	168,699	11,172,268	11,547,155	7,564		507,642	211,244
	August-24	31	48,840,769	56114	476,635	15,239,920	15,716,555	30,938	177,718	11,172,268	11,567,196	10,720		393,932	222,954
	September-24	30	49,195,352	26452	476,635	15,239,920	15,716,555	14,584	188,743	11,172,268	11,591,696	28,085		316,179	237,774
Q4	October-24	31	49,549,935	0	395,607	15,239,920	15,716,555	0	188,743	11,172,268	11,591,696	2,480		218,240	246,323
	November-24	30	49,904,519	0	200,187	15,239,920	15,716,555	0	188,743	11,172,268	11,591,696	2,400		196,800	250,243
	December-24	31	50,259,102	0	166,822	15,239,920	15,716,555	0	188,743	11,172,268	11,591,696	2,480		203,360	248,839
2024 AVERAGES & TOTALS				**181187**				**99,896**				**119054**	**0**		**0**
Q1	January-25	31	50,614,519	0	214,486	15,239,920	15,716,555	0	188,743	11,172,268	11,591,696	2,480		203,360	243,893
	February-25	28	50,969,935	0	214,486	15,239,920	15,716,555	0	188,743	11,172,268	11,591,696	2,240		183,680	0
	March-25	31	51,325,352	0	214,486	15,239,920	15,716,555	0	188,743	11,172,268	11,591,696	2,480		203,360	241,866
Q2	April-25	30	51,680,769	0	214,486	15,239,920	15,716,555	0	188,743	11,172,268	11,591,696	2,400		211,200	251,050
	May-25	31	52,036,185	0	215,217	15,239,920	15,718,180	0	182,397	11,172,268	11,577,595	2,480		320,877	249,125
	June-25	30	52,391,602	77826	476,635	15,239,920	15,716,555	42,909	266,559	11,172,268	11,764,621	53,245		439,668	0
Q3	July-25	31	52,747,019	20794	476,635	15,239,920	15,716,555	11,465	199,036	11,172,268	11,614,571	7,564		507,642	0
	August-25	31	53,102,435	56114	476,635	15,239,920	15,716,555	30,938	208,055	11,172,268	11,634,612	10,720		393,932	0
	September-25	30	53,457,852	26452	476,635	15,239,920	15,716,555	14,584	219,080	11,172,268	11,659,112	28,085		316,179	298,086
Q4	October-25	31	53,813,269	0	395,607	15,239,920	15,716,555	0	219,080	11,172,268	11,659,112	2,480		218,240	317,782
	November-25	30	54,168,685	0	200,187	15,239,920	15,716,555	0	219,080	11,172,268	11,659,112	2,400		196,800	318,687
	December-25	31	54,524,102	0	166,822	15,239,920	15,716,555	0	219,080	11,172,268	11,659,112	2,480		203,360	0
2025 AVERAGES & TOTALS				**181187**				**99,896**				**119054**	**0**		**0**
Q1	January-26	31	54,728,486	0	214,486	15,239,920	15,716,555	0	219,080	11,172,268	11,659,112	2,480		203,360	0
	February-26	28	54,932,869	0	214,486	15,239,920	15,716,555	0	219,080	11,172,268	11,659,112	2,240		183,680	0
	March-26	31	55,137,253	0	214,486	15,239,920	15,716,555	0	219,080	11,172,268	11,659,112	2,480		203,360	0
Q2	April-26	30	55,341,637	0	214,486	15,239,920	15,716,555	0	219,080	11,172,268	11,659,112	2,400		211,200	0
	May-26	31	55,546,021	0	215,217	15,239,920	15,718,180	0	212,734	11,172,268	11,645,011	2,480		320,877	347,303
	June-26	30	55,750,404	77826	476,635	15,239,920	15,716,555	42,909	296,896	11,172,268	11,832,037	53,245		439,668	357,863
Q3	July-26	31	55,954,788	20794	476,635	15,239,920	15,716,555	11,465	229,374	11,172,268	11,681,987	7,564		507,642	0
	August-26	31	56,159,172	56114	476,635	15,239,920	15,716,555	30,938	238,392	11,172,268	11,702,028	10,720		393,932	0
	September-26	30	56,363,556	26452	476,635	15,239,920	15,716,555	14,584	249,417	11,172,268	11,726,528	28,085		316,179	386,014
Q4	October-26	31	56,567,939	0	395,607	15,239,920	15,716,555	0	249,417	11,172,268	11,726,528	2,480		218,240	405,711
	November-26	30	56,772,323	0	200,187	15,239,920	15,716,555	0	249,417	11,172,268	11,726,528	2,400		196,800	0
	December-26	31	56,976,707	0	166,822	15,239,920	15,716,555	0	249,417	11,172,268	11,726,528	2,480		203,360	0
2026 AVERAGES & TOTALS				**181187**				**99,896**				**119054**	**0**		
Q1	January-27	31	56,976,707	0	214,486	15,239,920	15,716,555	0	249,417	11,172,268	11,726,528	-1,187,920		-1135840	0
	February-27	28	56,976,707	0	214,486	15,239,920	15,716,555	0	249,417	11,172,268	11,726,528	-1,072,960		-1025920	0
	March-27	31	56,976,707	0	214,486	15,239,920	15,716,555	0	249,417	11,172,268	11,726,528	-1,187,920		-1135840	0
	April-27	30	56,976,707	0	214,486	15,239,920	15,716,555	0	249,417	11,172,268	11,726,528	-1,149,600		-1084800	0

	Month	Nbr days		North Cell				South Cell							
			Mill Throughput cumulative (t)	Runoff Volume (m^3)	Total Free Water Volume (m^3)	Cummulative Tailings Deposited (m^3)	Cumulative Volume (Tailings + Pond) (m^3)	Runoff Volume (m^3)	Total Free Water Volume (m^3)	Cummulative Tailings Deposited (m^3)	Cummulative Volume (Tailings + Pond) (m^3)	Pit A Inflow (m^3)	Volume Pumped from 3rd Portage (m^3)	INFLOW	OUTFLOW
Q2	May-27	31	56,976,707	0	215,217	15,239,920	15,718,180	0	243,072	11,172,268	11,712,427	-1,187,920		-1018323	0
	June-27	30	56,976,707	77826	476,635	15,239,920	15,716,555	42,909	327,233	11,172,268	11,899,453	-1,098,755		-856332	0
Q3	July-27	31	56,976,707	20794	476,635	15,239,920	15,716,555	11,465	259,711	11,172,268	11,749,403	-1,182,836		-831558	0
	August-27	31	56,976,707	56114	476,635	15,239,920	15,716,555	30,938	268,729	11,172,268	11,769,444	-1,179,680		-945268	0
	September-27	30	56,976,707	26452	476,635	15,239,920	15,716,555	14,584	279,754	11,172,268	11,793,944	-1,123,915		-366571	0
Q4	October-27	31	56,976,707	0	395,607	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	-1,187,920		613250	0
	November-27	30	56,976,707	0	200,187	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	-1,149,600		3293225	0
	December-27	31	56,976,707	0	166,822	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	-1,187,920		2833410	0
2027 AVERAGES & TOTALS				**181187**				**99,896**					**0**		
Q1	January-28	31	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	-1,094,288		1017630	0
	February-28	29	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,240		12216	1624
	March-28	31	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,480		14830	3422
Q2	April-28	30	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,400		16202	5162
	May-28	31	0	0	215,217	15,239,920	15,718,180	0	279,754	11,172,268	11,793,944	2,480		62264	6960
	June-28	30	0	77826	476,635	15,239,920	15,716,555	42,909	279,754	11,172,268	11,793,944	53,245		420221	58487
Q3	July-28	31	0	20794	476,635	15,239,920	15,716,555	11,465	279,754	11,172,268	11,793,944	7,564		149064	65264
	August-28	31	0	56114	476,635	15,239,920	15,716,555	30,938	279,754	11,172,268	11,793,944	10,720		215312	75131
	September-28	30	0	26452	476,635	15,239,920	15,716,555	14,584	279,754	11,172,268	11,793,944	28,085		199341	102022
Q4	October-28	31	0	0	395,607	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,480		115228	103820
	November-28	30	0	0	200,187	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,400		116600	105560
	December-28	31	0	0	166,822	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,480		118766	107358
2028 AVERAGES & TOTALS			**0**	**181187**				**99,896**				**-977714**	**0**		
Q1	January-29	31	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,480		804092	786648
	February-29	28	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,240		127984	110780
	March-29	31	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,480		130022	112578
Q2	April-29	30	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,400		131682	114318
	May-29	31	0	0	215,217	15,239,920	15,718,180	0	279,754	11,172,268	11,793,944	2,480		177456	116116
	June-29	30	0	77826	476,635	15,239,920	15,716,555	42,909	279,754	11,172,268	11,793,944	53,245		535701	167643
Q3	July-29	31	0	20794	476,635	15,239,920	15,716,555	11,465	279,754	11,172,268	11,793,944	7,564		264256	174420
	August-29	31	0	56114	476,635	15,239,920	15,716,555	30,938	279,754	11,172,268	11,793,944	10,720		330504	184287
	September-29	30	0	26452	476,635	15,239,920	15,716,555	14,584	279,754	11,172,268	11,793,944	28,085		314821	211178
Q4	October-29	31	0	0	395,607	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,480		230420	212976
	November-29	30	0	0	200,187	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,400		232080	214716
	December-29	31	0	0	166,822	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,480		233958	216514
2029 AVERAGES & TOTALS			**0**	**181187**				**99,896**				**119054**	**0**		
Q1	January-30	31	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,480		913248	895804
	February-30	28	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,240		237140	219936
	March-30	31	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,480		572511	555067
Q2	April-30	30	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,400		907505	890141
	May-30	31	0	0	215,217	15,239,920	15,718,180	0	279,754	11,172,268	11,793,944	2,480		1286612	1225272
	June-30	30	0	77826	476,635	15,239,920	15,716,555	42,909	279,754	11,172,268	11,793,944	53,245		1978190	1610132

	Month	Nbr days		North Cell				South Cell							
			Mill Throughput cumulative (t)	Runoff Volume (m^3)	Total Free Water Volume (m^3)	Cummulative Tailings Deposited (m^3)	Cumulative Volume (Tailings + Pond) (m^3)	Runoff Volume (m^3)	Total Free Water Volume (m^3)	Cummulative Tailings Deposited (m^3)	Cumulative Volume (Tailings + Pond) (m^3)	Pit A Inflow (m^3)	Volume Pumped from 3rd Portage (m^3)	INFLOW	OUTFLOW
Q3	July-30	31	0	20794	476,635	15,239,920	15,716,555	11,465	279,754	11,172,268	11,793,944	7,564		2040079	1950243
	August-30	31	0	56114	476,635	15,239,920	15,716,555	30,938	279,754	11,172,268	11,793,944	10,720		2439660	2293443
	September-30	30	0	26452	476,635	15,239,920	15,716,555	14,584	279,754	11,172,268	11,793,944	28,085		2757310	2653667
Q4	October-30	31	0	0	395,607	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,480		2776109	2711373
	November-30	30	0	0	200,187	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,400		3428812	2694009
	December-30	31	0	0	166,822	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,480		3521751	2676565
2030 AVERAGES & TOTALS			0	181187				99,896				119054	0		
Q1	January-31	31	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,480		5109451	4299153
	February-31	28	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,240		3417567	2641917
	March-31	31	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,480		3365476	2624473
Q2	April-31	30	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,400		3313304	2607109
	May-31	31	0	0	215,217	15,239,920	15,718,180	0	279,754	11,172,268	11,793,944	2,480		3173260	2545770
	June-31	30	0	77826	476,635	15,239,920	15,716,555	42,909	279,754	11,172,268	11,793,944	53,245		2545770	2177712
Q3	July-31	31	0	20794	476,635	15,239,920	15,716,555	11,465	279,754	11,172,268	11,793,944	7,564		2177712	2087876
	August-31	31	0	56114	476,635	15,239,920	15,716,555	30,938	279,754	11,172,268	11,793,944	10,720		2087876	1941658
	September-31	30	0	26452	476,635	15,239,920	15,716,555	14,584	279,754	11,172,268	11,793,944	28,085		1941658	1838016
Q4	October-31	31	0	0	395,607	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,480		1838016	1820572
	November-31	30	0	0	200,187	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,400		1820572	1803208
	December-31	31	0	0	166,822	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,480		1803208	1785764
2031 AVERAGES & TOTALS			0	181187				99,896				119054	0		
Q1	January-32	31	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,480		1576973	1559529
	February-32	29	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,240		1768320	1751116
	March-32	31	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,480		1751116	1733672
Q2	April-32	30	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	2,400		1733672	1716308
	May-32	31	0	0	215,217	15,239,920	15,718,180	0	279,754	11,172,268	11,793,944	2,480		1716308	1654968
	June-32	30	0	77826	476,635	15,239,920	15,716,555	42,909	279,754	11,172,268	11,793,944	53,245		1654968	1286911
Q3	July-32	31	0	20794	476,635	15,239,920	15,716,555	11,465	279,754	11,172,268	11,793,944	7,564		1286911	1197074
	August-32	31	0	56114	476,635	15,239,920	15,716,555	30,938	279,754	11,172,268	11,793,944	10,720		1197074	1050857
	September-32	30	0	26452	476,635	15,239,920	15,716,555	14,584	279,754	11,172,268	11,793,944	28,085		1050857	947215
Q4	October-32	31	0	0	395,607	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	335,813		947215	596437
	November-32	30	0	0	200,187	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	335,733		100596436	245740
	December-32	31	0	0	166,822	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	335,813		350777	0
2032 AVERAGES & TOTALS			0	181187				99,896				1119054	0		
Q1	January-33	31	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	335,813		350777	0
	February-33	28	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	335,573		350537	0
	March-33	31	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	335,813		350777	0
Q2	April-33	30	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	252,400		267364	0
	May-33	31	0	0	215,217	15,239,920	15,718,180	0	279,754	11,172,268	11,793,944	335,813		394673	0
	June-33	30	0	77826	476,635	15,239,920	15,716,555	42,909	279,754	11,172,268	11,793,944	386,578		701391	0
Q3	July-33	31	0	20794	476,635	15,239,920	15,716,555	11,465	279,754	11,172,268	11,793,944	340,897		423169	0
	August-33	31	0	56114	476,635	15,239,920	15,716,555	30,938	279,754	11,172,268	11,793,944	344,053		479551	0

	Month	Nbr days		North Cell				South Cell							
			Mill Throughput cumulative (t)	Runoff Volume (m^3)	Total Free Water Volume (m^3)	Cummulative Tailings Deposited (m^3)	Cummulative Volume (Tailings + Pond) (m^3)	Runoff Volume (m^3)	Total Free Water Volume (m^3)	Cummulative Tailings Deposited (m^3)	Cummulative Volume (Tailings + Pond) (m^3)	Pit A Inflow (m^3)	Volume Pumped from 3rd Portage (m^3)	INFLOW	OUTFLOW
	September-33	30	0	26452	476,635	15,239,920	15,716,555	14,584	279,754	11,172,268	11,793,944	361,418		436976	0
Q4	October-33	31	0	0	395,607	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	335,813		350777	0
	November-33	30	0	0	200,187	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	335,733		350697	0
	December-33	31	0	0	166,822	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	335,813		350777	0
2033 AVERAGES & TOTALS			0	181187				99,896				4035721	0		
Q1	January-34	31	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	335,813		350777	0
	February-34	28	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	335,573		350537	0
	March-34	31	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	335,813		350777	0
Q2	April-34	30	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	335,733		350697	0
	May-34	31	0	0	215,217	15,239,920	15,718,180	0	279,754	11,172,268	11,793,944	335,813		394673	0
	June-34	30	0	77826	476,635	15,239,920	15,716,555	42,909	279,754	11,172,268	11,793,944	386,578		701391	0
Q3	July-34	31	0	20794	476,635	15,239,920	15,716,555	11,465	279,754	11,172,268	11,793,944	174,231		256503	0
	August-34	31	0	56114	476,635	15,239,920	15,716,555	30,938	279,754	11,172,268	11,793,944	177,387		312884	0
	September-34	30	0	26452	476,635	15,239,920	15,716,555	14,584	279,754	11,172,268	11,793,944	194,752		270309	0
Q4	October-34	31	0	0	395,607	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	169,147		184111	0
	November-34	30	0	0	200,187	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	169,067		184031	0
	December-34	31	0	0	166,822	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	169,147		184111	0
2034 AVERAGES & TOTALS			0	181187				99,896				3119054	0		
Q1	January-35	31	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	169,147		184111	0
	February-35	28	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	168,907		183871	0
	March-35	31	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	169,147		184111	0
Q2	April-35	30	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	169,067		184031	0
	May-35	31	0	0	215,217	15,239,920	15,718,180	0	279,754	11,172,268	11,793,944	169,147		228007	0
	June-35	30	0	77826	476,635	15,239,920	15,716,555	42,909	279,754	11,172,268	11,793,944	219,912		534724	0
Q3	July-35	31	0	20794	476,635	15,239,920	15,716,555	11,465	279,754	11,172,268	11,793,944	107,564		189836	0
	August-35	31	0	56114	476,635	15,239,920	15,716,555	30,938	279,754	11,172,268	11,793,944	110,720		246217	0
	September-35	30	0	26452	476,635	15,239,920	15,716,555	14,584	279,754	11,172,268	11,793,944	128,085		203643	0
Q4	October-35	31	0	0	395,607	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	102,480		117444	0
	November-35	30	0	0	200,187	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	102,400		117364	0
	December-35	31	0	0	166,822	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	102,480		117444	0
2035 AVERAGES & TOTALS			0	181187				99,896				1719054	0		
Q1	January-36	31	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	169,147		184111	0
	February-36	29	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	102,240		117204	0
	March-36	31	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	0		14964	0
Q2	April-36	30	0	0	214,486	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	0		14964	0
	May-36	31	0	0	215,217	15,239,920	15,718,180	0	279,754	11,172,268	11,793,944	0		58860	0
	June-36	30	0	77826	476,635	15,239,920	15,716,555	42,909	279,754	11,172,268	11,793,944	0		314813	0
Q3	July-36	31	0	20794	476,635	15,239,920	15,716,555	11,465	279,754	11,172,268	11,793,944	0		82272	0
	August-36	31	0	56114	476,635	15,239,920	15,716,555	30,938	279,754	11,172,268	11,793,944	0		135497	0
	September-36	30	0	26452	476,635	15,239,920	15,716,555	14,584	279,754	11,172,268	11,793,944	0		75558	0
	October-36	31	0	0	395,607	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	0		14964	0

	Month	Nbr days		North Cell				South Cell							
			Mill Throughput cumulative (t)	Runoff Volume (m^3)	Total Free Water Volume (m^3)	Cummulative Tailings Deposited (m^3)	Cummulative Volume (Tailings + Pond) (m^3)	Runoff Volume (m^3)	Total Free Water Volume (m^3)	Cummulative Tailings Deposited (m^3)	Cummulative Volume (Tailings + Pond) (m^3)	Pit A Inflow (m^3)	Volume Pumped from 3rd Portage (m^3)	INFLOW	OUTFLOW
Q4	November-36	30	0	0	200,187	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	0		14964	0
	December-36	31	0	0	166,822	15,239,920	15,716,555	0	279,754	11,172,268	11,793,944	0		14964	0
2036 AVERAGES & TOTALS			**0**	**181187**				**99,896**				**271387**	**0**		

	Month	Nbr days	Pit A					Pit E						
			All Pit A inflows Except Pit E	Cummulative Tailings Deposited (m^3)	Cummulative Volume (m^3)	Overflow to Pit E above 128	Overflow to pit E Via Central Dump	Pit E Inflow (m^3)	Volume Pumped from 3rd Portage (m^3)	INFLOW	OUTFLOW	All Pit E inflows Except Pit A	Cummulative Tailings Deposited (m^3)	Cummulative Volume (m^3)
Q1	January-21	31	-276,254	0	3,375,459	0.00	0	-360,000		-42,202	0	-42,202	1,224,483	2,796,409
	February-21	28	-357,389	0	3,018,069	0.00	0	1,624		257,281	0	257,281	1,418,041	3,247,249
	March-21	31	-331,735	0	2,686,335	0.00	0	-67,000		206,459	0	206,459	1,625,699	3,661,366
Q2	April-21	30	109,114	0	2,795,449	0.00	0	-100,000		116,766	0	116,766	1,789,754	3,942,187
	May-21	31	71,228	0	2,866,677	0.00	0	74,000		340,695	0	340,695	1,998,615	4,491,742
	June-21	30	244,435	0	3,111,111		0	-69,999		208,761	0	208,761	2,212,923	4,914,812
Q3	July-21	31	270,984	0	3,382,096		0	220,000		220,000	0	220,000	2,212,923	5,134,812
	August-21	31	448,177	0	3,830,273		0	93,000		208,313	0	208,313	2,299,157	5,429,359
	September-21	30	-129,157	0	3,701,115		0	0		304,655	0	304,655	2,516,903	5,951,761
Q4	October-21	31	231,206	0	3,932,321		0	4,869		273,381	247,019	26,362	2,681,654	6,142,873
	November-21	30	184,604	0	4,116,925		0	-57,955		248,927	351,795	-102,867	2,903,443	6,261,794
	December-21	31	-164,102	0	3,952,823		0	-23,947		249,533	72,352	177,181	3,046,502	6,582,035
2021 AVERAGES & TOTALS								-285408	0	0	0	0		
Q1	January-22	31	-191,493	0	3,761,330		0	1,798		163,065	56,715	106,350	3,185,038	6,826,921
	February-22	28	183,680	0	3,945,010		0	1,624		185,577	426,938	-241,361	3,409,205	6,809,727
	March-22	31	203,360	0	4,148,370		0	1,798		185,846	441,338	-255,492	3,633,371	6,778,402
Q2	April-22	30	211,200	0	4,359,570		0	1,740		185,236	436,538	-251,302	3,857,538	6,751,267
	May-22	31	320,877	0	4,680,447		0	1,798		185,348	441,338	-255,989	4,081,705	6,719,444
	June-22	30	439,668	0	5,120,115		0	51,527		237,852	436,538	-198,685	4,305,871	6,744,926
Q3	July-22	31	496,618	0	5,616,733		11024	6,777		203,563	441,338	-237,775	4,530,038	6,742,342
	August-22	31	360,925	0	5,977,658		33007	9,867		226,921	441,338	-214,416	4,754,205	6,785,099
	September-22	30	258,341	0	6,236,000		57838	26,891		269,168	436,538	-167,370	4,978,371	6,899,734
Q4	October-22	31	142,356	0	6,378,355		75884	1,798		262,210	441,338	-179,128	5,202,538	7,020,657
	November-22	30	107,999	0	6,486,354		88801	1,740		275,117	436,538	-161,420	5,426,705	7,172,205
	December-22	31	107,441	0	6,593,795		95919	1,798		282,245	441,338	-159,093	5,650,871	7,333,198
2022 AVERAGES & TOTALS								109156	0	0	0	0		
Q1	January-23	31	96,669	0	6,690,464		106691	1,798		301,423	454,895	-153,472	5,885,427	7,520,972
	February-23	28	183,680	0	6,874,144		0	1,624		194,165	440,495	-246,330	6,119,982	7,509,198
	March-23	31	91,836	0	6,965,980		111524	1,798		305,969	454,895	-148,926	6,354,538	7,706,352
Q2	April-23	30	90,492	0	7,056,471		120708	1,740		314,516	450,095	-135,579	6,589,094	7,926,036
	May-23	31	195,577	0	7,252,048		125300	1,798		319,225	454,895	-135,670	6,823,649	8,150,222
	June-23	30	309,843	0	7,561,891		129825	51,527		376,380	450,095	-73,715	7,058,205	8,440,887
Q3	July-23	31	368,038	0	7,929,930		139604	6,777		340,822	454,895	-114,073	7,292,760	8,700,972
	August-23	31	238,836	0	8,168,766		155096	9,867		357,610	454,895	-97,285	7,527,316	8,993,338
	September-23	30	142,681	0	8,311,447		173498	26,891		393,443	450,095	-56,652	7,761,871	9,344,739
Q4	October-23	31	32,800	0	8,344,248		185440	1,798		380,387	454,895	-74,508	7,996,427	9,690,226
	November-23	30	4,226	0	8,348,474		192574	1,740		387,511	450,095	-62,584	8,230,982	10,054,771
	December-23	31	9,146	0	8,357,621		194214	1,798		389,161	454,895	-65,734	8,465,538	10,417,806
2023 AVERAGES & TOTALS								109156	0	0	0	0		
Q1	January-24	31	8,478	0	8,366,098		194882	1,798		391,134	457,288	-66,154	8,701,927	10,782,924
	February-24	29	188,480	0	8,554,578		0	1,624		195,632	447,688	-252,056	8,938,316	10,767,257

	Month	Nbr days	Pit A					Pit E						
			All Pit A inflows Except Pit E	Cummulative Tailings Deposited (m^3)	Cummulative Volume (m^3)	Overflow to Pit E above 128	Overflow to pit E Via Central Dump	Pit E Inflow (m^3)	Volume Pumped from 3rd Portage (m^3)	INFLOW	OUTFLOW	All Pit E inflows Except Pit A	Cummulative Tailings Deposited (m^3)	Cummulative Volume (m^3)
	March-24	31	8,054	0	8,562,632		195306	1,798		391,268	457,288	-66,019	9,174,705	11,132,933
Q2	April-24	30	6,470	0	8,569,102		204730	1,740		400,050	452,488	-52,438	9,411,094	11,521,614
	May-24	31	115,744	0	8,684,846		205133	1,798		400,571	457,288	-56,717	9,647,482	11,906,419
	June-24	30	234,212	0	8,919,058		205456	51,527		453,547	452,488	1,059	9,883,871	12,349,324
Q3	July-24	31	296,398	0	9,215,456		211244	6,777		413,993	457,288	-43,294	10,120,260	12,753,662
	August-24	31	170,978	0	9,386,434		222954	9,867		426,985	457,288	-30,302	10,356,649	13,182,703
	September-24	30	78,405	0	9,464,839		237774	26,891		459,239	452,488	6,752	10,593,038	13,663,617
Q4	October-24	31	-28,083	0	9,436,756		246323	1,798		442,792	457,288	-14,496	10,829,427	14,131,833
	November-24	30	-53,443	0	9,383,313		250243	1,740		446,702	452,488	-5,785	11,065,816	14,612,680
	December-24	31	-45,479	0	9,337,834		248839	1,798		445,308	457,288	-11,980	11,302,205	15,085,928
2024 AVERAGES & TOTALS								109156	0	0	0	0		
Q1	January-25	31	-40,533	0	9,297,301		243893	1,798		440,605	458,013	-17,407	11,539,149	15,549,358
	February-25	28	183,680	0	9,480,981		0	1,624		196,140	443,613	-247,473	11,776,094	15,538,830
	March-25	31	-38,506	0	9,442,475		241866	1,798		438,288	458,013	-19,724	12,013,038	15,997,916
Q2	April-25	30	-39,850	0	9,402,625		251050	1,740		446,828	453,213	-6,384	12,249,982	16,479,527
	May-25	31	71,752	0	9,474,377		249125	1,798		445,021	458,013	-12,991	12,486,927	16,952,605
	June-25	30	439,668	0	9,914,045		0	51,527		248,556	453,213	-204,657	12,723,871	16,984,893
Q3	July-25	31	507,642	0	10,421,687		0	6,777		203,214	458,013	-254,799	12,960,816	16,967,039
	August-25	31	393,932	0	10,815,619		0	9,867		204,491	458,013	-253,521	13,197,760	16,950,462
	September-25	30	18,093	0	10,833,712		298086	26,891		520,012	453,213	66,799	13,434,705	17,552,291
Q4	October-25	31	-99,542	0	10,734,170		317782	1,798		514,712	458,013	56,699	13,671,649	18,163,716
	November-25	30	-121,887	0	10,612,283		318687	1,740		515,607	453,213	62,394	13,908,594	18,781,742
	December-25	31	203,360	0	10,815,643		0	1,798		196,930	458,013	-261,083	14,145,538	18,757,604
2025 AVERAGES & TOTALS								109156	0	0	0	0		
Q1	January-26	31	203,360	0	11,019,003		0	1,798		113,246	326,614	-213,368	14,281,794	18,680,492
	February-26	28	183,680	0	11,202,683		0	1,624		112,905	312,214	-199,309	14,418,050	18,617,438
	March-26	31	203,360	0	11,406,043		0	1,798		113,079	326,614	-213,535	14,554,305	18,540,159
Q2	April-26	30	211,200	0	11,617,243		0	1,740		112,705	321,814	-209,109	14,690,561	18,467,306
	May-26	31	-26,426	0	11,590,817		347303	1,798		460,080	326,614	133,466	14,826,817	19,084,331
	June-26	30	81,805	0	11,672,621		357863	51,527		522,075	321,814	200,261	14,963,073	19,778,712
Q3	July-26	31	507,642	0	12,180,263		0	6,777		119,100	326,614	-207,513	15,099,329	19,707,454
	August-26	31	393,932	0	12,574,195		0	9,867		121,148	326,614	-205,466	15,235,585	19,638,244
	September-26	30	-69,835	0	12,504,360		386014	26,891		524,443	321,814	202,630	15,371,840	20,363,144
Q4	October-26	31	-187,471	0	12,316,889		405711	1,798		519,082	326,614	192,468	15,508,096	21,097,579
	November-26	30	196,800	0	12,513,689		0	1,740		113,361	321,814	-208,452	15,644,352	21,025,382
	December-26	31	203,360	0	12,717,049		0	1,798		113,371	326,614	-213,243	15,780,608	20,948,395
2026 AVERAGES & TOTALS								109156	0					
Q1	January-27	31	-1,135,840	0	11,581,209		0	1,798		1,798	0	1,798	15,780,608	20,950,193
	February-27	28	-1,025,920	0	10,555,289		0	1,624		1,624	0	1,624	15,780,608	20,951,817
	March-27	31	-1,135,840	0	9,419,449		0	1,798		1,798	0	1,798	15,780,608	20,953,615
	April-27	30	-1,084,800	0	8,334,649		0	1,740		1,740	0	1,740	15,780,608	20,955,355

	Month	Nbr days	Pit A					Pit E						
			All Pit A inflows Except Pit E	Cummulative Tailings Deposited (m^3)	Cummulative Volume (m^3)	Overflow to Pit E above 128	Overflow to pit E Via Central Dump	Pit E Inflow (m^3)	Volume Pumped from 3rd Portage (m^3)	INFLOW	OUTFLOW	All Pit E inflows Except Pit A	Cummulative Tailings Deposited (m^3)	Cummulative Volume (m^3)
Q2	May-27	31	-1,018,323	0	7,316,326		0	1,798		1,798	0	10,726	15,780,608	20,966,081
	June-27	30	-856,332	0	6,459,994		0	51,527		51,527	0	60,167	15,780,608	21,026,248
Q3	July-27	31	-831,558	0	5,628,436		0	6,777		6,777	0	15,705	15,780,608	21,041,953
	August-27	31	-945,268	0	4,683,168		0	9,867		9,867	0	18,795	15,780,608	21,060,748
	September-27	30	-979,821	0	3,703,347		0	26,891		26,891	613,250	35,531	15,780,608	20,483,029
Q4	October-27	31	-1,120,960	0	2,582,387		0	1,798		1,798	1,734,210	1,798	15,780,608	18,750,617
	November-27	30	-1,099,200	0	1,483,187		0	1,740		1,740	2,833,410	1,740	15,780,608	15,918,946
	December-27	31	-1,135,840	0	347,347		0	1,798		1,798	3,969,250	1,798	15,780,608	11,951,494
2027 AVERAGES & TOTALS								**109156**	**0**					
Q1	January-28	31	-1,085,360	0	-738,013		0	1,798		1,798	2,102,990	1,798	**15,780,608**	9,850,302
	February-28	29	10,592	0	-727,421		1,624.00	1,624		3,248	1,624	1,624	**15,780,608**	9,851,926
	March-28	31	11,408	0	-716,013		3,422.00	1,798		5,220	3,422	1,798	**15,780,608**	9,853,724
Q2	April-28	30	11,040	0	-704,973		5,162.00	1,740		6,902	5,162	1,740	**15,780,608**	9,855,464
	May-28	31	55,304	0	-649,669		6,960.00	1,798		8,758	6,960	1,798	**15,780,608**	9,857,262
	June-28	30	361,734	0	-287,935		58,487.00	51,527		110,014	58,487	51,527	**15,780,608**	9,908,789
Q3	July-28	31	83,800	0	-204,135		65,264.00	6,777		72,041	65,264	6,777	**15,780,608**	9,915,566
	August-28	31	140,181	0	-63,954		75,131.00	9,867		84,998	75,131	9,867	**15,780,608**	9,925,433
	September-28	30	97,319	0	33,365		102,022.00	26,891		128,913	102,022	26,891	**15,780,608**	9,952,324
Q4	October-28	31	11,408	0	44,773		103,820.00	1,798		105,618	103,820	1,798	**15,780,608**	9,954,122
	November-28	30	11,040	0	55,813		105,560.00	1,740		107,300	105,560	1,740	**15,780,608**	9,955,862
	December-28	31	11,408	0	67,221		107,358.00	1,798		109,156	107,358	1,798	**15,780,608**	9,957,660
2028 AVERAGES & TOTALS								**109156**	**0**					
Q1	January-29	31	17,444	0	84,665		786,648	1,798		788,446	786,648	1,798	**15,780,608**	9,959,458
	February-29	28	17,204	0	101,869		110,780	1,624		112,404	110,780	1,624	**15,780,608**	9,961,082
	March-29	31	17,444	0	119,313		112,578	1,798		114,376	112,578	1,798	**15,780,608**	9,962,880
Q2	April-29	30	17,364	0	136,677		114,318	1,740		116,058	114,318	1,740	**15,780,608**	9,964,620
	May-29	31	61,340	0	198,017		116,116	1,798		117,914	116,116	1,798	**15,780,608**	9,966,418
	June-29	30	368,058	0	566,074		167,643	51,527		219,170	167,643	51,527	**15,780,608**	10,017,945
Q3	July-29	31	89,836	0	655,911		174,420	6,777		181,197	174,420	6,777	**15,780,608**	10,024,722
	August-29	31	146,217	0	802,128		184,287	9,867		194,154	184,287	9,867	**15,780,608**	10,034,589
	September-29	30	103,643	0	905,770		211,178	26,891		238,069	211,178	26,891	**15,780,608**	10,061,480
Q4	October-29	31	17,444	0	923,214		212,976	1,798		214,774	212,976	1,798	**15,780,608**	10,063,278
	November-29	30	17,364	0	940,578		214,716	1,740		216,456	214,716	1,740	**15,780,608**	10,065,018
	December-29	31	17,444	0	958,022		216,514	1,798		218,312	216,514	1,798	**15,780,608**	10,066,816
2029 AVERAGES & TOTALS								**109156**	**0**					
Q1	January-30	31	17,444	0	975,466		895,804	1,798		897,602	895,804	1,798	**15,780,608**	10,068,614
	February-30	28	17,204	0	992,670		219,936	1,624		221,560	219,936	1,624	**15,780,608**	10,070,238
	March-30	31	17,444	0	1,010,114		555,067	335,131		890,199	555,067	335,131	**15,780,608**	10,405,370
Q2	April-30	30	17,364	0	1,027,478		890,141	335,073		1,225,214	890,141	335,073	**15,780,608**	10,740,443
	May-30	31	61,340	0	1,088,818		1,225,272	335,131		1,560,403	1,225,272	335,131	**15,780,608**	11,075,574
	June-30	30	368,058	0	1,456,876		1,610,132	384,860		1,994,993	1,610,132	384,860	**15,780,608**	11,460,435

	Month	Nbr days	Pit A					Pit E						
			All Pit A inflows Except Pit E	Cummulative Tailings Deposited (m^3)	Cummulative Volume (m^3)	Overflow to Pit E above 128	Overflow to pit E Via Central Dump	Pit E Inflow (m^3)	Volume Pumped from 3rd Portage (m^3)	INFLOW	OUTFLOW	All Pit E inflows Except Pit A	Cummulative Tailings Deposited (m^3)	Cummulative Volume (m^3)
Q3	July-30	31	89,836	0	1,546,712		1,950,243	340,110		2,290,353	1,950,243	340,110	**15,780,608**	11,800,545
	August-30	31	146,217	0	1,692,929		2,293,443	343,200		2,636,643	2,293,443	343,200	**15,780,608**	12,143,745
	September-30	30	103,643	0	1,796,572		2,653,667	360,224		3,013,892	2,653,667	360,224	**15,780,608**	12,503,970
Q4	October-30	31	17,444	0	1,814,016		2,711,373	335,131		3,046,504	2,758,665	335,131	**15,780,608**	12,839,101
	November-30	30	17,364	0	1,831,379		2,694,009	335,073		3,029,082	3,411,448	335,073	**15,780,608**	13,174,174
	December-30	31	17,444	0	1,848,823		2,676,565	335,131		3,011,697	3,504,307	335,131	**15,780,608**	13,509,306
2030 AVERAGES & TOTALS								**3442489**	**0**					
Q1	January-31	31	17,444	0	1,866,267		4,299,153	335,131		4,634,285	5,092,007	335,131	**15,780,608**	13,844,437
	February-31	28	17,204	0	1,883,471		2,641,917	334,957		2,976,875	3,400,363	334,957	**15,780,608**	14,179,394
	March-31	31	17,444	0	1,900,915		2,624,473	335,131		2,959,605	3,348,032	335,131	**15,780,608**	14,514,526
Q2	April-31	30	17,364	0	1,918,279		2,607,109	335,073		2,942,183	3,295,940	335,073	**15,780,608**	14,849,599
	May-31	31	61,340	0	1,979,619		2,545,770	335,131		2,880,901	3,111,920	335,131	**15,780,608**	15,184,730
	June-31	30	368,058	0	2,347,677		2,177,712	384,860		2,562,572	2,177,712	384,860	**15,780,608**	15,569,591
Q3	July-31	31	89,836	0	2,437,513		2,087,876	340,110		2,427,986	2,087,876	340,110	**15,780,608**	15,909,701
	August-31	31	146,217	0	2,583,730		1,941,658	343,200		2,284,859	1,941,658	343,200	**15,780,608**	16,252,901
	September-31	30	103,643	0	2,687,373		1,838,016	360,224		2,198,240	1,838,016	360,224	**15,780,608**	16,613,126
Q4	October-31	31	17,444	0	2,704,817		1,820,572	335,131		2,155,703	1,820,572	335,131	**15,780,608**	16,948,257
	November-31	30	17,364	0	2,722,181		1,803,208	335,073		2,138,281	1,803,208	335,073	**15,780,608**	17,283,330
	December-31	31	17,444	0	2,739,625		1,785,764	335,131		2,120,895	1,785,764	335,131	**15,780,608**	17,618,462
2031 AVERAGES & TOTALS								**4109156**	**0**					
Q1	January-32	31	17,444	0	2,757,068		1,559,529	335,131		1,894,660	1,559,529	335,131	**15,780,608**	17,953,593
	February-32	29	17,204	0	2,774,272		1,751,116	334,957		2,086,073	1,751,116	334,957	**15,780,608**	18,288,550
	March-32	31	17,444	0	2,791,716		1,733,672	335,131		2,068,804	1,733,672	335,131	**15,780,608**	18,623,682
Q2	April-32	30	17,364	0	2,809,080		1,716,308	335,073		2,051,382	1,716,308	335,073	**15,780,608**	18,958,755
	May-32	31	61,340	0	2,870,420		1,654,968	335,131		1,990,100	1,654,968	335,131	**15,780,608**	19,293,886
	June-32	30	368,058	0	3,238,478		1,286,911	384,860		1,671,771	1,286,911	384,860	**15,780,608**	19,678,747
Q3	July-32	31	89,836	0	3,328,314		1,197,074	340,110		1,537,185	1,197,074	340,110	**15,780,608**	20,018,857
	August-32	31	146,217	0	3,474,531		1,050,857	343,200		1,394,057	1,050,857	343,200	**15,780,608**	20,362,057
	September-32	30	103,643	0	3,578,174		947,215	340,000		1,287,215	947,215	340,000	**15,780,608**	20,702,057
Q4	October-32	31	350,777	0	3,928,951		596,437	0		596,437	596,437	0	**15,780,608**	20,702,057
	November-32	30	350,697	0	4,279,648		245,740	0		245,740	245,740	0	**15,780,608**	20,702,057
	December-32	31	350,777	0	4,630,426		0	0		0	0	0	**15,780,608**	20,702,057
2032 AVERAGES & TOTALS								**3083596**	**0**					
Q1	January-33	31	350,777	0	4,981,203		0	0		0	0	0	**15,780,608**	20,702,057
	February-33	28	350,537	0	5,331,740		0	0		0	0	0	**15,780,608**	21,483,133
	March-33	31	350,777	0	5,682,518		0	0		0	0	0	**15,780,608**	20,702,057
Q2	April-33	30	267,364	0	5,949,881		0	0		0	0	0	**15,780,608**	20,702,057
	May-33	31	394,673	0	6,344,555		0	0		0	0	0	**15,780,608**	20,702,057
	June-33	30	701,391	0	7,045,946		0	0		0	0	0	**15,780,608**	20,702,057
Q3	July-33	31	423,169	0	7,469,115		0	0		0	0	0	**15,780,608**	20,702,057
	August-33	31	479,551	0	7,948,666		0	0		0	0	0	**15,780,608**	20,702,057

	Month	Nbr days	Pit A					Pit E						
			All Pit A inflows Except Pit E	Cummulative Tailings Deposited (m^3)	Cummulative Volume (m^3)	Overflow to Pit E above 128	Overflow to pit E Via Central Dump	Pit E Inflow (m^3)	Volume Pumped from 3rd Portage (m^3)	INFLOW	OUTFLOW	All Pit E inflows Except Pit A	Cummulative Tailings Deposited (m^3)	Cummulative Volume (m^3)
	September-33	30	436,976	0	8,385,642		0	0		0	0	0	**15,780,608**	20,702,057
Q4	October-33	31	350,777	0	8,736,419		0	0		0	0	0	**15,780,608**	20,702,057
	November-33	30	350,697	0	9,087,116		0	0		0	0	0	**15,780,608**	20,702,057
	December-33	31	350,777	0	9,437,894		0	0		0	0	0	**15,780,608**	20,702,057
2033 AVERAGES & TOTALS								**0**	**0**					
Q1	January-34	31	350,777	0	9,788,671		0	0		0	0	0	**15,780,608**	20,702,057
	February-34	28	350,537	0	10,139,208		0	0		0	0	0	**15,780,608**	20,702,057
	March-34	31	350,777	0	10,489,985		0	0		0	0	0	**15,780,608**	20,702,057
Q2	April-34	30	350,697	0	10,840,683		0	0		0	0	0	**15,780,608**	20,702,057
	May-34	31	394,673	0	11,235,356		0	0		0	0	0	**15,780,608**	20,702,057
	June-34	30	701,391	0	11,936,747		0	0		0	0	0	**15,780,608**	20,702,057
Q3	July-34	31	256,503	0	12,193,250		0	173,444		173,444	0	173,444	**15,780,608**	20,875,501
	August-34	31	312,884	0	12,506,134		0	176,534		176,534	0	176,534	**15,780,608**	21,052,035
	September-34	30	270,309	0	12,776,443		0	193,558		193,558	0	193,558	**15,780,608**	21,245,592
Q4	October-34	31	184,111	0	12,960,554		0	168,465		168,465	0	168,465	**15,780,608**	21,414,057
	November-34	30	184,031	0	13,144,584		0	168,407		168,407	0	168,407	**15,780,608**	21,582,464
	December-34	31	184,111	0	13,328,695		0	168,465		168,465	0	168,465	**15,780,608**	21,750,928
2034 AVERAGES & TOTALS								**1048871**	**0**					
Q1	January-35	31	184,111	0	13,512,805		0	168,465		168,465	0	168,465	**15,780,608**	21,919,393
	February-35	28	183,871	0	13,696,676		0	168,291		168,291	0	168,291	**15,780,608**	22,087,684
	March-35	31	184,111	0	13,880,787		0	168,465		168,465	0	168,465	**15,780,608**	22,256,148
Q2	April-35	30	184,031	0	14,064,817		0	168,407		168,407	0	168,407	**15,780,608**	22,424,555
	May-35	31	228,007	0	14,292,824		0	168,465		168,465	0	168,465	**15,780,608**	22,593,020
	June-35	30	534,724	0	14,827,548		0	218,194		218,194	0	218,194	**15,780,608**	22,811,213
Q3	July-35	31	189,836	0	15,017,384		0	240,110		240,110	0	240,110	**15,780,608**	23,051,324
	August-35	31	246,217	0	15,263,602		0	243,200		243,200	0	243,200	**15,780,608**	23,294,524
	September-35	30	203,643	0	15,467,244		0	260,224		260,224	0	260,224	**15,780,608**	23,554,748
Q4	October-35	31	117,444	0	15,584,688		0	235,131		235,131	0	235,131	**15,780,608**	23,789,880
	November-35	30	117,364	0	15,702,052		0	235,073		235,073	0	235,073	**15,780,608**	24,024,953
	December-35	31	117,444	0	15,819,496		0	235,131		235,131	0	235,131	**15,780,608**	24,260,084
2035 AVERAGES & TOTALS								**2509156**	**0**					
Q1	January-36	31	184,111	0	16,003,607		0	168,465		168,465	0	168,465	**15,780,608**	24,428,549
	February-36	29	117,204	0	16,120,810		0	234,957		234,957	0	234,957	**15,780,608**	24,663,506
	March-36	31	14,964	0	16,135,774		0	0		0	0	0	**15,780,608**	24,663,506
Q2	April-36	30	14,964	0	16,150,738		0	0		0	0	0	**15,780,608**	24,663,506
	May-36	31	58,860	0	16,209,598		0	0		0	0	0	**15,780,608**	24,663,506
	June-36	30	314,813	0	16,524,411		0	0		0	0	0	**15,780,608**	24,663,506
Q3	July-36	31	82,272	0	16,606,683		0	0		0	0	0	**15,780,608**	24,663,506
	August-36	31	135,497	0	16,742,180		0	0		0	0	0	**15,780,608**	24,663,506
	September-36	30	75,558	0	16,817,738		0	0		0	0	0	**15,780,608**	24,663,506
	October-36	31	14,964	0	16,832,702		0	0		0	0	0	**15,780,608**	24,663,506

	Month	Nbr days	Pit A					Pit E						
			All Pit A inflows Except Pit E	Cummulative Tailings Deposited (m^3)	Cummulative Volume (m^3)	Overflow to Pit E above 128	Overflow to pit E Via Central Dump	Pit E Inflow (m^3)	Volume Pumped from 3rd Portage (m^3)	INFLOW	OUTFLOW	All Pit E inflows Except Pit A	Cummulative Tailings Deposited (m^3)	Cummulative Volume (m^3)
Q4	November-36	30	14,964	0	16,847,666		0	0		0	0	0	**15,780,608**	24,663,506
	December-36	31	14,964	0	16,862,630		0	0		0	0	0	**15,780,608**	24,663,506
2036 AVERAGES & TOTALS								**403422**	**0**					

	Month	Nbr days	Overflow Towards Pit A Via Central Dump	Overflow Towards Goose above 131	Goose Pit				Water T							
					Goose Inflow (m³)	Volume Pumped from 3rd Portage (m³)	Cummulative Tailings Deposited (m³)	Cummulative Volume (m³)	NC to SC (m³)	SC to NC (m³)	Goose to WTP	Tear Drop Lake to SC (m³)	SC to Pit A (m³)	Goose to Pit A (m³)	Goose to Pit E (m³)	Central Dike D/S pond to Pit E (m³)
Q1	January-21	31	0		27,218		1,310,479	5,087,789						**0**	**0**	
	February-21	28	0		24,584		1,310,479	5,112,373						**0**	**0**	
	March-21	31	0		27,218		1,310,479	5,139,591						**0**	**0**	
Q2	April-21	30	0		26,340		1,310,479	5,165,931						**0**	**0**	
	May-21	31	0		-50,000		1,310,479	4,830,151					**0**	**285,780**	**0**	**33,024**
	June-21	30	0		65,316		1,310,479	4,764,340	*220,824.5*				**126,912**	**131,127**	**0**	
Q3	July-21	31	0		31,116		1,310,479	4,795,456	*42,281*				**125,862**	**0**	**0**	
	August-21	31	0		33,535		1,310,479	4,828,991	*52,677*				**42,007**	**0**	**0**	
	September-21	30	0		-21,716		1,310,479	4,807,275	*38,701*				**0**	**0**	**0**	
Q4	October-21	31	0		8,601		1,310,479	4,815,876	*105,508*				**0**	**0**	**0**	
	November-21	30	0		15,711		1,310,479	4,831,587	*3,607*				**0**	**0**	**0**	
	December-21	31	0		13,366		1,310,479	4,844,954	*0*				**0**	**0**	**0**	
2021 AVERAGES & TOTALS			0		**201,289**	**0**			**463,598**	**0**		**0**	**294,781**	**416,907**	**0**	**33,024**
Q1	January-22	31	0		15,000		1,310,479	4,859,954	*0*				**0**	**0**	**0**	
	February-22	28	0		24,584		1,310,479	4,884,538	*0*					**0**	**0**	
	March-22	31	0		27,218		1,310,479	4,911,756	*0*					**0**	**0**	
Q2	April-22	30	0		26,340		1,310,479	4,938,096	*0*					**0**	**0**	
	May-22	31	0		27,218		1,310,479	4,965,314	*0*				**24,717**	**0**	**0**	
	June-22	30	0		65,316		1,310,479	5,030,630	*220,825*				**96,443**	**0**	**0**	
Q3	July-22	31	0		31,116		1,310,479	5,061,746	*42,281*				**217,358**	**0**	**0**	
	August-22	31	0		33,535		1,310,479	5,095,281	*52,677*				**80,000**	**0**	**0**	
	September-22	30	0		46,029		1,310,479	5,141,310	*38,701*				**36,094**	**0**	**0**	
Q4	October-22	31	0		27,218		1,310,479	5,168,528	*-13*					**0**	**0**	
	November-22	30	0		26,340		1,310,479	5,194,868	*0*					**0**	**0**	
	December-22	31	0		27,218		1,310,479	5,222,086	*0*					**0**	**0**	
2022 AVERAGES & TOTALS			0		**377,132**	**0**			**354,470**	**0**		**0**	**454,612**	**0**	**0**	**0**
Q1	January-23	31	0		27,218		1,310,479	5,249,304	*0*					**0**	**0**	
	February-23	28	0		24,584		1,310,479	5,273,888	*0*					**0**	**0**	
	March-23	31	0		27,218		1,310,479	5,301,106	*0*					**0**	**0**	
Q2	April-23	30	0		26,340		1,310,479	5,327,446	*0*					**0**	**0**	
	May-23	31	0		27,218		1,310,479	5,354,664	*0*				**24,717**	**0**	**0**	
	June-23	30	0		65,316		1,310,479	5,419,980	*221,986*				**96,443**	**0**	**0**	
Q3	July-23	31	0		31,116		1,310,479	5,451,096	*55,375*				**217,358**	**0**	**0**	
	August-23	31	0		33,535		1,310,479	5,484,631	*65,929*				**80,000**	**0**	**0**	
	September-23	30	0		46,029		1,310,479	5,530,660	*43,915*				**36,094**	**0**	**0**	
Q4	October-23	31	0		27,218		1,310,479	5,557,878	*0*					**0**	**0**	
	November-23	30	0		26,340		1,310,479	5,584,218	*0*					**0**	**0**	
	December-23	31	0		27,218		1,310,479	5,611,436	*0*					**0**	**0**	
2023 AVERAGES & TOTALS			0		**389,350**	**0**			**387,206**	**0**		**0**	**454,612**	**0**	**0**	**0**
Q1	January-24	31	0		27,218		1,310,479	5,638,654	*0*					**0**	**0**	
	February-24	29	0		24,584		1,310,479	5,663,238	*0*					**0**	**0**	

					Goose Pit				Water T							
	Month	Nbr days	Overflow Towards Pit A Via Central Dump	Overflow Towards Goose above 131	Goose Inflow (m^3)	Volume Pumped from 3rd Portage (m^3)	Cummulative Tailings Deposited (m^3)	Cummulative Volume (m^3)	NC to SC (m^3)	SC to NC (m^3)	Goose to WTP	Tear Drop Lake to SC (m^3)	SC to Pit A (m^3)	Goose to Pit A (m^3)	Goose to Pit E (m^3)	Central Dike D/S pond to Pit E (m^3)
	March-24	31	0		27,218		1,310,479	5,690,456	*0*					**0**	**0**	
Q2	April-24	30	0		26,340		1,310,479	5,716,796	*0*					**0**	**0**	
	May-24	31	0		27,218		1,310,479	5,744,014	*0*				**24,717**	**0**	**0**	
	June-24	30	0		65,316		1,310,479	5,809,330	*221,986*				**96,443**	**0**	**0**	
Q3	July-24	31	0		31,116		1,310,479	5,840,446	*55,375*				**217,358**	**0**	**0**	
	August-24	31	0		33,535		1,310,479	5,873,981	*65,929*				**80,000**	**0**	**0**	
	September-24	30	0		46,029		1,310,479	5,920,010	*43,915*				**36,094**	**0**	**0**	
Q4	October-24	31	0		27,218		1,310,479	5,947,228	*0*					**0**	**0**	
	November-24	30	0		26,340		1,310,479	5,973,568	*0*					**0**	**0**	
	December-24	31	0		27,218		1,310,479	6,000,786	*0*					**0**	**0**	
2024 AVERAGES & TOTALS			0		**389,350**	**0**			**387,206**	**0**		**0**	**454,612**	**0**	**0**	**0**
Q1	January-25	31	0		27,218		1,310,479	6,028,004	*0*					**0**	**0**	
	February-25	28	0		24,584		1,310,479	6,052,588	*0*					**0**	**0**	
	March-25	31	0		27,218		1,310,479	6,079,806	*0*					**0**	**0**	
Q2	April-25	30	0		26,340		1,310,479	6,106,146	*0*					**0**	**0**	
	May-25	31	0		27,218		1,310,479	6,133,364	*0*				**24,717**	**0**	**0**	
	June-25	30	0		65,316		1,310,479	6,198,680	*221,986*				**96,443**	**0**	**0**	
Q3	July-25	31	0		31,116		1,310,479	6,229,796	*55,375*				**217,358**	**0**	**0**	
	August-25	31	0		33,535		1,310,479	6,263,331	*65,929*				**80,000**	**0**	**0**	
	September-25	30	0		46,029		1,310,479	6,309,360	*43,915*				**36,094**	**0**	**0**	
Q4	October-25	31	0		27,218		1,310,479	6,336,578	*0*					**0**	**0**	
	November-25	30	0		26,340		1,310,479	6,362,918	*0*					**0**	**0**	
	December-25	31	0		27,218		1,310,479	6,390,136	*0*					**0**	**0**	
2025 AVERAGES & TOTALS			0		**389,350**	**0**			**387,206**	**0**		**0**	**454,612**	**0**	**0**	**0**
Q1	January-26	31	0		27,218		1,310,479	6,417,354	*0*					**0**	**0**	
	February-26	28	0		24,584		1,310,479	6,441,938	*0*					**0**	**0**	
	March-26	31	0		27,218		1,310,479	6,469,156	*0*					**0**	**0**	
Q2	April-26	30	0		26,340		1,310,479	6,495,496	*0*					**0**	**0**	
	May-26	31	0		27,218		1,310,479	6,522,714	*0*				**24,717**	**0**	**0**	
	June-26	30	0		65,316		1,310,479	6,588,030	*221,986*				**96,443**	**0**	**0**	
Q3	July-26	31	0		31,116		1,310,479	6,619,146	*55,375*				**217,358**	**0**	**0**	
	August-26	31	0		33,535		1,310,479	6,652,681	*65,929*				**80,000**	**0**	**0**	
	September-26	30	0		46,029		1,310,479	6,698,710	*43,915*				**36,094**	**0**	**0**	
Q4	October-26	31	0		27,218		1,310,479	6,725,928	*0*					**0**	**0**	
	November-26	30	0		26,340		1,310,479	6,752,268	*0*					**0**	**0**	
	December-26	31	0		27,218		1,310,479	6,779,486	*0*					**0**	**0**	
2026 AVERAGES & TOTALS					**389,350**	**0**			**387,206**	**0**		**0**	**454,612**	**0**	**0**	**0**
Q1	January-27	31	0		27,218		1,310,479	6,806,704	*0*					**0**	**0**	
	February-27	28	0		24,584		1,310,479	6,831,288	*0*					**0**	**0**	
	March-27	31	0		27,218		1,310,479	6,858,506	*0*					**0**	**0**	
	April-27	30	0		26,340		1,310,479	6,884,846	*0*					**0**	**0**	

					Goose Pit				Water T							
	Month	Nbr days	Overflow Towards Pit A Via Central Dump	Overflow Towards Goose above 131	Goose Inflow (m³)	Volume Pumped from 3rd Portage (m³)	Cummulative Tailings Deposited (m³)	Cummulative Volume (m³)	NC to SC (m³)	SC to NC (m³)	Goose to WTP	Tear Drop Lake to SC (m³)	SC to Pit A (m³)	Goose to Pit A (m³)	Goose to Pit E (m³)	Central Dike D/S pond to Pit E (m³)
Q2	May-27	31	0		27,218		1,310,479	6,912,064	*0*				**24,717**	**0**	**0**	
	June-27	30	0		65,316		1,310,479	6,977,380	*221,986*				**96,443**	**0**	**0**	
Q3	July-27	31	0		31,116		1,310,479	7,008,496	*55,375*				**217,358**	**0**	**0**	
	August-27	31	0		33,535		1,310,479	7,042,031	*65,929*				**80,000**	**0**	**0**	
	September-27	30	613,250		46,029		1,310,479	7,088,060	*43,915*				**36,094**	**0**	**0**	
Q4	October-27	31	1,734,210		27,218		1,310,479	7,115,278	*0*					**0**	**0**	
	November-27	30	2,833,410		26,340		1,310,479	7,141,618	*0*					**0**	**0**	
	December-27	31	3,969,250		27,218		1,310,479	7,168,836	*0*					**0**	**0**	
2027 AVERAGES & TOTALS					**389,350**	**0**			**387,206**	**0**		**0**	**454,612**	**0**	**0**	**0**
Q1	January-28	31	**2,102,990**	**0**	19,131		1,310,479	7,187,967	0							
	February-28	29	**1,624**	**0**	19,313		1,310,479	7,207,280	0							
	March-28	31	**3,422**	**0**	-1,171,269		1,310,479	6,036,011	0							
Q2	April-28	30	**5,162**	**0**	-1,132,869		1,310,479	4,903,142	0							
	May-28	31	**6,960**	**0**	-1,171,087		1,310,479	3,732,055	0				10,616			
	June-28	30	**58,487**	**0**	-1,091,284		1,310,479	2,640,771	221,986.1				283,469			
Q3	July-28	31	**65,264**	**0**	-1,160,158		1,310,479	1,480,613	55,375.4				67,308			
	August-28	31	**75,131**	**0**	-182,352		1,310,479	1,298,261	65,929.3				100,041			
	September-28	30	**102,022**	**0**	366,598		1,310,479	1,664,859	43,914.7				60,594			
Q4	October-28	31	**103,820**	**0**	352,464		1,310,479	2,017,323	0.0				0			
	November-28	30	**105,560**	**0**	352,646		1,310,479	2,369,970	0							
	December-28	31	**107,358**	**0**	352,464		1,310,479	2,722,434	0							
2028 AVERAGES & TOTALS					**-4,446,402**	**0**			**387,206**	**0**		**0**	**522,028**	**0**	**0**	**0**
Q1	January-29	31	786,648	**0**	352,464		1,310,479	3,074,898	0							
	February-29	28	**110,780**	**0**	352,646		1,310,479	3,427,545	0							
	March-29	31	**112,578**	**0**	352,464		1,310,479	3,780,009	0							
Q2	April-29	30	**114,318**	**0**	352,464		1,310,479	4,132,473	0							
	May-29	31	**116,116**	**0**	352,646		1,310,479	4,485,120	0				10,616			
	June-29	30	**167,643**	**0**	394,049		1,310,479	4,879,169	221,986.1				283,469			
Q3	July-29	31	**174,420**	**0**	30,242		1,310,479	4,909,411	55,375.4				67,308			
	August-29	31	**184,287**	**0**	49,297		1,310,479	4,958,708	65,929.3				100,041			
	September-29	30	**211,178**	**0**	33,265		1,310,479	4,991,973	43,914.7				60,594			
Q4	October-29	31	**212,976**	**0**	19,131		1,310,479	5,011,104	0.0				0			
	November-29	30	**214,716**	**0**	19,313		1,310,479	5,030,417	0							
	December-29	31	**216,514**	**0**	19,131		1,310,479	5,049,548	0							
2029 AVERAGES & TOTALS					**2,327,114**	**0**			**387,206**	**0**		**0**	**522,028**	**0**	**0**	**0**
Q1	January-30	31	895,804	**0**	19,131		1,310,479	5,068,679	0							
	February-30	28	**219,936**	**0**	19,313		1,310,479	5,087,992	0							
	March-30	31	**555,067**	**0**	19,131		1,310,479	5,107,123	0							
Q2	April-30	30	**890,141**	**0**	19,131		1,310,479	5,126,254	0							
	May-30	31	**1,225,272**	**0**	19,313		1,310,479	5,145,567	0				10,616			
	June-30	30	**1,610,132**	**0**	60,716		1,310,479	5,206,283	221,986.1				283,469			

	Month	Nbr days			Goose Pit				Water T							
			Overflow Towards Pit A Via Central Dump	Overflow Towards Goose above 131	Goose Inflow (m^3)	Volume Pumped from 3rd Portage (m^3)	Cummulative Tailings Deposited (m^3)	Cummulative Volume (m^3)	NC to SC (m^3)	SC to NC (m^3)	Goose to WTP	Tear Drop Lake to SC (m^3)	SC to Pit A (m^3)	Goose to Pit A (m^3)	Goose to Pit E (m^3)	Central Dike D/S pond to Pit E (m^3)
Q3	July-30	31	**1,950,243**	**0**	30,242		1,310,479	5,236,525	55,375.4				67,308			
	August-30	31	**2,293,443**	**0**	49,297		1,310,479	5,285,822	65,929.3				100,041			
	September-30	30	**2,653,667**	**0**	33,265		1,310,479	5,319,087	43,914.7				60,594			
Q4	October-30	31	**2,711,373**	**47,292**	19,131		1,310,479	5,338,218	0.0				0			
	November-30	30	**2,694,009**	**717,438**	19,313		1,310,479	5,357,531	0							
	December-30	31	**2,676,565**	**827,742**	19,131		1,310,479	5,376,662	0							
2030 AVERAGES & TOTALS					**327,114**	**0**			**387,206**	**0**		**0**	**522,028**	**0**	**0**	**0**
Q1	January-31	31	4,299,153	**792,854**	19,131		1,310,479	5,395,793	0							
	February-31	28	**2,641,917**	**758,446**	19,313		1,310,479	5,415,106	0							
	March-31	31	**2,624,473**	**723,558**	19,131		1,310,479	5,434,237	0							
Q2	April-31	30	**2,607,109**	**688,830**	19,131		1,310,479	5,453,368	0							
	May-31	31	**2,545,770**	**566,151**	19,313		1,310,479	5,472,681	0				10,616			
	June-31	30	**2,177,712**	**0**	60,716		1,310,479	5,533,397	221,986.1				283,469			
Q3	July-31	31	**2,087,876**	**0**	30,242		1,310,479	5,563,639	55,375.4				67,308			
	August-31	31	**1,941,658**	**0**	49,297		1,310,479	5,612,936	65,929.3				100,041			
	September-31	30	**1,838,016**	**0**	33,265		1,310,479	5,646,201	43,914.7				60,594			
Q4	October-31	31	**1,820,572**	**0**	19,131		1,310,479	5,665,332	0.0				0			
	November-31	30	**1,803,208**	**0**	19,313		1,310,479	5,684,645	0							
	December-31	31	**1,785,764**	**0**	19,131		1,310,479	5,703,776	0							
2031 AVERAGES & TOTALS					**327,114**	**0**			**387,206**	**0**		**0**	**522,028**	**0**	**0**	**0**
Q1	January-32	31	1,559,529	**0**	19,131		1,310,479	5,722,907	0							
	February-32	29	**1,751,116**	**0**	19,313		1,310,479	5,742,220	0							
	March-32	31	**1,733,672**	**0**	19,131		1,310,479	5,761,351	0							
Q2	April-32	30	**1,716,308**	**0**	19,131		1,310,479	5,780,482	0							
	May-32	31	**1,654,968**	**0**	19,313		1,310,479	5,799,795	0				10,616			
	June-32	30	**1,286,911**	**0**	60,716		1,310,479	5,860,511	221,986.1				283,469			
Q3	July-32	31	**1,197,074**	**0**	30,242		1,310,479	5,890,753	55,375.4				67,308			
	August-32	31	**1,050,857**	**0**	49,297		1,310,479	5,940,050	65,929.3				100,041			
	September-32	30	**947,215**	**0**	33,265		1,310,479	5,973,315	43,914.7				60,594			
Q4	October-32	31	**596,437**	**0**	19,131		1,310,479	5,992,446	0.0				0			
	November-32	30	**245,740**	**0**	19,313		1,310,479	6,011,759	0							
	December-32	31	**0**	**0**	19,131		1,310,479	6,030,890	0							
2032 AVERAGES & TOTALS					**327,114**	**0**			**387,206**	**0**		**0**	**522,028**	**0**	**0**	**0**
Q1	January-33	31	0	**0**	19,131		1,310,479	6,050,021	0							
	February-33	28	**0**	**0**	19,313		1,310,479	6,069,334	0							
	March-33	31	**0**	**0**	19,131		1,310,479	6,088,465	0							
Q2	April-33	30	**0**	**0**	19,131		1,310,479	6,107,596	0							
	May-33	31	**0**	**0**	19,313		1,310,479	6,126,909	0				10,616			
	June-33	30	**0**	**0**	60,716		1,310,479	6,187,625	221,986.1				283,469			
Q3	July-33	31	**0**	**0**	30,242		1,310,479	6,217,867	55,375.4				67,308		0	
	August-33	31	**0**	**0**	49,297		1,310,479	6,267,164	65,929.3				100,041		0	

	Month	Nbr days			Goose Pit				Water T							
			Overflow Towards Pit A Via Central Dump	Overflow Towards Goose above 131	Goose Inflow (m^3)	Volume Pumped from 3rd Portage (m^3)	Cummulative Tailings Deposited (m^3)	Cummulative Volume (m^3)	NC to SC (m^3)	SC to NC (m^3)	Goose to WTP	Tear Drop Lake to SC (m^3)	SC to Pit A (m^3)	Goose to Pit A (m^3)	Goose to Pit E (m^3)	Central Dike D/S pond to Pit E (m^3)
	September-33	30	0	0	33,265		1,310,479	6,300,429	43,914.7				60,594		0	
Q4	October-33	31	0	0	19,131		1,310,479	6,319,560	0.0				0		0	
	November-33	30	0	0	19,313		1,310,479	6,338,873	0						0	
	December-33	31	0	0	19,131		1,310,479	6,358,004	0						0	
2033 AVERAGES & TOTALS					**327,114**	**0**			**387,206**	**0**		**0**	**522,028**	**0**	**0**	**0**
Q1	January-34	31	0	0	19,131		1,310,479	6,377,135	0						0	
	February-34	28	0	0	19,313		1,310,479	6,396,448	0						0	
	March-34	31	0	0	19,131		1,310,479	6,415,579	0						0	
Q2	April-34	30	0	0	19,131		1,310,479	6,434,710	0						0	
	May-34	31	0	0	19,313		1,310,479	6,454,023	0				10,616		0	
	June-34	30	0	0	60,716		1,310,479	6,514,739	221,986.1				283,469		0	
Q3	July-34	31	0	0	30,242		1,310,479	6,544,981	55,375.4				67,308		0	
	August-34	31	0	0	49,297		1,310,479	6,594,278	65,929.3				100,041		0	
	September-34	30	0	0	33,265		1,310,479	6,627,543	43,914.7				60,594		0	
Q4	October-34	31	0	0	19,131		1,310,479	6,646,674	0.0				0		0	
	November-34	30	0	0	19,313		1,310,479	6,665,987	0						0	
	December-34	31	0	0	19,131		1,310,479	6,685,118	0						0	
2034 AVERAGES & TOTALS					**327,114**	**0**			**387,206**	**0**		**0**	**522,028**	**0**	**0**	**0**
Q1	January-35	31	0	0	19,131		1,310,479	6,704,249	0						0	
	February-35	28	0	0	19,313		1,310,479	6,723,562	0						0	
	March-35	31	0	0	19,131		1,310,479	6,742,693	0						0	
Q2	April-35	30	0	0	19,131		1,310,479	6,761,824	0						0	
	May-35	31	0	0	19,313		1,310,479	6,781,137	0				10,616		0	
	June-35	30	0	0	60,716		1,310,479	6,841,853	221,986.1				283,469		0	
Q3	July-35	31	0	0	30,242		1,310,479	6,872,095	55,375.4				67,308		0	
	August-35	31	0	0	49,297		1,310,479	6,921,392	65,929.3				100,041		0	
	September-35	30	0	0	33,265		1,310,479	6,954,657	43,914.7				60,594		0	
Q4	October-35	31	0	0	19,131		1,310,479	6,973,788	0.0				0		0	
	November-35	30	0	0	19,313		1,310,479	6,993,101	0						0	
	December-35	31	0	0	19,131		1,310,479	7,012,232	0						0	
2035 AVERAGES & TOTALS					**327,114**	**0**			**387,206**	**0**		**0**	**522,028**	**0**	**0**	**0**
Q1	January-36	31	0	0	19,131		1,310,479	7,031,363	0						0	
	February-36	29	0	0	19,313		1,310,479	7,050,676	0						0	
	March-36	31	0	0	352,464		1,310,479	7,403,140	0						0	
Q2	April-36	30	0	0	352,464		1,310,479	7,755,605	0						0	
	May-36	31	0	0	19,313		1,310,479	7,774,918	0				10,616		0	
	June-36	30	0	0	60,716		1,310,479	7,835,634	221,986.1				283,469		0	
Q3	July-36	31	0	0	30,242		1,310,479	7,865,876	55,375.4				67,308		0	
	August-36	31	0	0	49,297		1,310,479	7,915,173	65,929.3				100,041		0	
	September-36	30	0	0	33,265		1,310,479	7,948,438	43,914.7				60,594		0	
	October-36	31	0	0	19,131		1,310,479	7,967,569	0.0				0		0	

					Goose Pit				Water T							
	Month	**Nbr days**	Overflow Towards Pit A Via Central Dump	Overflow Towards Goose above 131	Goose Inflow (m^3)	Volume Pumped from 3rd Portage (m^3)	Cummulative Tailings Deposited (m^3)	Cummulative Volume (m^3)	NC to SC (m^3)	SC to NC (m^3)	Goose to WTP	Tear Drop Lake to SC (m^3)	SC to Pit A (m^3)	Goose to Pit A (m^3)	Goose to Pit E (m^3)	Central Dike D/S pond to Pit E (m^3)
Q4	November-36	30	**0**	**0**	19,313		1,310,479	7,986,882	0						0	
	December-36	31	**0**	**0**	19,131		1,310,479	8,006,013	0						0	
2036 AVERAGES & TOTALS					**993,781**	**0**			**387,206**	**0**		**0**	**522,028**	**0**	**0**	**0**

	Month	Nbr days	ransfers								Parameters			East Dike Seepage			
			Goose to SC (m^3)	Interception sump to NC (m^3)	SD1, NC-A to NC-D, Japan Sump to NC (m^3)	Waste rock seep to NC (m^3)	SD2-3-4-5 to SC (m^3)	Central Dike D/S pond to Pit A (m^3)	Central Dike D/S pond to SC (m^3)	SC to Central Dike D/S pond (m^3)	NC Tailings water/ice entrampment (%)	SC Tailings water/ice entrampment (%)	IPD Tailings water entrapment (%)	Volume pumped	Discharge location		
															2PL	Pit E	Pit A
Q1	January-21	31						**19,155**			65%	65%	13%	8,437	1	0	0
	February-21	28						**23,305**			65%	65%	13%	7,332	1	0	0
	March-21	31						**16,273**			65%	65%	13%	7,928	1	0	0
Q2	April-21	30						**18,982**			65%	65%	13%	8,156	0.23	0.77	0
	May-21	31				*1,625*	*10,616*	**23,367**			40%	40%	13%	10,081	0.12	0.88	0
	June-21	30		*126,269*	*5,434*	*10,832*	*18,574*	**141,570**			25%	25%	13%	9,785	0	1	0
Q3	July-21	31		*24,514*	*6,653*	*3,414*	*468*	**155,319**			25%	25%	13%	15,141	0	1	0
	August-21	31		*8,346*	*104*	*1,365*	*3,174*	**135,283**			25%	25%	13%	17,203	0	1	0
	September-21	30		*12,085*	*3,378*	*2,000*	*2,095*	**109,976**			25%	25%	13%	12,214	0	1	0
Q4	October-21	31		*95,222*	*4,144*	*6,155*	*1,234*	**123,466**			40%	40%	13%	13,080	1	1	0
	November-21	30		*3,607*	*0*	*0*	*0*	**63,631**			65%	65%	13%	17,628	0	1	0
	December-21	31		*0*	*0*	*0*	*0*	**26,867**			65%	65%	13%	7,179	0.5	0.5	0
2021 AVERAGES & TOTALS			**0**	**270,043**	**19,713**	**25,391**	**36,161**	**857,194**	**0**	**0**	**48%**	**48%**	**13%**	**134,165**			
Q1	January-22	31		*0*	*0*	*0*	*0*	**15,853**	4,709		64%	65%	49%	6,149	0.96	0.04	0
	February-22	28						**47,040**			64%	65%	49%	8,064	1	0	0
	March-22	31						**52,080**			64%	65%	49%	8,928	1	0	0
Q2	April-22	30						**64,800**			64%	65%	49%	8,640	1	0	0
	May-22	31				*1,625*	*10,616*	**111,600**			64%	56%	49%	8,928	0	1	0
	June-22	30		*126,269*	*5,434*	*10,832*	*18,574*	**129,600**			47%	47%	49%	8,640	0	1	0
Q3	July-22	31		*24,514*	*6,653*	*3,414*	*468*	**133,920**			47%	47%	49%	8,928	0	1	0
	August-22	31		*8,346*	*104*	*1,365*	*3,174*	**133,920**			47%	47%	49%	8,928	0	1	0
	September-22	30		*12,085*	*3,378*	*2,000*	*2,095*	**108,000**			47%	47%	49%	8,640	0	1	0
Q4	October-22	31						**66,960**			55%	56%	49%	8,928	1	0	0
	November-22	30						**50,400**			64%	65%	49%	8,640	1	0	0
	December-22	31						**52,080**			64%	65%	49%	8,928	1	0	0
2022 AVERAGES & TOTALS			**0**	**171,214**	**15,569**	**19,236**	**34,927**	**966,253**	**4,709**	**0**	**57%**	**57%**	**49%**	**102,341**			
Q1	January-23	31						52,080			64%	65%	49%	8,928	1	0	0
	February-23	28						47,040			64%	65%	49%	8,064	1	0	0
	March-23	31						52,080			64%	65%	49%	8,928	1	0	0
Q2	April-23	30						64,800			64%	65%	49%	8,640	1	0	0
	May-23	31				*1,625*	*10,616*	111,600			64%	56%	49%	8,928	0	1	0
	June-23	30		*126,269*	*5,434*	*10,832*	*18,574*	129,600			47%	47%	49%	8,640	0	1	0
Q3	July-23	31		*24,514*	*6,653*	*3,414*	*468*	133,920			47%	47%	49%	8,928	0	1	0
	August-23	31		*8,346*	*104*	*1,365*	*3,174*	133,920			47%	47%	49%	8,928	0	1	0
	September-23	30		*12,085*	*3,378*	*2,000*	*2,095*	108,000			47%	47%	49%	8,640	0	1	0
Q4	October-23	31						66,960			55%	56%	49%	8,928	1	0	0
	November-23	30						50,400			64%	65%	49%	8,640	1	0	0
	December-23	31						52,080			64%	65%	49%	8,928	1	0	0
2023 AVERAGES & TOTALS			**0**	**171,214**	**15,569**	**19,236**	**34,927**		**0**	**0**		**57%**	**49%**	**105,120**			
Q1	January-24	31						52,080			64%	65%	49%	8,928	1	0	0
	February-24	29						47,040			64%	65%	49%	8,352	1	0	0

	Month	Nbr days	ransfers								Parameters			East Dike Seepage			
			Goose to SC (m^3)	Interception sump to NC (m³)	SD1, NC-A to NC-D, Japan Sump to NC (m³)	Waste rock seep to NC (m³)	SD2-3-4-5 to SC (m³)	Central Dike D/S pond to Pit A (m³)	Central Dike D/S pond to SC (m³)	SC to Central Dike D/S pond (m³)	NC Tailings water/ice entrampment (%)	SC Tailings water/ice entrampment (%)	IPD Tailings water entrapment (%)	Volume pumped	Discharge location		
															2PL	Pit E	Pit A
	March-24	31						52,080			64%	65%	49%	8,928	1	0	0
Q2	April-24	30						64,800			64%	65%	49%	8,640	1	0	0
	May-24	31				1,625	10,616	111,600			64%	56%	49%	8,928	0	1	0
	June-24	30		126,269	5,434	10,832	18,574	129,600			47%	47%	49%	8,640	0	1	0
Q3	July-24	31		24,514	6,653	3,414	468	133,920			47%	47%	49%	8,928	0	1	0
	August-24	31		8,346	104	1,365	3,174	133,920			47%	47%	49%	8,928	0	1	0
	September-24	30		12,085	3,378	2,000	2,095	108,000			47%	47%	49%	8,640	0	1	0
Q4	October-24	31						66,960			55%	56%	49%	8,928	1	0	0
	November-24	30						50,400			64%	65%	49%	8,640	1	0	0
	December-24	31						52,080			64%	65%	49%	8,928	1	0	0
2024 AVERAGES & TOTALS			0	171,214	15,569	19,236	34,927		0	0		57%	49%	105,408			
Q1	January-25	31						52,080			64%	65%	49%	8,928	1	0	0
	February-25	28						47,040			64%	65%	49%	8,064	1	0	0
	March-25	31						52,080			64%	65%	49%	8,928	1	0	0
Q2	April-25	30						64,800			64%	65%	49%	8,640	1	0	0
	May-25	31				1,625	10,616	111,600			64%	56%	49%	8,928	0	1	0
	June-25	30		126,269	5,434	10,832	18,574	129,600			47%	47%	49%	8,640	0	1	0
Q3	July-25	31		24,514	6,653	3,414	468	133,920			47%	47%	49%	8,928	0	1	0
	August-25	31		8,346	104	1,365	3,174	133,920			47%	47%	49%	8,928	0	1	0
	September-25	30		12,085	3,378	2,000	2,095	108,000			47%	47%	49%	8,640	0	1	0
Q4	October-25	31						66,960			55%	56%	49%	8,928	1	0	0
	November-25	30						50,400			64%	65%	49%	8,640	1	0	0
	December-25	31						52,080			64%	65%	49%	8,928	1	0	0
2025 AVERAGES & TOTALS			0	171,214	15,569	19,236	34,927		0	0		57%	49%	105,120			
Q1	January-26	31						52,080			64%	65%	49%	8,928	1	0	0
	February-26	28						47,040			64%	65%	49%	8,064	1	0	0
	March-26	31						52,080			64%	65%	49%	8,928	1	0	0
Q2	April-26	30						64,800			64%	65%	49%	8,640	1	0	0
	May-26	31				1,625	10,616	111,600			64%	56%	49%	8,928	0	1	0
	June-26	30		126,269	5,434	10,832	18,574	129,600			47%	47%	49%	8,640	0	1	0
Q3	July-26	31		24,514	6,653	3,414	468	133,920			47%	47%	49%	8,928	0	1	0
	August-26	31		8,346	104	1,365	3,174	133,920			47%	47%	49%	8,928	0	1	0
	September-26	30		12,085	3,378	2,000	2,095	108,000			47%	47%	49%	8,640	0	1	0
Q4	October-26	31						66,960			55%	56%	49%	8,928	1	0	0
	November-26	30						50,400			64%	65%	49%	8,640	1	0	0
	December-26	31						52,080			64%	65%	49%	8,928	1	0	0
2026 AVERAGES & TOTALS			0	171,214	15,569	19,236	34,927		0	0		57%	49%	105,120			
Q1	January-27	31						52,080			90%	65%	49%	8,928	1	0	0
	February-27	28						47,040			90%	65%	49%	8,064	1	0	0
	March-27	31						52,080			90%	65%	49%	8,928	1	0	0
	April-27	30						64,800			90%	65%	49%	8,640	1	0	0

	Month	Nbr days	ransfers								Parameters			East Dike Seepage			
			Goose to SC (m^3)	Interception sump to NC (m^3)	SD1, NC-A to NC-D, Japan Sump to NC (m^3)	Waste rock seep to NC (m^3)	SD2-3-4-5 to SC (m^3)	Central Dike D/S pond to Pit A (m^3)	Central Dike D/S pond to SC (m^3)	SC to Central Dike D/S pond (m^3)	NC Tailings water/ice entrampment (%)	SC Tailings water/ice entrampment (%)	IPD Tailings water entrapment (%)	Volume pumped	Discharge location		
															2PL	Pit E	Pit A
Q2	May-27	31				1,625	10,616	111,600			90%	40%	49%	8,928	0	1	0
	June-27	30		126,269	5,434	10,832	18,574	129,600			30%	25%	49%	8,640	0	1	0
Q3	July-27	31		24,514	6,653	3,414	468	133,920			30%	25%	49%	8,928	0	1	0
	August-27	31		8,346	104	1,365	3,174	133,920			30%	25%	49%	8,928	0	1	0
	September-27	30		12,085	3,378	2,000	2,095	108,000			30%	25%	49%	8,640	0	1	0
Q4	October-27	31						66,960			75%	40%	49%	8,928	1	0	0
	November-27	30						50,400			80%	65%	49%	8,640	1	0	0
	December-27	31						52,080			90%	65%	49%	8,928	1	0	0
2027 AVERAGES & TOTALS			**0**	**171,214**	**15,569**	**19,236**	**34,927**		**0**	**0**			**49%**	**105,120**			
Q1	January-28	31									90%	65%	65%	8,928	0		1
	February-28	29									90%	65%	65%	8,352	0		1
	March-28	31									90%	65%	65%	8,928	0		1
Q2	April-28	30									90%	65%	65%	8,640	0		1
	May-28	31				1,625	10,616				90%	40%	40%	8,928	0		1
	June-28	30		126,269	5,434	10,832	18,574				30%	25%	25%	8,640	0		1
Q3	July-28	31		24,514	6,653	3,414	468				30%	25%	25%	8,928	0		1
	August-28	31		8,346	104	1,365	3,174				30%	25%	25%	8,928	0		1
	September-28	30		12,085	3,378	2,000	2,095				30%	25%	25%	8,640	0		1
Q4	October-28	31									75%	40%	40%	8,928	0		1
	November-28	30									80%	65%	65%	8,640	0		1
	December-28	31									90%	65%	65%	8,928	0		1
2028 AVERAGES & TOTALS			**0**	**171,214**	**15,569**	**19,236**	**34,927**		**0**	**0**			**48%**	**105,408**			
Q1	January-29	31									90%	46%	65%	14,964	0		1
	February-29	28									90%	46%	65%	14,964	0		1
	March-29	31									90%	46%	65%	14,964	0		1
Q2	April-29	30									90%	46%	65%	14,964	0		1
	May-29	31				1,625	10,616				90%	40%	40%	14,964	0		1
	June-29	30		126,269	5,434	10,832	18,574				30%	32%	25%	14,964	0		1
Q3	July-29	31		24,514	6,653	3,414	468				30%	32%	25%	14,964	0		1
	August-29	31		8,346	104	1,365	3,174				30%	32%	25%	14,964	0		1
	September-29	30		12,085	3,378	2,000	2,095				30%	32%	25%	14,964	0		1
Q4	October-29	31									75%	40%	40%	14,964	0		1
	November-29	30									80%	46%	65%	14,964	0		1
	December-29	31									90%	46%	65%	14,964	0		1
2029 AVERAGES & TOTALS			**0**	**171,214**	**15,569**	**19,236**	**34,927**		**0**	**0**			**48%**	**179,567**			
Q1	January-30	31									90%	46%	65%	14,964	0		1
	February-30	28									90%	46%	65%	14,964	0		1
	March-30	31									90%	46%	65%	14,964	0		1
Q2	April-30	30									90%	46%	65%	14,964	0		1
	May-30	31				1,625	10,616				90%	40%	40%	14,964	0		1
	June-30	30		126,269	5,434	10,832	18,574				30%	32%	25%	14,964	0		1

	Month	Nbr days	ransfers								Parameters			East Dike Seepage			
			Goose to SC (m^3)	Interception sump to NC (m^3)	SD1, NC-A to NC-D, Japan Sump to NC (m^3)	Waste rock seep to NC (m^3)	SD2-3-4-5 to SC (m^3)	Central Dike D/S pond to Pit A (m^3)	Central Dike D/S pond to SC (m^3)	SC to Central Dike D/S pond (m^3)	NC Tailings water/ice entrampment (%)	SC Tailings water/ice entrampment (%)	IPD Tailings water entrapment (%)	Volume pumped	Discharge location		
															2PL	Pit E	Pit A
Q3	July-30	31		24,514	6,653	3,414	468				30%	32%	25%	14,964	0		1
	August-30	31		8,346	104	1,365	3,174				30%	32%	25%	14,964	0		1
	September-30	30		12,085	3,378	2,000	2,095				30%	32%	25%	14,964	0		1
Q4	October-30	31									75%	40%	40%	14,964	0		1
	November-30	30									80%	46%	65%	14,964	0		1
	December-30	31									90%	46%	65%	14,964	0		1
2030 AVERAGES & TOTALS			**0**	**171,214**	**15,569**	**19,236**	**34,927**		**0**	**0**			**48%**	**179,567**			
Q1	January-31	31									90%	46%	65%	14,964	0		1
	February-31	28									90%	46%	65%	14,964	0		1
	March-31	31									90%	46%	65%	14,964	0		1
Q2	April-31	30									90%	46%	65%	14,964	0		1
	May-31	31				1,625	10,616				90%	40%	40%	14,964	0		1
	June-31	30		126,269	5,434	10,832	18,574				30%	32%	25%	14,964	0		1
Q3	July-31	31		24,514	6,653	3,414	468				30%	32%	25%	14,964	0		1
	August-31	31		8,346	104	1,365	3,174				30%	32%	25%	14,964	0		1
	September-31	30		12,085	3,378	2,000	2,095				30%	32%	25%	14,964	0		1
Q4	October-31	31									75%	40%	40%	14,964	0		1
	November-31	30									80%	46%	65%	14,964	0		1
	December-31	31									90%	46%	65%	14,964	0		1
2031 AVERAGES & TOTALS			**0**	**171,214**	**15,569**	**19,236**	**34,927**		**0**	**0**			**48%**	**179,567**			
Q1	January-32	31									90%	46%	65%	14,964	0		1
	February-32	29									90%	46%	65%	14,964	0		1
	March-32	31									90%	46%	65%	14,964	0		1
Q2	April-32	30									90%	46%	65%	14,964	0		1
	May-32	31				1,625	10,616				90%	40%	40%	14,964	0		1
	June-32	30		126,269	5,434	10,832	18,574				30%	32%	25%	14,964	0		1
Q3	July-32	31		24,514	6,653	3,414	468				30%	32%	25%	14,964	0		1
	August-32	31		8,346	104	1,365	3,174				30%	32%	25%	14,964	0		1
	September-32	30		12,085	3,378	2,000	2,095				30%	32%	25%	14,964	0		1
Q4	October-32	31									75%	40%	40%	14,964	0		1
	November-32	30									80%	46%	65%	14,964	0		1
	December-32	31									90%	46%	65%	14,964	0		1
2032 AVERAGES & TOTALS			**0**	**171,214**	**15,569**	**19,236**	**34,927**		**0**	**0**			**48%**	**179,567**			
Q1	January-33	31									90%	46%	65%	14,964	0		1
	February-33	28									90%	46%	65%	14,964	0		1
	March-33	31									90%	46%	65%	14,964	0		1
Q2	April-33	30									90%	46%	65%	14,964	0		1
	May-33	31				1,625	10,616				90%	40%	40%	14,964	0		1
	June-33	30		126,269	5,434	10,832	18,574				30%	32%	25%	14,964	0		1
Q3	July-33	31		24,514	6,653	3,414	468				30%	32%	25%	14,964	0		1
	August-33	31		8,346	104	1,365	3,174				30%	32%	25%	14,964	0		1

	Month	Nbr days	ransfers								Parameters			East Dike Seepage			
			Goose to SC (m^3)	Interception sump to NC (m^3)	SD1, NC-A to NC-D, Japan Sump to NC (m^3)	Waste rock seep to NC (m^3)	SD2-3-4-5 to SC (m^3)	Central Dike D/S pond to Pit A (m^3)	Central Dike D/S pond to SC (m^3)	SC to Central Dike D/S pond (m^3)	NC Tailings water/ice entrampment (%)	SC Tailings water/ice entrampment (%)	IPD Tailings water entrapment (%)	Volume pumped	Discharge location		
															2PL	Pit E	Pit A
	September-33	30		12,085	3,378	2,000	2,095				30%	32%	25%	14,964	0		1
Q4	October-33	31									75%	40%	40%	14,964	0		1
	November-33	30									80%	46%	65%	14,964	0		1
	December-33	31									90%	46%	65%	14,964	0		1
2033 AVERAGES & TOTALS			**0**	**171,214**	**15,569**	**19,236**	**34,927**		**0**	**0**			**48%**	**179,567**			
Q1	January-34	31									90%	46%	65%	14,964	0		1
	February-34	28									90%	46%	65%	14,964	0		1
	March-34	31									90%	46%	65%	14,964	0		1
Q2	April-34	30									90%	46%	65%	14,964	0		1
	May-34	31				1,625	10,616				90%	40%	40%	14,964	0		1
	June-34	30		126,269	5,434	10,832	18,574				30%	32%	25%	14,964	0		1
Q3	July-34	31		24,514	6,653	3,414	468				30%	32%	25%	14,964	0		1
	August-34	31		8,346	104	1,365	3,174				30%	32%	25%	14,964	0		1
	September-34	30		12,085	3,378	2,000	2,095				30%	32%	25%	14,964	0		1
Q4	October-34	31									75%	40%	40%	14,964	0		1
	November-34	30									80%	46%	65%	14,964	0		1
	December-34	31									90%	46%	65%	14,964	0		1
2034 AVERAGES & TOTALS			**0**	**171,214**	**15,569**	**19,236**	**34,927**		**0**	**0**			**48%**	**179,567**			
Q1	January-35	31									90%	46%	65%	14,964	0		1
	February-35	28									90%	46%	65%	14,964	0		1
	March-35	31									90%	46%	65%	14,964	0		1
Q2	April-35	30									90%	46%	65%	14,964	0		1
	May-35	31				1,625	10,616				90%	40%	40%	14,964	0		1
	June-35	30		126,269	5,434	10,832	18,574				30%	32%	25%	14,964	0		1
Q3	July-35	31		24,514	6,653	3,414	468				30%	32%	25%	14,964	0		1
	August-35	31		8,346	104	1,365	3,174				30%	32%	25%	14,964	0		1
	September-35	30		12,085	3,378	2,000	2,095				30%	32%	25%	14,964	0		1
Q4	October-35	31									75%	40%	40%	14,964	0		1
	November-35	30									80%	46%	65%	14,964	0		1
	December-35	31									90%	46%	65%	14,964	0		1
2035 AVERAGES & TOTALS			**0**	**171,214**	**15,569**	**19,236**	**34,927**		**0**	**0**			**48%**	**179,567**			
Q1	January-36	31									90%	46%	65%	14,964	0		1
	February-36	29									90%	46%	65%	14,964	0		1
	March-36	31									90%	46%	65%	14,964	0		1
Q2	April-36	30									90%	46%	65%	14,964	0		1
	May-36	31				1,625	10,616				90%	40%	40%	14,964	0		1
	June-36	30		126,269	5,434	10,832	18,574				30%	32%	25%	14,964	0		1
Q3	July-36	31		24,514	6,653	3,414	468				30%	32%	25%	14,964	0		1
	August-36	31		8,346	104	1,365	3,174				30%	32%	25%	14,964	0		1
	September-36	30		12,085	3,378	2,000	2,095				30%	32%	25%	14,964	0		1
	October-36	31									75%	40%	40%	14,964	0		1

	Month	Nbr days	Transfers								Parameters			East Dike Seepage			
			Goose to SC (m^3)	Interception sump to NC (m^3)	SD1, NC-A to NC-D, Japan Sump to NC (m^3)	Waste rock seep to NC (m^3)	SD2-3-4-5 to SC (m^3)	Central Dike D/S pond to Pit A (m^3)	Central Dike D/S pond to SC (m^3)	SC to Central Dike D/S pond (m^3)	NC Tailings water/ice entrampment (%)	SC Tailings water/ice entrampment (%)	IPD Tailings water entrapment (%)	Volume pumped	Discharge location		
															2PL	Pit E	Pit A
Q4	November-36	30									80%	46%	65%	14,964	0		1
	December-36	31									90%	46%	65%	14,964	0		1
2036 AVERAGES & TOTALS			0	171,214	15,569	19,236	34,927		0	0			48%	179,567			

	Month	Nbr days	Volume pumped 2PL	Vault Pit					Phaser Pit						Vault ATP	
				Vault Pit Inflow (m^3)	Enter 1 for the discharge location		Volume Pumped from Wally (m^3)	Cummulative Volume (m^3)	Phaser Pit Inflow (m^3)	Enter 1 for the discharge location				Cummulative Volume (m^3)	Vault ATP Inflow (m^3)	Cummulative Volume (m^3)
					Vault Pit	Vault ATP				Vault Pit	Phaser Pit	Phaser Lake	Vault ATP			
Q1	January-21	31	8,437	0	1			309,759	0		1			342,939	0	1,061,739
	February-21	28	7,332	0	1			309,759	0		1			342,939	0	1,061,739
	March-21	31	7,928	0	1			309,759	0		1			342,939	0	1,061,739
Q2	April-21	30	1,876	0	1			309,759	0		1			342,939	0	1,061,739
	May-21	31	1,221	0	1		0	309,759	0		1			342,939	0	1,061,739
	June-21	30	0	66,526	1		0	376,285	73,652		1			416,591	118,708	1,180,447
Q3	July-21	31	0	17,775	1		0	394,061	19,679		1			436,271	6,053	1,186,500
	August-21	31	0	47,967	1		0	442,027	53,105		1			489,375	60,667	1,247,167
	September-21	30	0	22,611	1		0	464,639	25,033		1			514,409	30,672	1,277,839
Q4	October-21	31	0	0	1			464,639	0		1			514,409	0	1,277,839
	November-21	30	0	0	1			464,639	0		1			514,409	0	1,277,839
	December-21	31	7,645	0	1			464,639	0		1			514,409	0	1,277,839
2021 AVERAGES & TOTALS			**34,440**	**154,880**			**0**		**171,470**						**216,100**	
Q1	January-22	31	5,903	0	1			464,639	0		1			514,409	0	1,277,839
	February-22	28	8,064	0	1			464,639	0		1			514,409	0	1,277,839
	March-22	31	8,928	0	1			464,639	0		1			514,409	0	1,277,839
Q2	April-22	30	8,640	0	1		0	464,639	0		1			514,409	0	1,277,839
	May-22	31	0	0	1		0	464,639	0		1			514,409	0	1,277,839
	June-22	30	0	66,526	1		0	531,165	73,652		1			588,061	118,708	1,396,547
Q3	July-22	31	0	17,775	1		0	548,940	19,679		1			607,740	6,053	1,402,600
	August-22	31	0	47,967	1		0	596,907	53,105		1			660,845	60,667	1,463,267
	September-22	30	0	22,611	1		0	619,518	25,033		1			685,878	30,672	1,493,939
Q4	October-22	31	8,928	0	1			619,518	0		1			685,878	0	1,493,939
	November-22	30	8,640	0	1			619,518	0		1			685,878	0	1,493,939
	December-22	31	8,928	0	1			619,518	0		1			685,878	0	1,493,939
2022 AVERAGES & TOTALS			**58,031**	**154,880**			**0**		**171,470**						**216,100**	
Q1	January-23	31	8,928	0	1			619,518	0		1			685,878	0	1,493,939
	February-23	28	8,064	0	1			619,518	0		1			685,878	0	1,493,939
	March-23	31	8,928	0	1			619,518	0		1			685,878	0	1,493,939
Q2	April-23	30	8,640	0	1			619,518	0		1			685,878	0	1,493,939
	May-23	31	0	0	1		0	619,518	0		1			685,878	0	1,493,939
	June-23	30	0	66,526	1		0	686,044	73,652		1			759,530	118,708	1,612,647
Q3	July-23	31	0	17,775	1		0	703,820	19,679		1			779,210	6,053	1,618,700
	August-23	31	0	47,967	1		0	751,786	53,105		1			832,314	60,667	1,679,367
	September-23	30	0	22,611	1		0	774,398	25,033		1			857,348	30,672	1,710,039
Q4	October-23	31	8,928	0	1		0	774,398	0		1			857,348	0	1,710,040
	November-23	30	8,640	0	1		0	774,398	0		1			857,348	0	1,710,040
	December-23	31	8,928	0	1			774,398	0		1			857,348	0	1,710,040
2023 AVERAGES & TOTALS			**61,056**	**154,880**			**0**		**171,470**						**216,100**	
Q1	January-24	31	8,928	0	1			774,398	0		1			857,348	0	1,710,040
	February-24	29	8,352	0	1			774,398	0		1			857,348	0	1,710,040

	Month	Nbr days	Volume pumped 2PL	Vault Pit					Phaser Pit						Vault ATP	
				Vault Pit Inflow (m³)	Enter 1 for the discharge location		Volume Pumped from Wally (m^3)	Cummulative Volume (m^3)	Phaser Pit Inflow (m³)	Enter 1 for the discharge location				Cummulative Volume (m^3)	Vault ATP Inflow (m³)	Cummulative Volume (m^3)
					Vault Pit	Vault ATP				Vault Pit	Phaser Pit	Phaser Lake	Vault ATP			
	March-24	31	8,928	0	1			774,398	0		1			857,348	0	1,710,040
Q2	April-24	30	8,640	0	1		0	774,398	0		1			857,348	0	1,710,040
	May-24	31	0	0	1		0	774,398	0		1			857,348	0	1,710,040
	June-24	30	0	66,526	1		0	840,924	73,652		0.65	0.35		905,435	118,708	1,828,748
Q3	July-24	31	0	17,775	1		0	858,699	19,679			1		905,435	6,053	1,834,801
	August-24	31	0	47,967	1		0	906,666	53,105			1		905,435	60,667	1,895,468
	September-24	30	0	22,611	1		0	929,277	25,033			1		905,435	30,672	1,926,140
Q4	October-24	31	8,928	0	1		0	929,277	0			1		905,435	0	1,926,140
	November-24	30	8,640	0	1		0	929,277	0			1		905,435	0	1,926,140
	December-24	31	8,928	0	1			929,277	0			1		905,435	0	1,926,140
2024 AVERAGES & TOTALS			**61,344**	**154,880**			**0**		**171,470**						**216,100**	
Q1	January-25	31	8,928	0	1			929,277	0			1		905,435	0	1,926,140
	February-25	28	8,064	0	1			929,277	0			1		905,435	0	1,926,140
	March-25	31	8,928	0	1			929,277	0			1		905,435	0	1,926,140
Q2	April-25	30	8,640	0	1			929,277	0			1		905,435	0	1,926,140
	May-25	31	0	0	1			929,277	0			1		905,435	0	1,926,140
	June-25	30	0	66,526	1			995,803	73,652			1		905,435	118,708	2,044,848
Q3	July-25	31	0	17,775	1			1,013,579	19,679			1		905,435	6,053	2,050,901
	August-25	31	0	47,967	1			1,061,545	53,105			1		905,435	60,667	2,111,568
	September-25	30	0	22,611	1			1,084,157	25,033			1		905,435	30,672	2,456,434
Q4	October-25	31	8,928	0	1			1,084,157	0			1		905,435	0	2,456,434
	November-25	30	8,640	0	1			1,084,157	0			1		905,435	0	2,456,434
	December-25	31	8,928	0	1			1,084,157	0			1		905,435	0	2,456,434
2025 AVERAGES & TOTALS			**61,056**	**154,880**			**0**		**171,470**						**216,100**	
Q1	January-26	31	8,928	0	1			1,084,157	0			1		905,435	0	2,456,434
	February-26	28	8,064	0	1			1,084,157	0			1		905,435	0	2,456,434
	March-26	31	8,928	0	1			1,084,157	0			1		905,435	0	2,456,434
Q2	April-26	30	8,640	0	1			1,084,157	0			1		905,435	0	2,456,434
	May-26	31	0	0	1			1,084,157	0			1		905,435	0	2,456,434
	June-26	30	0	66,526	1			1,150,683	73,652			1		905,435	118,708	2,575,142
Q3	July-26	31	0	17,775	1			1,168,458	19,679			1		905,435	6,053	2,581,195
	August-26	31	0	47,967	1			1,216,425	53,105			1		905,435	60,667	2,641,862
	September-26	30	0	22,611	1			1,239,036	25,033			1		905,435	30,672	2,672,534
Q4	October-26	31	8,928	0	1			1,239,036	0			1		905,435	0	2,672,534
	November-26	30	8,640	0	1			1,239,036	0			1		905,435	0	2,672,534
	December-26	31	8,928	0	1			1,239,036	0			1		905,435	0	2,672,534
2026 AVERAGES & TOTALS			**61,056**	**154,880**			**0**		**171,470**						**216,100**	
Q1	January-27	31	8,928	0	1			1,239,036	0			1		905,435	0	2,672,534
	February-27	28	8,064	0	1			1,239,036	0			1		905,435	0	2,672,534
	March-27	31	8,928	0	1			1,239,036	0			1		905,435	0	2,672,534
	April-27	30	8,640	0	1			1,239,036	0			1		905,435	0	2,672,534

	Month	Nbr days	Volume pumped 2PL	Vault Pit: Vault Pit Inflow (m^3)	Vault Pit: Enter 1 for the discharge location – Vault Pit	Vault Pit: Enter 1 for the discharge location – Vault ATP	Vault Pit: Volume Pumped from Wally (m^3)	Vault Pit: Cummulative Volume (m^3)	Phaser Pit: Phaser Pit Inflow (m^3)	Phaser Pit: Enter 1 for the discharge location – Vault Pit	Phaser Pit: Enter 1 for the discharge location – Phaser Pit	Phaser Pit: Enter 1 for the discharge location – Phaser Lake	Phaser Pit: Enter 1 for the discharge location – Vault ATP	Phaser Pit: Cummulative Volume (m^3)	Vault ATP: Vault ATP Inflow (m^3)	Vault ATP: Cummulative Volume (m^3)
Q2	May-27	31	0	0	1			1,239,036	0			1		905,435	0	2,672,534
	June-27	30	0	66,526	1			1,305,562	73,652			0.71	0.29	905,435	118,708	2,812,793
Q3	July-27	31	0	17,775	1			1,323,338	19,679				1	905,435	6,053	2,838,525
	August-27	31	0	47,967	1			1,371,304	53,105				1	905,435	60,667	2,952,297
	September-27	30	0	22,611	1			1,393,916	25,033				1	905,435	30,672	3,008,002
Q4	October-27	31	8,928	0	1			1,393,916	0				1	905,435	0	3,008,002
	November-27	30	8,640	0	1			1,393,916	0				1	905,435	0	3,008,002
	December-27	31	8,928	0	1			1,393,916	0				1	905,435	0	3,008,002
2027 AVERAGES & TOTALS			**61,056**	**154,880**			**0**		**171,470**						**216,100**	
Q1	January-28	31	0	0	1			1,393,916	0				1	905,435	0	3,008,002
	February-28	29	0	0	1			1,393,916	0				1	905,435	0	3,008,002
	March-28	31	0	0	1			1,393,916	0				1	905,435	0	3,008,002
Q2	April-28	30	0	0	1			1,393,916	0				1	905,435	0	3,008,002
	May-28	31	0	0	1			1,393,916	0				1	905,435	0	3,008,002
	June-28	30	0	66,526	1			1,460,442	73,652				1	905,435	118,708	3,200,363
Q3	July-28	31	0	17,775	1			1,478,217	19,679				1	905,435	6,053	3,226,095
	August-28	31	0	47,967	1			1,526,184	53,105				1	905,435	60,667	3,339,867
	September-28	30	0	22,611	1			1,548,795	25,033				1	905,435	30,672	3,395,572
Q4	October-28	31	0	0	1			1,548,795	0				1	905,435	0	3,395,572
	November-28	30	0	0	1			1,548,795	0				1	905,435	0	3,395,572
	December-28	31	0	0	1			1,548,795	0				1	905,435	0	3,395,572
2028 AVERAGES & TOTALS			**0**	**154,880**			**0**		**171,470**						**216,100**	
Q1	January-29	31	0	0	1			1,548,795	0	1				905,435	0	3,395,572
	February-29	28	0	0	1			1,548,795	0	1				905,435	0	3,395,572
	March-29	31	0	0	1			1,548,795	0	1				905,435	0	3,395,572
Q2	April-29	30	0	0	1			1,548,795	0	1				905,435	0	3,395,572
	May-29	31	0	0	1			1,548,795	0	1				905,435		3,395,572
	June-29	30	0	66,526	1			1,688,974	73,652	1				905,435		3,395,572
Q3	July-29	31	0	17,775	1			1,726,428	19,679	1				905,435		3,395,572
	August-29	31	0	47,967	1			1,827,500	53,105	1				905,435		3,395,572
	September-29	30	0	22,611	1			1,875,144	25,033	1				905,435		3,395,572
Q4	October-29	31	0	0	1			1,875,144	0	1				905,435		3,395,572
	November-29	30	0	0	1			1,875,144	0	1				905,435		3,395,572
	December-29	31	0	0	1			1,875,144	0	1				905,435	0	3,395,572
2029 AVERAGES & TOTALS			**0**	**154,880**			**0**		**171,470**						**0**	
Q1	January-30	31	0	0	1			1,875,144	0	1				905,435	0	3,395,572
	February-30	28	0	0	1			1,875,144	0	1				905,435	0	3,395,572
	March-30	31	0	0	1			1,875,144	0	1				905,435	0	3,395,572
Q2	April-30	30	0	0	1			1,875,144	0	1				905,435	0	3,395,572
	May-30	31	0	0	1			1,875,144	0	1				905,435	0	3,395,572
	June-30	30	0	66,526	1			2,015,323	73,652	1				905,435		3,395,572

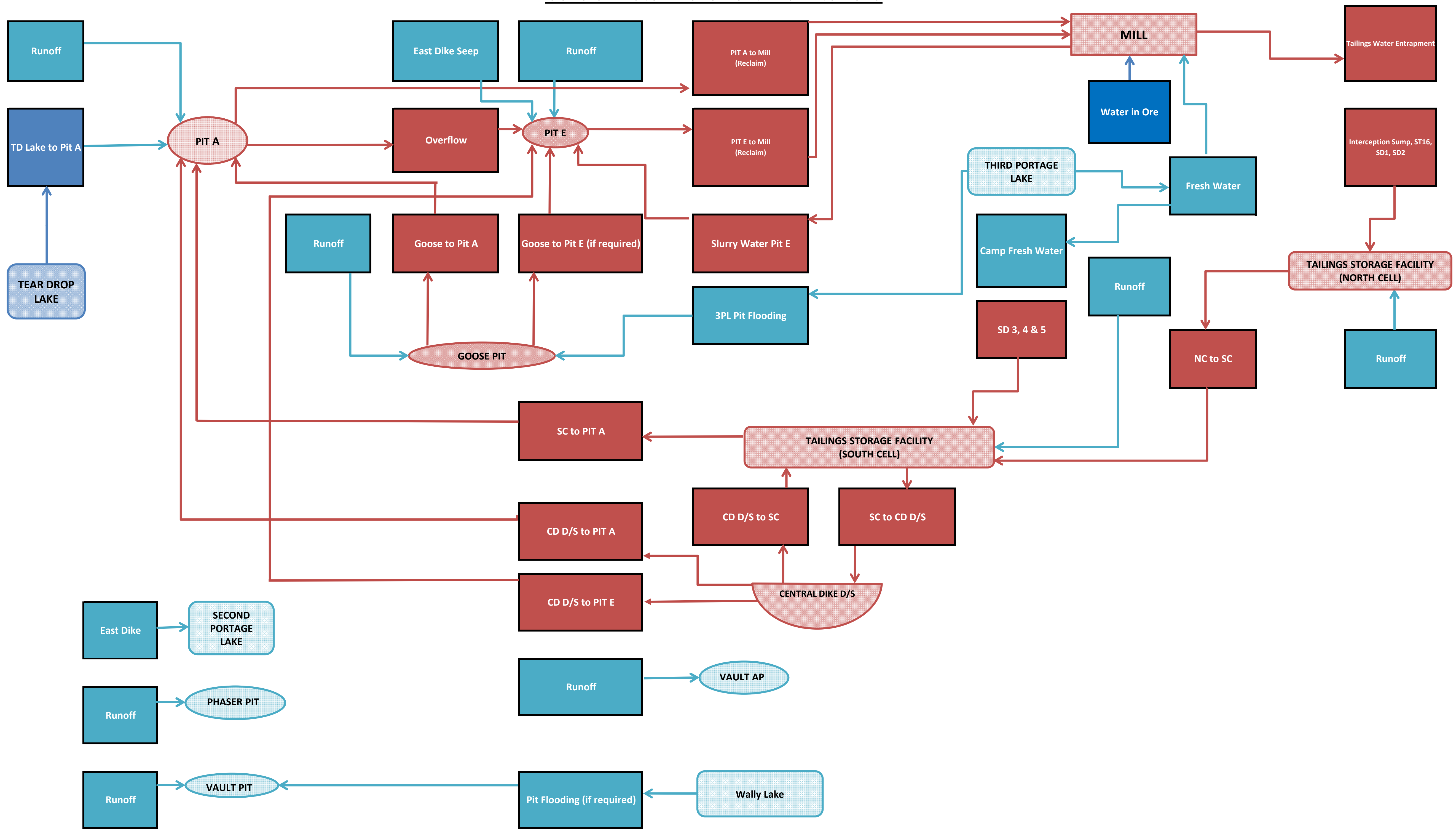
	Month	Nbr days	Volume pumped 2PL	Vault Pit					Phaser Pit						Vault ATP	
				Vault Pit Inflow (m³)	Enter 1 for the discharge location		Volume Pumped from Wally (m^3)	Cummulative Volume (m^3)	Phaser Pit Inflow (m³)	Enter 1 for the discharge location				Cummulative Volume (m^3)	Vault ATP Inflow (m³)	Cumulative Volume (m^3)
					Vault Pit	Vault ATP				Vault Pit	Phaser Pit	Phaser Lake	Vault ATP			
Q3	July-30	31	0	17,775	1			2,052,777	19,679	1				905,435		3,395,572
	August-30	31	0	47,967	1			2,153,849	53,105	1				905,435		3,395,572
	September-30	30	0	22,611	1			2,201,493	25,033	1				905,435		3,395,572
Q4	October-30	31	0	0	1			2,201,493	0	1				905,435	0	3,395,573
	November-30	30	0	0	1			2,201,493	0	1				905,435	0	3,395,573
	December-30	31	0	0	1			2,201,493	0	1				905,435	0	3,395,573
2030 AVERAGES & TOTALS			**0**	**154,880**			**0**		**171,470**						**0**	
Q1	January-31	31	0	0	1			2,201,493	0	1				905,435	0	3,395,573
	February-31	28	0	0	1			2,201,493	0	1				905,435	0	3,395,573
	March-31	31	0	0	1			2,201,493	0	1				905,435	0	3,395,573
Q2	April-31	30	0	0	1			2,201,493	0	1				905,435	0	3,395,573
	May-31	31	0	0	1			2,201,493	0	1				905,435		3,395,573
	June-31	30	0	66,526	1			2,341,672	73,652	1				905,435		3,395,573
Q3	July-31	31	0	17,775	1			2,379,126	19,679	1				905,435		3,395,573
	August-31	31	0	47,967	1			2,480,198	53,105	1				905,435		3,395,573
	September-31	30	0	22,611	1			2,527,842	25,033	1				905,435		3,395,573
Q4	October-31	31	0	0	1			2,527,842	0	1				905,435		3,395,573
	November-31	30	0	0	1			2,527,842	0	1				905,435	0	3,395,573
	December-31	31	0	0	1			2,527,842	0	1				905,435	0	3,395,573
2031 AVERAGES & TOTALS			**0**	**154,880**			**0**		**171,470**						**0**	
Q1	January-32	31	0	0	1			2,527,842	0	1				905,435	0	3,395,573
	February-32	29	0	0	1			2,527,842	0	1				905,435	0	3,395,573
	March-32	31	0	0	1			2,527,842	0	1				905,435	0	3,395,573
Q2	April-32	30	0	0	1			2,527,842	0	1				905,435	0	3,395,573
	May-32	31	0	0	1			2,527,842	0	1				905,435		3,395,573
	June-32	30	0	66,526	1			2,668,021	73,652	1				905,435		3,395,573
Q3	July-32	31	0	17,775	1			2,705,475	19,679	1				905,435		3,395,573
	August-32	31	0	47,967	1			2,806,547	53,105	1				905,435		3,395,573
	September-32	30	0	22,611	1			2,854,191	25,033	1				905,435		3,395,573
Q4	October-32	31	0	0	1			2,854,191	0	1				905,435		3,395,573
	November-32	30	0	0	1			2,854,191	0	1				905,435	0	3,395,573
	December-32	31	0	0	1			2,854,191	0	1				905,435	0	3,395,573
2032 AVERAGES & TOTALS			**0**	**154,880**			**0**		**171,470**						**0**	
Q1	January-33	31	0	0	1			2,854,191	0	1				905,435	0	3,395,573
	February-33	28	0	0	1			2,854,191	0	1				905,435	0	3,395,573
	March-33	31	0	0	1			2,854,191	0	1				905,435	0	3,395,573
Q2	April-33	30	0	0	1			2,854,191	0	1				905,435	0	3,395,573
	May-33	31	0	0	1			2,854,191	0	1				905,435	0	3,395,573
	June-33	30	0	66,526	1			2,994,370	73,652	1				905,435		3,395,573
Q3	July-33	31	0	17,775	1			3,031,824	19,679	1				905,435		3,395,573
	August-33	31	0	47,967	1			3,132,896	53,105	1				905,435		3,395,573

	Month	Nbr days	Volume pumped 2PL	Vault Pit					Phaser Pit						Vault ATP	
				Vault Pit Inflow (m³)	Enter 1 for the discharge location		Volume Pumped from Wally (m^3)	Cummulative Volume (m^3)	Phaser Pit Inflow (m³)	Enter 1 for the discharge location				Cummulative Volume (m^3)	Vault ATP Inflow (m³)	Cummulative Volume (m^3)
					Vault Pit	Vault ATP				Vault Pit	Phaser Pit	Phaser Lake	Vault ATP			
	September-33	30	0	22,611	1			3,180,540	25,033	1				905,435		3,395,573
Q4	October-33	31	0	0	1			3,180,540	0	1				905,435	0	3,395,573
	November-33	30	0	0	1			3,180,540	0	1				905,435	0	3,395,573
	December-33	31	0	0	1			3,180,540	0	1				905,435	0	3,395,573
2033 AVERAGES & TOTALS			**0**	**154,880**			**0**		**171,470**						**0**	
Q1	January-34	31	0	0	1			3,180,540	0	1				905,435	0	3,395,573
	February-34	28	0	0	1			3,180,540	0	1				905,435	0	3,395,573
	March-34	31	0	0	1			3,180,540	0	1				905,435	0	3,395,573
Q2	April-34	30	0	0	1			3,180,540	0	1				905,435	0	3,395,573
	May-34	31	0	0	1			3,180,540	0	1				905,435		3,395,573
	June-34	30	0	66,526	1			3,320,719	73,652	1				905,435		3,395,573
Q3	July-34	31	0	17,775	1			3,358,173	19,679	1				905,435		3,395,573
	August-34	31	0	47,967	1			3,459,245	53,105	1				905,435		3,395,573
	September-34	30	0	22,611	1			3,506,889	25,033	1				905,435		3,395,573
Q4	October-34	31	0	0	1			3,506,889	0	1				905,435		3,395,573
	November-34	30	0	0	1			3,506,889	0	1				905,435	0	3,395,573
	December-34	31	0	0	1			3,506,889	0	1				905,435	0	3,395,573
2034 AVERAGES & TOTALS			**0**	**154,880**			**0**		**171,470**						**0**	
Q1	January-35	31	0	0	1			3,506,889	0	1				905,435	0	3,395,573
	February-35	28	0	0	1			3,506,889	0	1				905,435	0	3,395,573
	March-35	31	0	0	1			3,506,889	0	1				905,435	0	3,395,573
Q2	April-35	30	0	0	1			3,506,889	0	1				905,435	0	3,395,573
	May-35	31	0	0	1			3,506,889	0	1				905,435		3,395,573
	June-35	30	0	66,526	1			3,647,068	73,652	1				905,435		3,395,573
Q3	July-35	31	0	17,775	1			3,684,522	19,679	1				905,435		3,395,573
	August-35	31	0	47,967	1			3,785,594	53,105	1				905,435		3,395,573
	September-35	30	0	22,611	1			3,833,238	25,033	1				905,435		3,395,573
Q4	October-35	31	0	0	1			3,833,238	0	1				905,435		3,395,573
	November-35	30	0	0	1			3,833,238	0	1				905,435	0	3,395,573
	December-35	31	0	0	1			3,833,238	0	1				905,435	0	3,395,573
2035 AVERAGES & TOTALS			**0**	**154,880**			**0**		**171,470**						**0**	
Q1	January-36	31	0	0	1			3,833,238	0	1				905,435	0	3,395,573
	February-36	29	0	0	1			3,833,238	0	1				905,435	0	3,395,573
	March-36	31	0	0	1			3,833,238	0	1				905,435	0	3,395,573
Q2	April-36	30	0	0	1			3,833,238	0	1				905,435	0	3,395,573
	May-36	31	0	333,333	1			4,166,571	0	1				905,435		3,395,573
	June-36	30	0	333,333	1			4,573,557	73,652	1				905,435		3,395,573
Q3	July-36	31	0	333,333	1			4,926,570	19,679	1				905,435		3,395,573
	August-36	31	0	333,333	1			5,313,008	53,105	1				905,435		3,395,573
	September-36	30	0	333,333	1			5,671,374	25,033	1				905,435		3,395,573
	October-36	31	0	333,333	1			6,004,708	0	1				905,435		3,395,573

	Month	Nbr days	Volume pumped 2PL	Vault Pit					Phaser Pit						Vault ATP	
				Vault Pit Inflow (m³)	Enter 1 for the discharge location		Volume Pumped from Wally (m^3)	Cummulative Volume (m^3)	Phaser Pit Inflow (m³)	Enter 1 for the discharge location				Cummulative Volume (m^3)	Vault ATP Inflow (m³)	Cummulative Volume (m^3)
					Vault Pit	Vault ATP				Vault Pit	Phaser Pit	Phaser Lake	Vault ATP			
Q4	November-36	30	0	333,333	1			6,338,041	0	1				905,435	0	3,395,573
	December-36	31	0	333,333	1			6,671,374	0	1				905,435	0	3,395,573
2036 AVERAGES & TOTALS			0	2,666,667			0		171,470						0	

APPENDIX B – WATER MANAGEMENT SCHEMATIC FLOW SHEETS

General Water Movement - 2021 to 2023

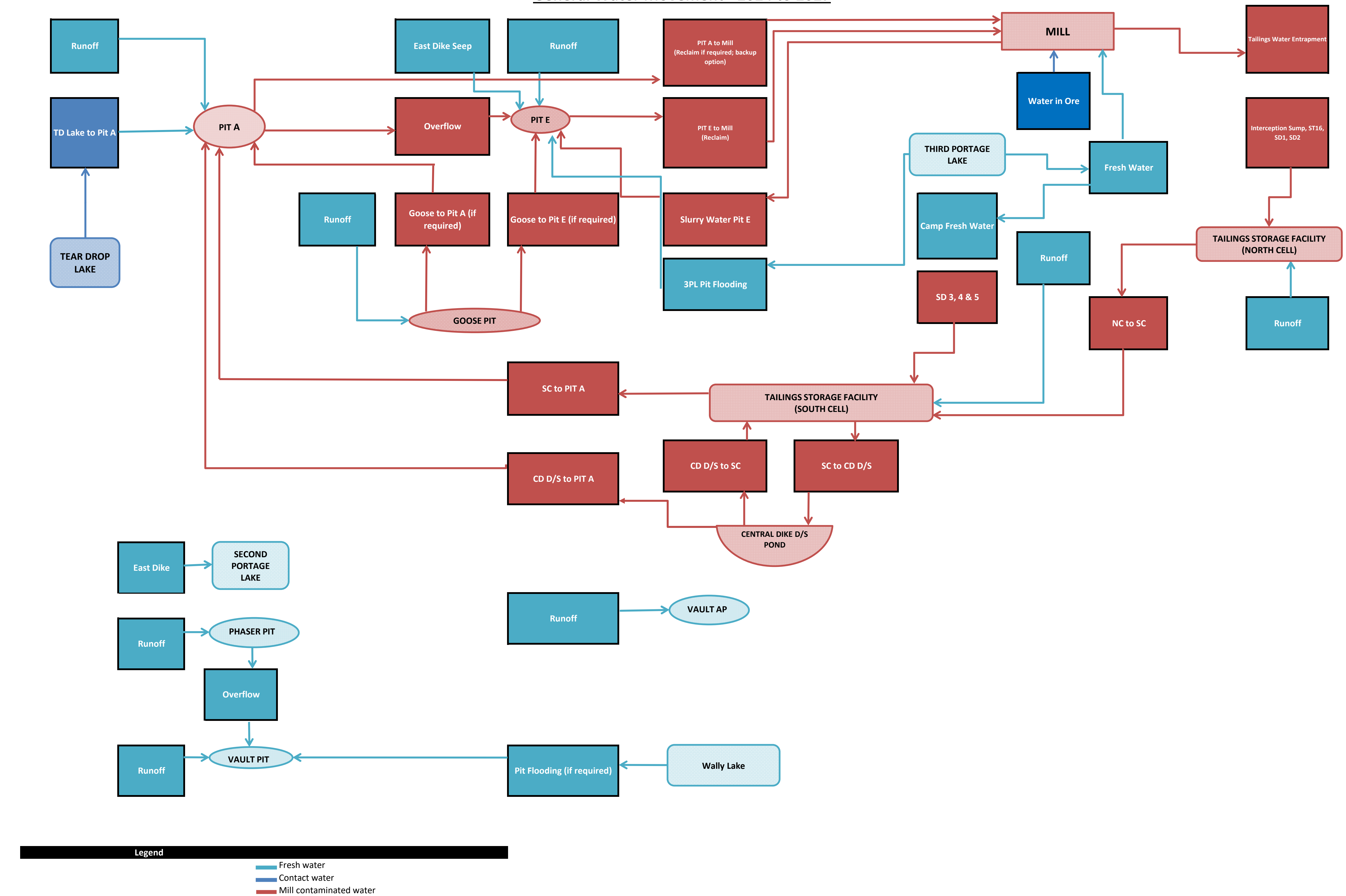


Legend

- Fresh water
- Contact water
- Mill contaminated water

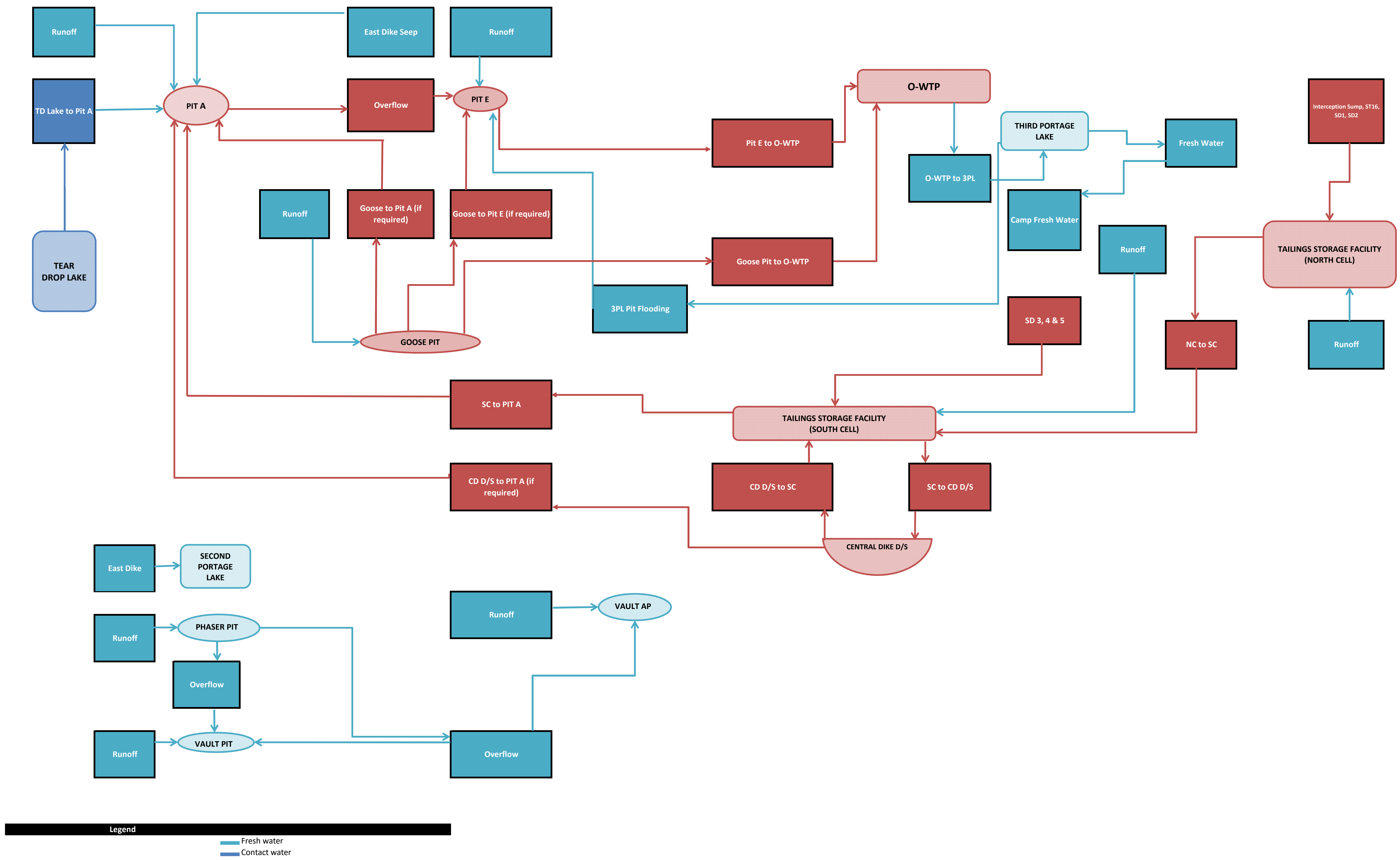
*Small water transfers are not shown on this drawing, refer to water balance tables for detailed water movement.

General Water Movement - 2024 to 2027



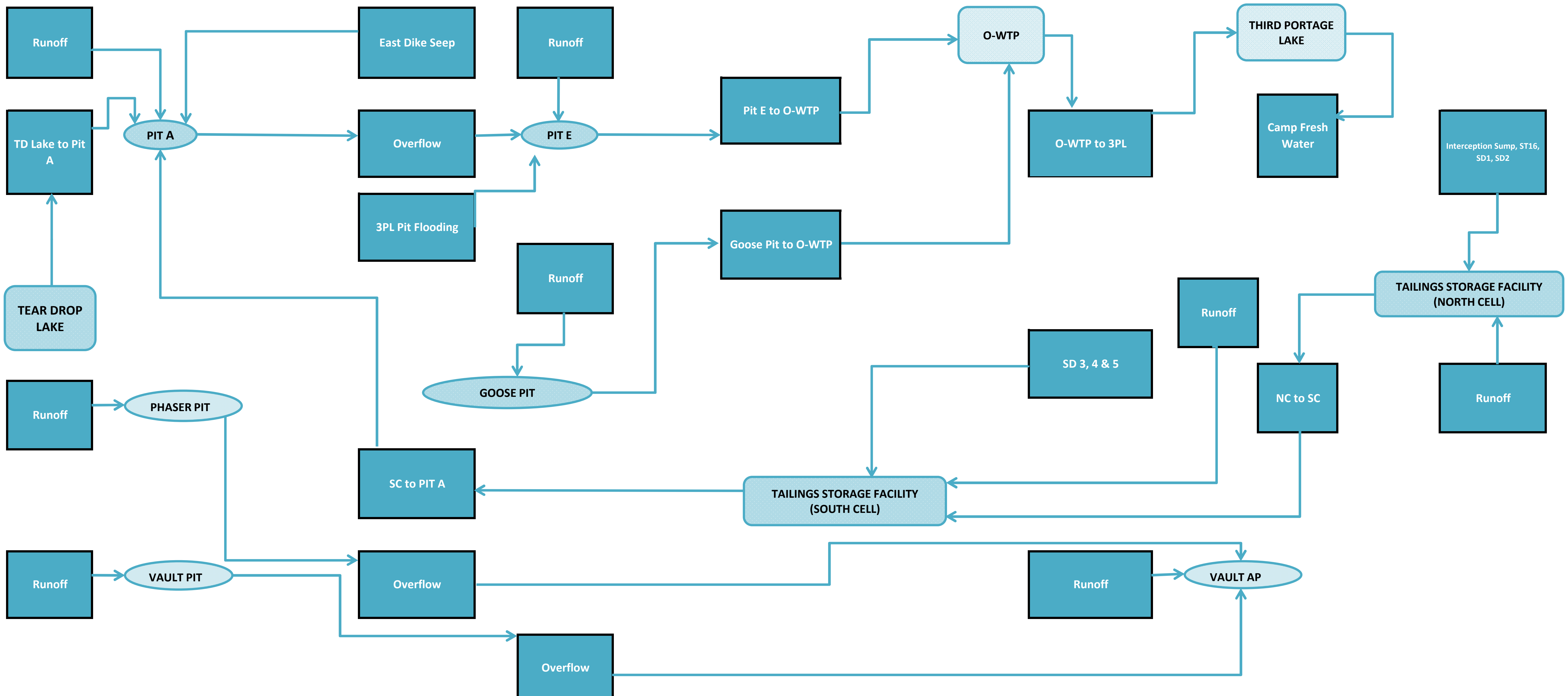
*Small water transfers are not shown on this drawing, refer to water balance tables for detailed water movement.

General Water Movement - 2028



*Small water transfers are not shown on this drawing, refer to water balance tables for detailed water movement.

General Water Movement - 2029 to 2030

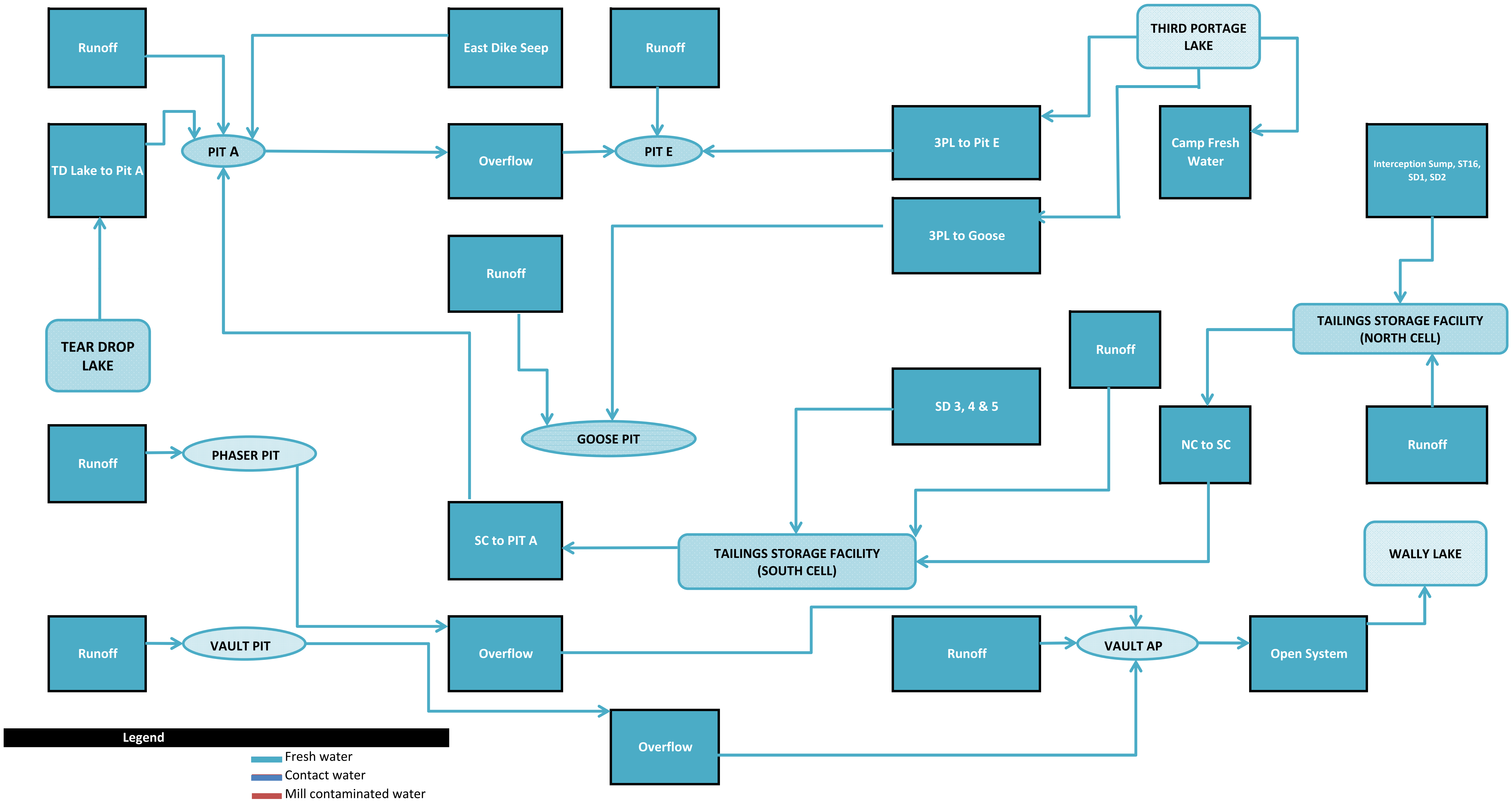


Legend

- Fresh water
- Contact water
- Mill contaminated water

*Small water transfers are not shown on this drawing, refer to water balance tables for detailed water movement.

General Water Movement - 2031 to 2036 - Open System



*Small water transfers are not shown on this drawing, refer to water balance tables for detailed water movement.

APPENDIX C – 2021 MEADOWBANK WATER QUALITY FORECASTING UPDATE

Title of document: **MEADOWBANK WATER QUALITY FORECASTING UPDATE FOR THE 2021 WATER MANAGEMENT PLAN**

Client: **AGNICO EAGLE MINES**

Project: **MEADOWBANK GOLD PROJECT**

Prepared by: Anh-Long Nguyen, Eng., M.Sc.
#OIQ: 122858, #NAPEG: L2716

Reviewed by: Houssem Eddine Ben Ali, Eng.
#OIQ: 6028681

Approved by: Anh-Long Nguyen, Eng., M.Sc.
#OIQ: 122858, #NAPEG: L2716

LIST OF REVISIONS

Revision					Pages Revised	Remarks
#	Prep.	Rev.	App.	Date		
PA	ALN	HBA	ALN	Mar. 4, 2022		Issue for internal comments
PB	ALN	HBA	ALN	Mar. 7, 2022		Issue for client's comments
00	ALN	HBA	ALN	Mar. 31, 2022		Final

NOTICE TO READER

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1.0 Introduction

1.1 Mandate

SNC-Lavalin Inc (SNC-Lavalin) was mandated by Agnico Eagle (Agnico) to review and update the water quality forecasting model developed in 2012 and updated yearly using the Water Balance reported in the 2021 Water Management Report and Plan (2021 WMP) to be submitted in March 2022 by Agnico.

1.2 Study Objectives and Content

This Technical Note presents the water quality forecast model updated for the Meadowbank Gold Project, based on the Water Balance 2021 (WB 2021) of Agnico (latest revision provided on February 17th, 2022). The WB 2021 was developed according to the updated Life of Mine (LOM) (Meadowbank 2021 Waste Management Plan) and the mine development sequence provided by Agnico and summarized in Table 1-1. The updated water quality forecast model applies to the North and South Cell Tailings Storage Facility (TSF) Reclaim Ponds, Portage and Goose Pits and Vault Pit.

The objective of this Technical Note is to forecast the concentration of the selected parameters of concern within the North and South Cell TSF Reclaim Ponds and the Portage and Goose Pits until closure, verify last year's assumptions and results, update the model if necessary, develop recommendations and assess water treatment requirements.

For the Vault Pit, no treatment is expected during re-flooding of the pit since there is no tailings disposal facility at the Vault site. The Vault Attenuation Pond only receives mine pit runoff water and fresh water. This will be confirmed through regular monitoring required by the Type A Water Licence 2AM-MEA1530 from 2014 to 2021. The first modelling of the Vault area was realized in 2016 based on the 2014 and 2015 data and updated on a yearly basis using sampling data collected for that year. For this year's report, the measurements taken in 2021 for this monitoring campaign were analyzed and are presented in section 5.0.

1.3 Water Balance

The Water Balance 2021 (WB 2021) was developed by Agnico (Agnico 2022). The water balance examined the water transfers required for the water management infrastructure during the active LOM under average hydrologic conditions.

The WB 2021 was based on the revised mining schedule presented in Table 1-1 below for Meadowbank and Vault areas.

Table 1-1: Water Management Phases (based on Meadowbank 2021 Waste Management Plan)

ACTIVITY	UPDATED START DATE[1]	UPDATED END DATE[1]
Pits Mining		
Portage Pit	January 2010	June 2019
North (Pit A)	January 2010	June 2018
Central (Pit B, C D)	January 2010	April 2013
South (Pit E)	January 2010	June 2019
Goose Pit	April 2012	May 2015
Vault Pit	January 2014	September 2018
Phaser and BB Phaser Pit	July 2018	September 2018
Whale Tail Project Pits (and underground)	July 2019	December 2026
Tailings Storage Facility Operations		
North Cell	January 2010	December 2026
South Cell	November 2014	December 2026
Goose pit (in pit tailings deposition)	July 2019	August 2020
Portage (in pit tailings deposition)	August 2020	December 2026
Rock Storage Facility (RSF) Operations		
Portage RSF	January 2009	October 2019
Vault RSF	January 2014	September 2018
Attenuation / Reclaim Pond Water Management		
Attenuation Pond (South Cell)[2]	January 2009	November 2014
Attenuation / Phaser Ponds Vault Lake	January 2014	September 2018
Other Key Activities		
Mill Operations	January 2010	December 2026
Dewatering of Vault Lake	June 2013	July 2014
Dewatering of Phaser Lake	July 2016	October 2016
Flooding of Vault Pit[4]	June 2019	August 2025
Flooding of Phaser and BB Phaser Pits [4]	-	-
Reclaim Water Treatment[5] – Goose Pit	June 2028	November 2028
Reclaim Water Treament[5] – Portage Pit	January 2027	June 2028
In-Pit Cover Construction[5] – Goose Pit	2029	2030
In-Pit Cover Construction[5] – Portage Pit	2028	2029
North and South Cell TSF Cover Construction	2027	2031
Flooding of Portage and Goose Pits [3, 5]	December 2028	June 2038
Breaching of dikes[5]	n/a	July 2038 only if water criteria are met

Notes:

1. Periods are given from the beginning of the starting month to the end of the ending month.
2. After November 2014, the Reclaim Pond is relocated to the South Cell TSF. After this date, there is no Attenuation Pond.
3. Artificial flooding only with a combination of pumps and siphons, natural run off inflow as part of re-flooding not accounted in this table.
4. Vault and Phaser pits and lake are expected to be flooded solely on a passive method (run offs) due to the small flooding volume required to re-establish initial elevation combined with its big watershed.
5. Tentative dates.

2.0 Review of Water Balance and Water Quality Data for 2021

2.1 Documents Reviewed

A review of the available water balance and water quality data measured in 2021 was undertaken by SNC-Lavalin and compiled with previous data measured since 2012. This includes a review of the following documents:

- WB 2021 based on the Meadowbank 2021 Waste Management Plan.
- Water quality chemical analysis results from the Portage Area for 2021. The chemical analysis results of interest for this Technical Note are presented in Section 8 of the 2021 Annual Report and were integrated in the data previously obtained, specifically:
  - North Cell TSF Reclaim Pond (ST-21) from January 2013 to October 2021;
  - South Cell TSF Reclaim Pond (ST-21) (former South Cell TSF Attenuation Pond ST-18) from June 2013 to October 2021;
  - Mill effluent metal and cyanide concentrations from January 2013 to December 2021;
  - Monthly grab samples of Mill Effluent taken in 2021;
  - Portage North Pit (ST-17, Pit A) and Portage South Pit (ST-19, Pit E) from January 2013 to December 2021;
  - Goose Pit (samples taken in the sump pit and in the lake, ST-20) from January 2013 to October 2021;
  - Central Dike seepages collected in the downstream collection pond (ST-S-5) sampled in 2021;
  - East Dike (ST-1) seepage and Saddle Dam 3 (ST-32) sump sampled in 2021;
  - Saddle Dam 1 downstream sump (ST-S-2) and Portage Rock Storage Facility seepage (RSF) (ST-16) sampled from 2015 to 2021;
  - Tailing shake flask extraction (SFE) tests results conducted in 2021 on the tailings.
- Water quality chemical analysis results for the Vault Area for 2021, specifically:
  - Vault Pit lake (ST-26);
  - Vault RSF (ST-24);
  - Vault Attenuation Pond (ST-25);
  - Phaser Pit (ST-41 and ST-42);
  - Phaser Attenuation Pond (ST-43).

It is important to remember that the review of the Meadowbank water quality data was undertaken to gain a better understanding of the water quality in the Portage Area, particularly as it affects the TSF Reclaim Ponds and the tailings in-pit deposition, and to provide a basis for the development and update of the water quality forecast mass balance model.

Analysis of the Vault water quality data was undertaken to gain a better understanding of the water quality in this area.

2.2 Updates to the Water Balance

The initial WB was developed in 2012. It has been updated on a yearly basis based on actual water transfers conducted on site, field survey of the different pond levels and on updates to the LOM. Table 2-1 summarizes the main differences between the WB from 2012 to 2021.

The WB 2021 integrates the extension of the LOM of Meadowbank Mine by construction and operating the Whale Tail Pit, a satellite deposit located on the Whale Tail property, and continuing mine operations and milling at Meadowbank. It also integrates in-pit deposition of tailings in Goose and Portage pits.

Table 2-1: Updates to the Water Balance

WB YEAR	FORECAST END OF DEPOSITION	MAIN DIFFERENCES
2012	February 2018	Initial WB model based on the 2012 WMP. Tailing's deposition started in the North Cell TSF until March 2015 and was then transferred to South Cell TSF until February 2018. Reclaim Water was then transferred to the pits. It was anticipated that there would be approximately 6 Mm^3 of non-contact water already accumulated in each pit at that time.
2013	September 2017	In this WB, the LOM included deposition of tailings in North and South Cell TSF in 2014 and 2015. Deposition in the North Cell TSF was planned to end on October 2015 and continue in the South Cell TSF until September 2017. Furthermore, it was anticipated that South Cell TSF Reclaim Water would be transferred as of 2015 to the pits when there would be very little water in the pits. This was done while tailings deposition in South Cell TSF was ongoing. Runoff water will then be allowed to flow into the pit and mix with the South Cell Reclaim Water.
2014	September 2017	In this WB, tailings were deposited in the North and South Cell TSF in 2014 and 2015. Deposition in the South Cell TSF started on November 2014. Deposition in the North Cell TSF was planned to end in September 2015 and continue in the South Cell TSF. Based on the volume of Reclaim Water in the North Cell TSF and South Cell TSF Ponds, it was anticipated that South Cell Reclaim Water would be transferred to Portage Pit starting August 2017. No Reclaim Water was to be transferred to Goose Pit. Furthermore, the percentage of tailings water/ice entrapment was also updated in the 2014 WMP to better reflect what was currently observed on site.
2015	September 2018	From January to July 2015, tailings were deposited in the South Cell TSF. Deposition in the North Cell TSF continued from July to October 2015. As of October 2015, deposition of tailings continued only in the South Cell TSF until the end of the LOM. The LOM was extended compared to WB 2014, where tailings deposited was planned to end in September 2017. The transfer of Reclaim Water to the Portage Pit was postponed one year due to the longer LOM and is planned to start on September 2018. No Reclaim Water will be transferred to Goose Pit other than the 50,431 m^3 transferred from the Central Dike Downstream Pond (CDDP), which has a similar water quality than the South Cell Reclaim Pond. Those transfers were proposed by the Meadowbank Dike Review Board (MDRB) to further assess the Central Dike seepage (ST-S-5) that was identified that same year.

WB YEAR	FORECAST END OF DEPOSITION	MAIN DIFFERENCES
2016	September 2018	The tailings deposition and water transfer schedule are similar to the WB 2015. Water in sumps from Saddle Dam 3-4-5 was added as a new input to the South Cell TSF Reclaim Pond. Furthermore, the transfer of seepages and runoff water from the North Cell interception sump, RSF and Saddle Dam 1 to the North Cell TSF continued past 2018 until closure. Portage and Goose Pit filling rates were also adjusted in this WB.
2017	September 2018	The tailings deposition and water transfer schedule are similar to the WB 2016. The actual volumes of water transferred and tailings deposited in 2017 were entered into the model. About 332,177 m^3 of pond water was transferred to Goose Pit from the CDDP between August and October 2017 to reduce the hydraulic gradient between the South Cell and ST-S-5. This strategy was presented to the MDRB as part of an action plan on Central Dike. The updated water balance does not plan any other pond water transfer during tailings deposition in 2018. Portage and Goose Pit flooding rates were also adjusted. A different percentage of tailings water/ice entrapment for North and South Cell TSF was also used in the WB 2017 to better characterize the difference of ice entrapment cover between the two, partly due to the continuing water inflow from the mill effluent in the South Cell TSF.
2018	December 2021	The tailings deposition and water transfer schedule were extended until December 2021. Tailings will be deposited in the North Cell and South Cell TSF. The additional tailings come from the continuation of the milling of ore produced from the Whale Tail pit at the Whale Tail site. The actual volumes of water transferred and tailings deposited in 2018 were entered into the model. In 2018, no Reclaim Water was transferred from CDDP or South Cell TSF to Goose Pit. In the Vault area, there was no discharge to Wally Lake as well.
2019	July 2022	The tailings deposition and water transfer schedule were extended until July 2022. Tailings were deposited in the South Cell TSF and North Cell until April 2019 and July 2019, respectively. Tailings were then deposited in Goose and Portage pits. In-pit deposition started in Goose Pit in July 2019. The additional tailings came from the continuation of the milling of ore produced from the Whale Tail pit operation. The actual volumes of water transferred, and tailings deposited in 2019 were integrated into the model. In 2019, Reclaim Water was transferred from South Cell TSF Reclaim Pond to Goose Pit. Reclaim water from CDDP was transferred back to SC Reclaim Pond or to Portage North Pit (Pit A). In the Vault area, there was no discharge to Wally Lake in 2019. Natural pit flooding was allowed to begin in the Vault area.
2020	June 2026	The tailings deposition and water transfer schedule were extended until June 2026. In-pit deposition occurred in Goose Pit from July 2019 till August 2020. In-pit deposition continued in Portage Pit starting in August 2020 and is projected to end in June 2026. The additional tailings come from the continuation of the milling of ore produced from the Whale Tail pit, IVR pit and underground mine operation at the Whale Tail site. The actual volumes and quantity of water transferred, and tailings deposited in 2020 were integrated into the model.

WB YEAR	FORECAST END OF DEPOSITION	MAIN DIFFERENCES
		In 2020, Reclaim Water was transferred from South Cell TSF Reclaim Pond to Portage Pit. Reclaim Water from CDDP was transferred back to SC Reclaim Pond or to Portage South Pit (Pit E). Reclaim Water was pumped from South Cell TSF and Portage North Pit (Pit A) to the mill. In the Vault area, natural pit flooding was allowed to continue. Following in-pit deposition, the Interim Closure and Reclamation Plan (ICRP) includes the treatment of the Reclaim Water in Portage and Goose Pits. The treated effluent shall be discharged to Third Portage Lake. Once treatment is completed, aggregate cover construction over the tailings in the pits will begin, followed by re-flooding of the pits with natural runoff and water transfer from Third Portage Lake.
2021	December 2026	The tailings deposition and water transfer schedule were extended until December 2026. In-pit deposition occurred in Goose Pit from July 2019 till August 2020. In-pit deposition continued in Portage Pit starting in August 2020 and is projected to end in December 2026. The additional tailings come from the continuation of the milling of ore produced from the Whale Tail pit, IVR pit and underground mine operation at the Whale Tail site. In 2021, tailings were deposited in the North Cell TSF in July and August. The actual volumes and quantity of water transfer and tailings deposited in 2021 were integrated into the model. In 2021, Reclaim Water was transferred from South Cell (SC) TSF Reclaim Pond to Portage North Pit (A). Reclaim Water from CDDP was transferred back to SC Reclaim Pond or to Portage North Pit (Pit A). Reclaim Water was pumped from Portage South Pit (Pit E) to the mill and to Portage North Pit (Pit A). In the Vault area, natural pit flooding was allowed to continue. Following in-pit deposition, the ICRP includes the treatment of the Reclaim Water in Portage and Goose Pits. The treated effluent shall be discharged to Third Portage Lake. Once treatment is completed, aggregate cover construction over the tailings in the pits will begin, followed by re-flooding of the pits with natural runoff and water transfer from Third Portage Lake. Note that the feasibility of building the aggregate cover will be evaluated and updated in the final closure plan.

2.3 Parameters of Concern

A review of the chemical analysis for water samples collected in the North Cell (now transferred to the South Cell) and South Cell TSF Reclaim Ponds (Station ST-21) and in Portage and Goose Pits (ST-17/19 and ST-20) was undertaken by SNC-Lavalin to identify contaminants that could be above the discharge criteria as stipulated in the MDMER regulation, Canadian Council of Ministers of the Environment (CCME) guideline and the Water Licence, Part F.

In the current LOM, Reclaim Water collected from the North Cell and South Cell TSF and the CDDP are currently transferred to Portage Pit until the end of in-pit deposition. The Reclaim Water is then pumped back to the mill for re-use. There is no discharge of Reclaim Water to the environment during operations. At closure, the Reclaim Water stored in Portage and Goose Pits shall be treated and discharged to the environment. The pits will then be reflooded with natural runoff and water transfer from Third Portage Lake.

For the purpose of this analysis, the following parameters of concern that are listed in the Water Licence shall be reviewed, specifically:

i. Total Cyanide
ii. Total Aluminum
iii. Total Arsenic
iv. Total Cadmium
v. Total Copper
vi. Total Lead
vii. Total Mercury
viii. Total Nickel
ix. Total Zinc
x. Total dissolved solids
xi. Chloride
xii. Total Ammonia
xiii. Nitrate

Furthermore, the water quality review from past studies also identified the following parameters in the Reclaim Water that should be monitored since they could represent a potential long-term contamination risk:

i. Total Iron
ii. Total Selenium
iii. Fluoride
iv. Sulphate

It is understood that the MDMER, CCME and Water Licence criteria apply to mining effluents discharged to the environment and are as such not applicable to the North Cell, South Cell TSF Reclaim Ponds and Portage and Goose Pits since no effluent is discharged from these areas to the environment during operations. However, the MDMER, CCME and Water Licence criteria are used as a guide to identify potential parameters of concern at the start of closure activities.

It should be noted that the parameters of concern were only determined based on the chemical analyses provided by Agnico.

Table 2-2 presents the MDMER, Water Licence 2AM-MEA1530 (Nunavut Water Board Licence, 2020) discharge criteria and CCME discharge guidelines for the parameters of concern. For the water quality forecast report, the British Columbia guideline for sulphate for the protection of aquatic life was used as a benchmark for reference only. However final site-specific closure limits will be developed through review of the final closure plan by regulatory agencies.

Table 2-2: Discharge Criteria and CCME Guidelines for the Parameters Evaluated

PARAMETER	DISCHARGE CRITERIA & WATER QUALITY GUIDELINES		
	MDMER (1)	*Water Licence (2) (Part F)*	*CCME (3) (guideline date)*
Cyanide (CN)	0.5 mg/L (as total CN)	0.5 mg/L (as total CN)	0.005 mg/L (as free CN) (1987)
Aluminum (Al)	*no criteria*	1.5 mg/L	0.1 mg/L(8) (1987)
Arsenic (As)	0.3 mg/L	0.3 mg/L	0.005 mg/L (1997)
Cadmium (Cd)	*no criteria*	0.002 mg/L	0.00004 mg/L (9) (2014)
Copper (Cu)	0.3 mg/L	0.1 mg/L	0.002 mg/L (4) (1987)
Iron (Fe)	*no criteria*	*no criteria*	0.3 mg/L (1987)
Lead (Pb)	0.1 mg/L	0.1 mg/L	0.001 mg/L (9) (1987)

PARAMETER	DISCHARGE CRITERIA & WATER QUALITY GUIDELINES		
	MDMER (1)	*Water Licence (2) (Part F)*	*CCME (3) (guideline date)*
Mercury (Hg)	*no criteria*	0.0004 mg/L	0.000026 mg/L (2003)
Nickel (Ni)	0.5 mg/L	0.2 mg/L	0.025 mg/L (9) (1987)
Selenium (Se)	*no criteria*	*no criteria*	0.001 mg/L (1987)
Zinc (Zn)	0.5 mg/L	0.4 mg/L	0.013 mg/L (9) (2018)
Total Ammonia (NH_3)	*no criteria*	16 mg N/L	1.83 mg N/L (5) (2001)
Un-ionized ammonia	*0.5 mg N/L*	n/a	0.019 mg N/L (2001)
Nitrate (NO_3)	*no criteria*	20 mg N/L	2.94 mg N/L (7) (2012)
Total Dissolved Solids	*no criteria*	1,400 mg/L	*no criteria*
Chloride (Cl)	*no criteria*	1,000 mg/L	120 mg/L (6) (2011)
Sulphate (SO_4)	*no criteria*	*no criteria*	128 mg/L (10) (2013)
Fluoride (F)	*no criteria*	*no criteria*	0.12 mg/L (2002)

Notes:

(1) Current MDMER criteria (as of June 2021) corresponding to the maximum average monthly concentration (schedule 4, table 2)

(2) Water Licence (Part F) criteria for Third Portage Lake corresponding to the maximum average concentration (2020)

(3) CCME criteria as per the Water Quality Guidelines for the Protection of Aquatic Life for freshwater and long-term exposure. Criteria referenced from www.ccme.ca in 2021.

(4) The copper discharge criterion depends on hardness. A Third Portage Lake hardness level is approx. 12 mg/L as $CaCO_3$. For hardness between 0 to 82 mg/L $CaCO_3$, the copper limit is set at 2 µg/L.

(5) The ammonia concentration limit depends on temperature and pH (an increase in temperatures and pH leads to a more stringent ammonia concentration limit). In this case, 2.22 mg/L of NH_3, or 1.83 mg N/L was determined based on an average pH of 7.5 in Third Portage Lake and a maximum measured temperature of approx. 15°C.

(6) This is the long-term chloride concentration limit. The short-term concentration limit is 640 mg/L.

(7) This is the long-term nitrate concentration limit (13 mg/L as NO_3). The short-term concentration limit is 550 mg/L.

(8) Aluminum discharge criterion depends on the pH. Value shown is for a water pH > 6.5.

(9) Cadmium, lead, nickel and zinc discharge criteria depend on hardness. Third Portage Lake hardness level is approx. 12 mg/L as $CaCO_3$. For hardness between 0 to 17 mg/L $CaCO_3$, the limit is set at 0.04 µg/L for cadmium. For hardness between 0 to 60 mg/L $CaCO_3$, the limit is set at 0.001 mg/L for lead and 0.025 mg/L for nickel. For hardness of 12 mg/L as $CaCO_3$, the limit for zinc is 0.013 mg/L.

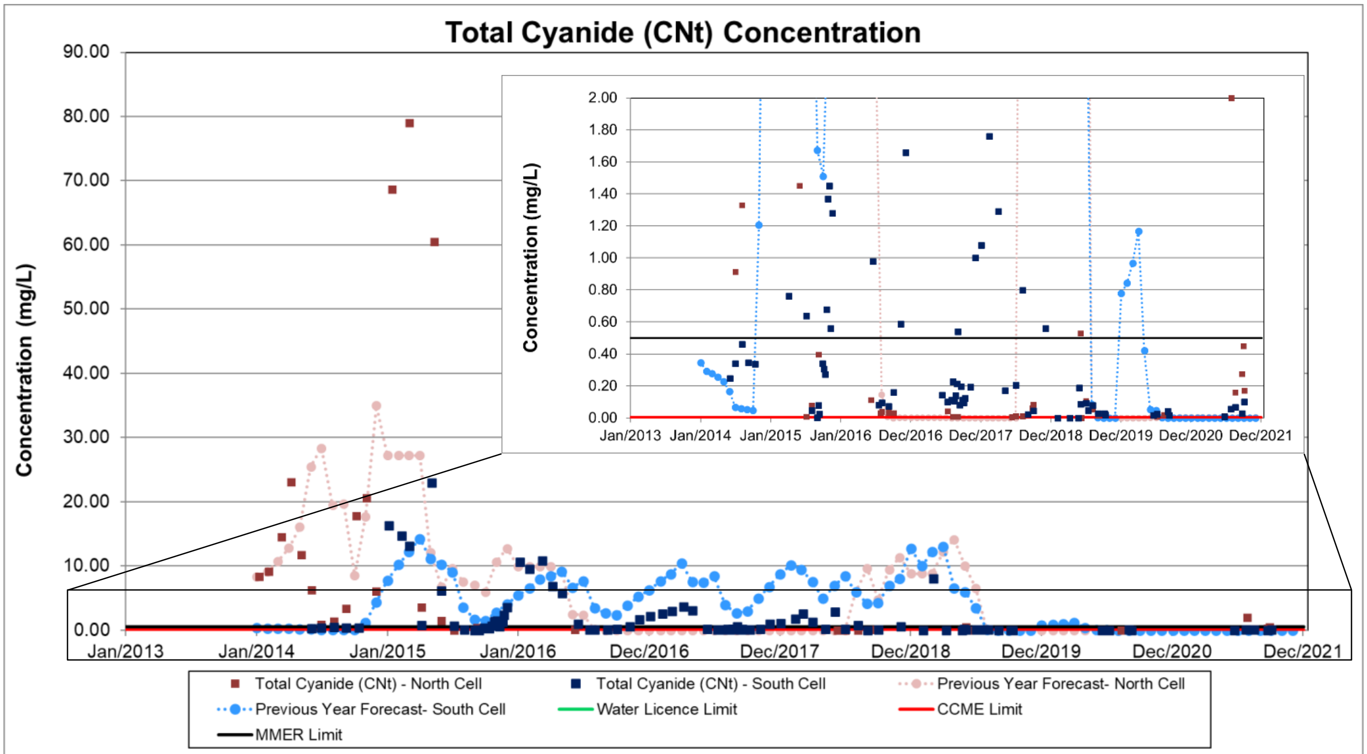
(10) Threshold value for sulphate based on BC Environment guideline for the protection of aquatic life for very soft water (0-30 mg/L) (April 2013).

2.4 North and South Cell TSF Reclaim Ponds

At the start of operations, tailings were deposited in the North and South Cell TSF. Reclaim Water was collected in the North and South Cell TSF Reclaim Ponds and transferred back to the mill for re-use. Since 2019, tailings are no longer deposited constantly in these cells and the contact water collected in these areas are transferred to Portage Pit. For 2021, tailings were deposited in the North Cell TSF in July and August.

Figures 2-1 to 2-3 presents the concentration of the parameters of concern measured in the North and South Cell TSF Reclaim Ponds from 2013 to 2021. Also shown in these figures are the forecasted concentrations from the Water Quality Forecasting Update based on the planned water transfer described in the 2020 Water Management Plan (SNC-Lavalin 2021). For the metal parameters, total concentration values are shown in the figures in this year's report since the discharge criteria and CCME water quality guidelines are based on total concentration measurements.

Figure 2-1: Concentrations North and South Cell TSF Reclaim Ponds – Total Cyanide & Metals



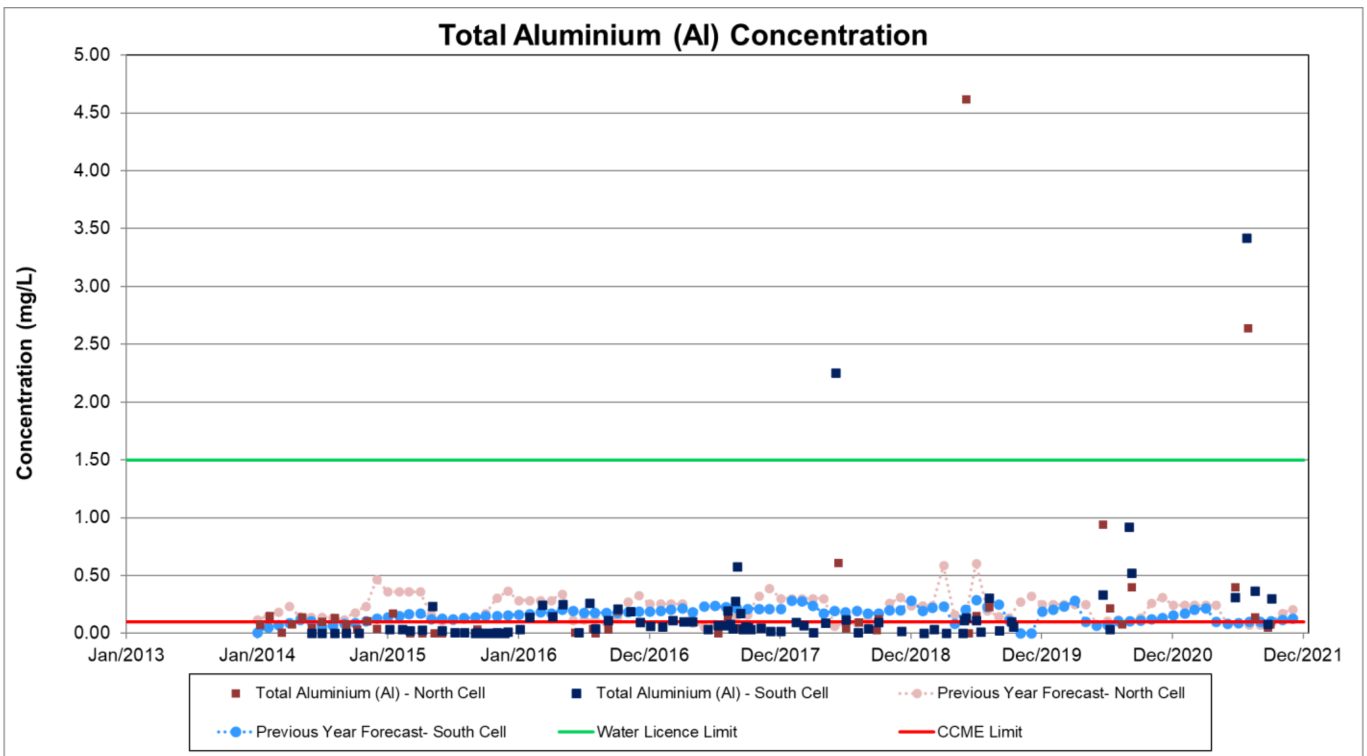
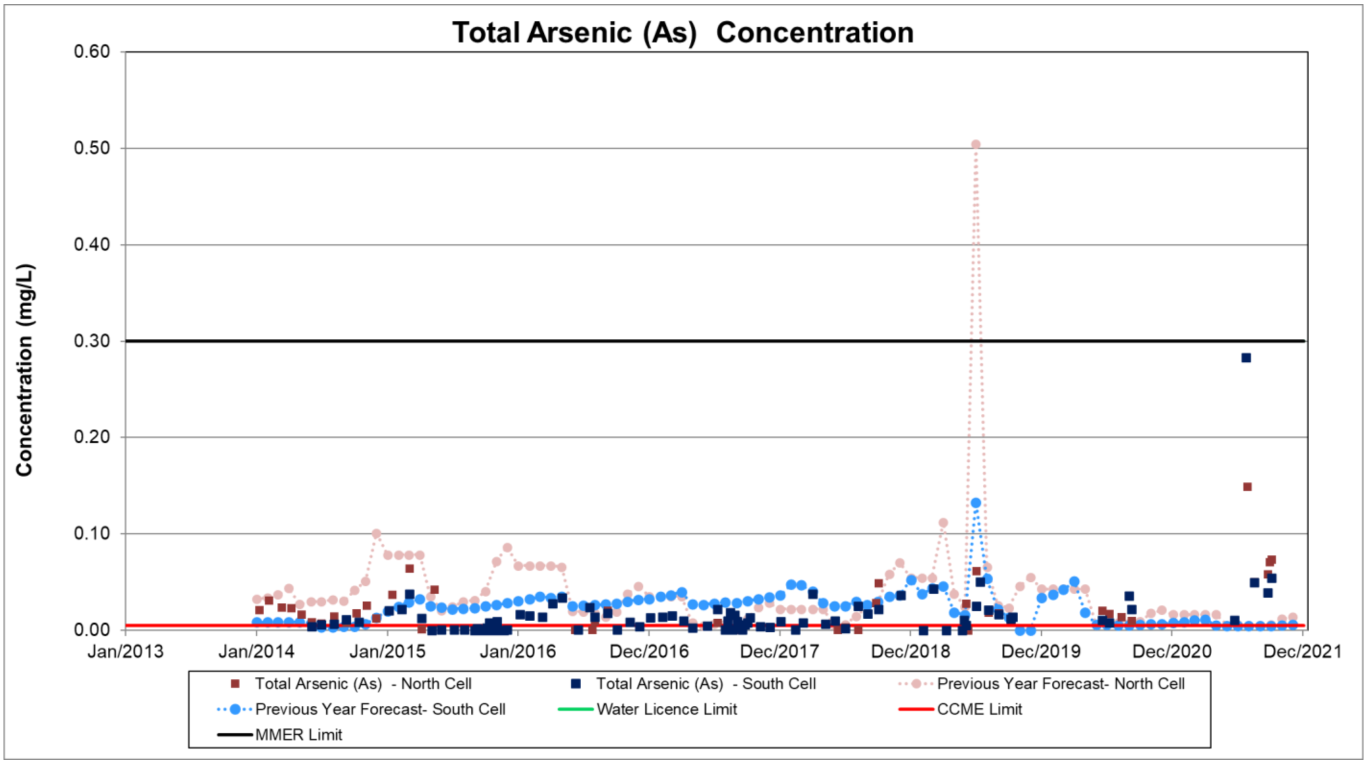


Figure 2-1: (continued) Concentrations North and South Cell TSF Reclaim Ponds – Total Cyanide & Metals



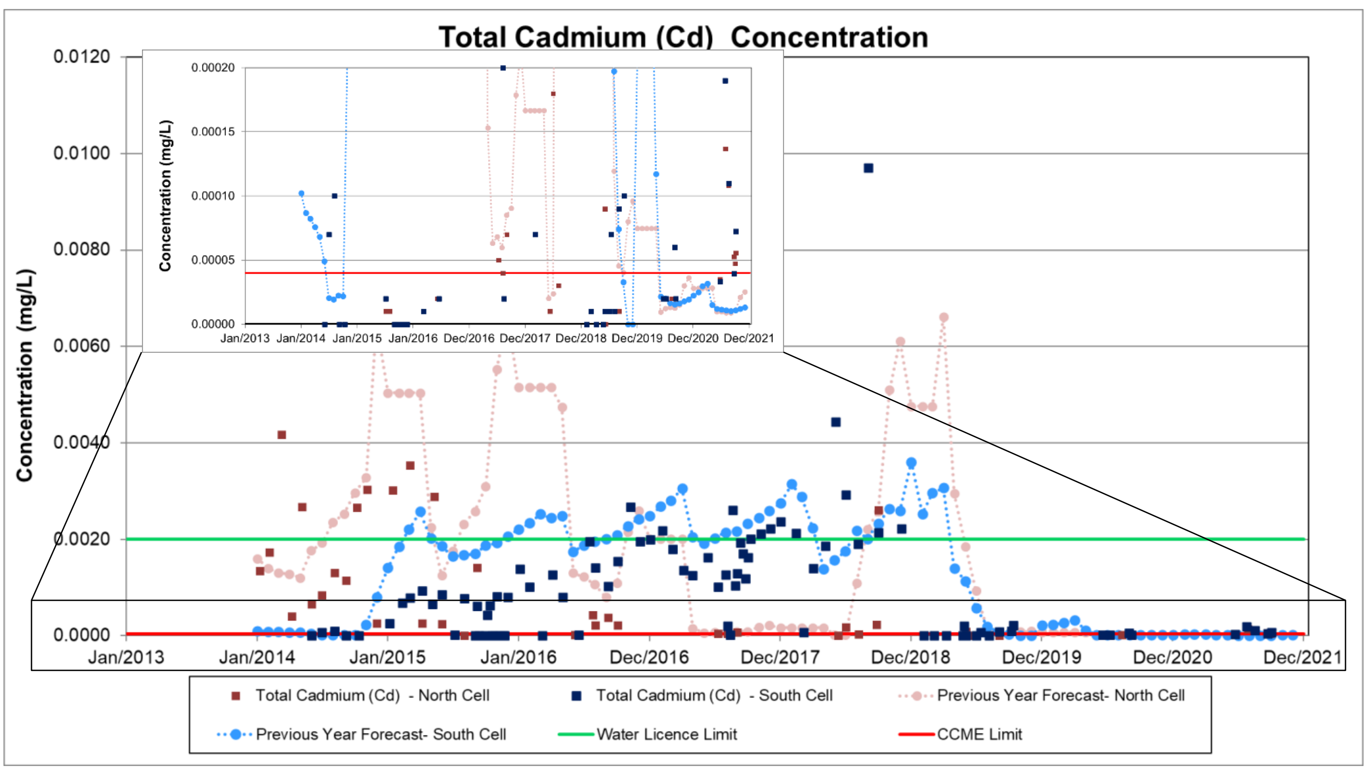
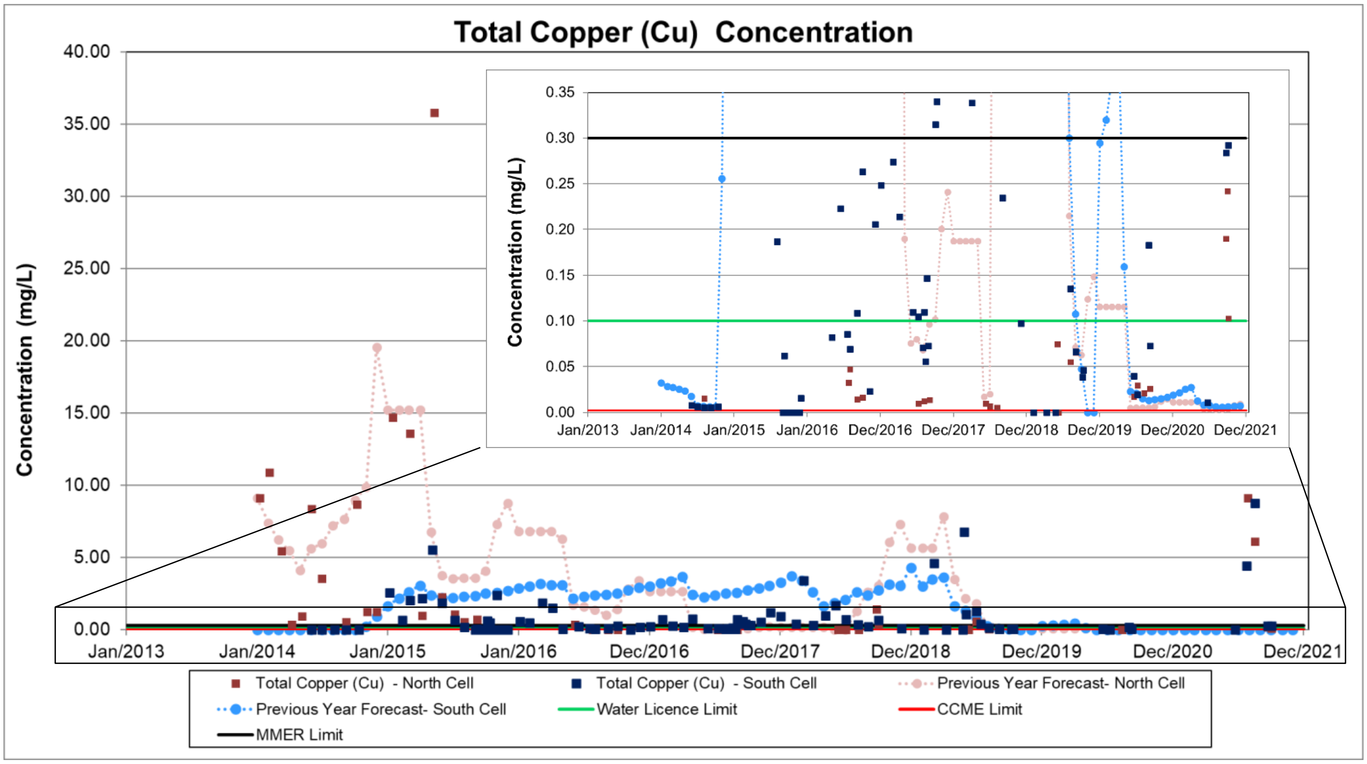


Figure 2-1: (continued) Concentrations North and South Cell TSF Reclaim Ponds – Total Cyanide & Metals



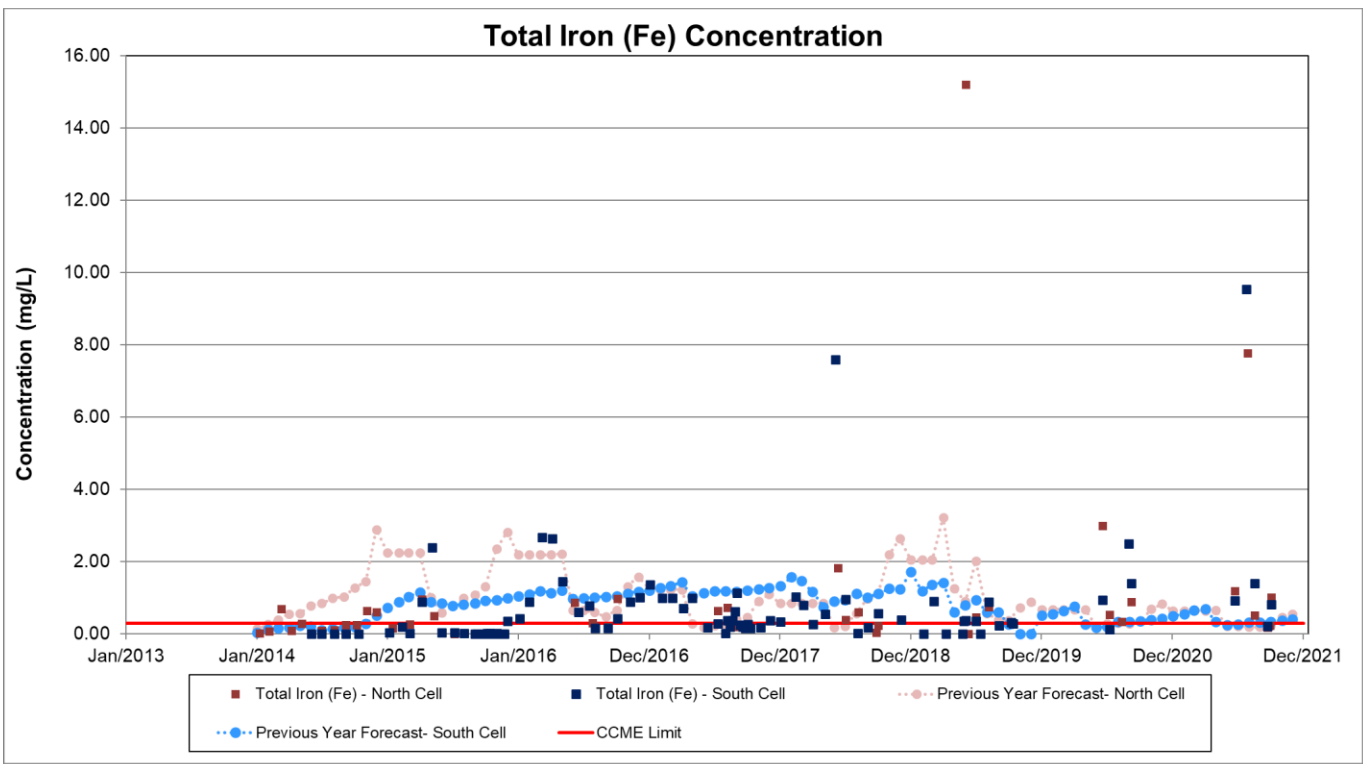
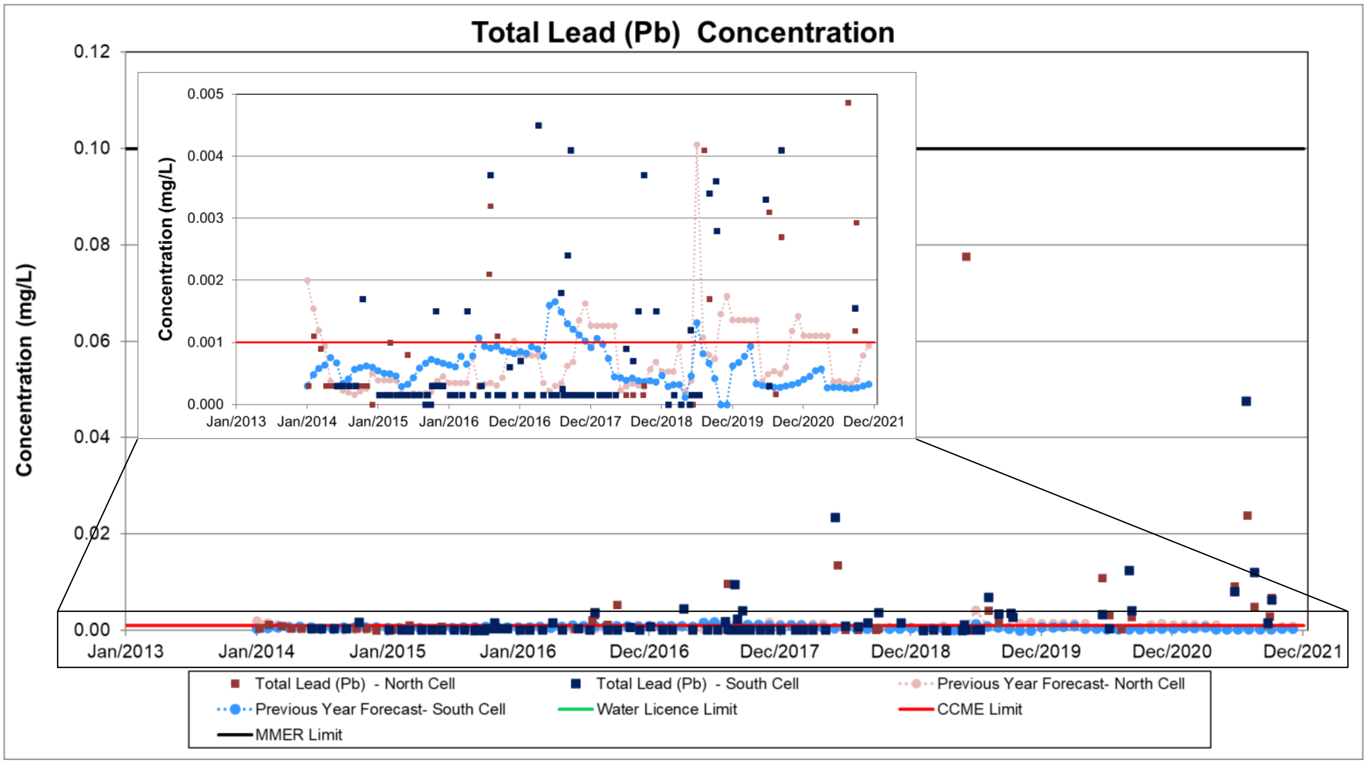


Figure 2-1: (continued) Concentrations North and South Cell TSF Reclaim Ponds – Total Cyanide & Metals



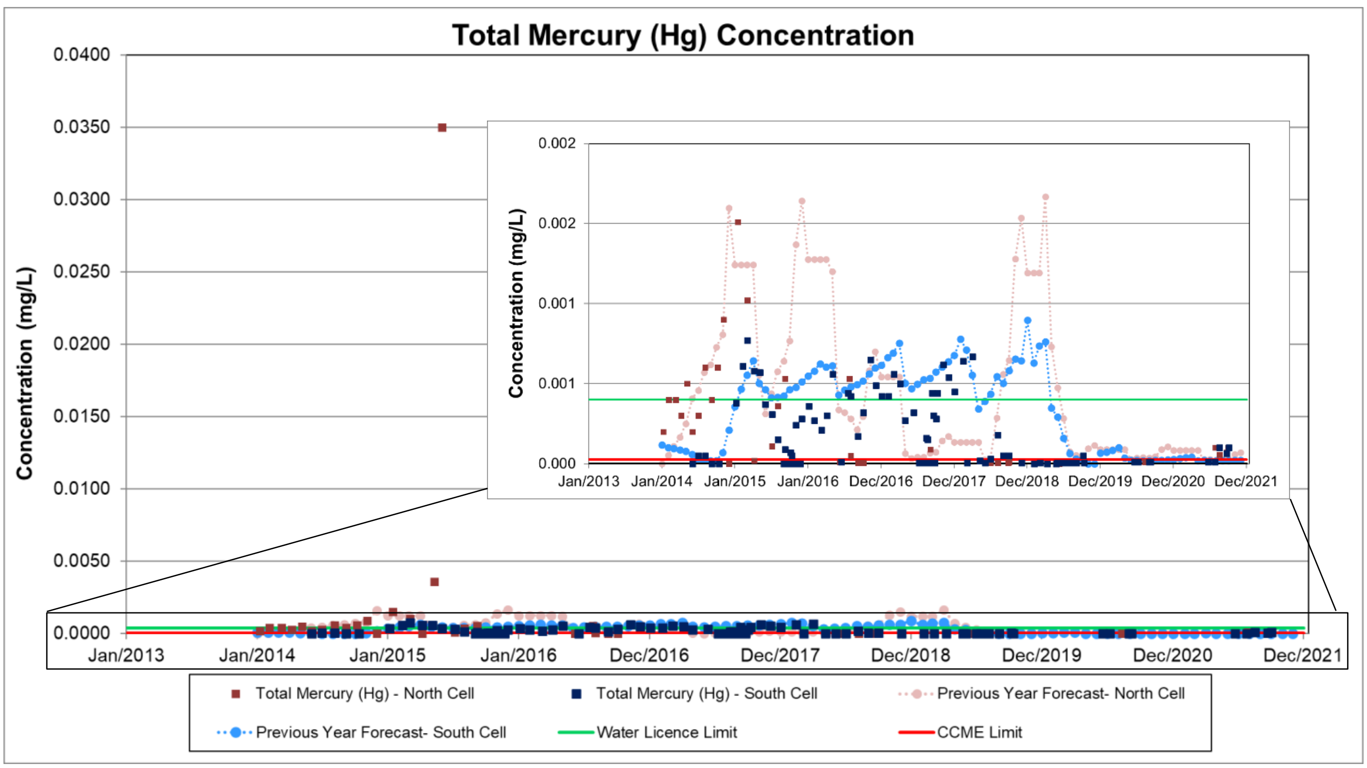
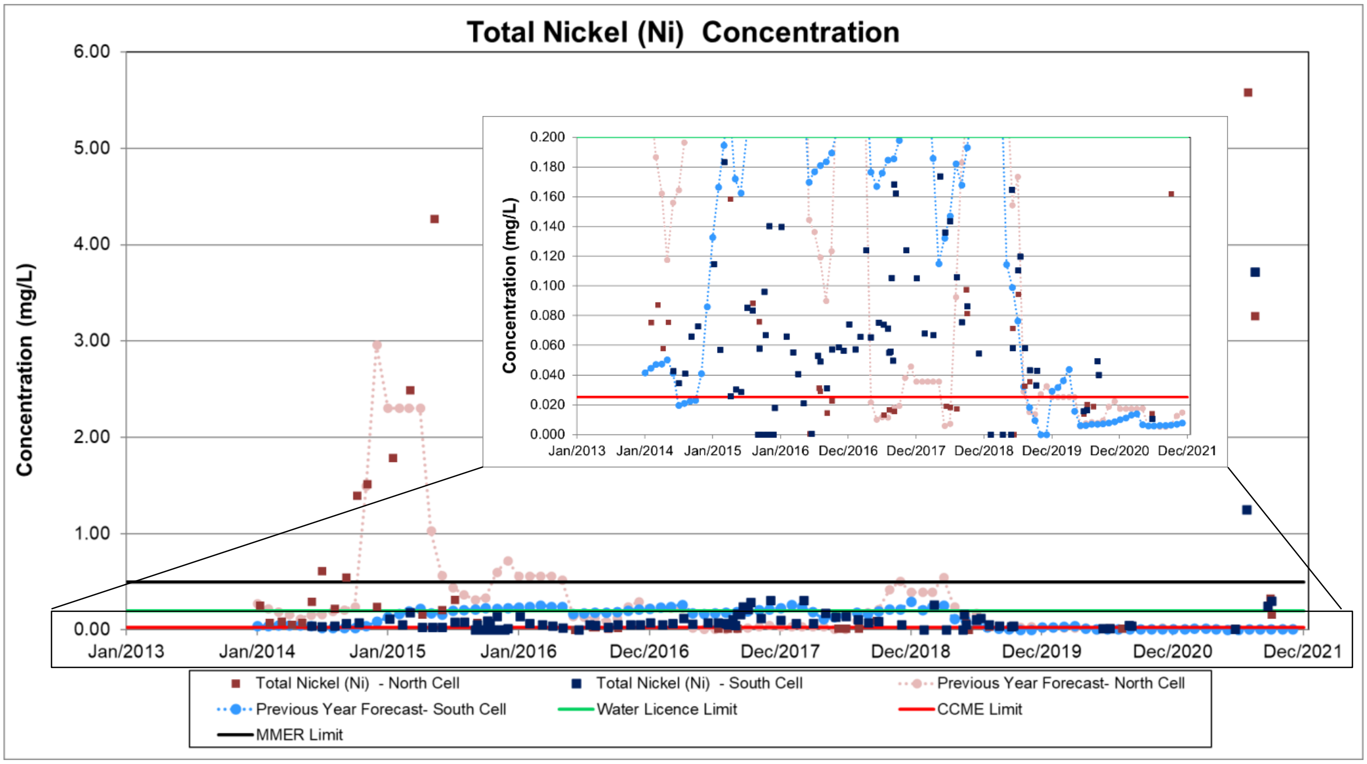


Figure 2-1: (continued) Concentrations North and South Cell TSF Reclaim Ponds – Total Cyanide & Metals



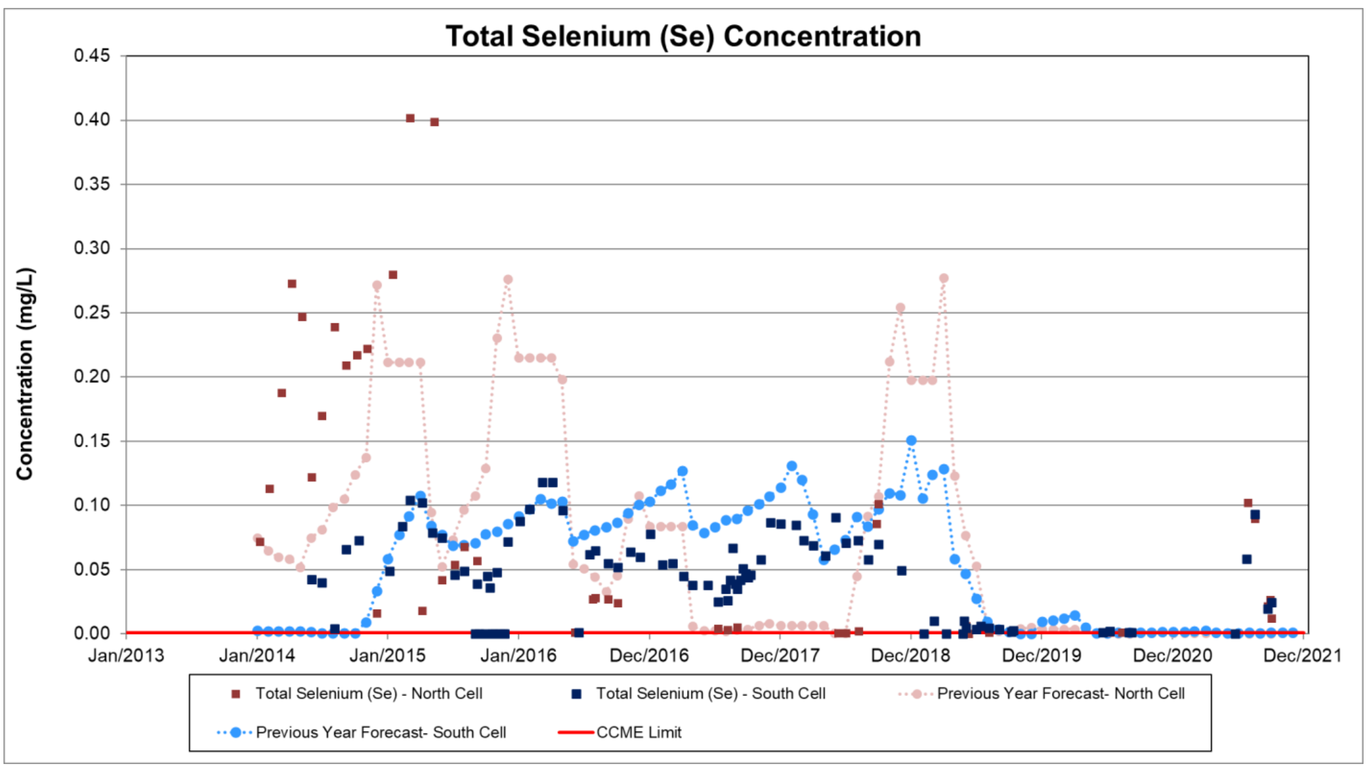


Figure 2-1: (continued) Concentrations North and South Cell TSF Reclaim Ponds – Total Cyanide & Metals

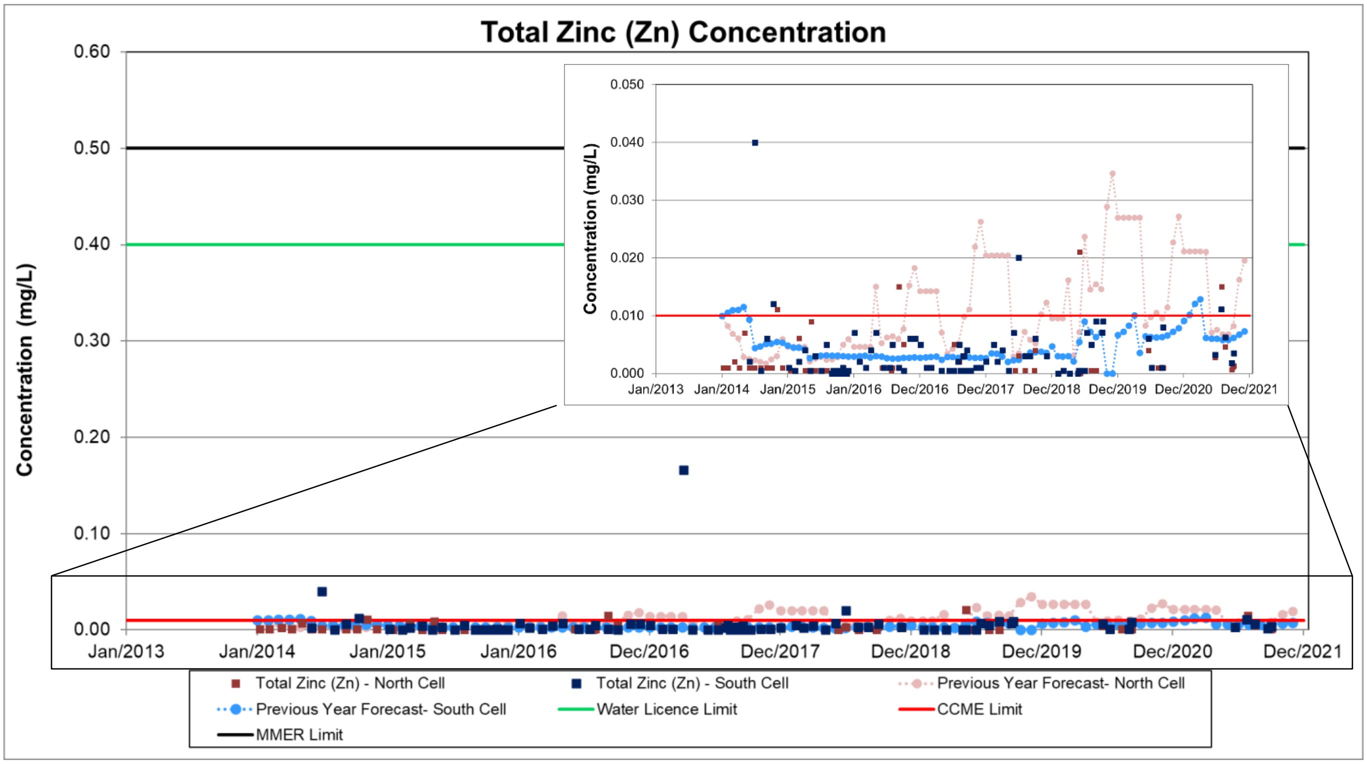
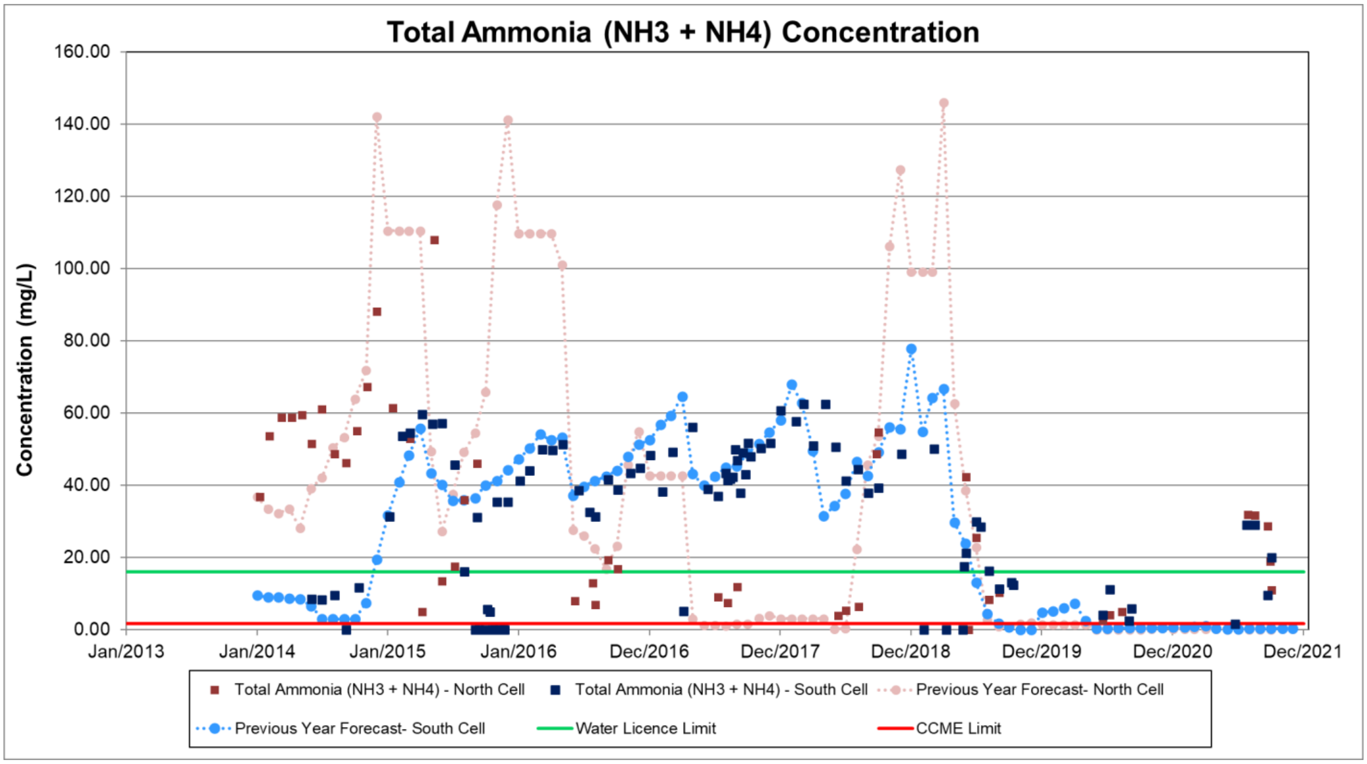


Figure 2-2: Concentrations North and South Cell TSF Reclaim Ponds – Ammonia & Nitrate



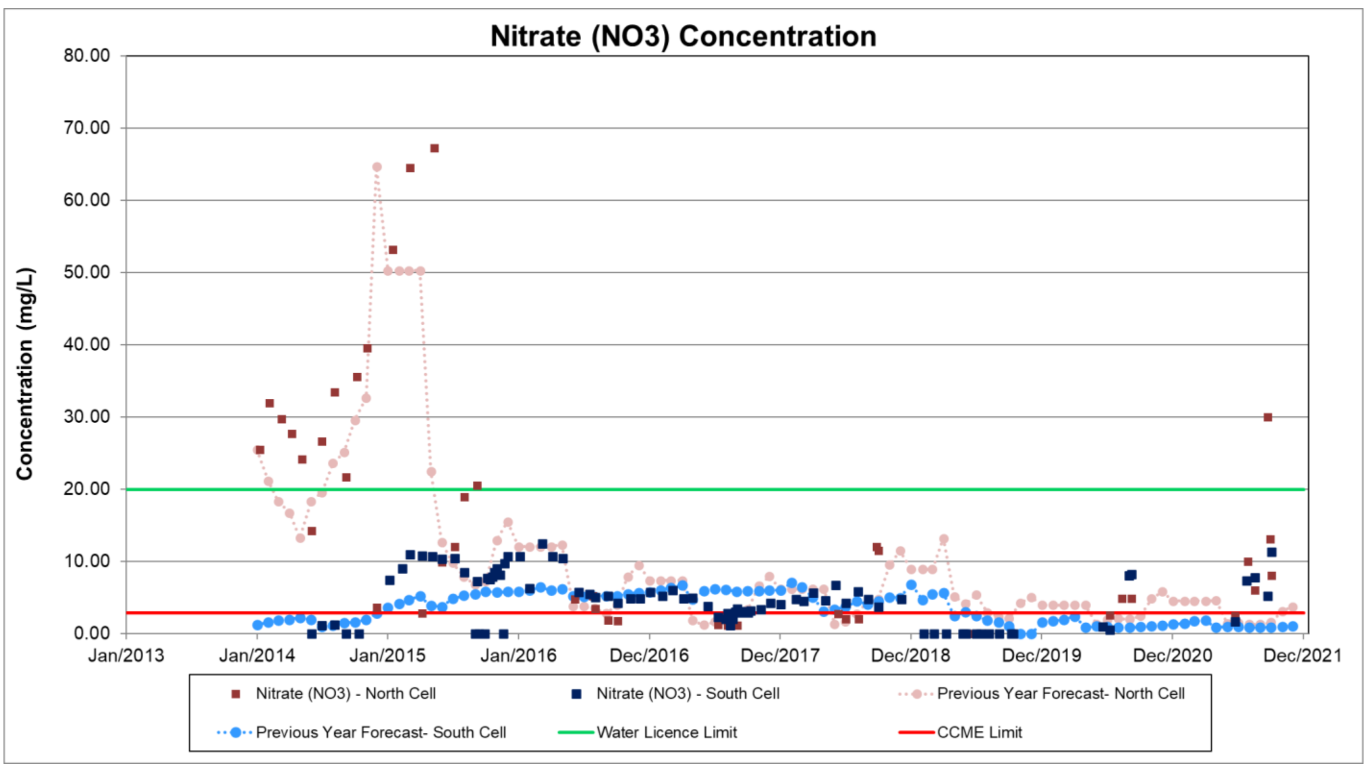
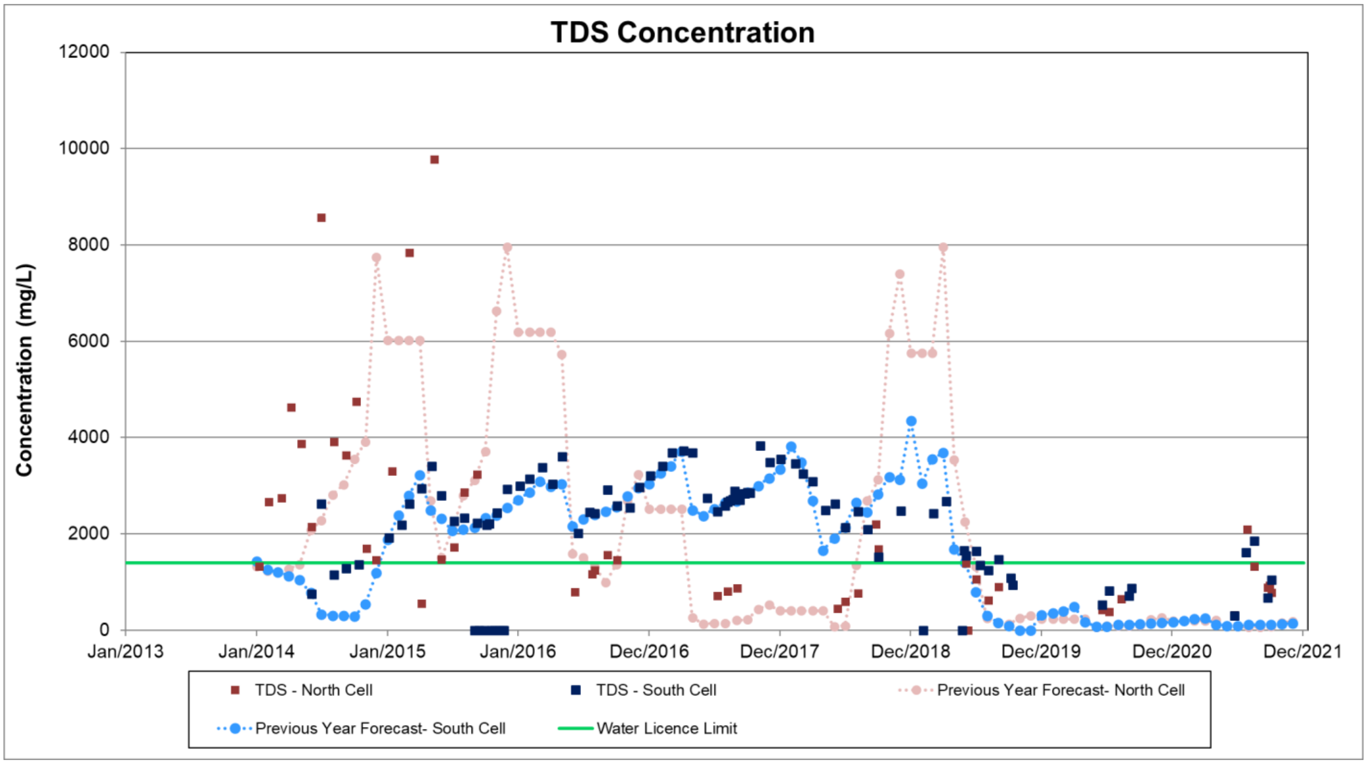


Figure 2-3: Concentrations North and South Cell TSF Reclaim Ponds – TDS & Anions



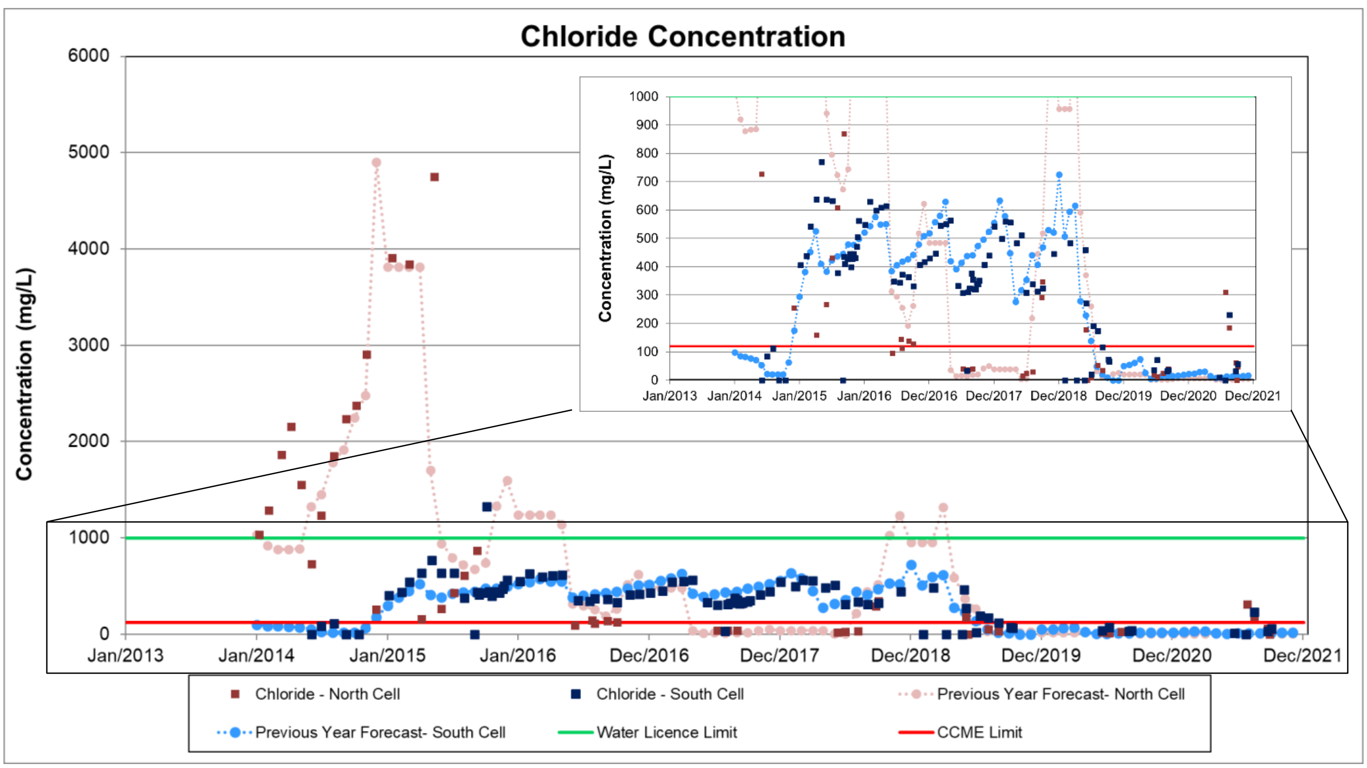
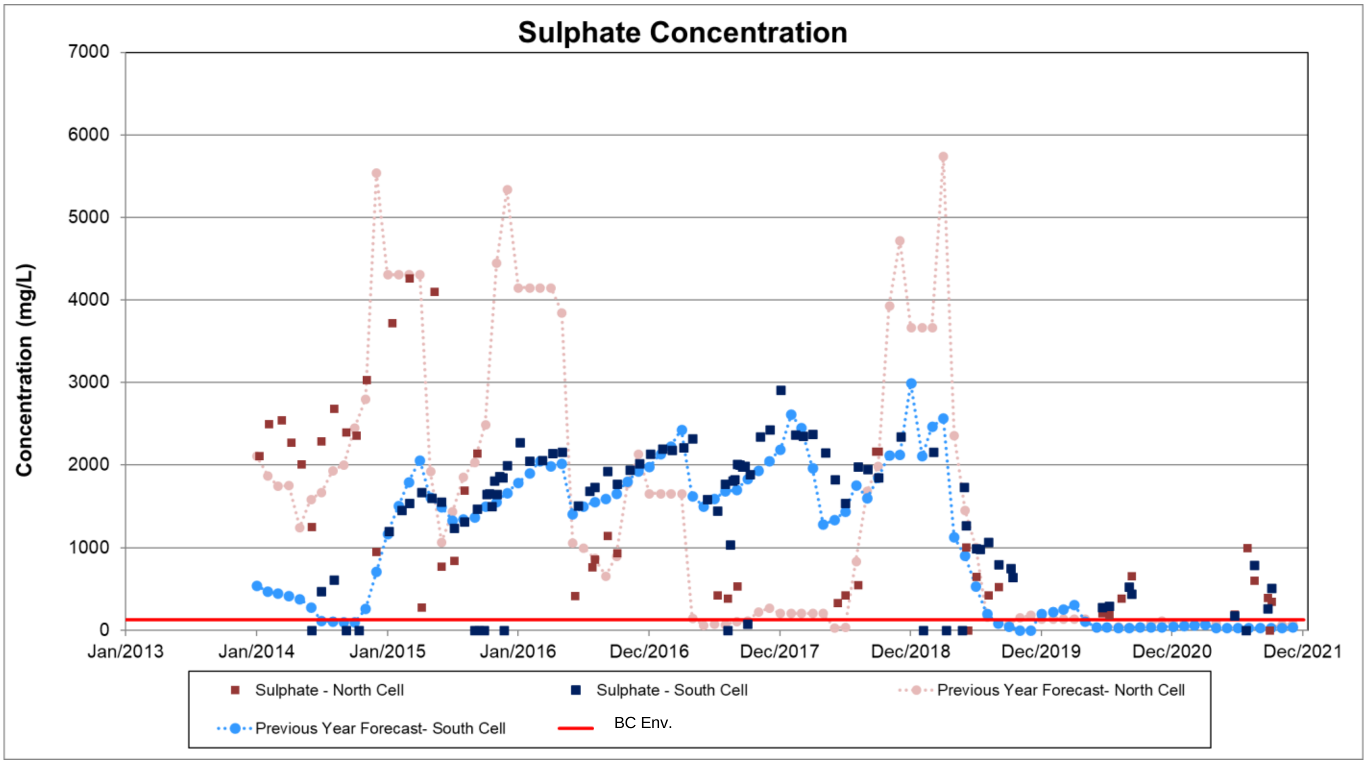


Figure 2 3: (continued) Concentrations North and South Cell TSF Reclaim Ponds – TDS & Anions



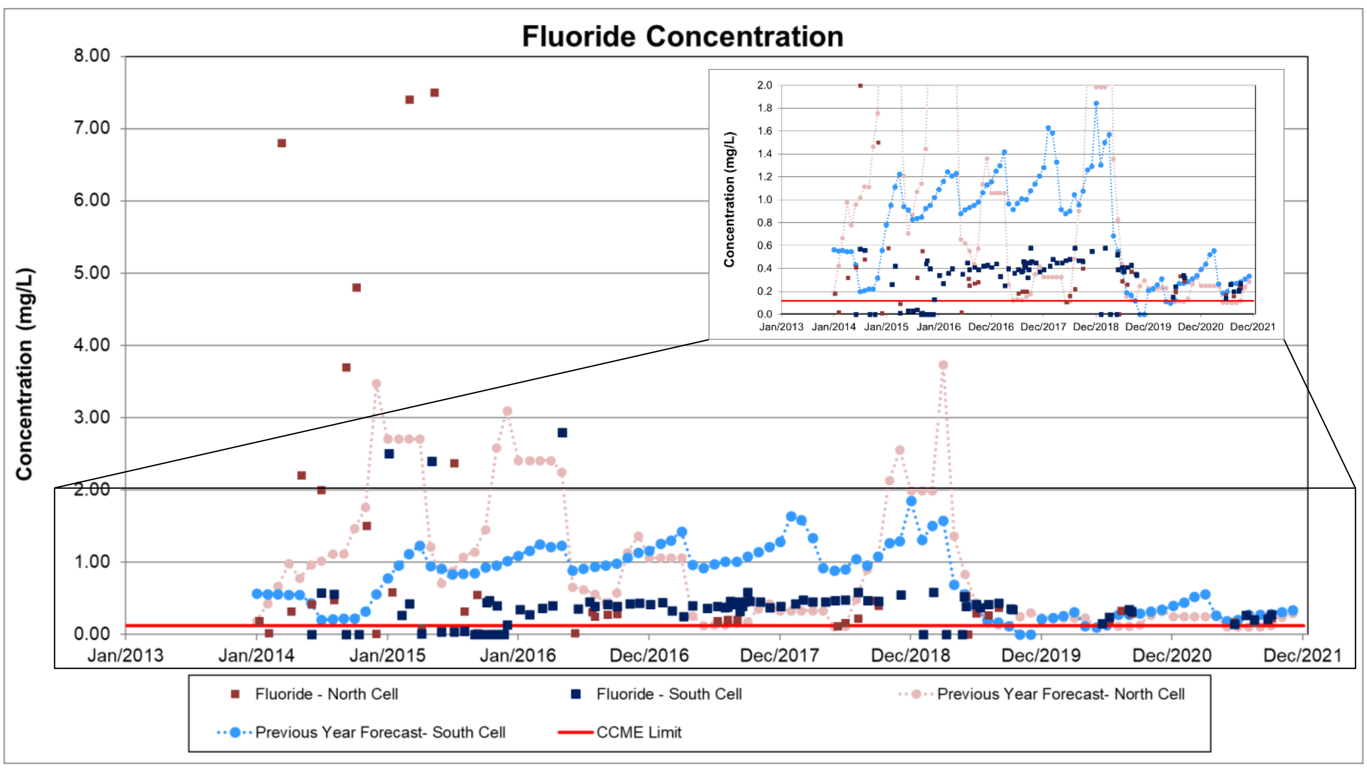


Table 2-3 summarizes the observations that can be made based on the measured values and forecasted concentrations as shown in Figures 2-1 and 2-3. For some parameters, the graphs observations have been divided into North Cell TSF Reclaim Pond (NC) and South Cell TSF Reclaim Pond (SC). The forecasted values are based on the previous model (SNC-Lavalin 2021).

Table 2-3: Observations from Measured and Forecasted Concentrations in the North and South Cell TSF Reclaim Ponds

PARAMETER	MEASURED VALUES OBSERVATIONS	FORECASTED VALUES OBSERVATIONS
Total Cyanide (CN)	**NC & SC**: Since the end of deposition of tailings in NC and SC in 2019, the CN concentration are very low. For comparison purposes only, concentrations were below MDMER and Water Licence criterion for all the analysed samples. The concentrations are generally above CCME limit. However, tailings were deposited in 2021 in NC, and the CN concentration did increase in NC and SC compared to 2020.	**NC& SC:** As there was no tailings deposition in both North and South Cells between 2019 and 2020, cyanide volatizes in the summer and its concentration slowly reduces in the cell with time. This was confirmed with the monitored data. In 2021, tailings were deposited in the NC, which was not included in the previous year's forecast.
Total Metals (general)	See specific parameters for details	The current forecasting model was based on a mass balance using the water balance around the site and does not consider possible geochemical reactions that could help precipitate the metals out of the water column phase at equilibrium. For this reason, some of the forecasted values can be higher than the measured values. Furthermore, for both **NC and SC:** Deposition of tailings was not forecasted in the 2020 WB and thus the higher measured concentrations were not forecasted. See specific parameters for additional details.
Total Aluminum	**NC & SC:** Measured concentrations increased in 2021 compared to previous years. This was due to the deposition of tailings in NC in July and August, and the transfer of Reclaim Water from NC to SC. Peak concentrations were higher than the Water Licence discharge criterion.	**NC & SC:** Prior to the deposition of tailings in NC, the measured values were higher than the forecasted value. This indicates that natural runoff into the NC and SC were carrying suspended solids that contains metal particulates. The dissolved fraction concentration for this constituent was generally below CCME limit.
Total Arsenic	**NC & SC:** Measured concentrations increased in 2021 compared to previous years. This was due to the deposition of tailings in NC in July and August. However, concentrations were lower than the Water Licence discharge criterion, but above CCME limit.	See notes on Total Metals.
Total Cadmium	**NC & SC:** Measured concentrations were relatively low. For comparison purposes only, all the collected samples showed concentrations below Water Licence criterion and slightly above CCME limit.	**NC and SC:** Forecasted concentration were expected to be close to the CCME limit. Despite the deposition of tailings in the NC, the measured concentration remained close to the CCME limit.

PARAMETER	MEASURED VALUES OBSERVATIONS	FORECASTED VALUES OBSERVATIONS
Total Copper	**NC & SC:** Measured concentrations increased in 2021 compared to previous years. This was due to the deposition of tailings in NC in July and August. Concentrations were higher than the Water Licence discharge criterion.	See notes on Total Metals.
Total Iron	**NC & SC:** Measured concentrations increased in 2021 compared to previous years. This was due to the deposition of tailings in NC in July and August. Concentrations were higher than the CCME limit.	See notes on Total Metals.
Total Lead	**NC & SC:** Measured concentrations increased in 2021 compared to previous years. This was due to the deposition of tailings in NC in July and August. However, concentrations were lower than the Water Licence discharge criterion, but above CCME limit.	**NC & SC:** Forecasted concentrations were expected to be close to the CCME limit. The deposition of tailings in the NC lead to an increase in concentrations that are above the CCME limit but below the Water Licence discharge criterion.
Total Mercury	**NC & SC:** Measured concentrations increased in 2021 compared to previous years. This was due to the deposition of tailings in NC in July and August. However, concentrations were lower than the Water Licence discharge criterion, but slightly above CCME limit.	**NC & SC:** Forecasted concentrations were expected to be close to the CCME limit. Despite the deposition of tailings in the NC, the measured concentrations remained close to the CCME limit.
Total Nickel	**NC & SC:** Measured concentrations increased in 2021 compared to previous years. This was due to the deposition of tailings in NC in July and August. Concentrations were higher than the MDMER and Water Licence discharge criterion.	See notes on Total Metals.
Total Selenium	**NC & SC:** Measured concentrations increased in 2021 compared to previous years. This was due to the deposition of tailings in NC in July and August. Concentrations were higher than the CCME limit.	See notes on Total Metals.
Total Zinc	**NC & SC:** Slight increase in concentrations in 2021 compared to previous years. This was due to the deposition of tailings in NC in July and August. However, concentrations remain below Water Licence criterion and generally below the CCME limit.	**NC & SC:** Forecasted concentration were expected to be close to the CCME limit. Despite the deposition of tailings in the NC, the measured concentration remained close to the CCME limit.
Total Ammonia	**NC & SC:** Measured concentrations increased in 2021 compared to previous years. This was due to the deposition of tailings in NC in July and August. Concentrations were higher than the Water Licence criterion.	**NC & SC:** Deposition of tailings was not forecasted in the 2020 WMP and thus the higher observed concentrations were not forecasted. Forecasted concentrations were expected to be close to the CCME limit.

PARAMETER	MEASURED VALUES OBSERVATIONS	FORECASTED VALUES OBSERVATIONS
Nitrate	**NC & SC:** Measured concentrations increased in 2021 compared to previous years. This was due to the deposition of tailings in NC in July and August. Concentrations were generally lower than the Water Licence criterion, but higher than the CCME limit.	**NC & SC:** Deposition of tailings was not forecasted in the 2020 WMP and thus the higher observed concentrations were not forecasted. Forecasted concentrations were expected to be close to the CCME limit.
TDS	**NC & SC:** Measured concentrations increased in 2021 compared to previous years. This was due to the deposition of tailings in NC in July and August. Concentrations were generally higher than the Water Licence criterion during deposition and then decreased below the criterion afterward.	**NC & SC:** Deposition of tailings was not forecasted in the 2020 WMP and thus the higher observed concentrations were not forecasted. Forecasted concentrations were expected to be close to the Water Licence criterion.
Chloride	The primary source of chloride found in the TSF Reclaim Ponds was most likely from the use of calcium chloride in the winter months as an anti-freeze solution on the ore and a dust suppressant in the Mill dome. **NC & SC:** Despite the deposition of tailings in the NC, the concentration increased slightly and remain below the Water Licence criterion. However, some measurements taken during deposition where above the CCME limit.	**NC & SC:** Deposition of tailings was not forecasted in the 2020 WMP and thus the higher observed concentrations were not forecasted. Forecasted concentrations were expected to be below the CCME limit.
Sulphate	**NC & SC:** Measured concentrations increased in 2021 compared to previous years. This was due to the deposition of tailings in NC in July and August. Concentrations were generally higher than the adopted limit for this criterion.	**NC &SC:** Deposition of tailings was not forecasted in the 2020 WMP and thus the higher observed concentrations were not forecasted. Forecasted concentrations were expected to be below the BC Environmental limit for this parameter.
Fluoride	**NC & SC:** Fluoride concentrations were more or less constant and low during the year, despite the deposition of tailings in NC. For comparison purposes only, the concentrations were generally slightly above CCME limit.	**NC & SC:** Forecasted concentrations were expected to be slightly higher than CCME limit. The forecasted values trends well with the measured data.

2.5 Portage and Goose Pits

In 2020, in-pit tailings deposition continued in Goose Pit from January to August 2020 and then transferred to South Portage Pit (Pit E).

In Goose Pit, Reclaim Water and natural runoff from its sub-catchment area were allowed to accumulate in the pit. Water was then transferred to Portage Pit A between May to September 2020 and in May and June 2021.

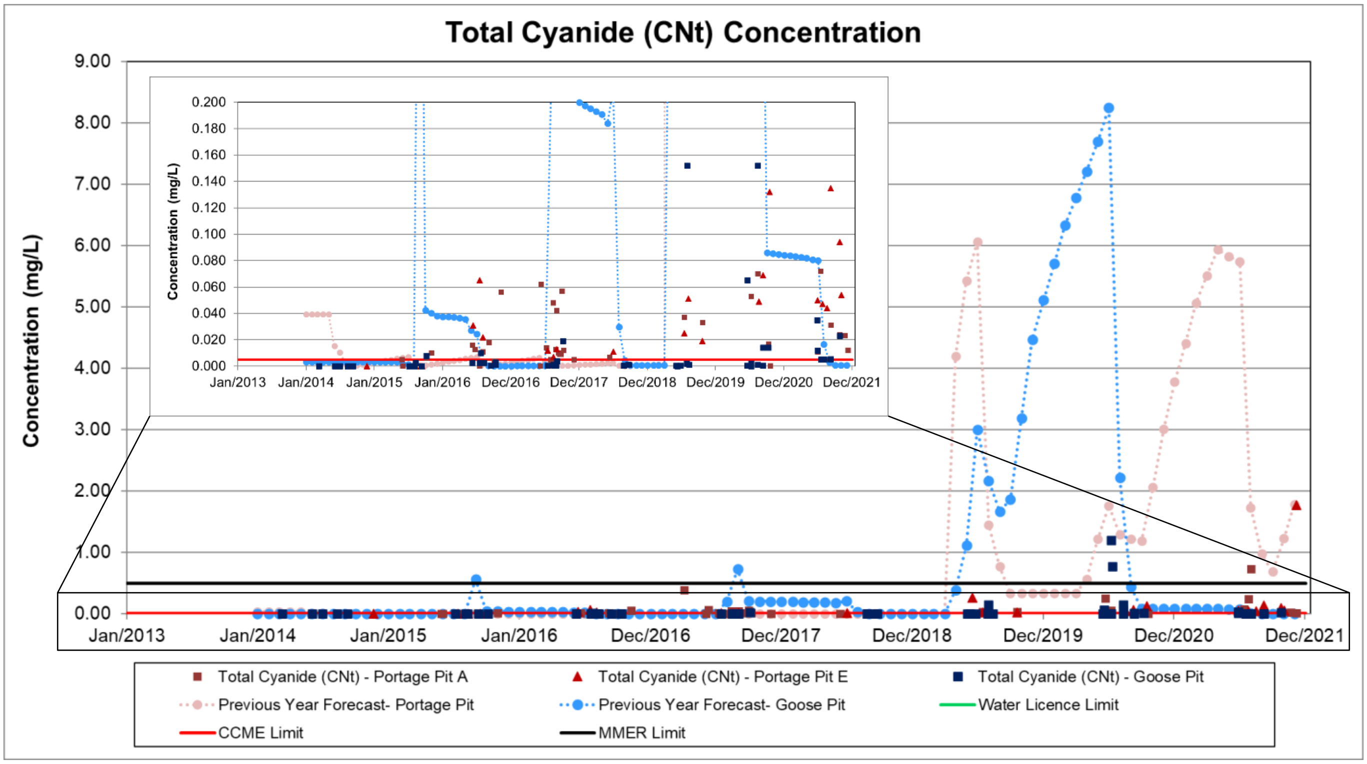
In Portage Pit E, Reclaim Water (as of August 2020) and natural runoff from its sub-catchment area also accumulated in the pit. No water transfer occurred in 2020. Water was transferred to Portage North Pit (Pit A) in October and November 2021.

North Portage Pit (Pit A) continues to receive its natural runoff from its sub-catchment area, as well as water transfer from East Dike Seepage, South Cell TSF, CDDP, Goose Pit and Storm Water Management Pond. From June 2020 to the end of 2021, water from Pit A was pumped to the Mill to be re-used as Reclaim Water.

Water quality analysis of samples taken from the pit lakes formed in Portage Pit A (ST-17) and Pit E (ST-19), and in Goose Pit (ST-20) in 2021 are tabulated in Section 8 of the 2021 Annual Report.

Figures 2-4 to 2-6 presents the concentration of the parameters of concern measured in the Portage and Goose Pits from 2013 to 2021. Based on the graphs shown in Figures 2-4 to 2-6, observations from measured and forecasted concentrations in Portage and Goose Pits are summarized in Table 2-4. To facilitate the reading, Portage Pit has been abbreviated as PP and Goose Pit as GP.

Figure 2-4: Concentrations Portage Pit and Goose Pit – Total Cyanide & Metals



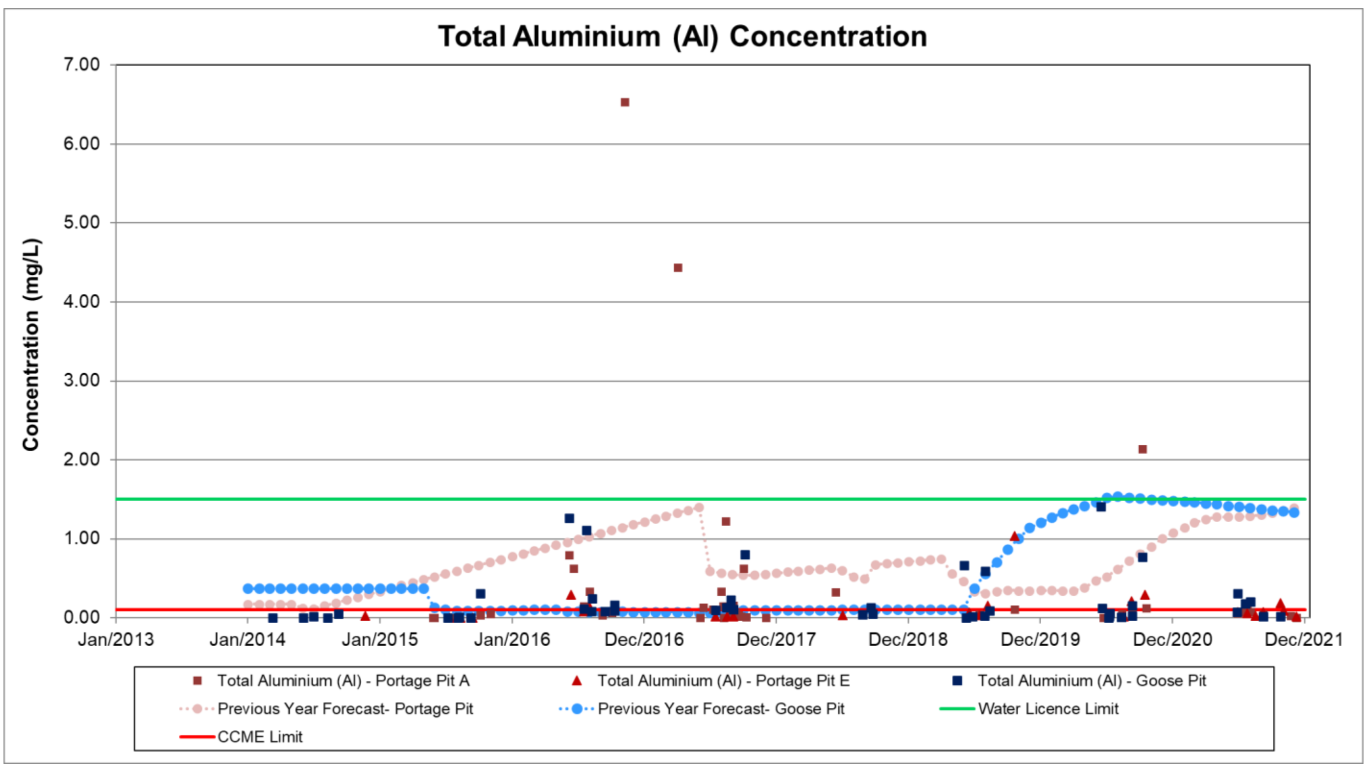
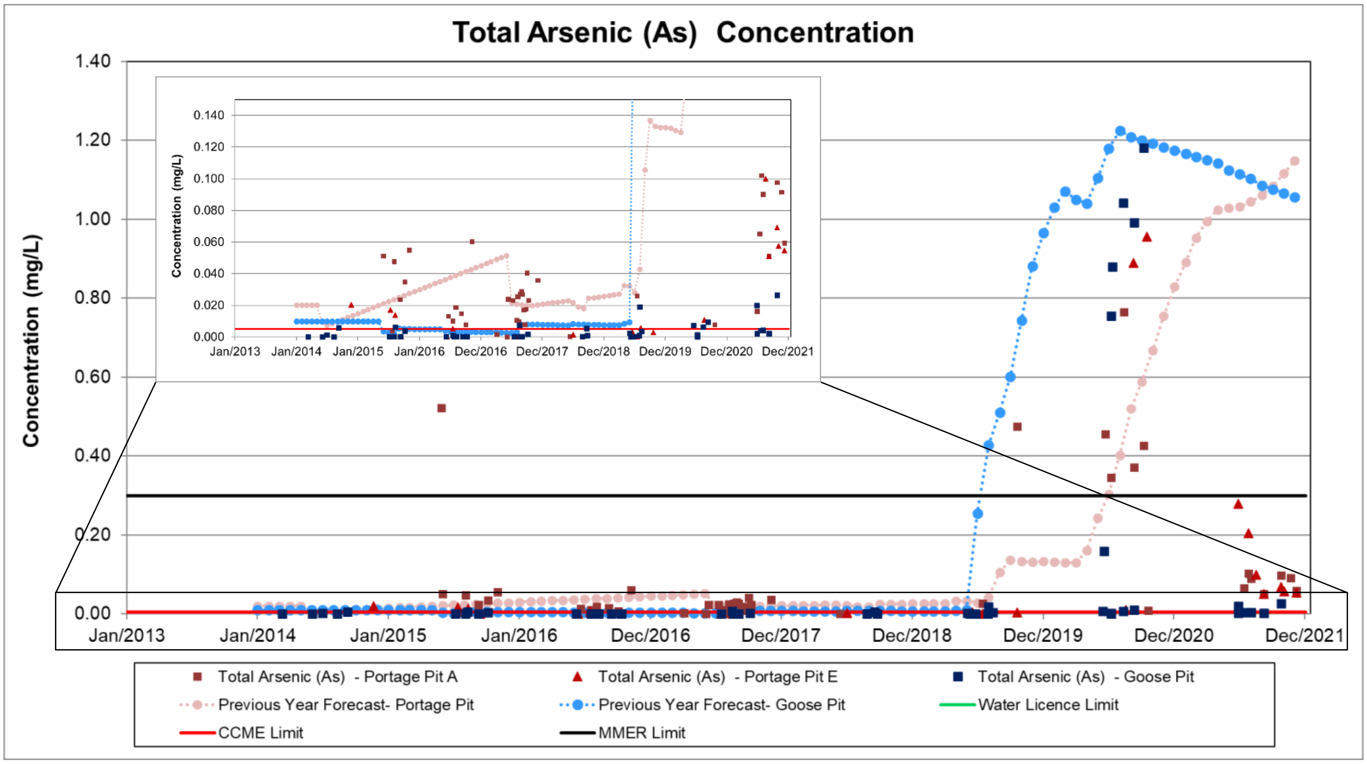


Figure 2 4: (continued) Concentrations Portage Pit and Goose Pit – Total Cyanide & Metals



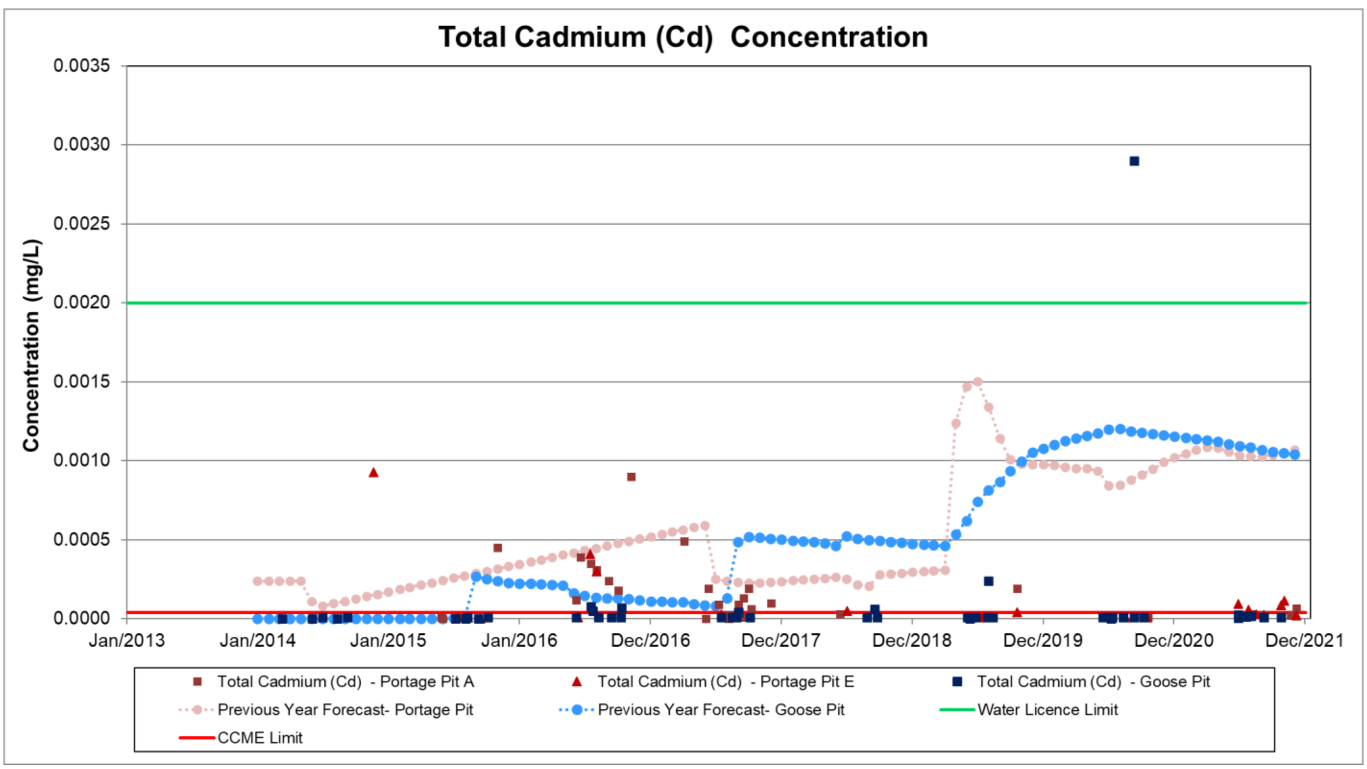
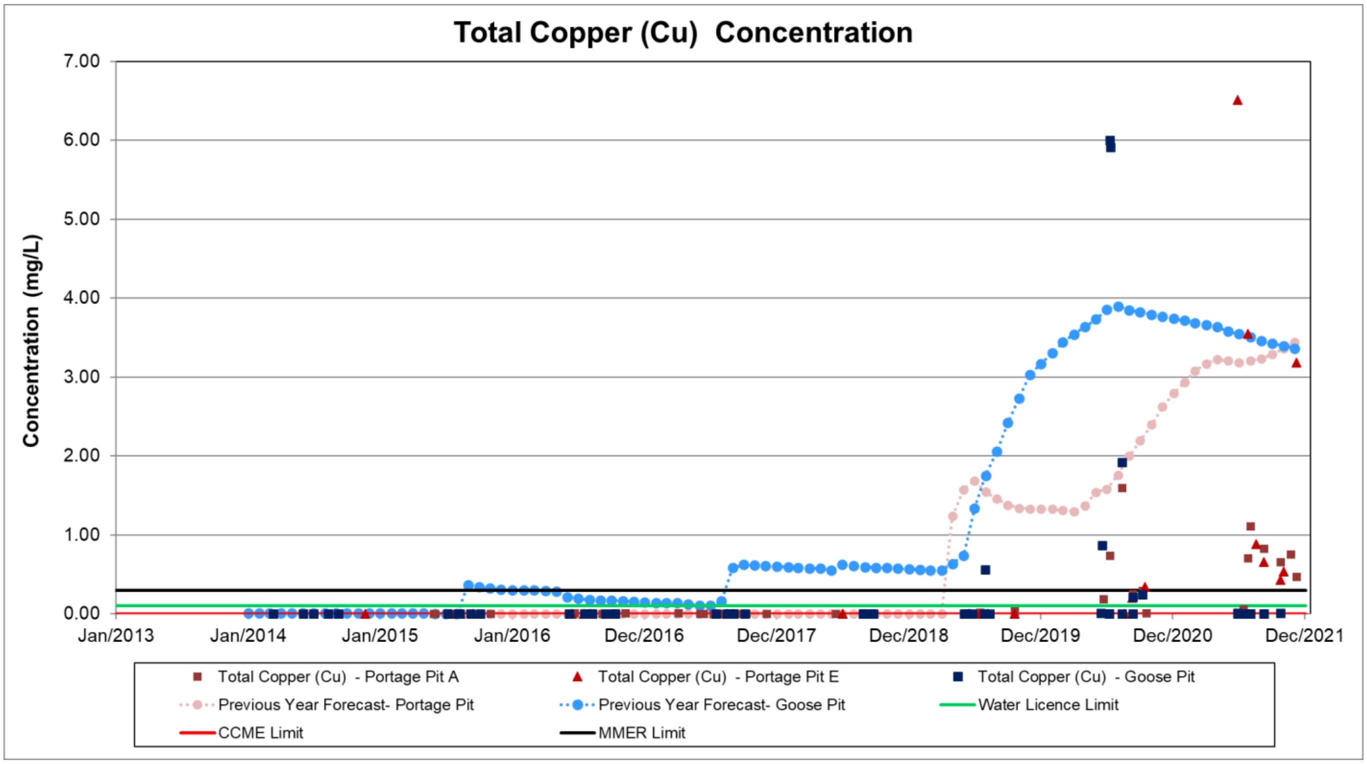


Figure 2 4: (continued) Concentrations Portage Pit and Goose Pit – Total Cyanide & Metals



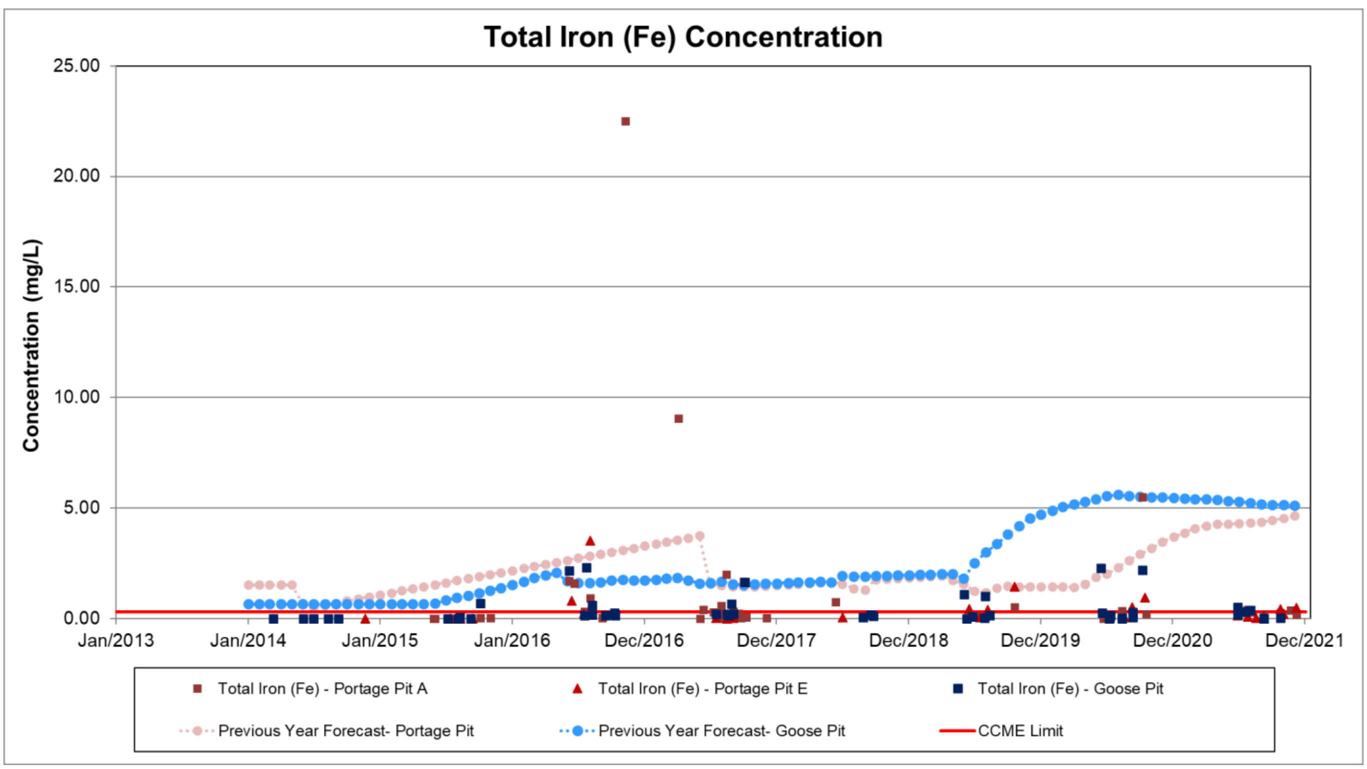
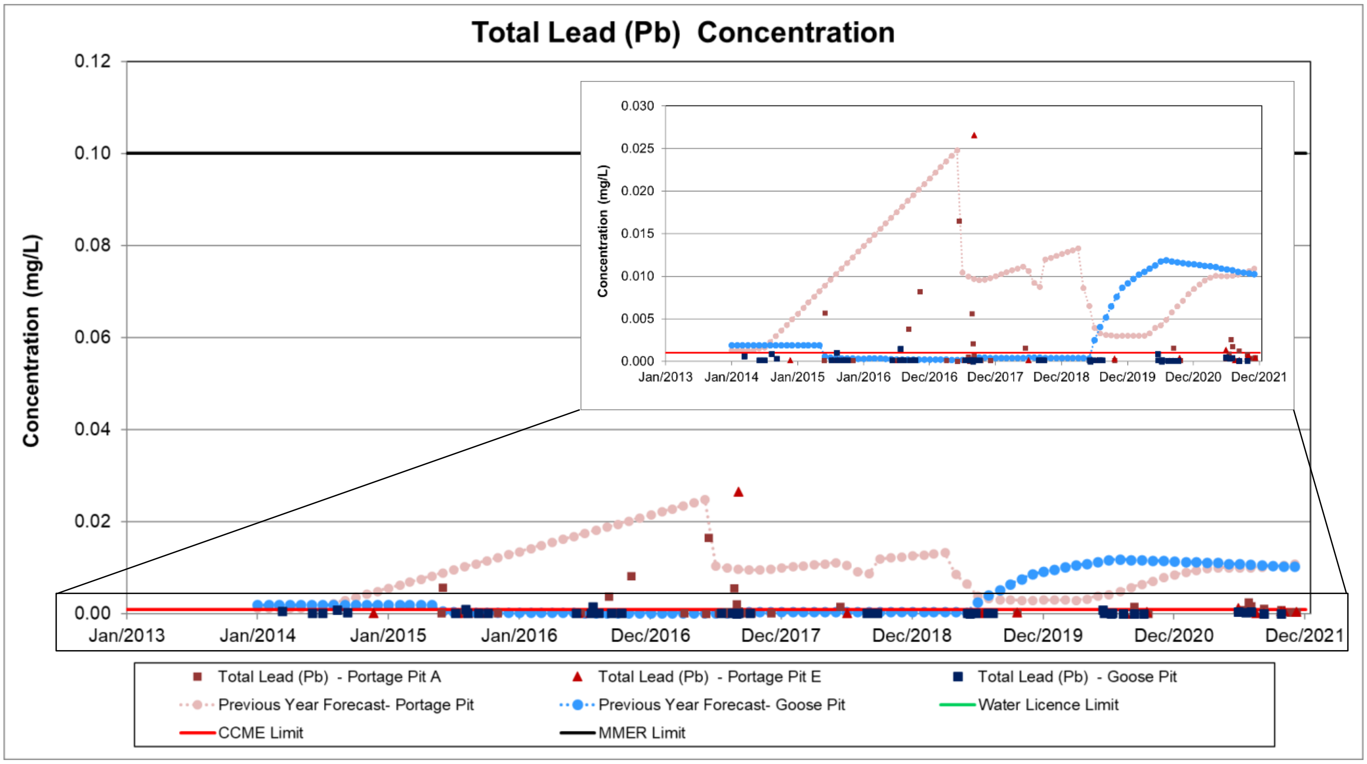


Figure 2 4: (continued) Concentrations Portage Pit and Goose Pit – Total Cyanide & Metals



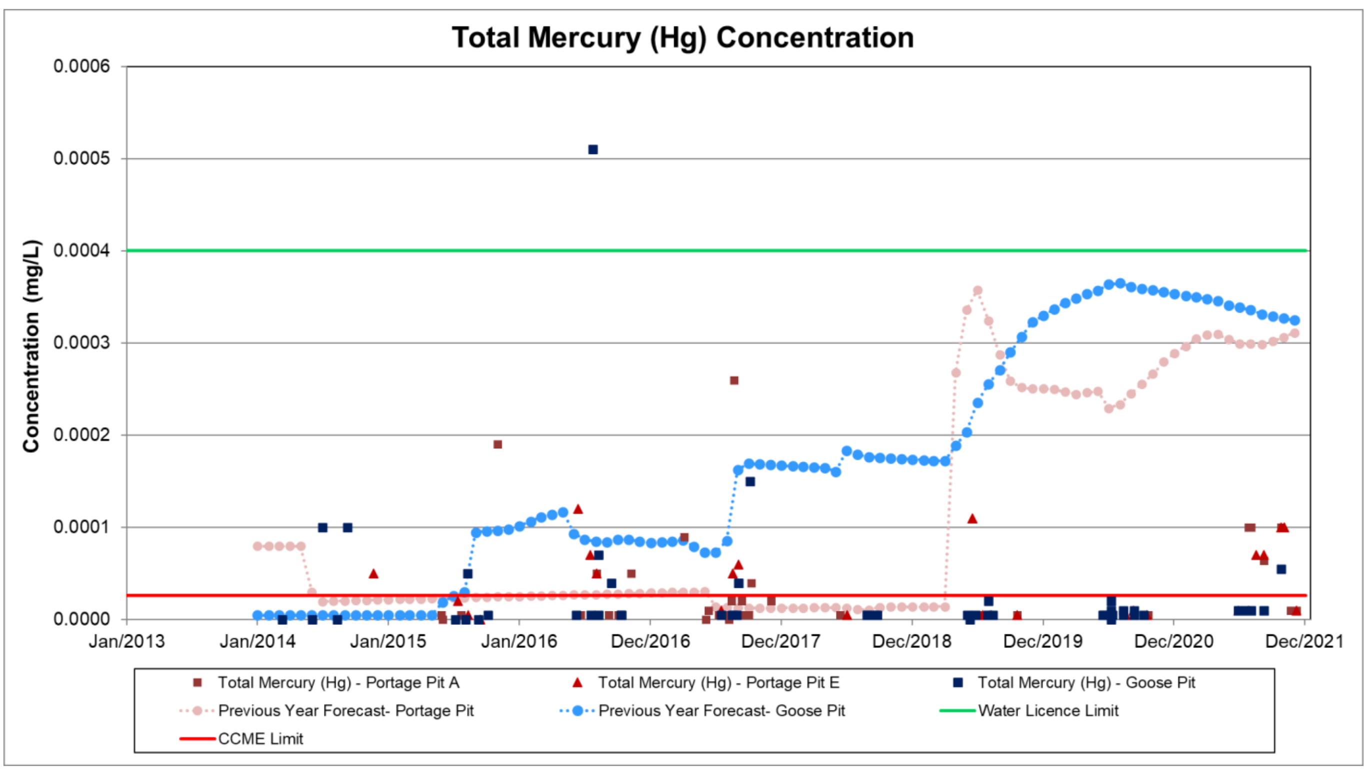
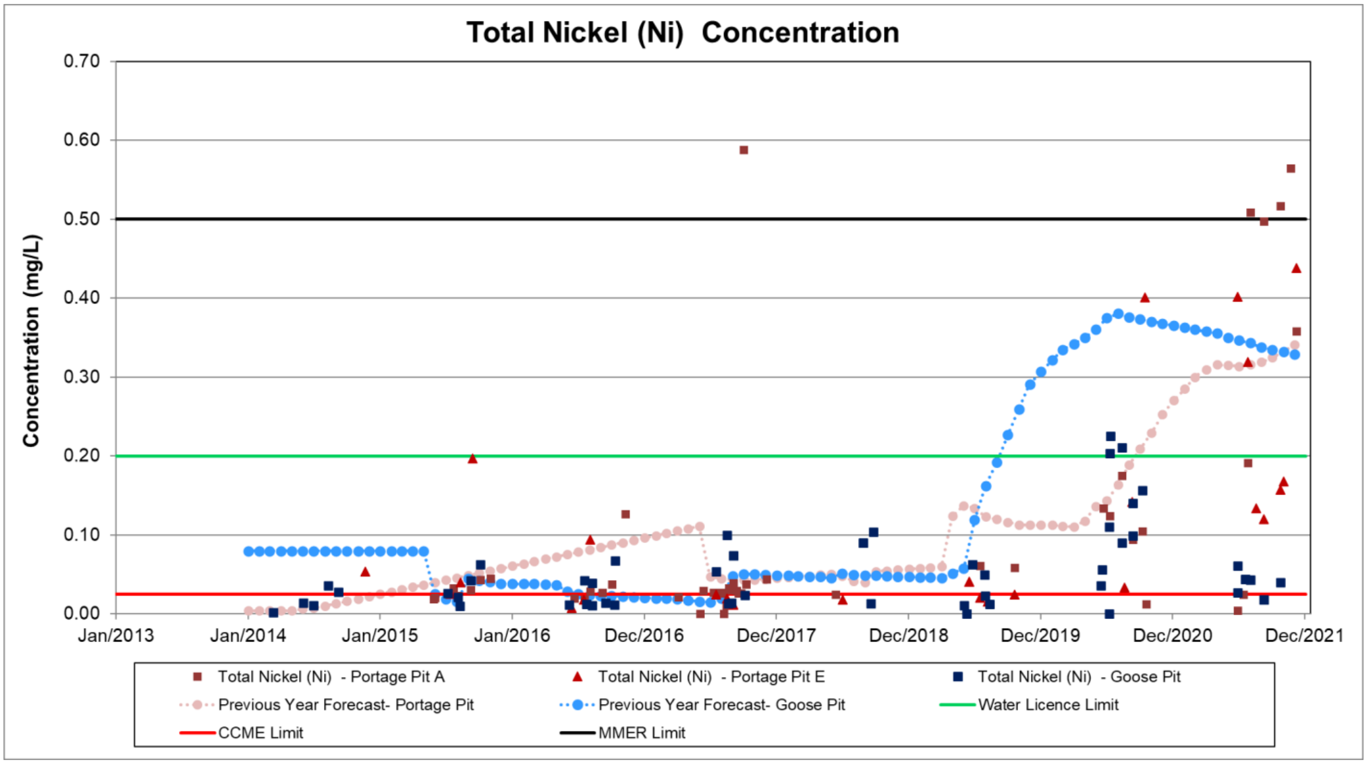


Figure 2 4: (continued) Concentrations Portage Pit and Goose Pit – Total Cyanide & Metals



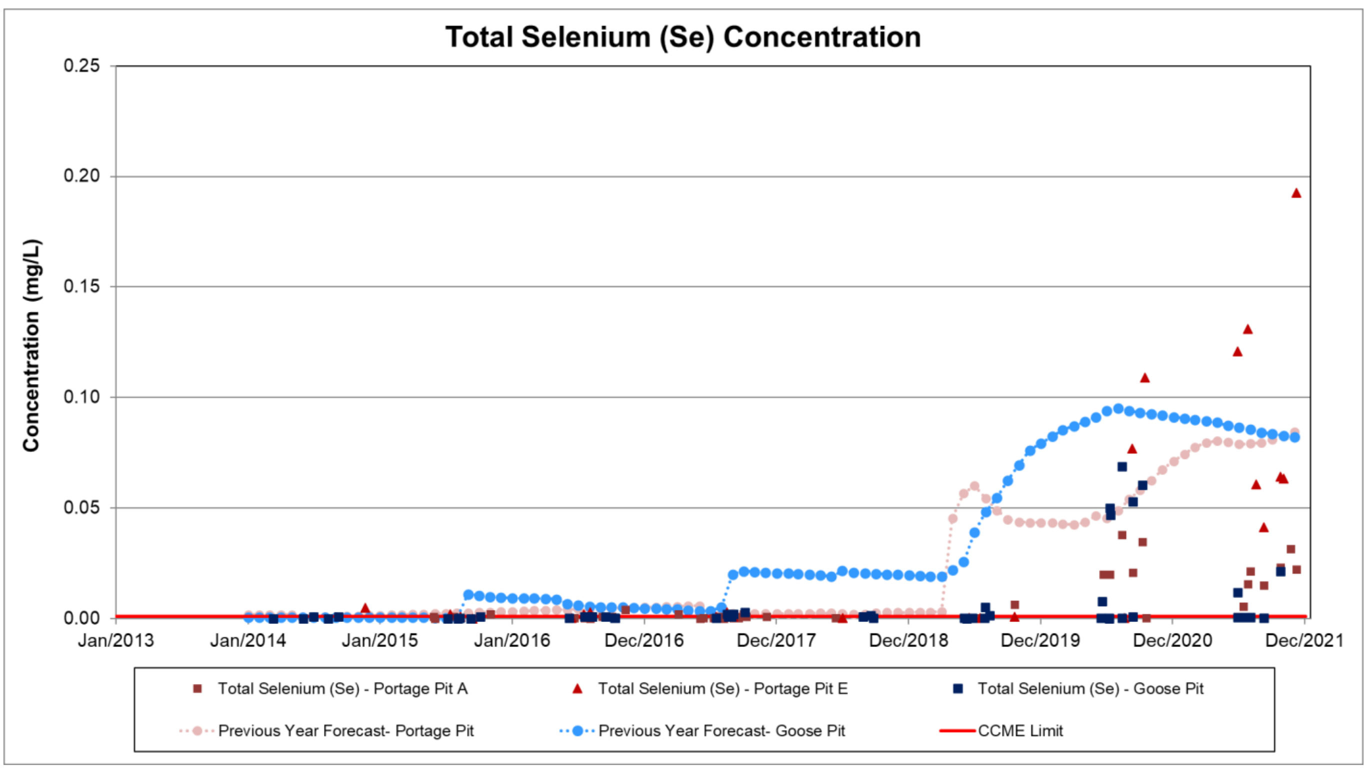


Figure 2 4: (continued) Concentrations Portage Pit and Goose Pit – Total Cyanide & Metals

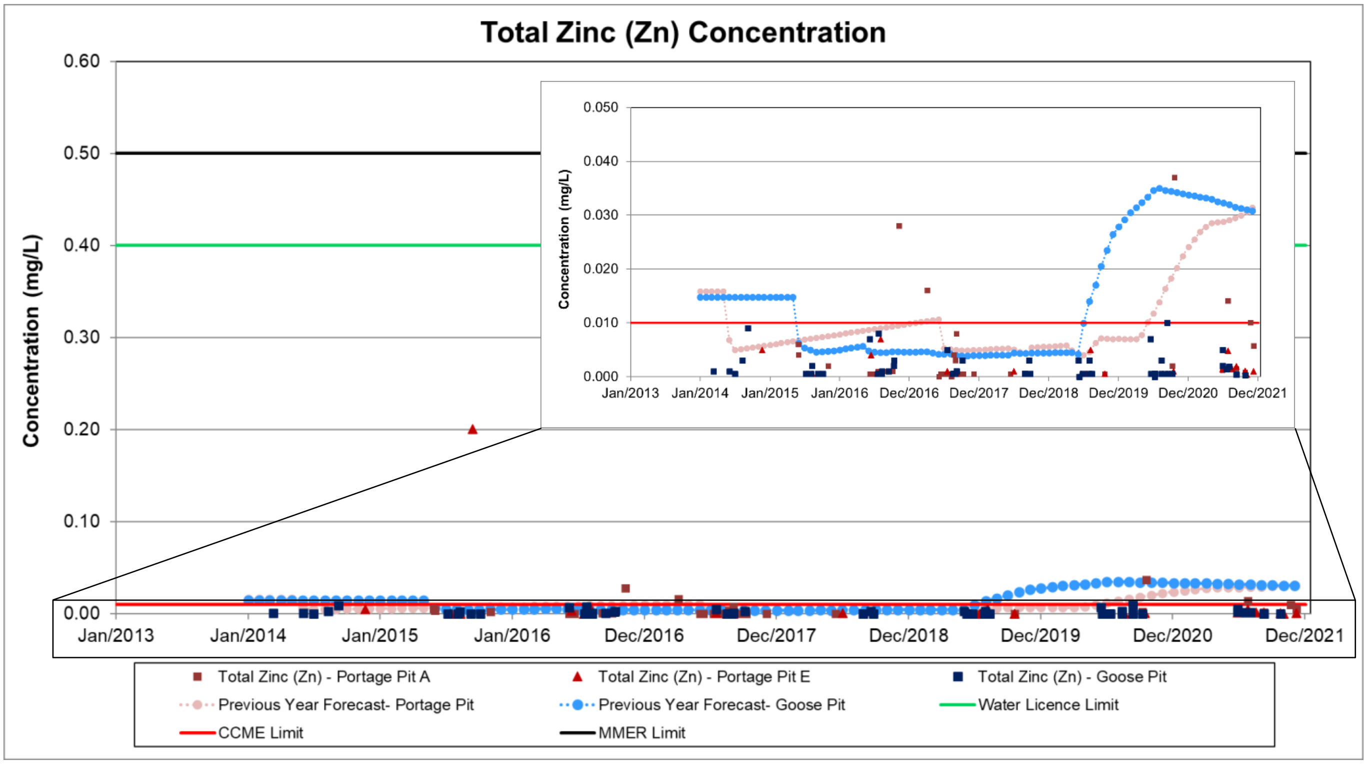
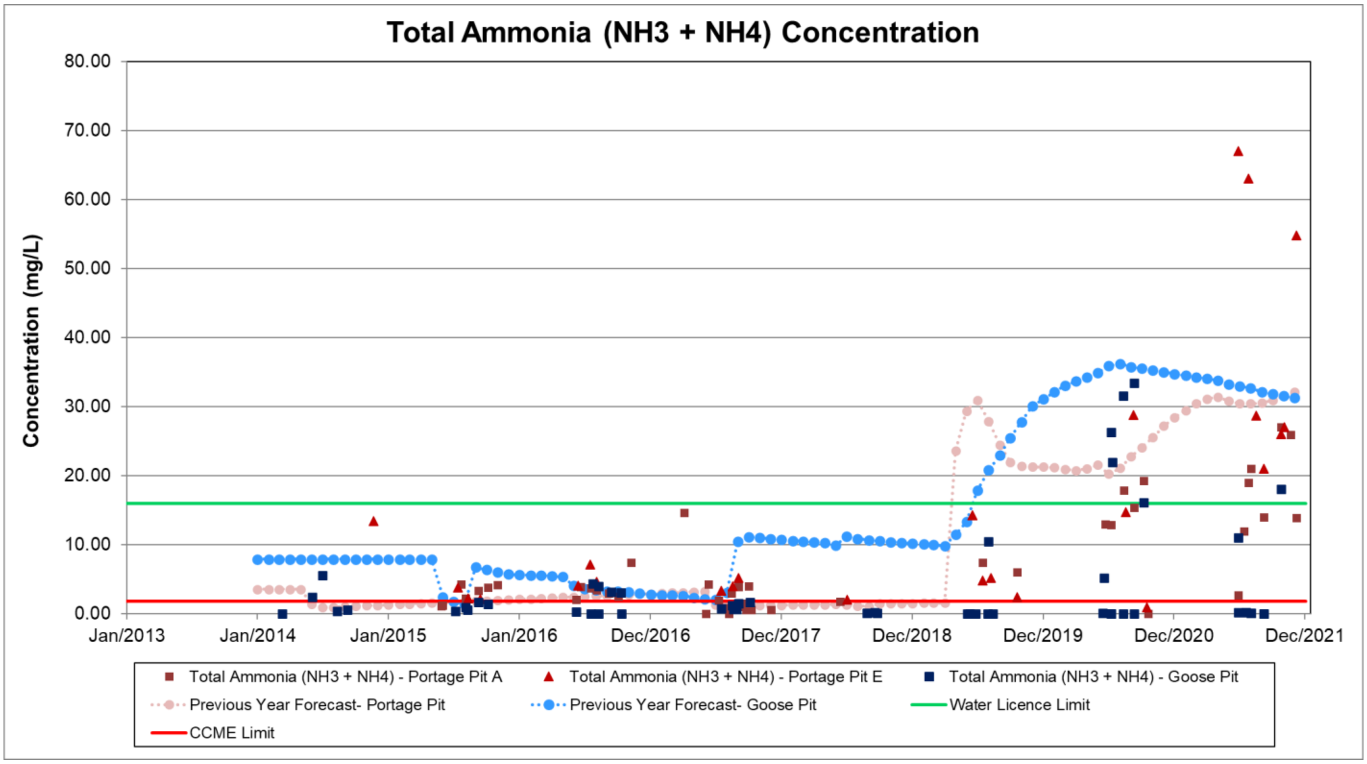


Figure 2-5: Concentrations Portage Pit and Goose Pit – Ammonia & Nitrate



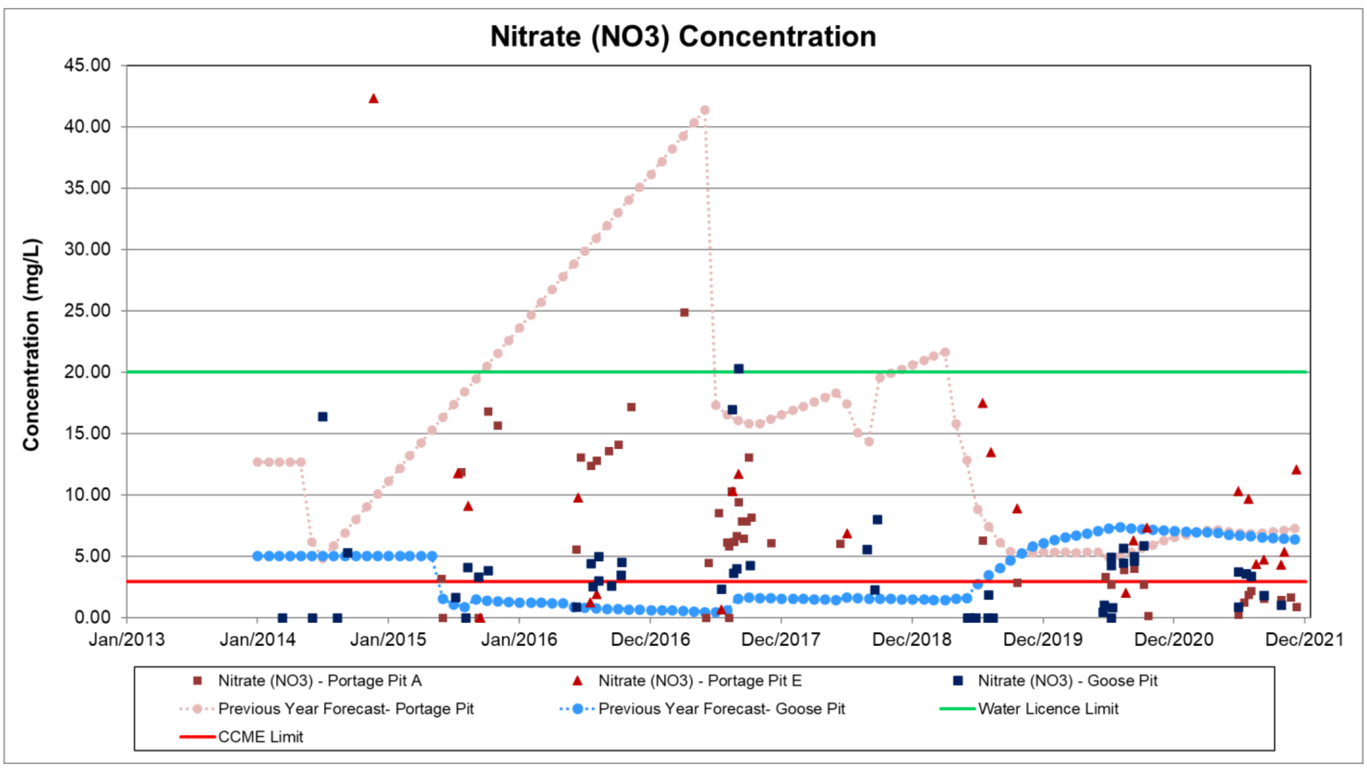
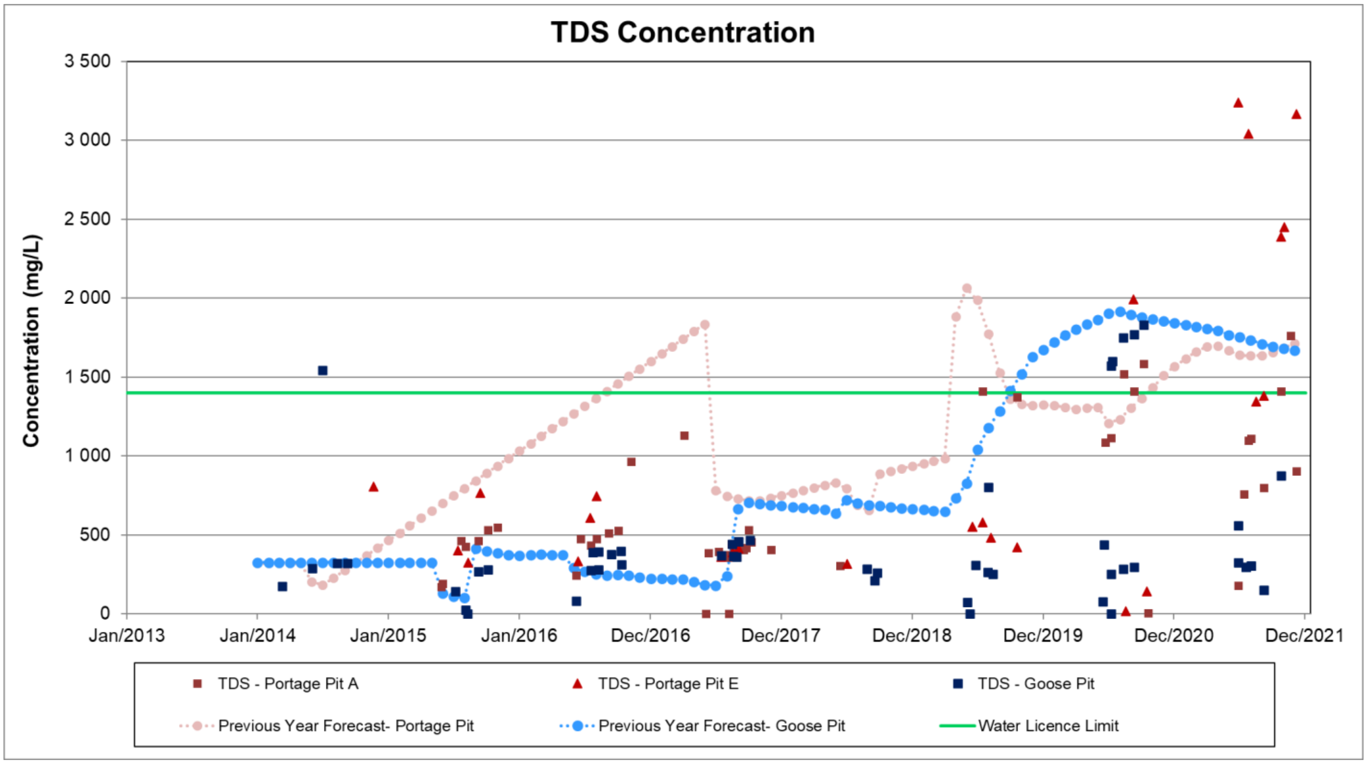


Figure 2-6: Concentrations Portage Pit and Goose Pit – TDS & Anions



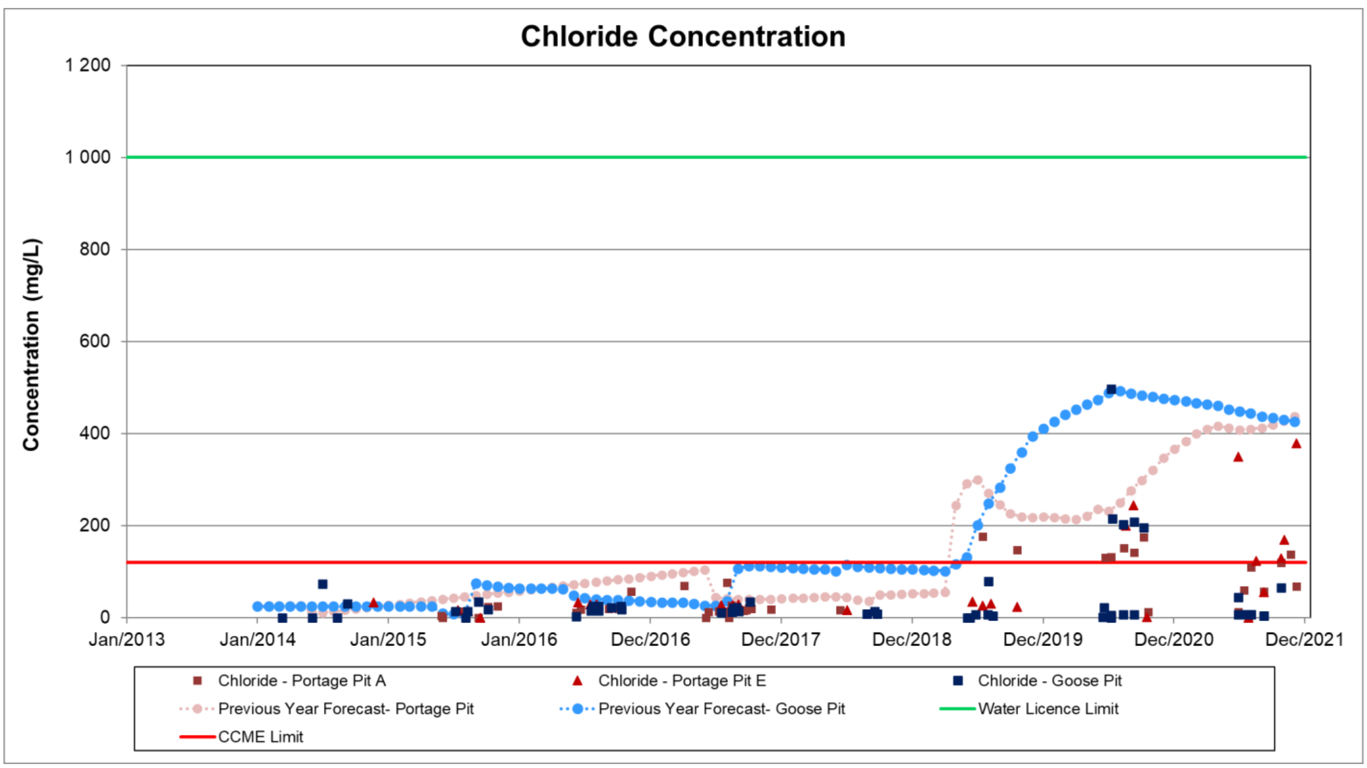
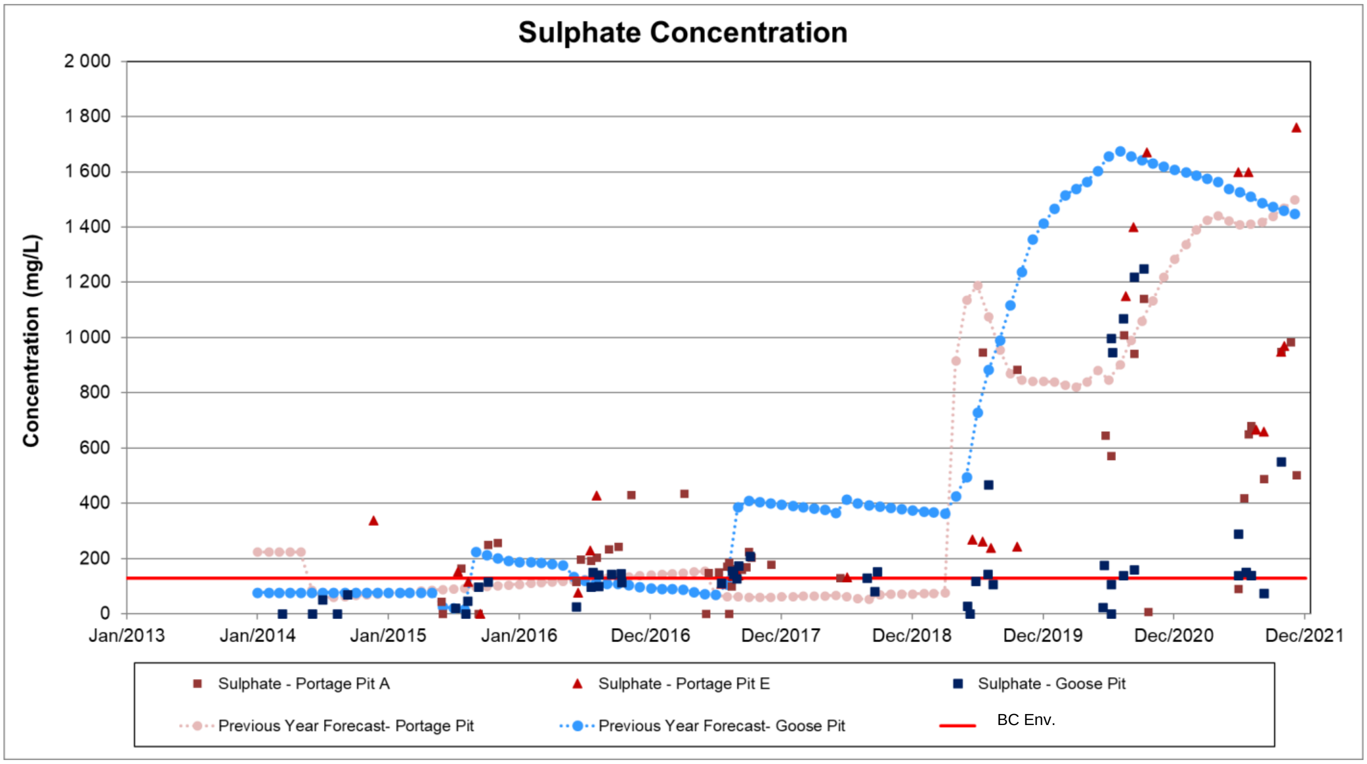


Figure 2 6: (continued) Concentrations Portage Pit and Goose Pit – TDS & Anions



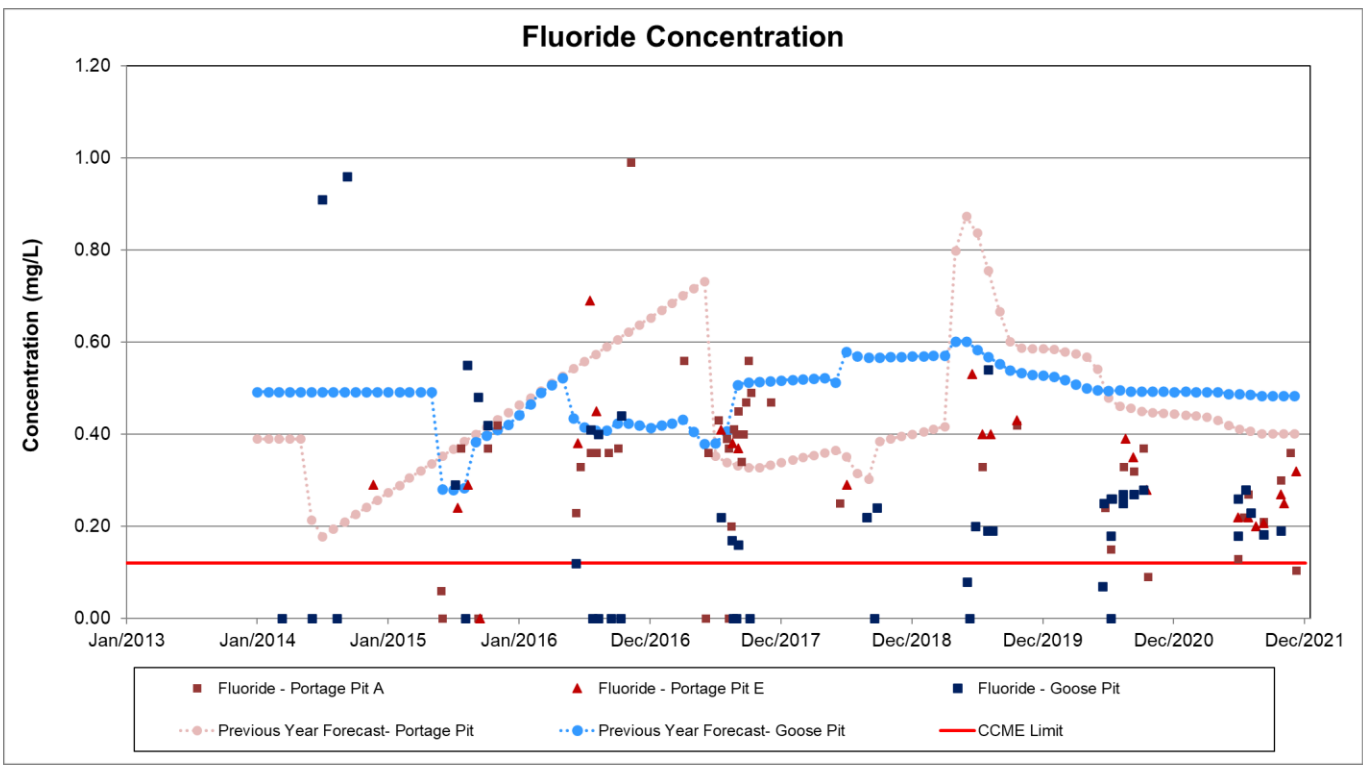


Table 2-4: Observations from Measured and Forecasted Concentrations in Portage and Goose Pits

PARAMETER	MEASURED VALUES OBSERVATIONS	FORECASTED VALUES OBSERVATIONS
Total cyanide	**PP:** Measured values increased in 2021 since deposition of tailings started in PP. For comparison purposes only, the measured concentrations of Pit E and Pit A were generally below Water Licence and MDMER limits during the summer months and increased above these limits in winter. The concentrations remained above the CCME limit. **GP**: Measured concentrations were very low since no deposition occurred in this pit. For comparison purpose only, the measured concentrations were below MDMER and Water Licence limits and were slightly above CCME limit.	**PP:** The forecast model predicted an increase in total cyanide values since tailings deposition started in this pit. The measured concentrations however did not increase that much when compared to the forecasted values, which suggest that the cyanide load assumed in the model is conservative. **GP:** Forecasted values for 2021 were higher than measured concentrations, suggesting some natural degradation was occurring in the pit lake.
Total Aluminum	**PP:** Measured values were similar to previous years. For comparison purposes only, all values were below the Water Licence limit and were slightly above the CCME limit. The transfer of Reclaim Water to Pit A from GP and the deposition of tailings in Pit E did not contribute to increase the concentration for this parameter. **GP**: Measured values were similar to previous years. For comparison purpose only, the concentrations were generally below Water Licence limit and slightly above CCME limit.	**PP & GP:** The forecasted concentrations were generally higher than the measured concentrations, suggesting that the load for this constituent assumed in the model is conservative. The lower measured concentration could also be explained by a good settling of suspended particles in these pits.
Total Arsenic	**PP:** Measured concentrations decreased compared to last year data. For comparison purposes only, the measured values were below MDMER and close to the Water Licence limit only but remain above CCME limits. **GP**: Measured concentrations remain low since there are no deposition of tailings in this pit. For comparison purpose only, the concentrations were below the MDMER, Water Licence limits and slightly above CCME limits.	**PP:** Forecasted values indicated an increase in concentrations during tailings deposition, which was observed based on the measured data. However, the forecasted values are higher than the measured values, which suggest that the load assumed for this constituent in the model is conservative. Furthermore, the model assumes a constant loading for this constituent from the mill effluent over time and does not consider any variability in mill effluent chemistry over the year, resulting in a conservative assessment. **GP:** Forecasted values indicated a decrease in concentrations in 2021, which was observed based on the measured data. However, the forecasted values are higher than the measured values, which suggest that the load assumed for this constituent in the model is conservative.

PARAMETER	MEASURED VALUES OBSERVATIONS	FORECASTED VALUES OBSERVATIONS
Total Cadmium	**PP:** Measured concentrations were generally below the detection limit. For comparison purposes only, the concentrations were generally below CCME limit. **GP**: Measured concentrations were generally below the detection limit. For comparison purposes only, the concentrations were generally below CCME limit.	**PP and GP:** Forecasted values were higher than the measured ones, which suggest that the load assumed for this constituent in the model is conservative
Total Copper	**PP:** Measured concentrations increased due to tailings deposition in Pit E. For comparison purpose only, values were higher than the MDMER and Water Licence limits. **GP**: Measured concentrations remain low since no tailing deposition took place in this pit. For comparison purpose only, measured values were lower than MDMER and Water Licence limits and close to the CCME limit.	**PP:** Forecasted values indicated an increase in concentration. The measured values do not follow this trend. Most measured values remain below the forecasted values, suggesting that the load for this constituent assumed in the model is conservative. The lower measured concentration could also be explained by a good settling of suspended particles in these pits. **GP:** Forecasted values indicated a decrease in concentration. The measured values do follow this trend, but remain well below the forecasted values, suggesting that the load for this constituent assumed in the model is conservative. The lower measured concentration could also be explained by a good settling of suspended particles in these pits.
Total Iron	**PP:** Measured concentrations were relatively low. For comparison purpose only, in Pit E and Pit A, most values were below or close to the CCME limit. **GP**: Measured concentrations were generally low. For comparison purposes only, most values were below or close to the CCME limit.	**PP & GP:** Forecasted values were much higher than the measured values, suggesting that the load for this constituent assumed in the model is conservative. The lower measured concentration could also be explained by a good settling of suspended particles in these pits.
Total Lead	**PP & GP:** Measured concentrations were relatively low. For comparison purpose only, most values were below or close to the CCME limit.	**PP & GP:** Forecasted values were higher than the measured values, suggesting that the load for this constituent assumed in the model is conservative. The lower measured concentration could also be explained by a good settling of suspended particles in these pits.
Total Mercury	**PP:** Measured concentrations were relatively low. For comparison purpose only, in Pit E and Pit A, concentration values were below the Water Licence discharge criterion and slightly above the CCME limit. **GP**: Measured concentrations were generally low. For comparison purposes only, most values were below or close to the CCME limit.	**PP & GP:** Concentrations were forecasted to remain below the Water Licence discharge criterion. Forecasted concentrations values were higher than the measured values, suggesting that the load for this constituent assumed in the model is conservative. The lower measured concentration could also be explained by a good settling of suspended particles in these pits.

PARAMETER	MEASURED VALUES OBSERVATIONS	FORECASTED VALUES OBSERVATIONS
Total Nickel	**PP:** Measured concentrations were higher compared to the previous years, which was expected since deposition of tailings continued in these pits. For comparison purposes only, most measurements were above the Water Licence limits. **GP:** Measured concentrations were generally lower compared to last year. This was expected since no deposition took place in this pit. For comparison purposes only, measured concentrations were below the Water Licence limits and slightly above CCME limit.	**PP:** Forecasted values indicated an increase in concentration as tailing deposition continued in this pit. Some of the measure values were higher than the forecasted value. Since the model assumes a constant load for this constituent to the pit, it does not consider any variability of the mill effluent water chemistry over the year. **GP:** Forecasted values were much higher than the measured values, suggesting that the load for this constituent assumed in the model is conservative. The lower measured concentration could also be explained by a good settling of suspended particles in these pits.
Total Selenium	**PP:** Measured concentrations increased due to tailings deposition in Pit E. For comparison purpose only, the measured values were above the CCME limit. **GP**: Measured concentrations decreased compared to last year since no tailings were deposited in this pit. For comparison purpose only, the measured values were slightly above the CCME limit	**PP:** Forecasted values projected an increasing trend and the measured data reflect this trend. Some of the measured values were higher than the forecasted values. Since the model assumes a constant load for this constituent to the pit, it does not consider the variability of the mill effluent water chemistry over the year. **GP:** Forecasted values projected a decrease in concentration and were generally higher than measured ones, suggesting that the load for this constituent assumed in the model is conservative.
Total Zinc	**PP & GP:** Measured concentrations in both pits were low. For comparison purpose only, measured values remained below Water Licence limits and were generally close to the CCME limit.	**PP & GP:** Forecasted concentrations in the previous model projected an increasing trend this year due to the deposition of tailings. However, the measured values are much lower than the forecasted values, suggesting that the load for this constituent assumed in the model is conservative.
Total Ammonia	**PP:** Measured concentrations increased due to tailings deposition in Pit E. For comparison purpose only, measured concentrations exceeded the Water Licence criterion. **GP**: Measured concentrations were lower compared to last year. For comparison purpose only, in general, most measurements were below the Water Licence criterion (except for one sample) and were generally below CCME limit.	**PP:** Forecasted concentrations in the previous model projected an increasing trend this year due to the deposition of tailings. The measured values reflect this trend. However, the measured values are higher than the forecasted values. Since the model assumes a constant load for this constituent to the pit, it does not consider any variability of the mill effluent water chemistry over the year. **GP:** Forecasted concentrations projected a decreasing trend. This was observed based on the measured values. The measured values were much lower than the forecasted values, suggesting that the load for this constituent assumed in the model is conservative.

PARAMETER	MEASURED VALUES OBSERVATIONS	FORECASTED VALUES OBSERVATIONS
Nitrate	**PP:** Measured concentrations increased due to tailings deposition in Pit E. However, measured concentrations remain below the Water Licence criterion. **GP**: Measured concentrations were lower compared to last year. For comparison purpose only, in general, most measurements were below the Water Licence criterion and were generally below CCME limit.	**PP:** Forecasted concentrations in the previous model projected an increasing trend this year due to the deposition of tailings. The measured values reflect this trend. However, the measured values are higher than the forecasted values. **GP:** Forecasted concentrations projected a decreasing trend. This was observed based on the measured values. The measured values were much lower than the forecasted values.
TDS	**PP:** Measured concentrations increased due to tailings deposition in Pit E. For comparison purpose only, some measured concentrations were above the Water Licence criterion. **GP**: Measured concentrations are generally lower compared to last year. For comparison purpose only, measured concentrations were below the Water Licence criterion.	**PP:** Forecasted concentrations in the previous model projected an increasing trend this year due to the deposition of tailings. The measured values reflect this trend. However, the measured values are higher than the forecasted values. Since the model assumes a constant load for this constituent to the pit, it does not consider any variability of the mill effluent water chemistry over the year. **GP:** Forecasted concentrations projected a decreasing trend. This was observed based on the measured values. The measured values were much lower than the forecasted values, suggesting that the load for this constituent assumed in the model is conservative.
Chloride	**PP:** Measured concentrations increased due to tailings deposition in Pit E. However, measured concentrations were lower than the Water Licence criterion, but remain above CCME limit. **GP**: Measured concentrations are generally lower compared to last year. For comparison purpose only, measured concentrations were below the Water Licence criterion and below CCME limit.	**PP:** Forecasted concentrations in the previous model projected an increasing trend this year due to the deposition of tailings. The measured values reflect this trend. The measured values are lower than the forecasted values, suggesting that the load for this constituent assumed in the model is conservative. **GP:** Forecasted concentration projected a decreasing trend. This was observed based on the measured values. The measured values were much lower than the forecasted values, suggesting that the load for this constituent assumed in the model is conservative.

PARAMETER	MEASURED VALUES OBSERVATIONS	FORECASTED VALUES OBSERVATIONS
Sulphate	**PP:** Measured concentrations increased due to tailings deposition in Pit E. For comparison purpose only, measured values were higher than the threshold value for sulphate based on BC Environment guideline for the protection of aquatic life for very soft water. **GP**: Measured concentrations are generally lower compared to last year. For comparison purpose only, measured values were higher or close to the threshold value for sulphate based on BC Environment guideline for the protection of aquatic life for very soft water.	**PP:** Forecasted concentrations in the previous model projected an increasing trend this year due to the deposition of tailings. The measured values reflect this trend. **GP:** Forecasted concentrations projected a decreasing trend. This was observed based on the measured values. The measured values were much lower than the forecasted values, suggesting that the load for this constituent assumed in the model is conservative.
Fluoride	**PP & GP:** Measured concentrations were generally lower than 0.4 mg/L. For comparison purposes only, all of the measured values were above CCME limit.	**PP and GP:** Forecasted values were similar to the measured values, suggesting that the load for this constituent assumed in the model is conservative.

2.6 Mill Effluent

2.6.1 Mill Effluent Measurements

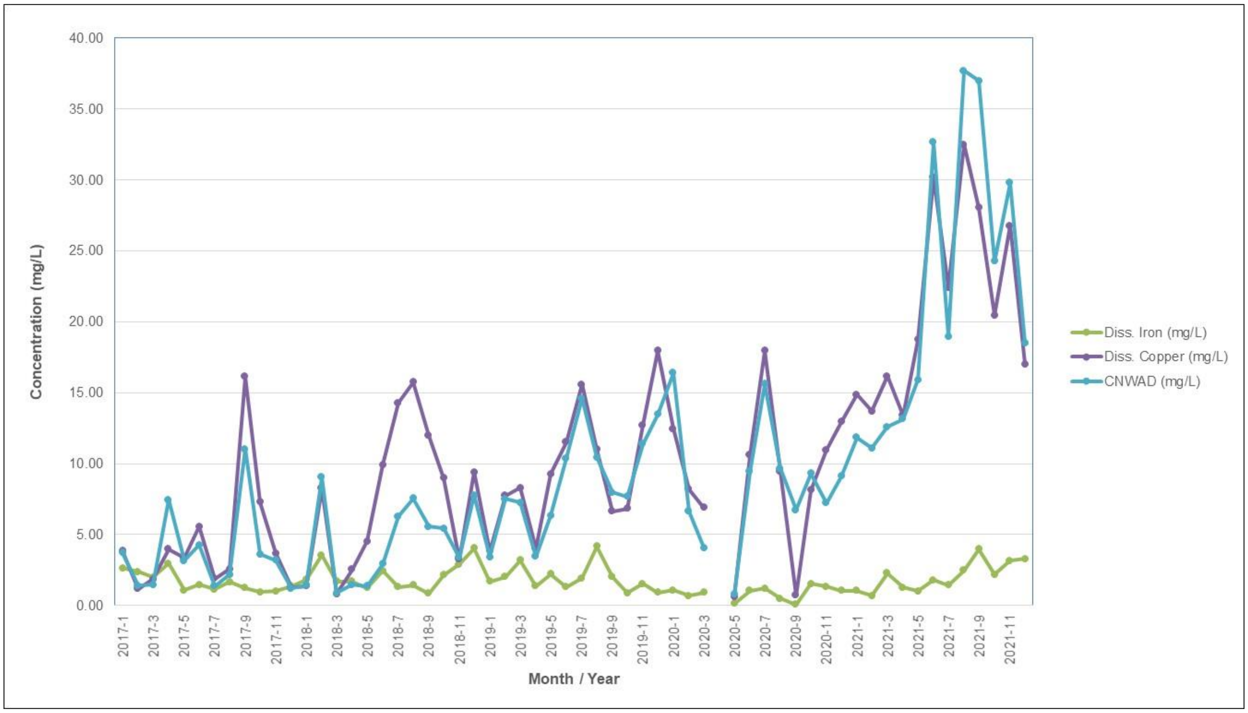
A review of the chemical analysis for the Mill Effluent was undertaken by SNC-Lavalin to identify the impact of the Mill Effluent water quality on the water quality observed in the North and South Cell TSF Reclaim Ponds as well as in both Portage and Goose pits. The Mill Effluent is tested twice daily for gold (solid and dissolved), iron (dissolved), copper (dissolved) and cyanide (CN-WAD) using the on-site lab, which is not accredited for environmental water quality chemical analysis. These chemical analyses were provided to SNC-Lavalin between January 2013 and December 2021.

Figure 2-7 shows the monthly average dissolved metal concentrations and cyanide (CN-WAD) in the Mill Effluent sampled at the final tailings sampling point 360-SA-008 for the last five years. This figure illustrates the following:

- Dissolved iron and copper concentrations were present in the Mill Effluent. Thus, the main source of iron and copper in the Reclaim Water comes from the Mill Effluent.
- There was a relationship between copper and cyanide concentrations at the Mill Effluent. This was clearly represented in Figure 2-7 where the two trends behaved similarly in 2021. A low concentration of CN-WAD was generally associated with less cyanide required to extract the gold in certain ore type, resulting in less copper catalyst required in the cyanide destruction.

Compared to the values of 2017, the peaks observed in 2017, 2018, 2019 and 2020 for copper and CN-WAD were generally higher, as shown in Figure 2-7. This figure also shows that the concentrations measured in 2021 were higher than in 2020, and generally higher than the 2017 to 2019 concentrations.

Figure 2-7: Mill Effluent Monthly Average 2017 to 2021: Iron, Copper and Cyanide (CN-WAD)



2.6.2 Additional Mill Effluent Water Quality Results

Agnico analyzed on a monthly basis the water fraction of Mill Effluent after cyanide destruction to have representative data of the tailings water being discharged to the Portage Pit in 2021. The water quality analysis was completed by an external accredited laboratory. Parameters of concern are plotted in Figure 2-8 and Figure 2-9.

Figure 2-8: Mill Effluent Concentrations Sampled in 2021 – Total Metals

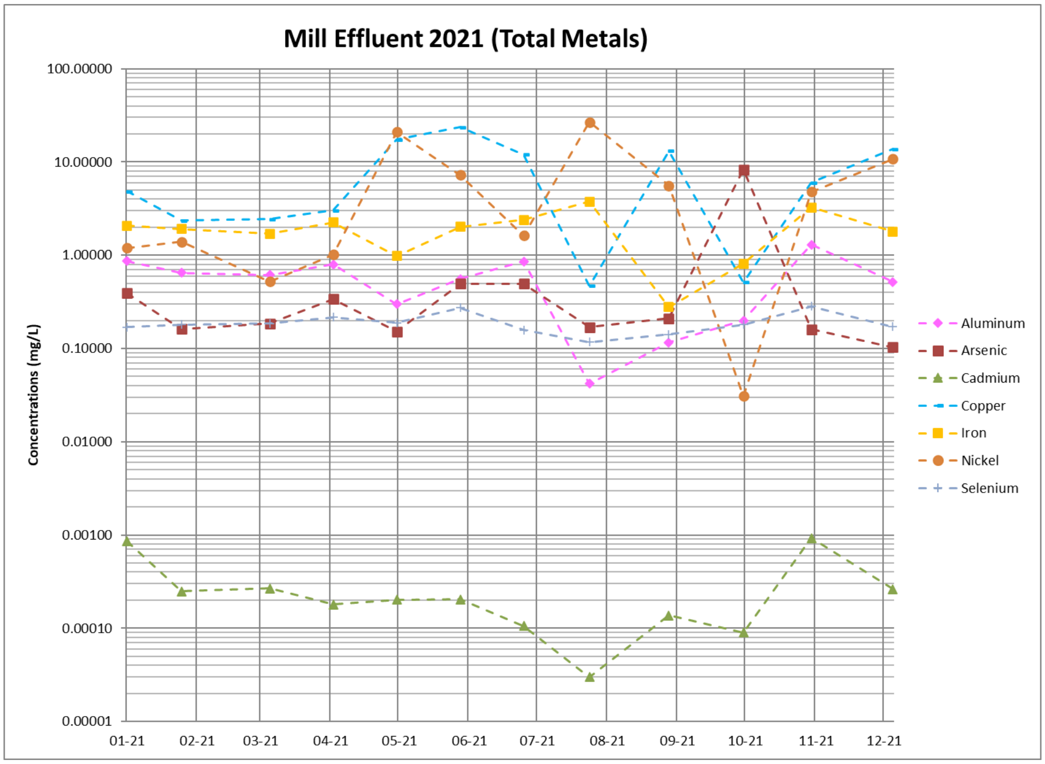
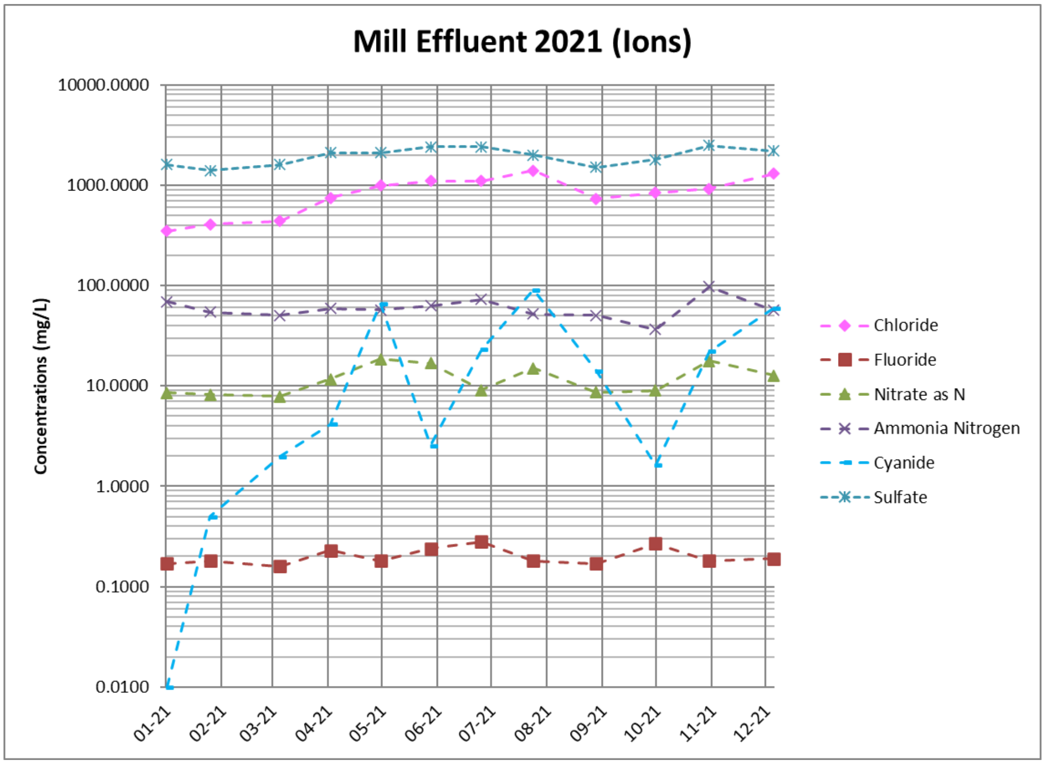


Figure 2-9: Mill Effluent Concentrations Sampled in 2021 – Major Ions



Samples of mill effluent were taken and analysed throughout the year to compare the concentration of key parameters. Table 2-5 compares the yearly average Mill Effluent samples between 2015 and 2021 for some parameters of concern.

Since 2020, only ore from the Whale Tail pit was processed at the mill. When comparing to the measured values taken in 2021 to 2020, the measured concentrations are more or less similar except for aluminum, cadmium, chromium and iron which were lower and nickel and chloride which were higher.

The measured data collected in 2021 also confirm some of the difference observed to the measurements taken in 2019 between the Mill Effluent quality produced when processing Portage/Vault ore versus Whale Tail ore. Concentrations of arsenic, cadmium, and chromium were an order of magnitude higher in the Mill Effluent when processing Whale Tail ore, while the concentration in fluoride was about 50% lower.

Table 2-5: Mill Effluent Concentrations Sampled in 2015 to 2021

PARAMETER	*Average 2015*	*Average 2016*	*Average 2017*	*Average 2018*	*Average 2019 w/o Whale tail*	*Average 2019 Whale tail only*	*Average 2020 Whale Tail only*	*Average 2021 Whale Tail only*
Total Cyanide (CNt)	18.2	9.3	20.4	6.2	11.7	11.8	24.6	23.8
Total Aluminum (Al)	0.629	0.326	1.541	2.2	0.394	109.5	1.73	0.59
Total Arsenic (As)	0.036	0.026	0.018	0.025	0.034	9.0	0.72	0.93
Total Cadmium (Cd)	0.0020	0.0003	0.0072	0.0004	0.0002	0.0035	0.017	0.0003
Total Chromium (Cr)	0.002	0.001	0.009	0.005	0.002	3.5	0.654	0.026
Total Copper (Cu)	11.0	3.6	5.3	0.161	3.925	9.1	6.4	8.3
Total Iron (Fe)	5.9	2.8	6.9	6.5	5.6	401.7	5.6	1.9
Total Nickel (Ni)	0.423	0.024	0.982	0.026	2.7	7.7	2.8	6.8
Total Selenium (Se)	0.131	0.166	0.076	0.131	0.007	0.143	0.144	0.189
Ammonia (NH_3-NH_4)	127	105	79	84	64	75	65	60
Nitrate (NO_3)	15.9	13.3	12.7	8.9	10.0	12.9	9.2	12.0
Chloride (Cl)	775	558	630	515	660	767	411	861
Fluoride (F)	0.545	0.645	0.335	0.680	0.565	0.297	0.28	0.20

2.7 Central Dike Downstream Pond

2.7.1 General

From December 2015 to April 2019, Agnico has been depositing tailings into the South Cell (formerly Attenuation Pond) as per their water management plan. As expected, the operating water level in the South Cell increased as tailings' deposition progressed in the South Cell. Due in part to the higher hydraulic gradient, seepage flows were being observed downstream of Central Dike located to the east of the South Cell Tailings Storage Facility (TSF). The water was accumulating at the base of Central Dike and being mixed with snowmelt runoff water and possible underground water resurgence. In order to compensate for this unexpected accumulation, Agnico recirculated the accumulated water downstream of Central Dike back to the South Cell Reclaim Pond from 2015 to 2019 to control the pond of water accumulated at the base of Central Dike to an elevation of 115 masl, per the action plan on the Central Dike. Some seepage water accumulated downstream was also transferred to Goose and Portage Pits in 2019.

Since 2020, no tailings deposition was occurring in the SC TSF. Only natural runoff coming from the NC TSF and SC TSF catchment area was collected in the SC Reclaim Pond and transferred to North Portage Pit (i.e., Pit A). In 2021, tailings were deposited in the NC and the resulting Reclaim Water was transferred to the SC TSF and eventually to Portage Pit A. Water accumulation downstream of the Central Dike was still observed in 2020 and 2021 and transferred to Portage Pit A.

In September 2015, approximately 50,431 m^3 of pond water was transferred to Goose Pit as part of the water management plan around the Central Dike Downstream (D/S) Pond. This steady state test proved the 1:1 used in the water balance meaning if the D/S pond was recirculated, there was globally no net loss of water in the South Cell. As of 2016, Agnico continued to recirculate the accumulated water downstream of Central Dike back to the South Cell TSF Reclaim Pond in order to maintain a constant water elevation at approximately 115 masl in the downstream pond. Water from the CDDP was also transferred to either Goose Pit, South Portage Pit (Pit E) or North Portage Pit (A):

- Between August and October 2017, about 332,177 m^3 of pond water was transferred to Goose Pit from the CDDP .
- In 2018, no reclaim water was transferred from CDDP to Goose Pit.
- Between May and November of 2019 water downstream of Central Dike was discharged to the Portage Pit (i.e., North Portage Pit (Pit A)). Additionally, 358,156 m^3 of reclaim water were transferred from the CDDP to Goose Pit between May and July 2019.
- Between February and June of 2020 water from the CDDP was discharged to the South Portage Pit (Pit E). From July to December of 2020, water was then discharged to North Portage Pit (Pit A).
- In 2021, water from CDDP was discharged mainly to Portage Pit A. Additionally, a small volume was transferred to Portage Pit E.

Water samples from the CDDP were routinely collected during the year (sampling point ST-S-5) as per Water Licence requirement.

2.7.2 Water Balance

Table 2-6 presents the estimated monthly inflows and outflows around the CDDP for 2021 based on:

- the seepage volume from the South Cell TSF to the CDDP estimated by Agnico;
- the total volume pumped back to the South Cell TSF;
- the total volume transferred to Portage Pits (Pit A and Pit E).

The volume of seepage estimated in 2021 from South Cell TSF to CDDP was about 20% higher compared to the 2020. One possible explanation for this increase is the addition of tailings in the North Cell in 2021, which increase the volume of Reclaim Water stored in the North Cell and South Cell TSF Reclaim Pond.

Table 2-6: Estimated Monthly Inflows and Outflows to Central Dike D/S Pond for 2021

<table>
<tr><th>Date</th><th>Estimated Seepage Flow from South Cell TSF to Central Dike D/S Pond</th><th>Volume of Water Transferred from Central Dike D/S Pond to South Cell TSF</th><th>Volume of Water Transferred from Central Dike D/S Pond to Goose Pit or Portage Pit (Pit A or Pit E)</th></tr>
<tr><th></th><th>m^3/month</th><th>m^3/month</th><th>m^3/month</th></tr>
<tr><td>Jan-21</td><td>19,155</td><td>0</td><td>19,155</td></tr>
<tr><td>Feb-21</td><td>23,305</td><td>0</td><td>23,305</td></tr>
<tr><td>Mar-21</td><td>16,273</td><td>0</td><td>16,273</td></tr>
<tr><td>Apr-21</td><td>18,982</td><td>0</td><td>18,982</td></tr>
<tr><td>May-21</td><td>56,391</td><td>0</td><td>56,391</td></tr>
<tr><td>Jun-21</td><td>141,570</td><td>0</td><td>141,570</td></tr>
<tr><td>Jul-21</td><td>155,319</td><td>0</td><td>155,319</td></tr>
<tr><td>Aug-21</td><td>135,283</td><td>0</td><td>135,283</td></tr>
<tr><td>Sep-21</td><td>109,976</td><td>0</td><td>109,976</td></tr>
<tr><td>Oct-21</td><td>123,466</td><td>0</td><td>123,466</td></tr>
<tr><td>Nov-21</td><td>63,631</td><td>0</td><td>63,631</td></tr>
<tr><td>Dec-21</td><td>26,867</td><td>0</td><td>26,867</td></tr>
<tr><td>Total 2021</td><td>890,218</td><td>0</td><td>890,218</td></tr>
<tr><td rowspan="2">Total 2020</td><td rowspan="2">702,031</td><td>54,734</td><td>685,541</td></tr>
<tr><td colspan="2">739,915</td></tr>
<tr><td rowspan="2">Total 2019</td><td rowspan="2">2,294,063</td><td>754,347</td><td>1,368,676</td></tr>
<tr><td colspan="2">2,123,023</td></tr>
<tr><td>Total 2018</td><td>2,171,246</td><td>2,300,416</td><td></td></tr>
<tr><td>Total 2017</td><td>4,636,032</td><td>4,366,869</td><td>332,177</td></tr>
</table>

2.7.3 Water Quality

The water analysis taken from the CDDP are tabulated and presented in Section 8 of the 2021 Annual Report. Table 2-7 summarizes the data for key parameters of concern and compares the measurements to the average values measured in the South Cell TSF Reclaim Pond in 2021.

The data confirm that one of the main inflows to the CDDP was from the South Cell TSF Reclaim Pond. The water in the CDDP has detectable concentrations of all of the key parameters of concern found in the South Cell TSF Reclaim Pond.

The measured values in the South Cell TSF were higher than the values measured in the CDDP for all parameters but not for total cyanide, ammonia, chloride, fluoride and sulphate.

The lower concentration detected for these parameters in the CDDP may indicate that either some of the parameters were subject to a natural degradation process, precipitating out of solution in the Central Dike D/S Pond or were being reduced through anaerobic microbial reaction as the water seeps through the Central Dike. Furthermore, under anaerobic condition, iron reducing bacteria could be reducing the ferric oxide in the soil to a soluble ferrous hydroxide, thus increasing the total iron concentration in the Central Dike D/S Pond.

The higher concentration measured in the pond for parameters such as ammonia, chloride, sulphate and fluoride could originate from the pore water in the tailings flowing toward the pond.

Table 2-7 : Water Quality in Central Dike D/S Pond for 2020

PARAMETER	Central Dike Downstream Pond (ST-S-5) (mg/L)			South Cell TSF Reclaim Pond (ST-21) (mg/L)		
	Min	Mean	Max	Min	Mean	Max
Total Cyanide (CNt)	0.016	**0.070**	0.110	0.008	**0.052**	0.100
Aluminum (Al)	0.004	**0.023**	0.172	0.081	**0.897**	3.420
Arsenic (As)	0.016	**0.044**	0.090	0.011	**0.087**	0.283
Cadmium (Cd)	0.0000	**0.00002**	0.0001	0.00003	**0.00009**	0.0002
Copper (Cu)	0.0005	**0.001**	0.005	0.011	**2.759**	8.760
Iron (Fe)	0.16	**1.21**	2.58	0.21	**2.58**	9.54
Nickel (Ni)	0.002	**0.005**	0.020	0.011	**1.106**	3.720
Selenium (Se)	0.0002	**0.001**	0.003	0.000	**0.039**	0.093
Total Ammonia-Nitrogen (mg N/L)	4.00	**26.9**	33.0	1.7	**17.9**	29.0
Nitrate (NO_3) (mg N/L)	0.01	**0.2**	2.3	1.7	**6.7**	11.4
Chloride (Cl)	40	**210**	250	9	**82**	230
Fluoride (F)	0.23	**0.46**	0.57	0.14	**0.22**	0.27
Sulphate (SO4)	283	**1323**	1600	180	**436**	790

2.8 Ammonia Loading to Environment at Meadowbank

Ammonia that is found in the TSF Reclaim Water at Meadowbank originates mainly from the hydrolysis of cyanate which is the by-product produced following cyanide destruction. To a lesser extent, ammonia also comes from un-reacted ammonium nitrate-based explosive used in Portage, Goose and Vault pits and from the treated effluent from the mine site sewage treatment plant which is discharged to the Stormwater Management Pond. This latter is pumped twice yearly to the South Cell TSF.

In 2021:

> Approximately 294,781 m^3 of pond water from the South Cell TSF Reclaim Pond was transferred to North Portage Pit (Pit A). The average concentration measured in 2021 in the SC TSF Reclaim Pond was approximately 17.9 mg N/L. Thus, using this average concentration value of ammonia, the total load of ammonia transferred to Portage Pit A in 2021 is evaluated at approximately 5,277 kg of ammonia (expressed as N).

> Approximately 890,218 m^3 of pond water from the Central Dike D/S Pond was transferred to North Portage Pit and South Portage Pit (Pit A and Pit E). The average concentration measured was approximately 26.9 mg N/L. Thus, using this average concentration value of ammonia, the total load of ammonia transferred to North and South Portage Pit in 2021 is evaluated at approximately 23,947 kg of ammonia (expressed as N). This additional load of ammonia in North and South Portage Pit is taken into account in this year's forecasting model

This additional load of ammonia to Portage Pit A and Pit E is considered in this year's forecasting model.

3.0 Updated Mass Balance Model

3.1 Description

The water quality updated mass balance model presented in this Technical Note was developed to help forecast trends in water quality in the Portage Area of Meadowbank for different parameters of interest. The starting date for the model was arbitrarily set for January 2014 in order to keep in-line with the previous models.

For this year, the end date of the model is set at the end of pit reflooding, which is projected to be in June 2038. Per the Meadowbank ICRP 2019 update, the Reclaim Water stored in the pits shall be treated and discharged to Third Portage Lake. Once the granular cover shall be installed on the tailings, pit flooding will commence with natural runoff and transfer of water from Third Portage Lake.

The main objectives for this year's model are to:

> Forecast the Reclaim Water quality at the end of in-pit deposition to help define the water treatment system that shall be required at the start of closure;

> Forecast the water quality following pit reflooding.

This mass balance model was based on the following:

> Flows and volumes provided in the Water Balance – 2022-IPD Plan (Agnico 2022);

> Assumptions presented below in section 3.2;

> Chemical analyses for ST-21 (North and South Cell TSF Reclaim Pond) (2014-2021);

> Chemical analyses for Third Portage Lake (2015);

> Chemical analyses for the Mill Effluent (samples taken in 2021);

> Chemical analyses for Portage North Pit (ST-17, Pit A) and Portage South Pit (ST-19, Pit E) (from 2013 to 2021);

> Chemical analysis for Goose Pit (samples taken in the sump pit and in the lake, ST-20) (from 2013 to 2021)

> East Dike (ST-1) seepage and Saddle Dam 3 (ST-32) sumps sampled in 2021;

> Stormwater management pond water sampled in 2018;

> Saddle Dam 1 seepage (ST-S-2) and Portage RSF runoff (ST-16) (2015 to 2021);

> Portage Pit A and Pit E seepage water quality sampled from 2017 to 2020 and Goose Pit seepage water quality sampled from 2017 to 2019.

Furthermore, this year's water quality forecast mass balance model will also include the following changes:

> Deposition of Whale Tail pit tailings in Goose Pit (2019) and Portage Pit E;

> End of tailings deposition projected for December 2026.

3.2 Assumptions

Table 3-1 summarizes the assumptions used in the development of the water quality forecast model for the Meadowbank site.

Table 3-1 : Water Quality Forecast Model Assumptions

PARAMETERS	ASSUMPTIONS
Water quality forecast model	• Mass balance model. • Assume completely mixed system. • Ponds to model: North and South Cell TSF Reclaim Pond, Goose Pit and Portage Pit. • Portage Pit E and Pit A are hydraulically connected through the waste rock deposited between both pits. For simplification, the model shall consider Portage Pit A and Pit E as one pit. • For simplification of the model, the parameters are assumed to be inert: they do not degrade or react with other elements in the system, with the exception of cyanide.
Model time period	• Start: January 2014 • End: June 2038 (projected end date of pit reflooding)

Input Source Terms:
Mill Effluent
	• Mill Effluent is the main source terms for metal contaminants, cyanide, sulphate, chloride, ammonia and nitrate in the Reclaim Pond.
	• Mill Effluent quality is assumed to be constant over time for all parameters.
	• Assume two different types of Mill Effluent quality:
	  ○ One when Portage/Vault ore is processed: 2014 to June 2019
	  ○ One when Whale Tail ore is processed: July 2019 to December 2026
	• As of April 2021, consider additional brine (i.e., chloride and TDS) loading the pore water contained in the underground ore mined at the Whale Tail site.
	• For the purpose of the model, assume that the Mill Effluent will meet at a minimum Agnico's CN-WAD operational target of 15 mg/L at all times, which is assumed to correspond to a total cyanide concentration of 18.2 mg/L.

Other Input Source Terms	• Following source terms are considered in the model, based on measured water quality data:
	  ○ Mill effluent
	  ○ Portage Pit transfer
	  ○ Goose Pit transfer
	  ○ Stormwater Management Pond
	  ○ Portage RSF
	  ○ Saddle Dam 1 sump
	  ○ Saddle Dam 3 sump
	  ○ East Dike seepage
	• Precipitation runoff loading
	  ○ Assumed negligible loading and have similar water characteristics as Third Portage Lake water.
	• Assumed constant water quality for each stream.

Input Source Terms: **Pit seepage loading**	• Seepage flow considered into Goose Pit and Portage Pit based on the hydrogeological modelling results conducted for the in-pit deposition project (SNC-Lavalin 2018b). • Seepage quality based on the average water quality measured from the seepages sampled in the pits. • Assumed constant water quality for each seepage stream.

PARAMETERS	ASSUMPTIONS
Input Source Terms: **North and South Cell TSF after Closure**	• Assumed that the water accumulated in closed North and South Cell TSF is transferred to Portage Pit and will have a water quality similar to non-contact runoff water.
Cyanide modeling	• The total cyanide in the TSF Reclaim Pond is comprised of free cyanide and metal-cyanide complexes (weak and strong metal cyanide complexes). As per discussions with Agnico, most of the iron and metal-cyanide complexes are precipitated in the mill. However, since the reaction is not complete or perfect, some dissolved iron- and metal-cyanide complexes are expected to remain in the Mill Effluent. Therefore, it was assumed that 10% of the total cyanide concentration was bound as strong iron-cyanide complexes, and that another 10% of the total cyanide concentration was present as weak metal-cyanide complexes (cyanide bound with copper, zinc, and nickel). The balance is presented as free cyanide (i.e., HCN and CN^-). This agrees with values observed at other gold mine tailings sites (Simovic, 1984). These same proportions are assumed to apply to the cyanide at the Mill Effluent. • For this model, natural cyanide degradation is only considered for the summer months.
Water treatment	• For this analysis, it is assumed that no treatment will take place at the North or South Cell TSF Reclaim Pond or at the Portage or Goose Pits during in-pit deposition. • During closure, Reclaim Water will be pumped to a water treatment plant and discharged to the environment. • Projected water treatment period of the Reclaim Water in the pits: ○ Portage Pits: January 2027 to June 2028 ○ Goose Pit: June 2028 to November 2028
Pit reflooding	• Pits shall be reflooded by natural runoff from the site and active transfer of water from Third Portage Lake. • Period of pit reflooding: December 2028 to June 2038

3.3 Limitations

The limitations of the Meadowbank water quality mass balance model and ensuing results and conclusions presented in this Technical Note are listed below:

i. In order to simplify the model, the mass balance model assumes that the pond and pits are completely mixed systems. Consequently, the results from this model provide an indication of the concentrations in the ponds and pits and should not be considered as an absolute value at this time. Future monitoring results both for flows and water quality will provide for a better indication of concentrations of contaminants.

ii. The mass balance model is based on the water quality analysis results provided by Agnico.

iii. The model does make some allowances for the impact that changes in the TSF that will have on the TSF Reclaim Pond water quality over time (i.e., water body surface area on natural cyanide degradation in the summer months, free water volume in the pond on the forecasted concentration measurements).

iv. The model is based on a monthly time-step and the resulting concentrations provided represent monthly values.

v. It should be noted at this point that the model should be used to evaluate at a high level the impact of Mill Effluent on the future water quality in the North and South Cell TSF Reclaim Pond and Portage and Goose Pits.

vi. Furthermore, this model is intended as a mass balance model for the Portage Area and should be updated and calibrated on a yearly basis as additional water quality data, pond volumes and flows in the Portage Area become available. Refer to Section 6.3 for recommendations on improving the mass balance.

3.4 Input Parameters

3.4.1 General

The mass balance model for the Meadowbank site was developed originally in 2012 to forecast the long-term concentration of cyanide, copper, iron, ammonia, nitrate and chloride in the North and South Cell TSF Reclaim Pond and in Portage and Goose Pits. Since 2015, the report also evaluated a broader selection of parameters: alkalinity, hardness, aluminum, silver, arsenic, barium, cadmium, chromium, manganese, mercury, molybdenum, nickel, lead, selenium, zinc, fluoride, sulphate and total dissolved solids (TDS).

The mass balance model is based on the assumptions presented in Section 3.2 and on the following input parameters:

> Mill effluent concentration (refer to section 3.4.2 for more details);
> SFE leaching test results conducted in 2020 on tailings from ores from Vault, Portage and Whale Tail Pit (concentration in the liquid portion) were used to compute the loading coming from the leaching of the tailings.
> Initial concentration in the North and South Cells TSF Reclaim Pond;
> Initial concentration in the Portage and Goose Pits;
> Runoff from the Portage RSF;
> Sumps from Saddle Dam 1, Saddle Dam 3 and East Dike seepage;
> Runoff water quality similar to Third Portage Lake;
> Stormwater Management Pond concentration used to compute the influent loading to the TSF Reclaim Pond;
> Goose Pit and Portage Pit seepage estimated water flow and water quality data; and
> Agnico 2021 Water Balance which defines all of the input and output flows in the North and South Cell TSF, CDDP, Portage Pit and Goose Pit.

3.4.2 Mill Effluent Concentration

Table 3-2 presents the Mill Effluent concentrations considered for the input parameters of the mass balance. Three different types of Mill Effluent characteristics are considered for the mass balance model:

> Type 1: Based on the ore produced from Portage/Goose/Vault pits for model years between 2014 and June 2019. The characteristics of the effluent are based on samples taken in 2019 of the Mill Effluent.

> Type 2: Based on the ore produced from Whale Tail pit in 2019 and 2020 and deposited in Goose Pit. The characteristics of the effluent are based on samples taken in 2020 of the Mill Effluent and adjusted to obtain forecasted values that are similar to the measured concentrations in Goose Pit.

> Type 3: Based on the ore produced from Whale Tail pit for model year 2021 and onward and primarily deposited in Portage Pit. The characteristics of the effluent are based on samples taken in 2021 of the Mill Effluent and adjusted to obtain forecasted values that are similar to the measured concentrations in Portage Pit.

Table 3-2 : Mill Effluent Concentration Selected for the Mass Balance Model

Parameters (mg/L)	Type 1 Processing Portage/Goose/Vault Pit Ore (2019 samples)	Type 2 Processing Whale Tail Pit Ore (2020 samples)	Type 3 Processing Whale Tail Pit Ore (2021 samples)
Alkalinity	87 (as $CaCO_3$)	172 (as $CaCO_3$)	136 (as $CaCO_3$)
Hardness	1307 (as $CaCO_3$)	1511 (as $CaCO_3$)	1671 (as $CaCO_3$)
Aluminum (Al)	0.0004	2.590	0.568
Silver (Ag)	0.0011	0.004	0.00159
Arsenic (As)	0.017	0.724	0.934
Barium (Ba)	0.191	0.099	0.244
Cadmium (Cd)	0.003	0.00002	0.0000003
Chromium (Cr)	0.0004	0.0006540	0.00003
Copper (Cu)	3.925	3.185	8.298
Iron (Fe)	1.115	8.359	2.90
Manganese (Mn)	0.331	0.118	1.5954
Mercury (Hg)	0.0008	0.000035	0.00013
Molybdenum (Mo)	0.572	0.152	0.124442
Nickel (Ni)	0.266	0.310	1.369
Lead (Pb)	0.00005	0.02050	0.007
Selenium (Se)	0.135	0.115	0.283
Strontium (Sr)	2.08	1.21	1.94
Thallium (Tl)	0.00001	0.00005	0.00002
Uranium (U)	0.008	0.006	0.045
Zinc (Zn)	0.00002	0.14314	0.0041
Total Cyanide (CNt)	18	18	18
Total Ammonia (NH_3-NH_4)	64	52	90
Nitrate (NO_3)	5	11	18
Fluoride (F)	0.85	0.03	0.21
Chloride	660	699	603
Sulphate (SO_4)	2190	1800	2951
Total Dissolved Solids (TDS)	3948	2835	5907

Please note the items below on the parameters used for the Mill Effluent when processing Meadowbank Mine site ore for the updated water quality forecast model based on the 2021 WMP:

- Mill Effluent Adjustment Factors:
  - Adjustment factors were applied to some constituents measured in the Mill Effluent to obtain forecasted concentrations that are in the same order of magnitude as the measured values.
  - An adjustment factor was applied to the average measurements taken of the Mill Effluent in 2019 when processing Portage/Vault ore at the mill to obtain the forecasted concentrations that are in the same order of magnitude as the measured values found in the North and South Cell TSF from 2014 to 2020.
  - As of July 2019, ore from Whale Tail Pit located at the Whale Tail site has been processed at Meadowbank and the tailings will be deposited in Goose Pit and Portage Pit. The geochemical behavior of the ore body from Whale Tail Pit is different from the ore produced from Portage, Goose and Vault pits.
  - An adjustment factor was applied to the average measurements taken of the Mill Effluent in 2020 when processing Whale Tail ore at the mill to obtain the forecasted concentrations that are in the same order of magnitude as the measured values found in Goose Pit from 2019 to 2020.
  - An adjustment factor was also applied to the average measurements taken of the Mill Effluent in 2021 when processing Whale Tail ore at the mill to obtain the forecasted concentrations that are in the same order of magnitude as the measured values found in Portage Pit in 2021.
  - Table 3-3 presents average Mill Effluent concentrations sampled in 2019, 2020 and 2021 that were used as a basis to evaluate the Mill Effluent characteristics that was retained for the mass balance model.
- Ammonia, chloride, sulphate and TDS are present in the Mill Effluent due to the following processes in the mill:
  - Ammonia is present due to the hydrolysis of cyanate to ammonia. The concentration of cyanate is proportional to the concentration of cyanide removed in the cyanide destruction system;
  - Chloride is present due to the continued use of calcium chloride as a dust suppressant in the mill and crusher;
  - Sulphates are present due to the oxidation of sulphide produced in the ore; and
  - The overall TDS of the Mill Effluent will continue to increase due to the increase in ammonia, chloride and sulphate.
- Copper, Nitrate, Total Cyanide and Chloride in the North Cell**:**
  - Higher concentrations of the listed parameters are considered for the Mill Effluent when tailings were deposited in the North Cell TSF in 2014. These values were selected based on the measured values from the North Cell TSF Reclaim Pond.

Table 3-3 : Mill Effluent Average Concentration Sampled in 2019, 2020 and 2021

Parameters (mg/L)	Mill Effluent 2019 Average Concentration (mg/L)	Mill Effluent 2020 Average Concentration (mg/L)	Mill Effluent 2021 Average Concentration (mg/L)
Alkalinity	87 (as $CaCO_3$)	86 (as $CaCO_3$)	68 (as $CaCO_3$)
Hardness	1307 (as $CaCO_3$)	1511 (as $CaCO_3$)	1392 (as $CaCO_3$)
Aluminum (Al)	0.3940	1.727	0.5684
Silver (Ag)	0.0115	0.002	0.0080
Arsenic (As)	0.0342	0.724	0.9340
Barium (Ba)	0.0765	0.099	0.1219
Cadmium (Cd)	0.0002	0.01699	0.0003
Chromium (Cr)	0.0021	0.654	0.0261
Copper (Cu)	3.9250	6.369	8.2979
Iron (Fe)	5.5750	5.572	1.9352
Manganese (Mn)	0.0221	0.235	0.1064
Mercury (Hg)	0.00002	0.000005	0.000016
Molybdenum (Mo)	0.5720	1.013	0.1244
Nickel (Ni)	2.6610	2.822	6.8443
Lead (Pb)	0.0049	0.021	0.0075
Selenium (Se)	0.0067	0.144	0.1886
Strontium (Sr)	2.08	1.51	1.9413
Thallium (Tl)	0.00001	0.00005	0.00002
Uranium (U)	0.0078	0.011	0.0050
Zinc (Zn)	0.0020	0.143	0.0041
Total Cyanide (CNt)	12	25	24
Total Ammonia (NH_3-NH_4)	64	65	60
Nitrate (NO_3)	10	0.45	12
Fluoride (F)	0.57	0.28	0.21
Chloride	660	411	861
Sulphate (SO_4)	1460	1800	1967
Total Dissolved Solids (TDS)	3290	3544	3938

Notes:

1. Grey highlighted cells indicate values that were increased with an adjustment factor to obtain forecasted concentrations that are in the same order of magnitude as the measured values.
2. Green highlighted cells indicate values that were decreased with an adjustment factor to obtain forecasted concentrations that are in the same order of magnitude as the measured values.

3.4.3 Concentrations used in the Model

As noted previously, the mass balance model arbitrarily begins in January 2014 to fit the previous models. The initial concentrations selected for the following streams are based on the following:

- North Cell TSF Reclaim Pond corresponds to the January 8th, 2014 chemical analysis results from station ST-21.
- Concentrations selected for the South Cell TSF Reclaim Pond (former Attenuation Pond) correspond to the 12-month (2014) average concentrations' results from station ST-18 (current Attenuation Pond). When there was no or little data available, the average values from 2010 to 2014 were used. In general, the concentrations observed in the Attenuation Pond had little variation from one month to the other.
- The initial concentrations of all parameters in the Portage and Goose Pits were assumed to be the average of 2013. For Portage Pit, the average concentrations measured in 2013 in Pit E (ST-19) were used. For Goose Pit, the average concentrations measured in 2013 in the Goose Pit sump (ST-20) were used.

For the other water inputs, the water quality was based on the following:

- Runoff from the Portage RSF is based on the average concentration measured in 2015 and 2021 at sampling station ST-16.
- Saddle Dam 1 sump that is transferred to the North Cell is based on the average concentration measured from 2015 to 2021 at sampling station ST-S-2.
- Saddle Dam 3 sump that is transferred to the South Cell is based on the average concentration measured in 2016 and 2021 at sampling station ST-32.
- East dike seepage quality is based on the average concentrations measured in 2016 to 2021 at sampling station ST-1.
- Stormwater Management Pond quality is based on the value measured in July 2018.
- Surface runoff water is assumed to be of similar quality as Third Portage Lake. The water quality for Third Portage Lake is based on the average concentration obtained in summer 2015 in the East Basin.

The average leaching rate inferred from the results obtained from the SFE Leach Tests conducted on the tailings produced from Portage and Vault ore bodies in 2019 were used to account for possible leaching of contaminants from the tailings. The SFE Leach Tests conducted on the tailings produced from the Whale Tail ore bodies in 2021 were used to account for possible leaching of contaminants from this type of tailings.

Table 3-4 summarizes the leaching rates used in the model while Table 3-5 summarizes the water quality characteristics for various input source streams used in the water quality forecast model based on total metals. Measurements that are higher than CCME guidelines for Protection of Aquatic Life are also highlighted in the Table 3-5, which are used for comparison purpose only.

Table 3-4 : Leaching Rate Used in Water Quality Forecast Model

PARAMETERS	UNITS	LEACHING OF TAILS FROM PORTAGE / VAULT (kg/ton)	LEACHING OF TAILS FROM WHALE TAIL PIT (kg/ton)
		From SFE Leach Test- Avg 2019 tests	From SFE Leach Test- Avg 2021 tests
Alkalinity	mg $CaCO_3$/L	3.90E-02	3.78E-02
Hardness	mg $CaCO_3$/L	1.89E-01	2.47E-01

PARAMETERS	UNITS	LEACHING OF TAILS FROM PORTAGE / VAULT (kg/ton)	LEACHING OF TAILS FROM WHALE TAIL PIT (kg/ton)
		From SFE Leach Test- Avg 2019 tests	From SFE Leach Test- Avg 2021 tests
Total Dissolved Solids (TDS)	mg/L	0 (1)	0 (1)
Total Aluminum (Al)	mg/L	8.67E-05	3.73E-05
Total Silver (Ag)	mg/L	2.50E-08	3.47E-07
Total Arsenic (As)	mg/L	1.26E-05	7.93E-04
Total Barium (Ba)	mg/L	1.13E-05	3.82E-05
Total Cadmium (Cd)	mg/L	0 (1)	5.48E-08
Total Chromium (Cr)	mg/L	1.20E-04	3.20E-07
Total Copper (Cu)	mg/L	1.54E-06	4.64E-06
Total Iron (Fe)	mg/L	1.34E-04	6.17E-05
Total Manganese (Mn)	mg/L	1.57E-05	1.90E-05
Total Mercury (Hg)	mg/L	6.67E-09	6.67E-09
Total Molybdenum (Mo)	mg/L	4.63E-05	4.34E-05
Total Nickel (Ni)	mg/L	1.13E-06	5.50E-05
Total Lead (Pb)	mg/L	6.67E-08	1.88E-07
Total Selenium (Se)	mg/L	1.43E-06	1.83E-05
Total Strontium (Sr)	mg/L	2.44E-04	3.24E-04
Total Thallium (Tl)	mg/L	9.00E-09	9.50E-09
Total Uranium (U)	mg/L	9.30E-07	5.35E-07
Total Zinc (Zn)	mg/L	1.00E-06	1.44E-06
Chloride	mg/L	0 (1)	0 (1)
Fluoride (F)	mg/L	3.40E-04	1.62E-04
Sulphate (SO_4)	mg SO_4/L	2.30E-01	2.44E-01
Total Cyanide (CNt)	mg/L	0 (1)	0 (1)
Total Ammonia ($NH_3 + NH_4$)	mg N/L	3.10E-03	4.31E-03
Nitrate (NO_3)	mg N/L	3.00E-04	8.59E-04

Notes:

(1) No data available. Assume negligible.

Table 3-5 : Input Source Stream Concentrations used in the Water Quality Forecast Model

PARAMETERS	UNITS	RECLAIM ST-21 NORTH CELL	ATTEN. POND / SOUTH CELL	PORTAGE RSF TO NORTH CELL	SADDLE DAM 1 SUMP TO NORTH CELL	SADDLE DAM 3 SUMP TO SOUTH CELL	EAST DIKE SEEPAGE TO PORTAGE	STORM WATER MGMT POND	THIRD PORTAGE LAKE	PORTAGE PIT ST-19	GOOSE PIT ST-20	CCME GUIDELINES	WATER LICENCE MEADOWBANK MAX. AVG. CONC.
		Initial condition for model January-08-14	Initial condition for model Average 2014	Average 2015 to 2021 sampled at ST-16	Average 2015 to 2021 sampled at ST-S-2	Average 2016 to 2021 sampled at ST-32	Average 2016 to 2021sampled at ST-1	July 2018	Average- East Basin Summer 2015	Initial Condition for Model Average 2013	Initial Condition for Model Average 2013	Long Term Based on 3PL quality	Part F of Licence
Alkalinity	mg $CaCO_3$/L	135	106	63	56	161	29	129	9.1	72.2	129.8	n/a	n/a
Hardness	mg $CaCO_3$/L	1329	362	149	245	237	36	134	12	274	130	n/a	n/a
Total Dissolved Solids (TDS)	mg/L	1329	1437	234	279	380	74	293	22	320	326	n/a	1400
Total Aluminum (Al)	mg/L	0.119 (1)	0.010 (1)	0.258	0.478	2.273	0.04236	0.229	0.0075	0.1720	0.3708	0.1	1.5
Total Silver (Ag)	mg/L	0.0001 (1)	0.0001 (1)	0.000	0.000	0.000	0.00010	0.000	0.000005	0.00005	0.00005	0.00025	n/a
Total Arsenic (As)	mg/L	0.032 (1)	0.008 (1)	0.026	0.024	0.021	0.00106	0.004	0.0005	0.0202	0.0099	0.005	0.3
Total Barium (Ba)	mg/L	0.094 (1)	0.051 (1)	0.016	0.035	0.071	0.00768	0.020	0.0037	0.0110	0.0219	n/a	n/a
Total Cadmium (Cd)	mg/L	0.00160	0.00010	0.00003	0.00003	0.00005	0.00003	0.00001	0.000003	0.000240	0.000000	0.00004	0.002
Total Chromium (Cr)	mg/L	0.0008	0 (4)	0.003	0.004	0.014	0.00210	0.002	0.0001	0.0027	0.0026	0.001	n/a
Total Copper (Cu)	mg/L	9.135	0.033 (1)	0.016	0.007	0.021	0.00130	0.003	0.0006	0.0042	0.0069	0.002	0.1
Total Iron (Fe)	mg/L	0.140 (1)	0.047 (1)	0.670	1.144	4.763	0.34500	0.880	0.017	1.5	0.7	0.3	n/a
Total Manganese (Mn)	mg/L	0.065 (1)	2.898 (1)	1.099	0.201	0.817	0.01483	0.410	0.002	0.257	0.108	n/a	n/a
Total Mercury (Hg)	mg/L	0.000000	0.000117	0.000076	0.000128	0.000019	0.00001	0.000005	0.000003	0.000080	0.000005	0.000026	0.0004
Total Molybdenum (Mo)	mg/L	0.596 (1)	0.026 (1)	0.014	0.011	0.007	0.00053	0.004	0.0002	0.0664	0.0082	0.073	n/a
Total Nickel (Ni)	mg/L	0.277 (1)	0.041 (1)	0.019	0.030	0.087	0.00089	0.011	0.00059	0.00394	0.07973	0.025	0.2
Total Lead (Pb)	mg/L	0.002 (2)	0.000 (1)	0.001	0.003	0.005	0.00056	0.000	0.00003	0.00131	0.00192	0.001	0.1
Total Selenium (Se)	mg/L	0.075 (1)	0.003 (1)	0.001	0.001	0.002	0.00140	0.003	0.00003	0.00183	0.00080	0.001	n/a
Total Strontium (Sr)	mg/L	0.743 (3)	0 (4)	0.151	0 (4)	0 (4)	0.00000	0.29	0.0132	0 (4)	0 (4)	n/a	n/a
Total Thallium (Tl)	mg/L	0.005 (3)	0 (4)	0.001	0.001	0 (4)	0.00260	0.0004	0.000005	0.0020	0.0016	0.0008	n/a
Total Uranium (U)	mg/L	0.010 (3)	0 (4)	0.005	0 (4)	0 (4)	0.00000	0.002	0.000049	0 (4)	0 (4)	0.015	n/a
Total Zinc (Zn)	mg/L	0.010 (1)	0.010 (1)	0.003	0.074	0.021	0.00310	0.005	0.002	0.016	0.015	0.03	0.4
Chloride	mg/L	1035	98	6	7	17	0.96667	52	0.793	26.117	24.978	120	1000
Fluoride (F)	mg/L	0.180	0.565	0.183	0.192	0.299	0.09167	0.860	0.0793	0.3900	0.4922	0.12	n/a
Sulphate (SO_4)	mg SO_4/L	2115	542	64	175	135	9.44783	30	5	224	77	128 (5)	n/a
Total Cyanide (CNt)	mg/L	8	0.346	0.002	0.010	0.016	0.0028	0.002	0.0005	0.0393	0.0033	0.005	0.5
Total Ammonia ($NH_3 + NH_4$)	mg N/L	37	10	0.269	0.462	2.539	0.01000	1.320	0.015	3.6	7.9	1.83	16
Nitrate (NO_3)	mg N/L	26	1	5	7	12	0.42333	0.06	0.0331	12.7	5.1	2.94 (6)	20

Notes:

(1) No total concentration value measured. Estimated using dissolved concentration value divided by the ratio of dissolved/total concentration values from sample taken in July 1, 2014 from the North Cell.

(2) Used dissolved concentration value when the value is higher than the total concentration measured.

(3) No data available for sample taken on Jan 8, 2014. Use data sampled on July 1, 2014.

(4) No data. Assume negligible.

(5) Threshold value for sulphate based on BC Environment guideline for the protection of aquatic life for very soft water (0-30 mg/L) (April 2013).

(6) Value based on the threshold concentration for classification of an oligotrophic lake in terms of nutrient concentrations (Nurnberg 1996).

(7) [pink box] Indicate values higher than CCME Guidelines (Long Term), or other criterion, based on Third Portage Lake water quality. Provided as a guide to help identify potential parameters of concern.

3.5 Cyanide Decay

The water quality model developed during this study takes natural cyanide degradation into account: the most important mechanism in the natural degradation of cyanide is the volatilization of hydrogen cyanide (HCN). In fact, tests carried out in Canada found that volatilization of HCN accounted for 90% of cyanide removed from solution in a tailing's impoundment (Botz and Mudder, 2000).

Oxidation of cyanide ions (CN^-) to orthocyanate (OCN) with atmospheric oxygen is possible but extremely slow when compared to HCN volatilization. Similarly, the probability of microbial degradation of cyanide to carbon dioxide, ammonia, nitrite and nitrate is low due to the limited presence of microorganisms and low nutrient levels in tailings water.

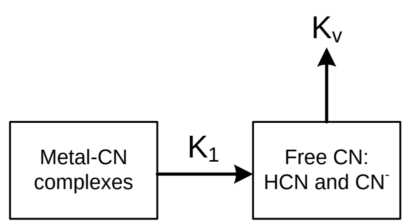
Cyanide volatilization can be summarized as a two (2) step process presented in Figure 3-1 below:

i. First, metal-cyanide complexes dissociate to free cyanide (HCN and CN^-) based on a first-order decay constant (k_1). Note that: (1) equilibrium between HCN and CN^- is based on pH; (2) a first order decay constant signifies that the final concentration (Cf) can be estimated as, Cf=Cie-kt, where k is the first order decay constant).

i. It is then followed by HCN volatilization based on a first-order decay constant (k_v).

ii. Both decay constants k_1 and k_v depend on the presence of UV light (sun) and air (wind), and water temperature and pH. The volatilization decay constant, k_v, also depends on the surface area to volume ratio of the pond.

Figure 3-1: Cyanide Volatilization Process



Since both constants depend to a great extent on temperature, UV light and air, separate constants were determined for summer (May to October) and winter (November to April) conditions. The decay constants were based on laboratory values recorded by Simovic (1984). The assumptions made for the development of the cyanide decay constants were the following:

> Summer conditions: an average water temperature of 10°C, presence of air and UV light. Furthermore, since metal-CN dissociation and HCN volatilization by air and UV is particularly important in the summer months, the decay constant factors in the physical property of the tailing's impoundment, represented by the open surface area to volume ratio. Multiplying the decay constant by this ratio takes into account the accelerated reaction due to a large exposed surface area of the Reclaim Pond.

> Winter conditions: no natural cyanide degradation occurs.

- The pH in the Reclaim Pond is maintained constant at 8.0, which means that most (94%)[1] of the free cyanide will be present as HCN. Note that as the pH decreases, the proportion of free cyanide as HCN increases, which increases cyanide degradation through volatilization.
- As stated in section 3.2, it was assumed that 10% of the total cyanide concentration was bound as iron-cyanide complexes, another 10% as metal (copper, nickel and zinc) cyanide complexes, and 80% as free cyanide. This agrees with values observed at other gold mine tailings impoundments.

It should be noted that these decay constants (referred to as k_0) were established based on an hourly time step and were not deemed reliable for longer time-periods (i.e., months). Therefore, the summer and winter decay constants obtained based on volatilization conditions and assumptions, were calibrated to represent more accurately and conservatively the expected cyanide concentrations on a monthly time-step.

Table 3-6 presents the assumptions and cyanide decay constants used in the water quality model.

Table 3-6: Natural Cyanide Degradation – Assumptions and Constants

DECAY CONSTANT	DESCRIPTION	WINTER CONDITIONS[2]			SUMMER CONDITIONS		
		Conditions	k_0	Calibrated value (k)	Conditions	k_0	Calibrated value (k)
K_1	Metal-CN dissociation	4° No air No UV	n/a	n/a	10° Air (wind) UV (sunlight)	0.01443/hr	2.11/month
K_V (3)	HCN volatilization		n/a	n/a		2.382 cm/hr	58.0 m/month

3.6 Portage and Goose Pit Groundwater Seepage Loading

In the previous water quality forecast model, to account for the contaminant loads originating from underground water seepages and surface runoff on PAG rock surface area into the pits, a contaminant loading rate per month reporting to the pits were estimated based on a monthly mass balance around the pit using the following information:

- Runoff volume flowing into and pumped out of Portage and Goose Pits in 2015 and 2016;
- Estimated water volume in Portage and Goose Pits in 2015 and 2016; and,
- Concentration measurements from samples taken in Portage Pit (Pit A, ST-17) and Goose Pit (sump, ST-20) in 2015 and 2016 on a monthly basis. The measurements made in the pit sump implicitly measure the impact on groundwater seepage and surface water contact on PAG rock on the pit sumps water quality.

For this year's model, loadings from groundwater seepages to Portage Pit and Goose Pit shall be estimated based on the following information:

[1] The dissociation constant for HCN is pKa = $10^{-9.2}$.
[2] During the winter, most of the Reclaim Pond is covered in ice and/or snow. Assume no natural degradation of cyanide is occurring.
[3] In the summer k_v strongly depends on the presence of air and UV, and thus it also depends on the surface area to volume ratio (A/V). Therefore, the k_v value for the summer season has units of cm/h or m/month and should be multiplied by A/V.

- In the hydrogeological modelling of the groundwater flow in Goose Pit and Portage Pit, the seepage flow entering each pit was estimated at: 196 m^3/day in Portage Pit and 423 m^3/day in Goose Pit (SNC-Lavalin 2018b).
- The average concentration measured from samples taken of the pit seepages in each pit between 2017 to 2019 shall be used to estimate the loadings to each pit assuming a constant seepage flow rate.

Table 3-7 presents the average concentration considered for seepages reporting to Goose Pit and Portage Pit in the water qualify forecast model.

Table 3-7: Pit Seepage Water Quality Considered in the Model

Parameters	Units	Portage Pit Seepage	Goose Pit Seepage
		Average Data from 2017-2020	Average Data from 2017-2019
Alkalinity	mg $CaCO_3$/L	69.8	80.3
Hardness	mg $CaCO_3$/L	523	81
Total Dissolved Solids (TDS)	mg/L	813	175
Total Aluminum (Al)	mg/L	0.63	0.127
Total Silver (Ag)	mg/L	0.0000355	0.00005
Total Arsenic (As)	mg/L	0.0217	0.0022
Total Barium (Ba)	mg/L	0.0318	0.0417
Total Cadmium (Cd)	mg/L	0.000251	0.000013
Total Chromium (Cr)	mg/L	0.0002	0.0001
Total Copper (Cu)	mg/L	0.0011	0.0020
Total Iron (Fe)	mg/L	1.6	5.1
Total Manganese (Mn)	mg/L	0.357	0.043
Total Mercury (Hg)	mg/L	0.000005	0.000171
Total Molybdenum (Mo)	mg/L	0.0801	0.0093
Total Nickel (Ni)	mg/L	0.05101	0.00682
Total Lead (Pb)	mg/L	0.0114	0.00015
Total Selenium (Se)	mg/L	0.00257	0.00071
Total Strontium (Sr)	mg/L	0.74650	0.22333
Total Thallium (Tl)	mg/L	0.00023	0.00035
Total Uranium (U)	mg/L	0.06960	0.00333
Total Zinc (Zn)	mg/L	0.003	0.007
Chloride (Cl)	mg/L	45.5	16.2
Fluoride (F)	mg/L	0.2720	0.8333
Sulphate (SO4)	mg SO_4/L	48	0
Total Cyanide (CNt)	mg/L	0.0119	0.0023
Total Ammonia (NH_3 + NH_4)	mg N/L	1.1	0.3
Nitrate (NO_3)	mg N/L	17.9	0.1

4.0 Water Quality Forecast Results

4.1 Results

The results of the mass balance model around the North and South Cell TSF Reclaim Ponds, Portage Pit and Goose Pit are presented in the Figure 4-1 to Figure 4-17 for the following parameters of concern that were identified in Section 2.3:

i. Total Cyanide
ii. Total Aluminum
iii. Total Arsenic
iv. Total Cadmium
v. Total Copper
vi. Total Iron
vii. Total Lead
viii. Total Mercury
ix. Total Nickel
x. Total Selenium
xi. Total Zinc
xii. Total Ammonia
xiii. Nitrate
xiv. Total dissolved solids
xv. Chloride
xvi. Sulphate
xvii. Fluoride

The graphs show the forecasted monthly concentrations of the parameters from 2014 to end of in-pit tailings deposition in 2026 for the North and South Cell TSF Reclaim Ponds, and until the end of pit reflooding in 2038 for Portage and Goose Pits. A total of two (2) graphs are presented per parameter: the first shows the forecasted concentrations in the North and South Cells TSF Reclaim Ponds and the second shows the forecasted concentrations in the Portage and Goose Pits.

For comparison purpose only, the Water Licence, MDMER and CCME limits (refer to Table 2-1) were also included in the figures, where applicable.

Again, it is important to remember that the results presented in the figures in Section 4 of this report are based on the input parameters presented in Section 3. These results must be reviewed while keeping in mind the assumptions and limitations described in Sections 3.2 and 3.3. It is also important to note that the results from this model assume treatment of Reclaim Pond effluent shall be undertaken following the end of in-pit deposition and the treated water shall be discharged to the environment.

4.2 Discussions

4.2.1 Key Dates

The mass balance model presented in this Technical Note is based on the WB 2021. The following key dates are important to keep in mind while reviewing the forecasted concentration data presented in Figure 4-1 to Figure 4-17:

- November 2014: The former Attenuation Pond becomes the South Cell and TSF Reclaim Pond;
- May 2015: Start of natural re-flooding of Goose Pit with surface runoff water only;
- September 2015: Transfer of 50,431 m3 of CDDP water to Goose Pit;
- October 2015: End of deposition in the North Cell TSF;
- July 2017: Allow runoff water and ground water to accumulate in the North Portage Pit (Pit A);

- August to October 2017: Approximately 332,177 m^3 of pond water is transferred from CDDP to Goose Pit;
- August to October 2018: Deposition in North and South Cell TSF;
- April 2019: Deposition end in South Cell TSF;
- April to July 2019: Deposition resumes in North Cell TSF;
- May to July 2019: Approximately 358,156 m^3 of pond water is transferred from CDDP to Goose Pit;
- July 2019: End of processing ore from Portage/Goose/Vault pits at the mill. Start of processing of ore from Whale Tail;
- July 2019: Start of deposition of tailings from Whale Tail Pit;
- July 2019 to August 2020: Deposition of tailings in Goose Pit;
- August 2020 to December 2026: Deposition of tailings in Portage Pit E;
- Reclaim Water from Portage Pit E is returned to the mill or transferred to Portage Pit A;
- Reclaim Water from Goose Pit is transferred to Portage Pit A;
- Allow East Dike Seepage to discharge to Second Portage Lake as long as discharge criteria are met. If not, East Dike Seepage is transferred to Portage Pit A or Pit E;
- July 2020: Start of water transfer from South Cell TSF Reclaim Pond to Portage Pit A;
- As of 2020: North Cell TSF Reclaim Pond is almost completely empty. The pond is maintained empty in the subsequent years by transferring the accumulated runoff water to the South Cell TSF Reclaim Pond;
- September 2020: South Cell TSF Reclaim Pond is almost completely empty. The pond is maintained empty in the subsequent years by transferring the accumulated runoff water to Portage Pit A;
- April 2021: Start processing at the mill some ore that comes from underground mine at Whale Tail. Only a fraction of the ore shall come from the underground mine while the balance shall come from the pit operation at Whale Tail.
- December 2026: End of in-pit tailings deposition

4.2.2 Forecasted Concentrations in the North and South Cell TSF Reclaim Pond

The forecasted concentrations in the North and South Cell TSF Reclaim Pond are presented in Figure 4-1 to Figure 4-17.

Based on the model for forecasting concentrations in the North and South Cell TSF Reclaim Pond, the following notes and observations can be made:

i. For the metal parameters, the fluctuations observed from 2014 to 2019 are primarily due to seasonal variability (runoff from nearby areas, snow and ice melt, temperature, etc.). Furthermore, the forecasted concentrations are generally more conservative than the field measurements.

ii. Natural degradation of cyanide during summer plays a significant role in reducing the measured concentration of total cyanide in the TSF Reclaim Ponds and it is considered in the forecasting model.

iii. For ammonia, it is important to note that:

   a. The mass balance model developed here does not include seasonal variability (sunlight, microbial or algae degradation of ammonia, etc.), and

b. Ammonia concentrations can vary significantly depending on temperature, pH, sunlight, algae activity, etc. Ammonia concentrations may be lower in the summer and higher in the winter. The forecasted concentrations in the South Cell TSF Reclaim Pond between 2014 and 2019 are more conservative than the measured values.

iv. Similarly, for nitrate, it is important to remember that:

a. The mass balance model developed here does not include seasonal variability, and,

b. Ammonia decomposes to nitrate, therefore nitrate concentrations can vary significantly depending on temperature, pH, sunlight, algae activity, etc. Nitrate concentrations may be lower in the winter and higher in the summer. The forecasted values from 2014 to 2019 are in the same range as the measured values in the North Cell. For the South Cell, the forecasted values are in the same range as the measured value. However, between 2014 to mid-2016, measured values were higher than forecasted concentrations. After this, the model is conservative.

v. Guidelines:

a. For comparison purposes, the forecasted concentrations in the North and South Cells TSF Reclaim Ponds for almost all the parameters are above the Water Licence discharge criteria when tailings depositions were occurring in this area, except for aluminum, arsenic. Following the end of tailings deposition, the forecasted values drop below the Water Licence limits.

b. For comparison purposes, almost all forecasted concentrations in the North and South Cells TSF Reclaim Ponds for the parameters of concern are also above the CCME guidelines for the protection of aquatic life during tailings depositions. Following deposition, the forecasted concentration drops close to or below the CCME guidelines.

c. However, it is important to note that no water in the TSF Reclaim Pond during tailings deposition is discharged to the environment. Thus, the Water Licence discharge criteria are not applicable but are rather used as a comparison herein. Also, the dikes around Portage and Goose Pits will only be breached if the water quality within it meets the selected discharge closure criteria.

4.2.3 Forecasted Concentration in Portage and Goose Pits

Table 4-1 presents the forecasted concentration of all parameters for Portage and Goose Pits at the end of in-pit deposition projected (IPD) to be in December 2026 and at the end of pit reflooding projected to be in June 2038.

Based on the model for forecasting of the concentrations in Portage and Goose Pits, the following notes and observations can be made:

i. The water quality forecast considers the extension of the Life of Mine at Meadowbank which adds the processing of ore body coming from the Whale Tail Pit, IVR Pit and the underground mine at the Whale Tail site. The ore body from Whale Tail Pit has a different geochemical behavior when compared to the Portage/Goose/Vault ore bodies. It has a higher potential to leach certain metals, such as arsenic, mercury and lead.

ii. The forecasted concentrations at the end of in-pit deposition are compared to the current Water Licence discharge criteria since the Reclaim Water shall be treated and discharged to the Environment prior to pit reflooding. The following observations can be made for each of the parameters of concern:

a. **Total Cyanide** Forecasted total concentration is projected to be close to the Water Licence limit in Portage Pit.

b. **Total Aluminum** Forecasted total concentration is projected to be lower than the Water Licence limit in Portage and Goose Pits.

c. **Total Arsenic** Forecasted total concentration is projected to be higher than the Water Licence limit at the end of IPD in Portage and Goose Pits. The main source terms for this constituent are from the mill effluent and the pit seepages reporting to the pits.

d. **Total Cadmium** Forecasted total concentration is projected to be lower than the Water Licence limit in Portage and Goose Pits.

e. **Total Copper** Forecasted total concentration is projected to be higher than the Water Licence limit at the end of IPD in Portage and Goose Pits. The main source terms for this constituent are from the mill effluent and the pit seepages reporting to the pits.

f. **Total Iron** Higher forecasted total concentration is projected in Portage Pit and Goose Pit. The main source terms for this constituent are from the mill effluent, surface runoff and the pit seepages reporting to the pits.

g. **Total Lead** Forecasted total concentration is projected to be lower than the Water Licence limit in Portage and Goose Pits.

h. **Total Mercury** Forecasted total concentration is projected to be lower than the Water Licence limit in Portage and Goose Pits.

i. **Total Nickel** Forecasted total concentration is projected to be higher than the Water Licence limit at the end of IPD in Portage Pit. The main source term for this constituent is from the mill effluent reporting to the pits.

j. **Total Selenium** There is no specific Water Licence limit for this constituent. However, total forecasted concentration remains higher than the CCME guidelines in Portage Pit and Goose Pit. An increase is observed once IPD has started, suggesting that the main source term for this constituent is from the mill effluent reporting to the pits.

k. **Total Zinc** Forecasted total concentration is projected to be lower than the Water Licence limit in Portage and Goose Pits.

l. **Total Ammonia** Ammonia forecasted concentrations are higher than the Water Licence limit in Portage Pit and in Goose Pit at the end of IPD. A higher load of ammonia is forecasted in the pits due to the additional ammonia load coming from the mill effluent reporting to the pits (i.e., from cyanate hydrolysis).

m. **Nitrate** Forecasted total concentration is projected to be lower than the Water Licence limit in Portage and Goose Pits.

n. **Total Dissolved Solids** — Higher forecasted total concentration than the Water Licence limits is projected in Portage Pit since tailings deposition is mainly occurring in this pit from 2020 to 2026. In that same period, reclaim water from Goose Pit shall be transferred to Portage Pit and natural runoff is allowed to accumulate in the pit, explaining the decrease in concentration. An increase in TDS is observed in the pit once IPD started, suggesting that the main source term for this constituent is from the mill effluent reporting to the pits.

o. **Chloride** — Forecasted concentration in Portage Pit and Goose Pit at the end of IPD is projected to be lower than the Water Licence limit for this constituent.

p. **Sulphate** — Since 2019, the sulphate forecasted concentrations are compared against a threshold value based on BC Environment guideline for the protection of aquatic life for very soft water (0-30 mg/L) (April 2013). There is no specific Water Licence limit for this constituent. An increase in sulphate concentration is observed once IPD has started, suggesting that the main load for this constituent comes from the mill effluent. Concentration of sulphate is expected to increase in Portage Pit due to continued deposition of tailings and decrease in Goose Pit due to water transfer to Portage Pit.

q. **Fluoride** — There is no specific Water Licence limit for this constituent. However, total forecasted concentration remains higher than the CCME guidelines in Portage Pit and Goose Pit. The fluoride load to the pits comes from the mill effluent and from pit seepages.

iii. Based on the forecasted concentrations at the end of IPD, the new water treatment plant required at closure should be designed to treat and manage the following parameters of concern: **arsenic, copper, nickel, iron, TDS and total ammonia.** The new water treatment plant shall also be designed to meet **pH** and **total suspended solids** requirements.

iv. It is important to note that the treated effluent discharge water quality criteria shall need to be assessed based on the assimilative capacity of the receiving water body, Third Portage Lake.

v. Water quality forecast at the end of pit reflooding:

   a. Pit reflooding shall begin once the Reclaim Water shall be treated and discharged to the environment. Pit reflooding shall be done via natural reflooding and active transfer of water from Third Portage Lake.

   b. It is important to note that once the water elevation in the pits reaches a level above 130 m, both Portage and Goose Pits will be hydraulically connected. For this reason, only the forecasted concentration in the mixed Portage and Goose Pits are considered in the model.

   c. As shown in Table 4-1, when assuming complete mixing of both pits, most of the parameters are below the CCME guidelines, except for total copper and total nitrogen.

d. Total copper is slightly higher than the CCME limit but is expected to be lower once the particulates are allowed to settle out in the pits.

e. For comparative purpose only, the total nitrogen equivalent concentration (i.e., sum of ammonia and nitrate) is slightly higher than the threshold concentration for classification of an oligotrophic lake (i.e., a lake characterized by a low accumulation of dissolved nutrient salts, supporting but a sparse growth of algae and other organisms, and having a high oxygen content owing to the low organic content) in terms of nutrient concentration (Nurnberg 1996). However, the mass balance model does not consider any natural nitrogen degradation cycle that could occur over the summer months.

In summary, the forecasted values presented in this section provide an indication of the type of effluent that shall be managed and treated at the end of in-pit deposition and following pit reflooding. This information can be used to initiate the assessment of the type of water treatment system required for closure and initiate planning for water treatability testing. All of the parameters listed in Table 4-1 shall be monitored in the pits and used to re-evaluate next year's water quality forecast model.

4.2.4 Comparison of Forecasted Values

As of 2019, in-pit tailings deposition has started in Goose Pit and Portage Pit instead of the North and South Cell TSF. For this reason, comparison of the model results shall focus on the trends forecasted in Portage and Goose Pits.

Chloride and sulphate shall be used to compare the model results since these constituents are likely to accumulate over time in the reclaim water and not precipitate out of solutions.

Figures 4-18 and 4-19 compare the forecasted value based on the Water Balance (WB) 2019, WB 2020 and WB 2021. Measured values for chloride and sulphate sampled in the pits are also presented.

Based on these figures, the following notes and observations can be made:

i. The water quality forecast model based on WB 2019 overestimated the forecasted concentration for chloride in Goose and Portage Pits. The WB 2020 model and the current model correct the forecast to be more in line with the measured values.

ii. The water quality forecast model based on WB 2019 underestimated the forecasted concentration for sulphate in Goose and Portage Pits. The WB 2020 model and the current model corrects the forecast to be more in line with the measured values.

The site Water Balance and Water Quality Forecast model will continue to be updated on a yearly basis, using the actual volumes and measured concentrations to calibrate the models.

Table 4-1: Summary of Forecasted Concentrations at the End of Deposition and After Pit Reflooding

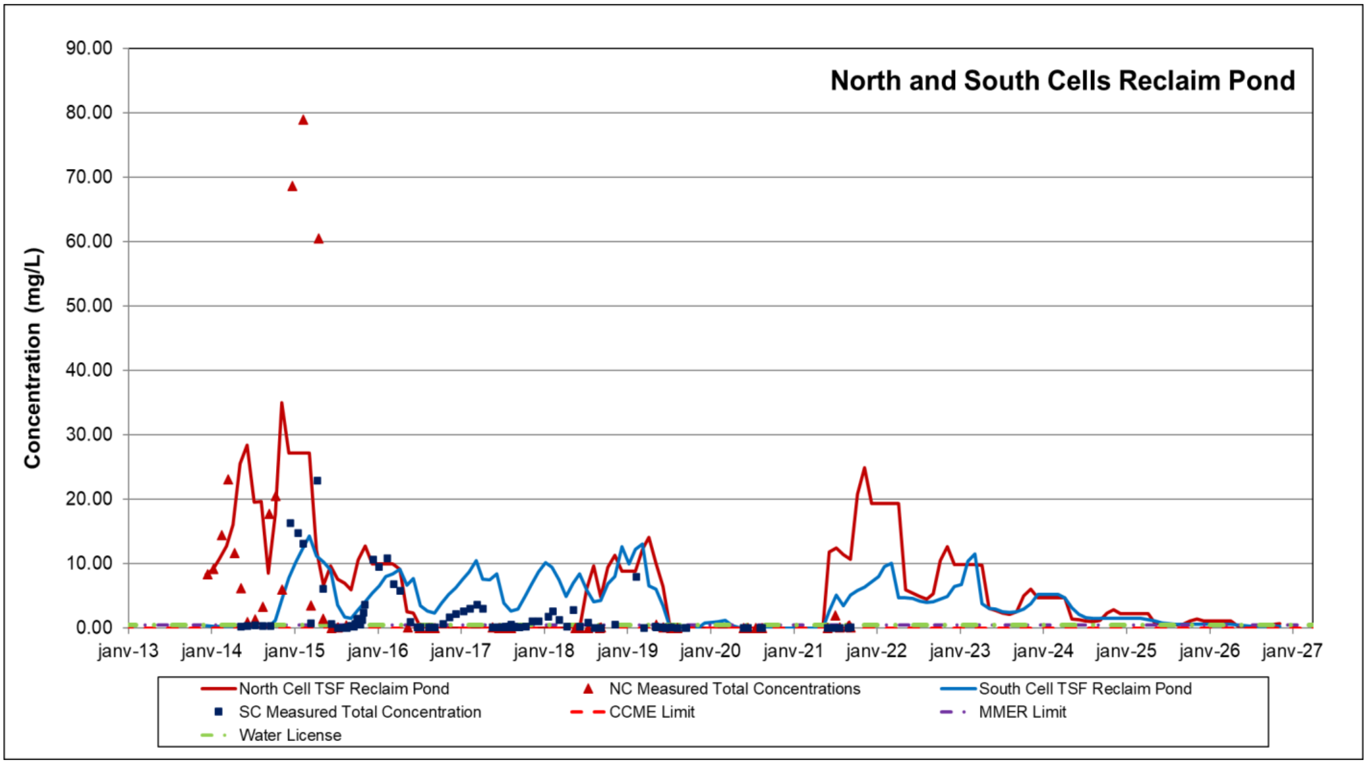
					END OF DEPOSITION (DEC. 2026)				END OF PIT FLOODING (JUN. 2038)
PARAMETERS	UNITS	WATER LICENCE at ST-9 (3)	CCME GUIDELINES	3rd PORTAGE LAKE	NORTH CELL	SOUTH CELL	PORTAGE PIT	GOOSE PIT	PORTAGE / GOOSE PITS
					Mass Balance Conc.				Mass Balance Conc.
pH (assumed)									
Alkalinity	mg $CaCO_3$/L	n/a	n/a	9.1	45	16	152	108	11
Hardness	mg $CaCO_3$/L	n/a	n/a	12.05	155	58	1973	710	22
Total Dissolved Solids (TDS)	mg/L	1400	n/a	22.1	378	153	4717	1221	40
Total Aluminum (Al)	mg/L	1.5	0.10	0.0075	0.138	0.04	0.53	0.97	0.02
Total Silver (Ag)	mg/L	n/a	0.00025	0.000005	0.00010	0.00004	0.00159	0.00143	0.00001
Total Arsenic (As)	mg/L	0.3	0.005	0.0005	0.053	0.022	1.574	0.514	0.002
Total Barium (Ba)	mg/L	n/a	n/a	0.0037	0.027	0.010	0.220	0.069	0.004
Total Cadmium (Cd)	mg/L	0.002	0.00004	0.000003	0.00001	0.00000	0.00013	0.00016	0.00001
Total Chromium (Cr)	mg/L	n/a	0.001	0.0001	0.00127	0.00037	0.00502	0.00968	0.00020
Total Copper (Cu)	mg/L	0.1	0.002	0.0006	0.363	0.161	5.813	1.281	0.005
Total Iron (Fe)	mg/L	n/a	0.30	0.0173	0.402	0.13	2.37	4.40	0.06
Total Manganese (Mn)	mg/L	n/a	0.23	0.0016	0.245	0.080	1.152	0.079	0.011
Total Mercury (Hg)	mg/L	0.0004	0.000026	0.000003	0.00004	0.000012	0.000114	0.000094	0.000003
Total Molybdenum (Mo)	mg/L	n/a	0.073	0.0002	0.009	0.004	0.153	0.097	0.001
Total Nickel (Ni)	mg/L	0.2	0.025	0.0006	0.067	0.029	1.014	0.141	0.002
Total Lead (Pb)	mg/L	0.1	0.001	0.0000	0.001	0.00028	0.006	0.007	0.0002
Total Selenium (Se)	mg/L	n/a	0.001	0.0000	0.01267	0.0056	0.2195	0.0520	0.0003
Total Strontium (Sr)	mg/L	n/a	n/a	0.0132	0.140	0.057	1.802	0.702	0.025
Total Thallium (Ti)	mg/L	n/a	0.0008	0.000005	0.00031	0.00008	0.00011	0.00013	0.0001
Total Uranium (U)	mg/L	n/a	0.015	0.000049	0.003	0.0011	0.0322	0.0096	0.0001
Total Zinc (Zn)	mg/L	0.4	0.013	0.0015	0.014	0.004	0.009	0.054	0.002

PARAMETERS	UNITS	WATER LICENCE at ST-9 (3)	CCME GUIDELINES	3rd PORTAGE LAKE	END OF DEPOSITION (DEC. 2026) NORTH CELL	SOUTH CELL	PORTAGE PIT	GOOSE PIT	END OF PIT FLOODING (JUN. 2038) PORTAGE / GOOSE PITS
					Mass Balance Conc.				Mass Balance Conc.
Chloride	mg/L	**1000**	120	0.7925	30	13	765	278	2
Fluoride (F)	mg/L	**n/a**	0.12	0.07925	0.260	0.10	0.41	0.40	0.08
Sulphate (SO4)	mg SO_4/L	**n/a**	128 (2)	5.1	172	70	2390	822	8
Total Cyanide (CNt)	mg/L	**0.5**	0.005	0.0005	0.65	0.29	0.50	0.00003	0.0004
Total Ammonia	mg N/L	**16.0**	1.83	0.0145	4	2	69	23	0.1
Nitrate (NO3)	mg N/L	**20.0**	2.94	0.03305	2	1	14	5	0.3
Total N equivalent	mg N/L	**n/a**	0.35 (1)	0.04755	7	3	83	27	0.4

Notes:

1) Value based on the threshold concentration for classification of an oligotrophic lake in terms of nutrient concentrations (Nurnberg 1996).
2) Threshold value for sulphate based on BC Environment guideline for the protection of aquatic life for very soft water (0-30 mg/L) (April 2013).
3) [pink box] Mass balance forecasted concentration higher than current Water Licence limits at ST-9. For comparison purpose only.
4) [beige box] Mass balance forecasted concentration higher than CCME limits. For comparison purpose only

Figure 4-1: Total Cyanide Forecasted Concentration



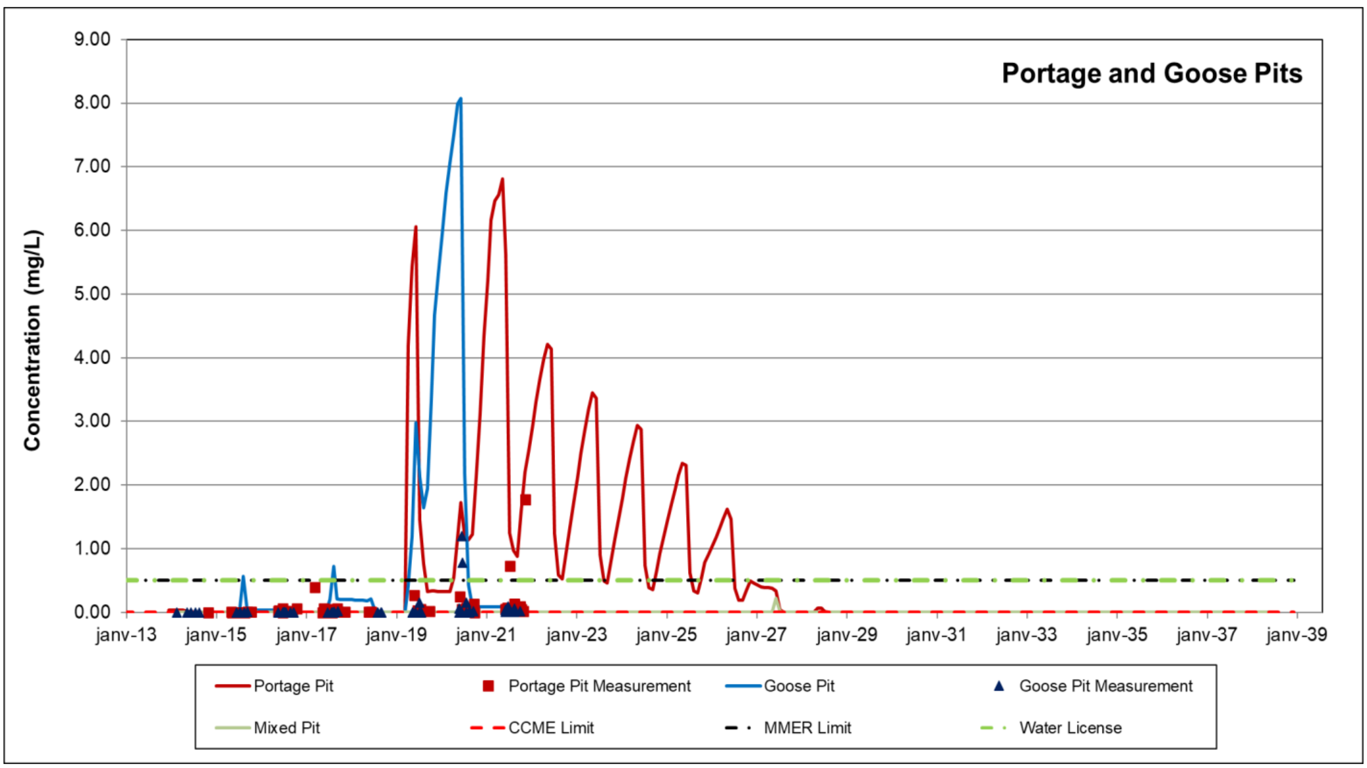
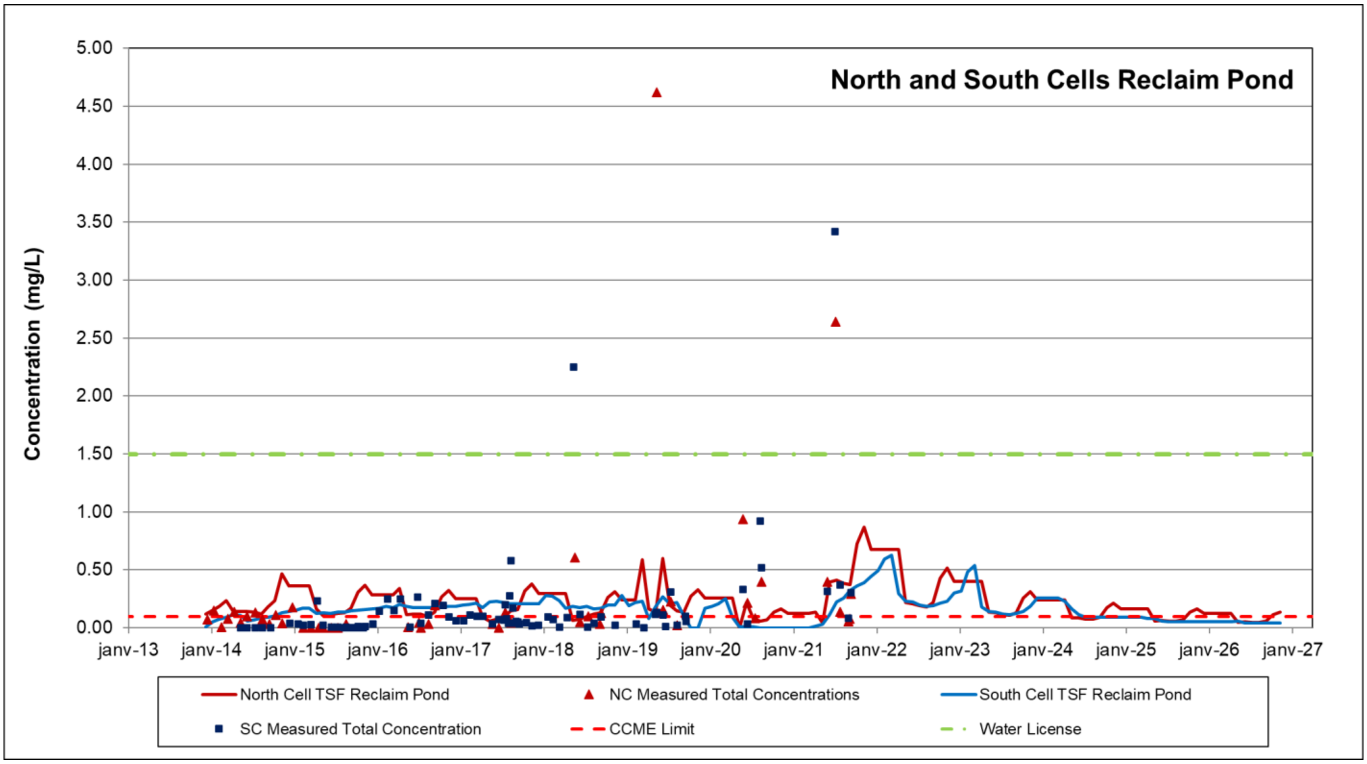


Figure 4-2: Total Aluminum Forecasted Concentration



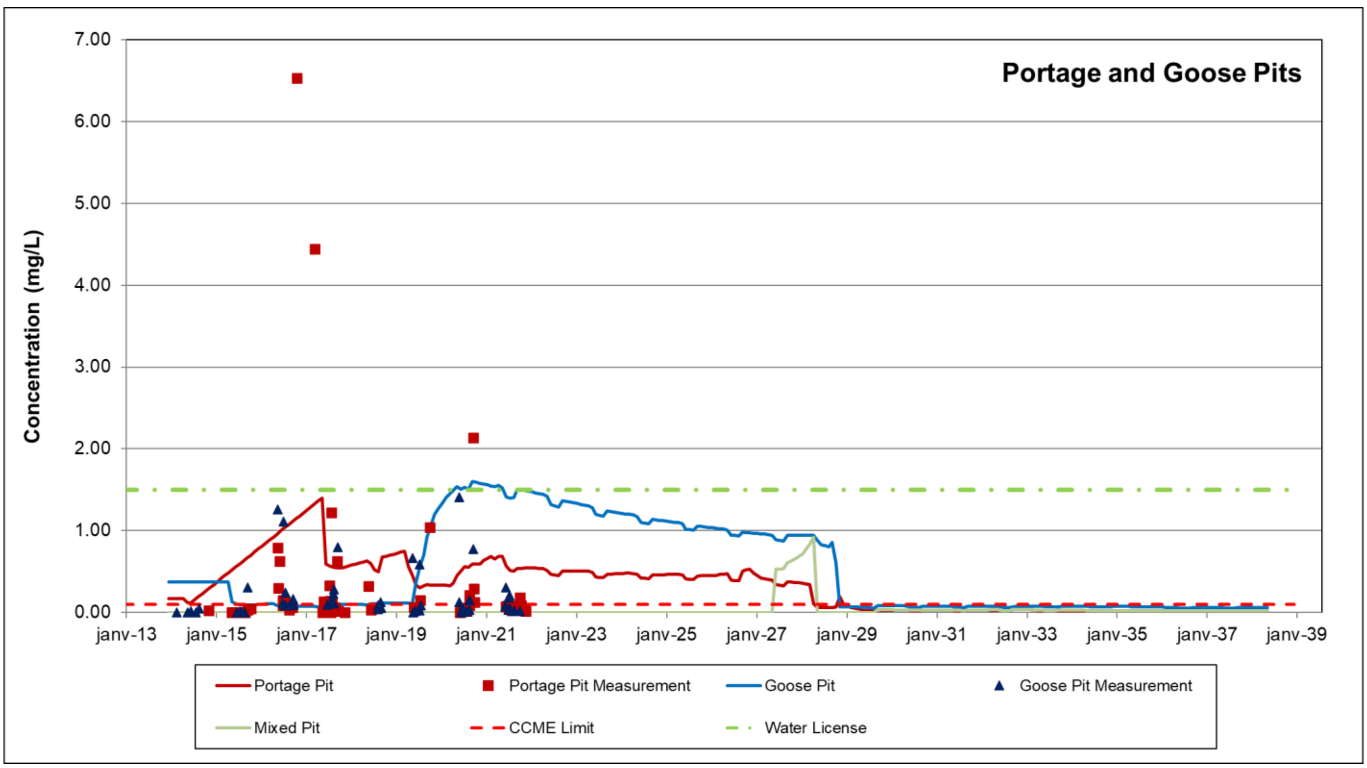


Figure 4-3: Total Arsenic Forecasted Concentration

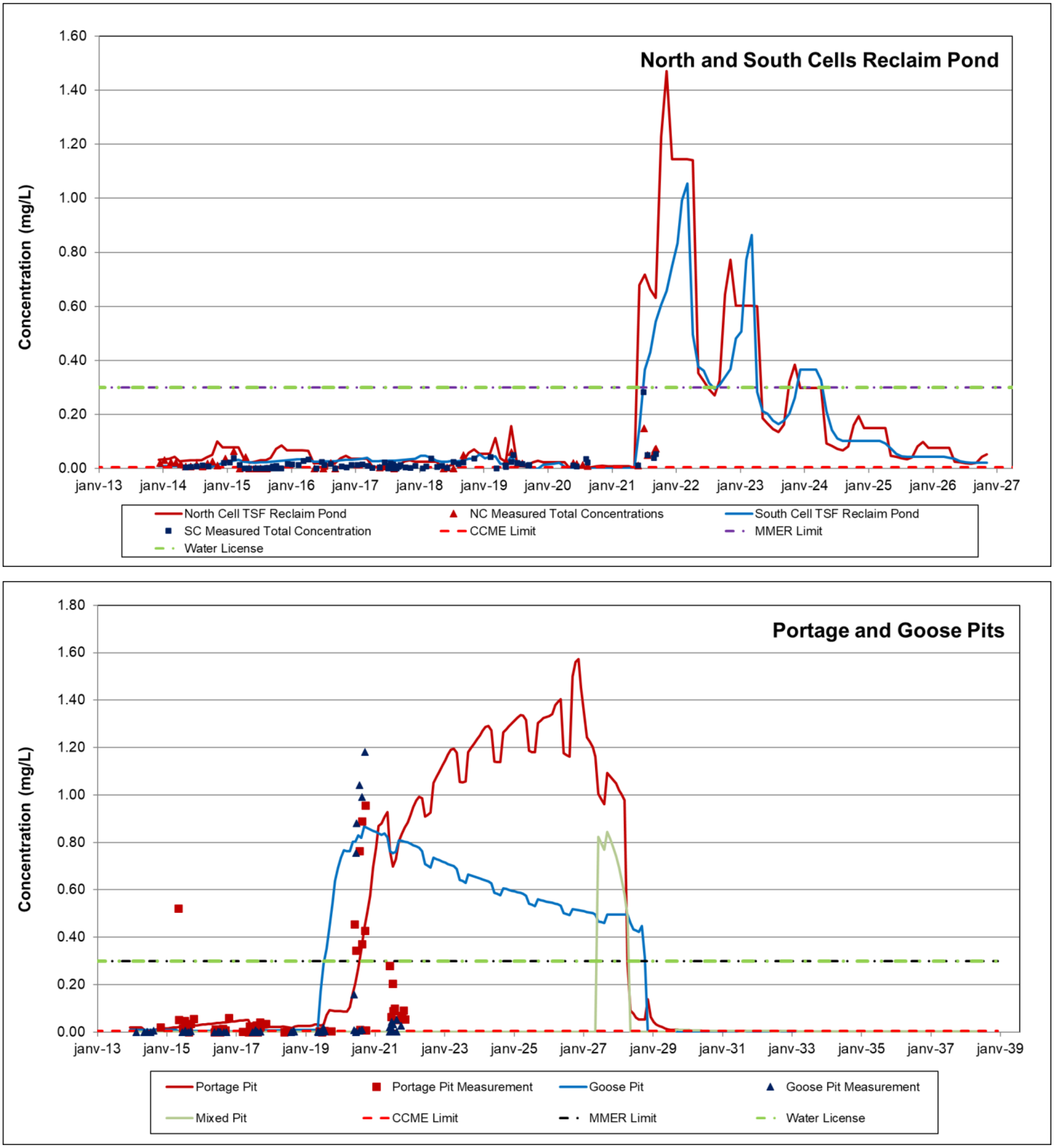
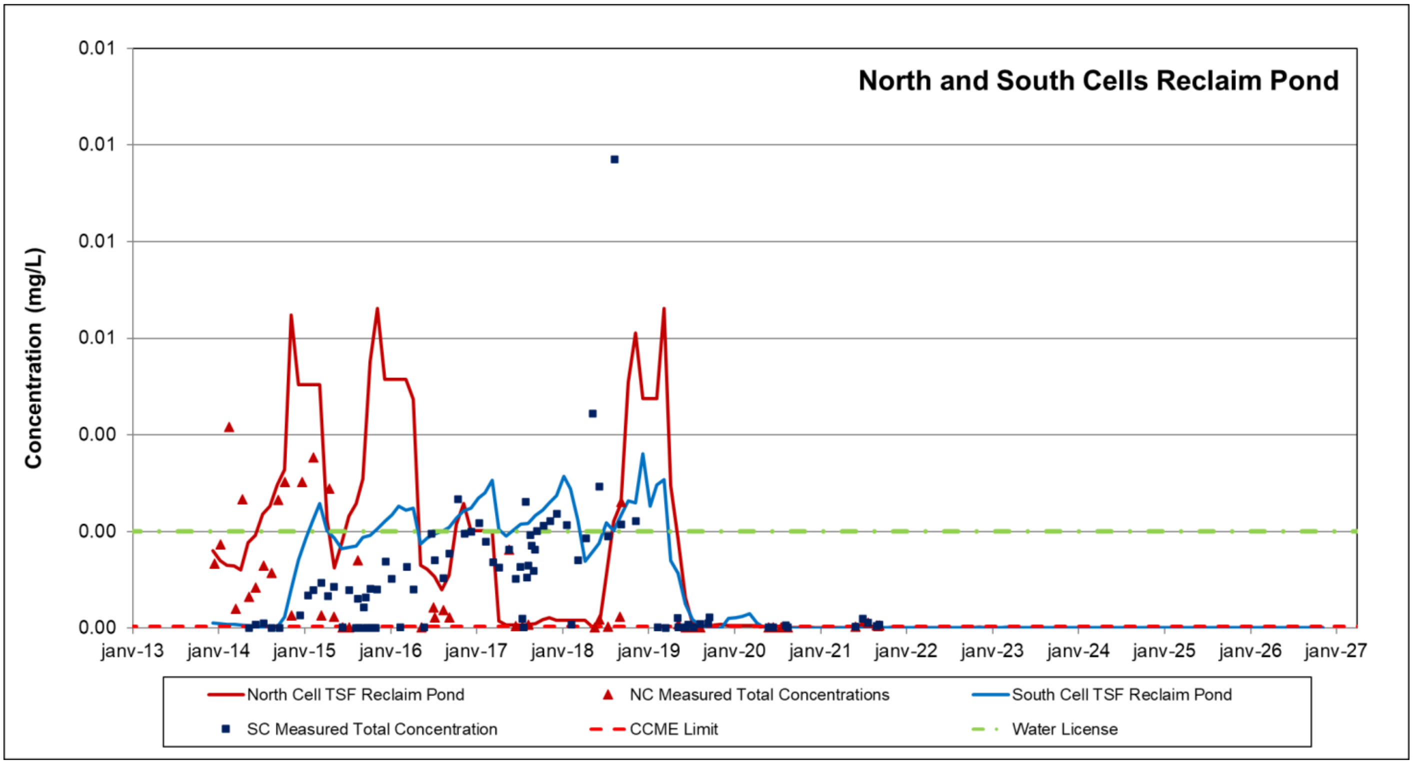


Figure 4-4: Total Cadmium Forecasted Concentration



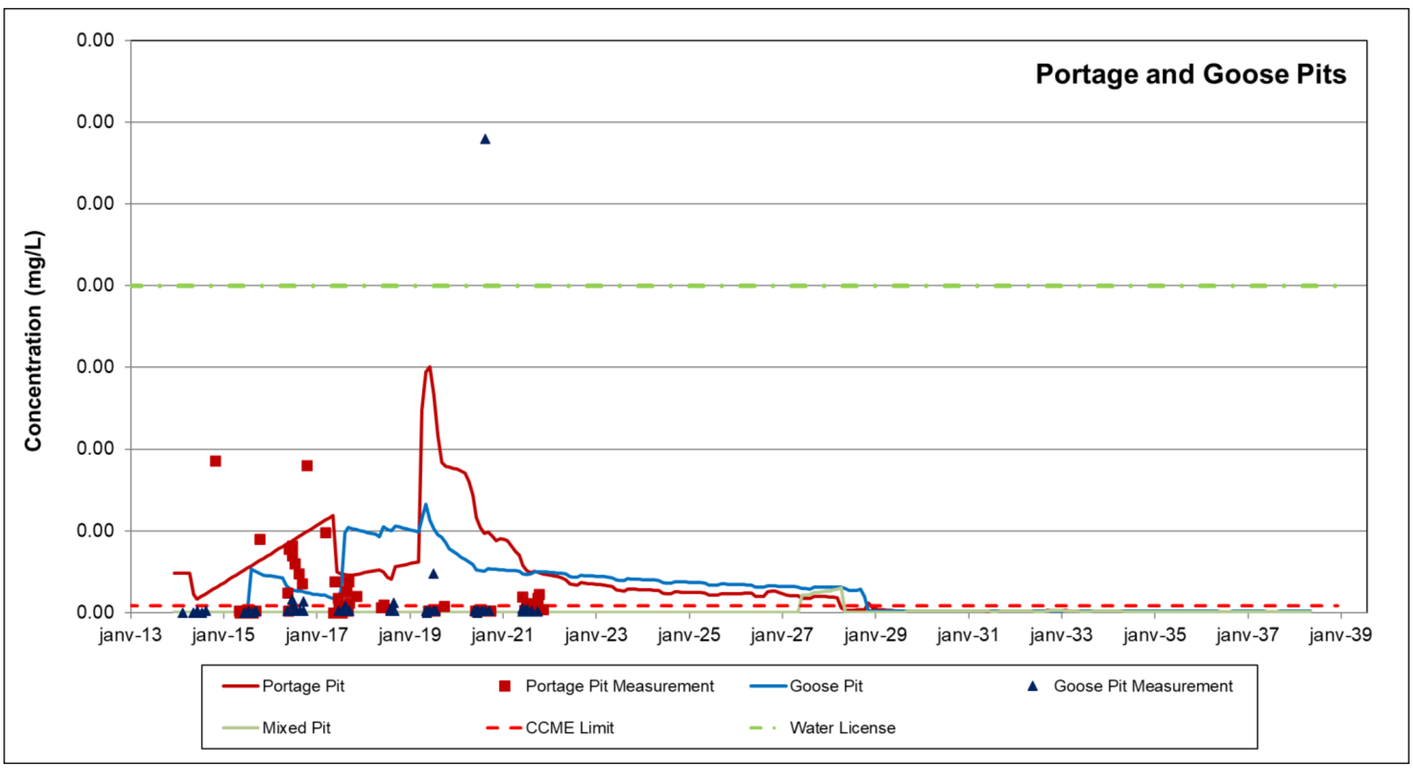
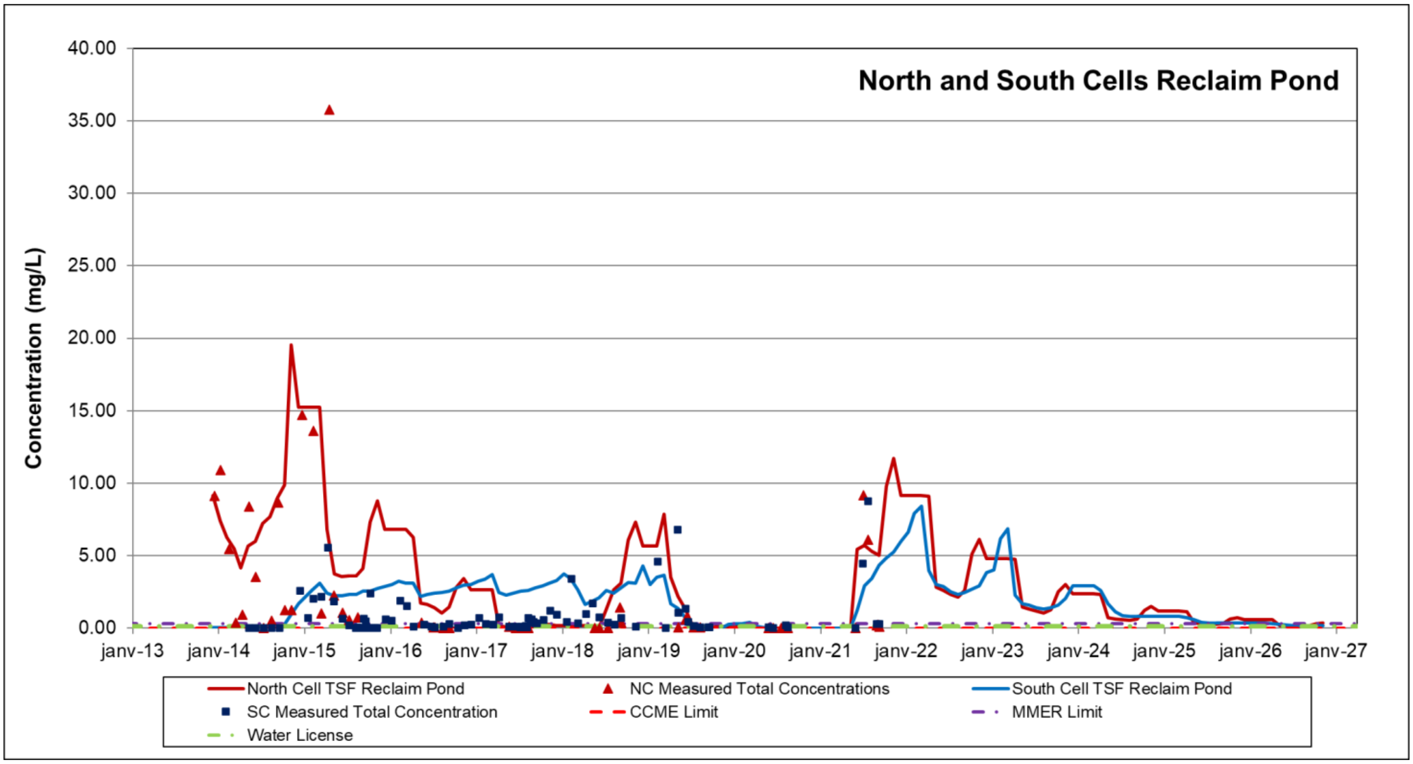


Figure 4-5: Total Copper Forecasted Concentration



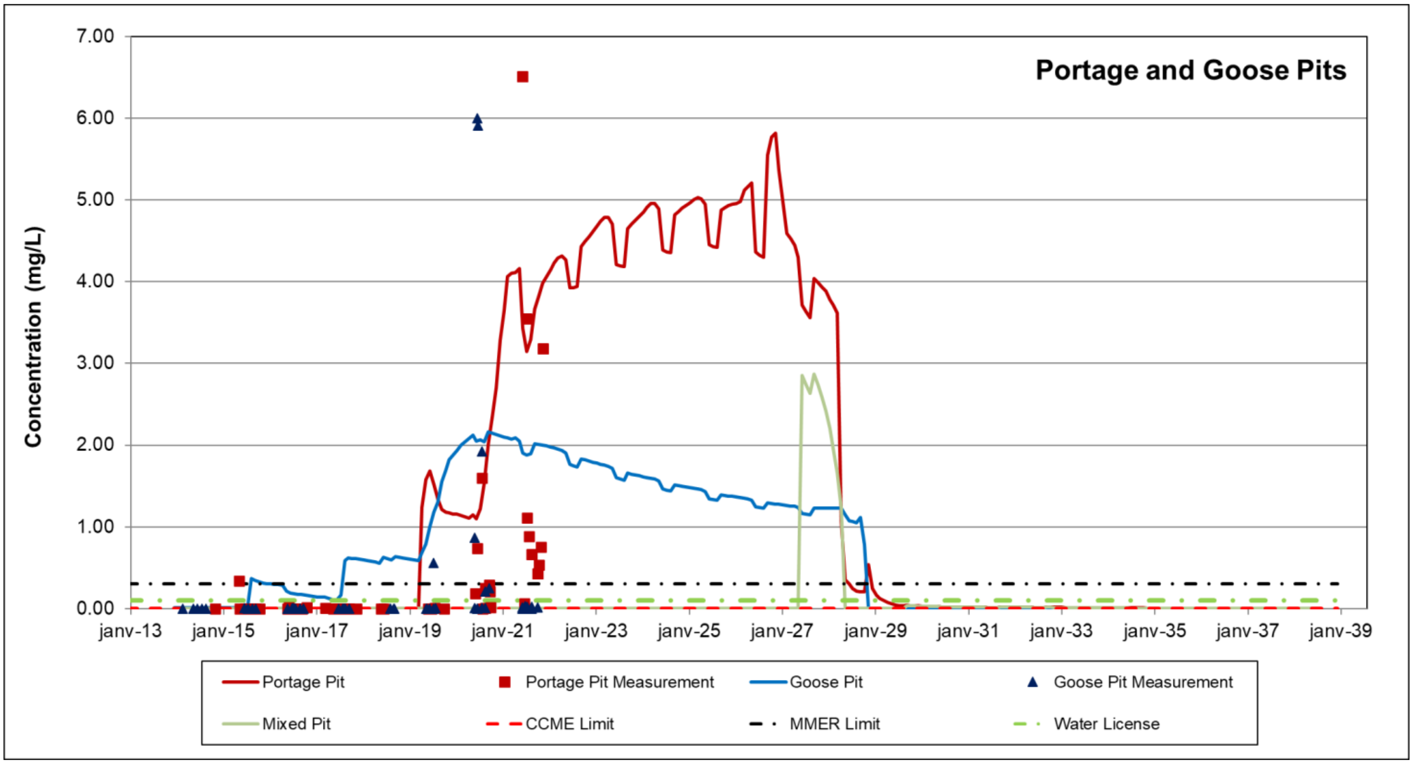
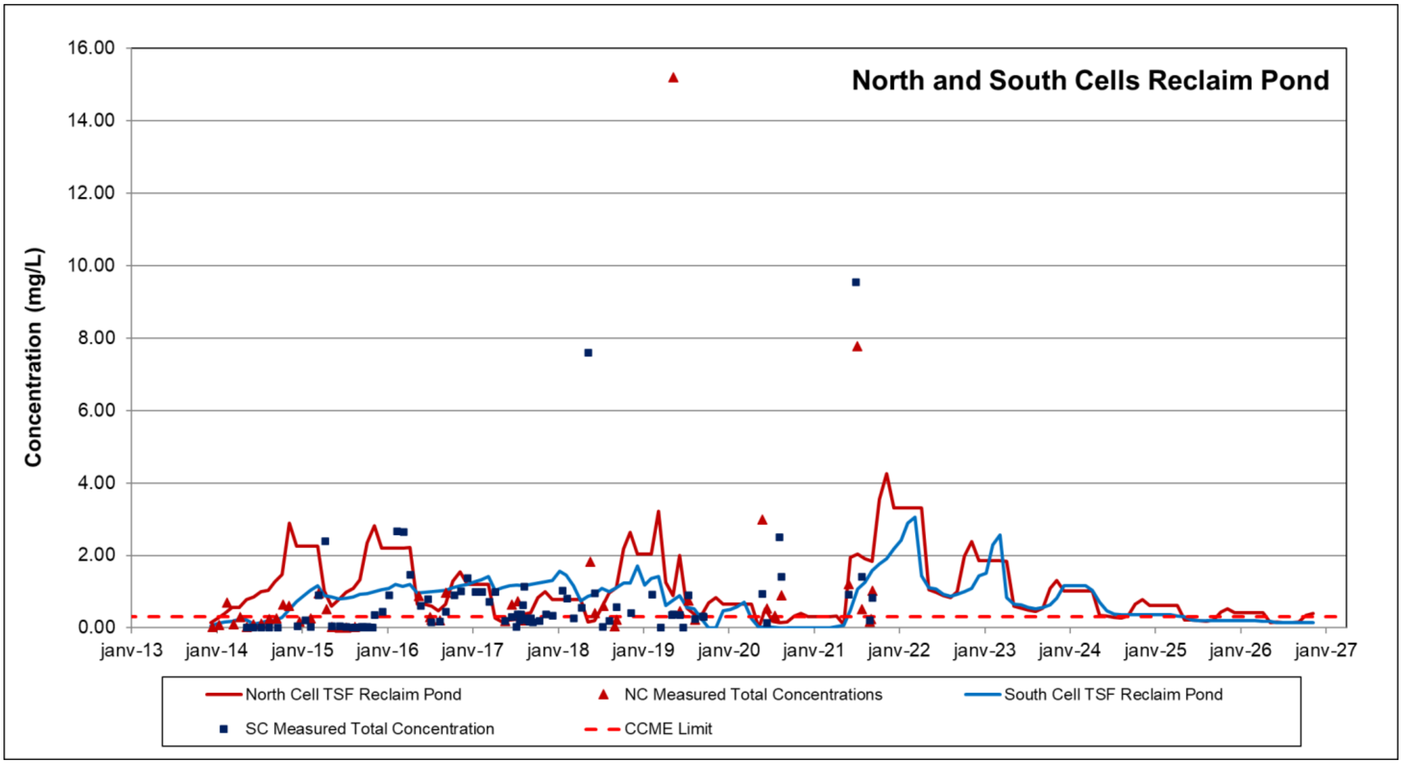


Figure 4-6: Total Iron Forecasted Concentration



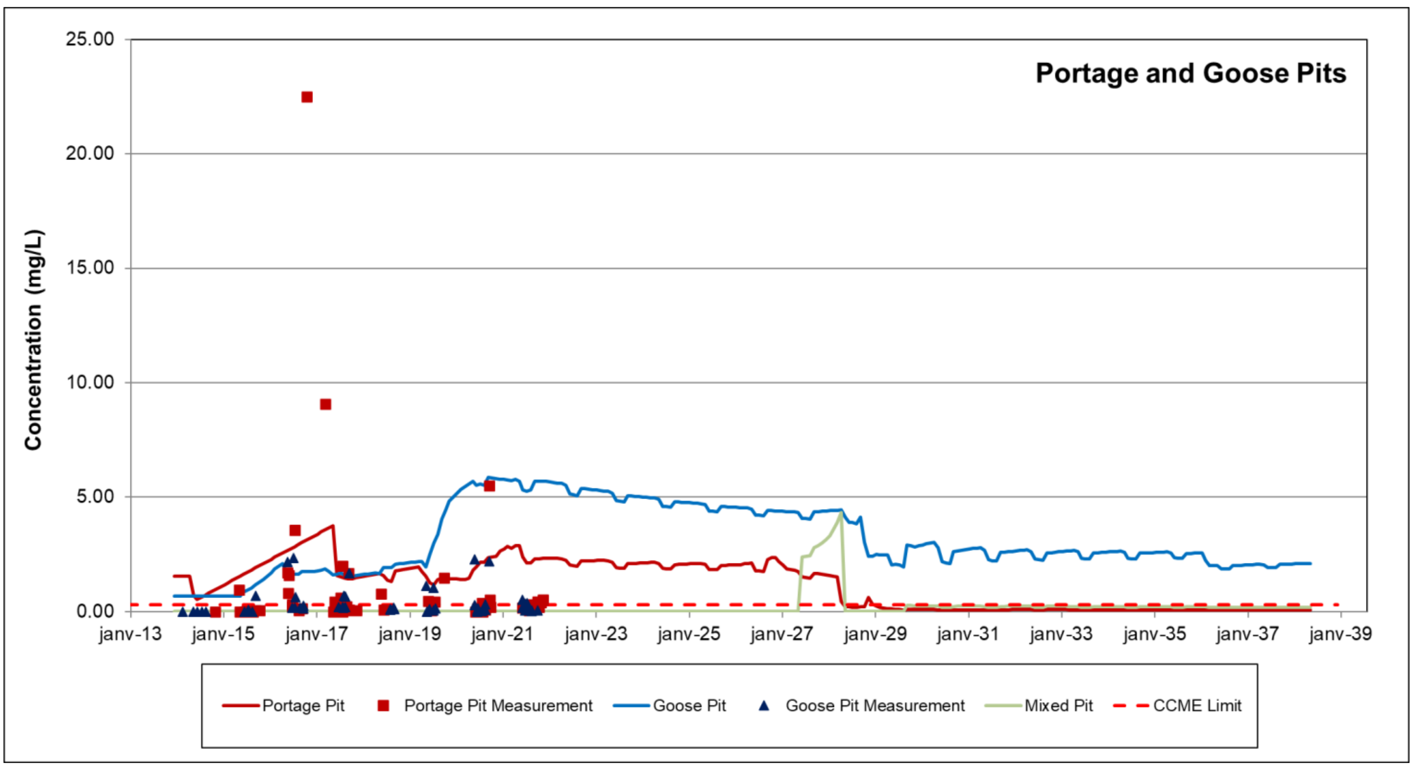
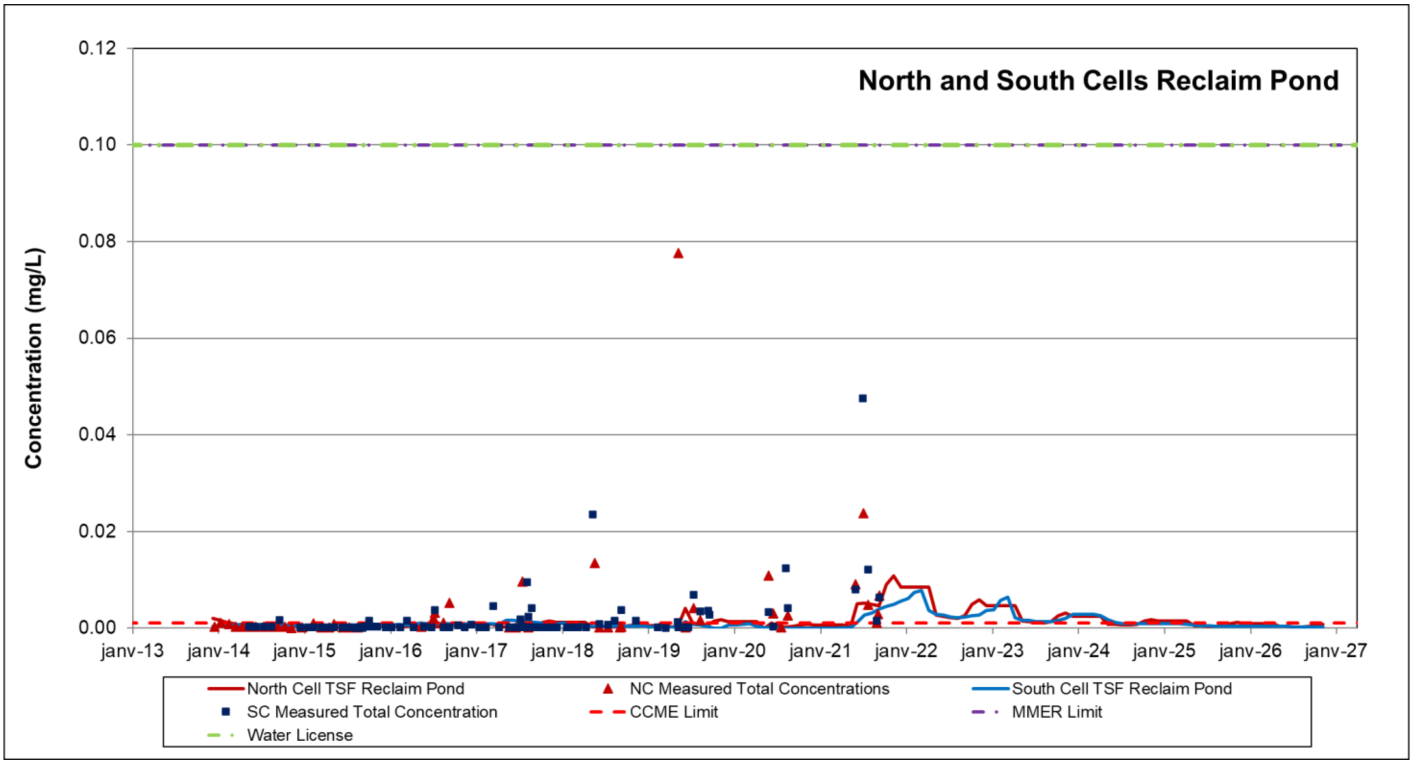


Figure 4-7: Total Lead Forecasted Concentration



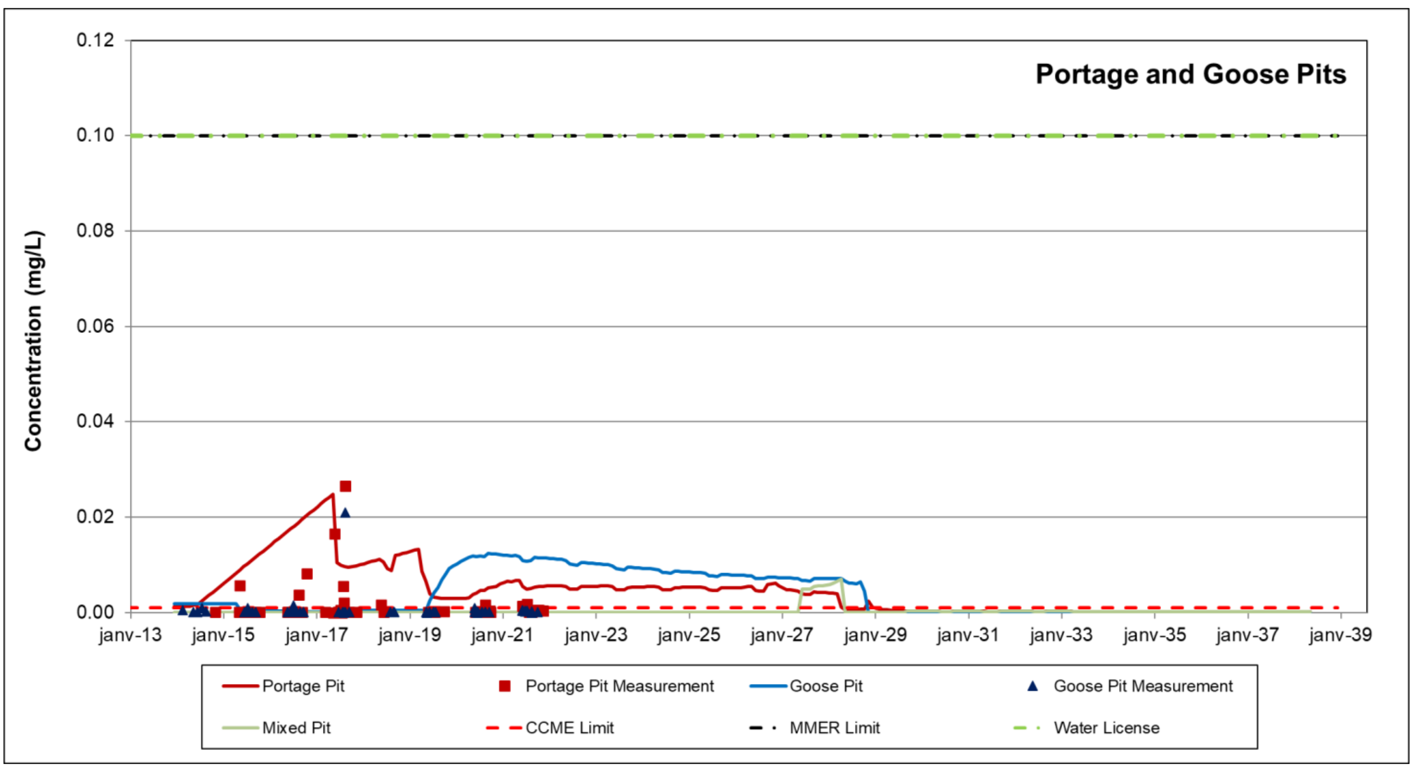
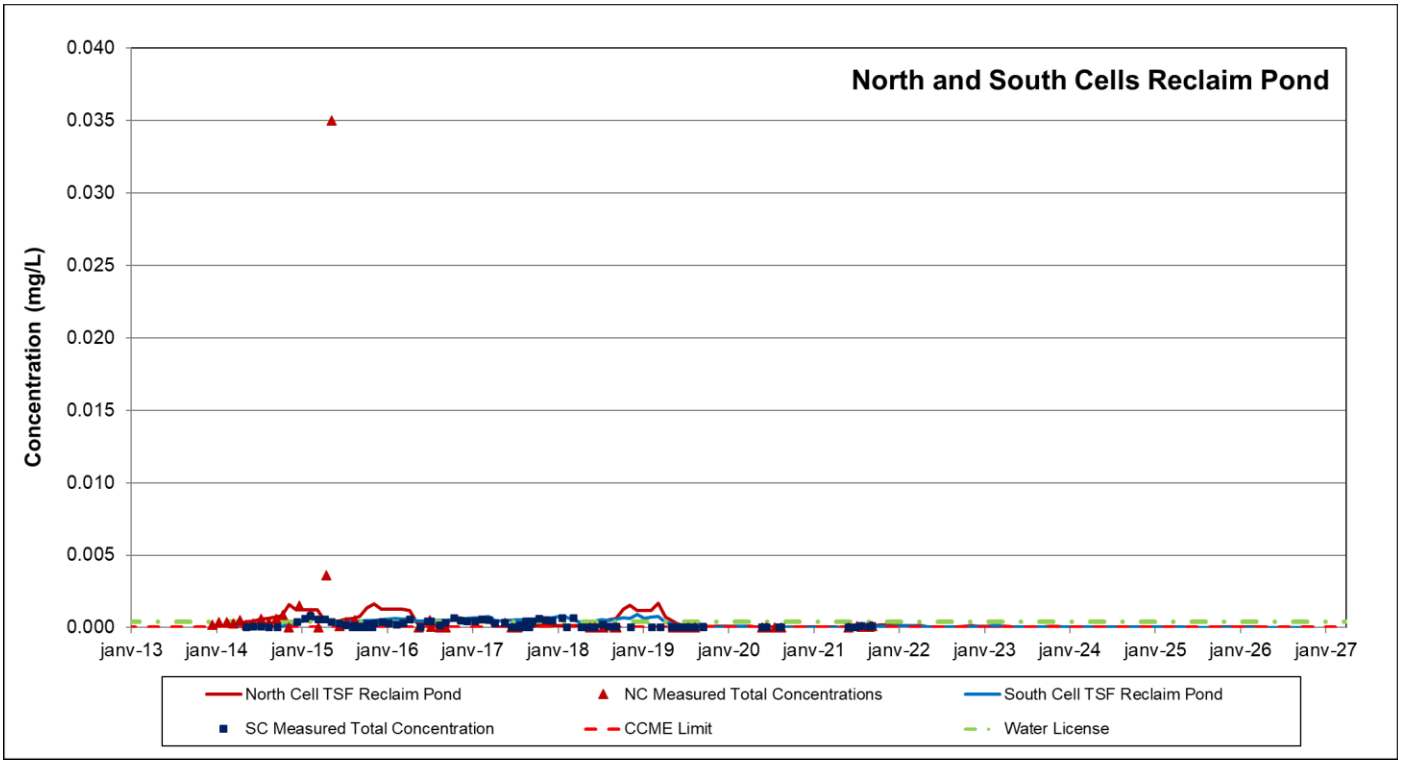


Figure 4-8: Total Mercury Forecasted Concentration



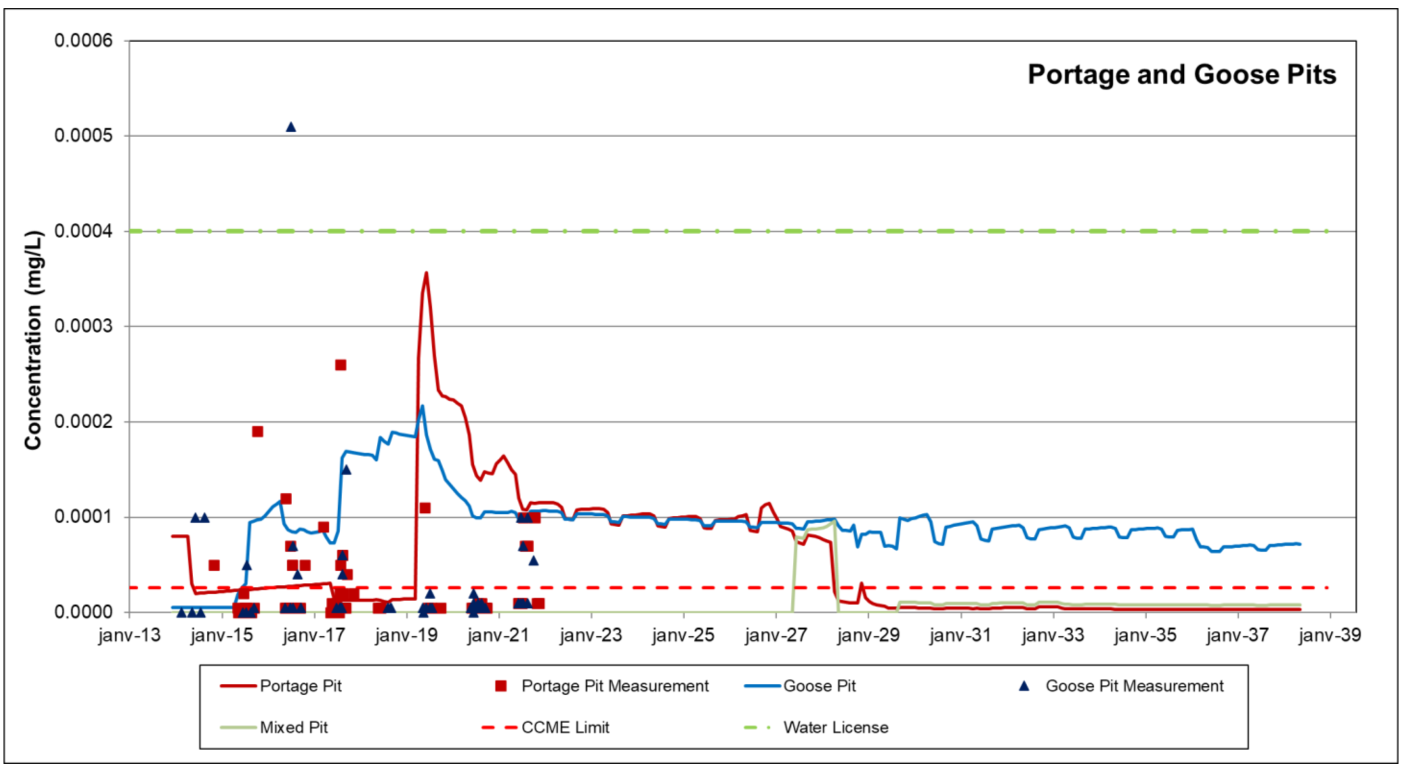
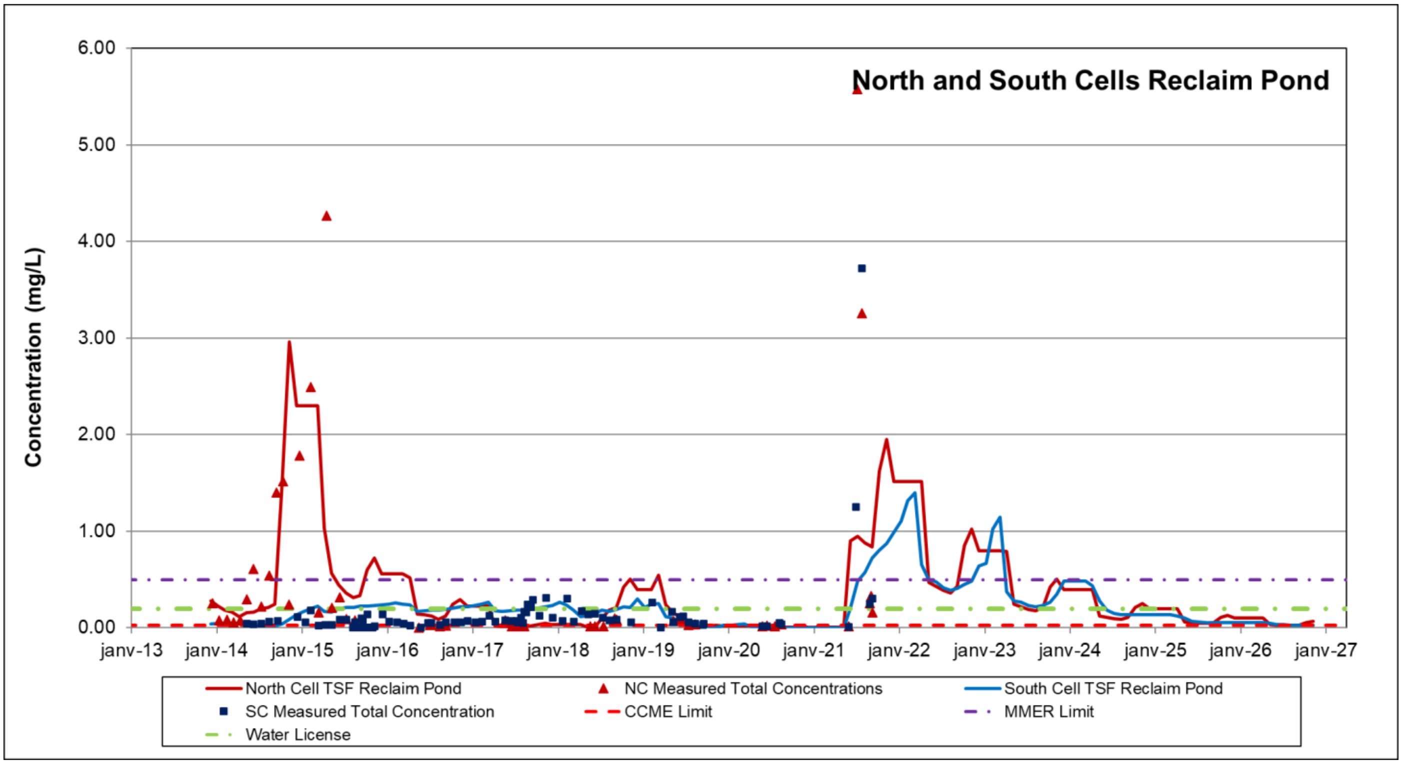


Figure 4-9: Total Nickel Forecasted Concentration



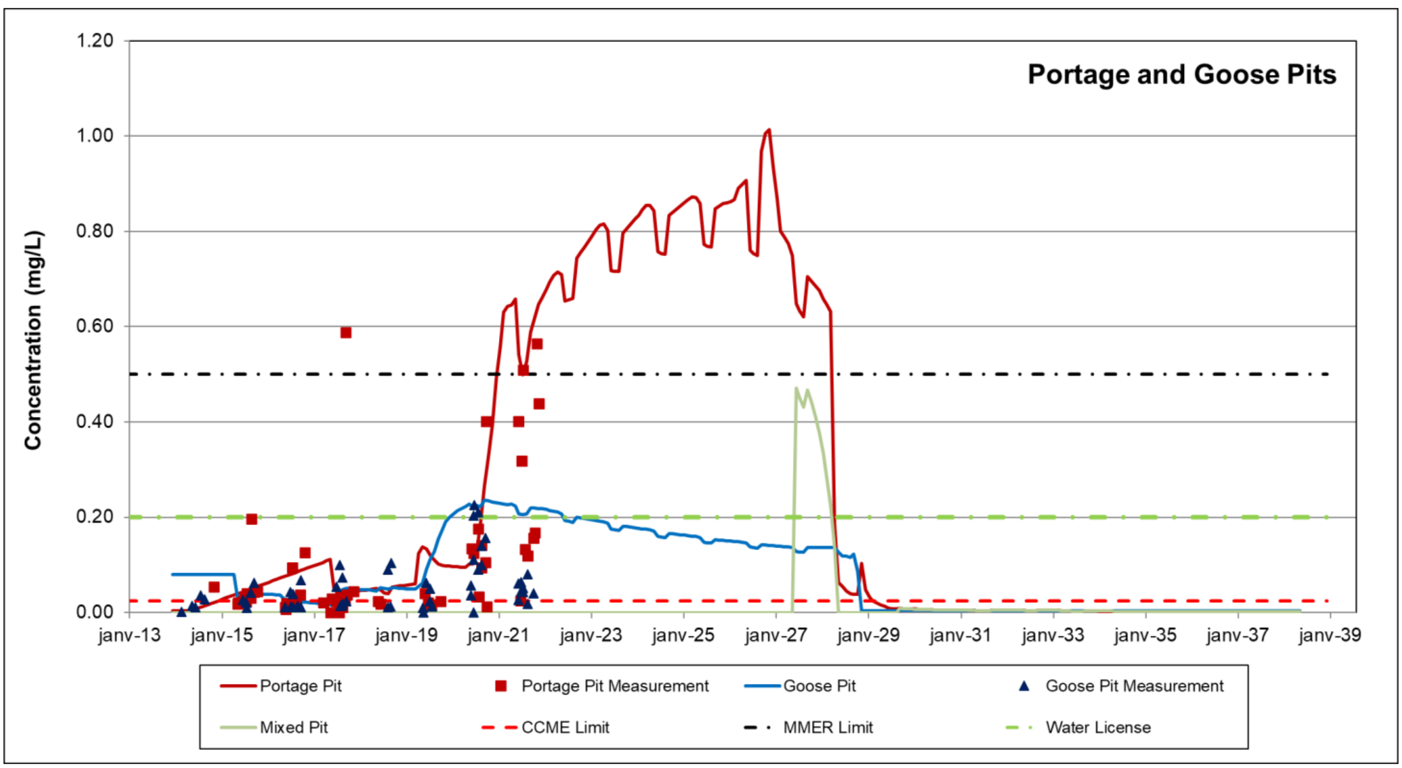
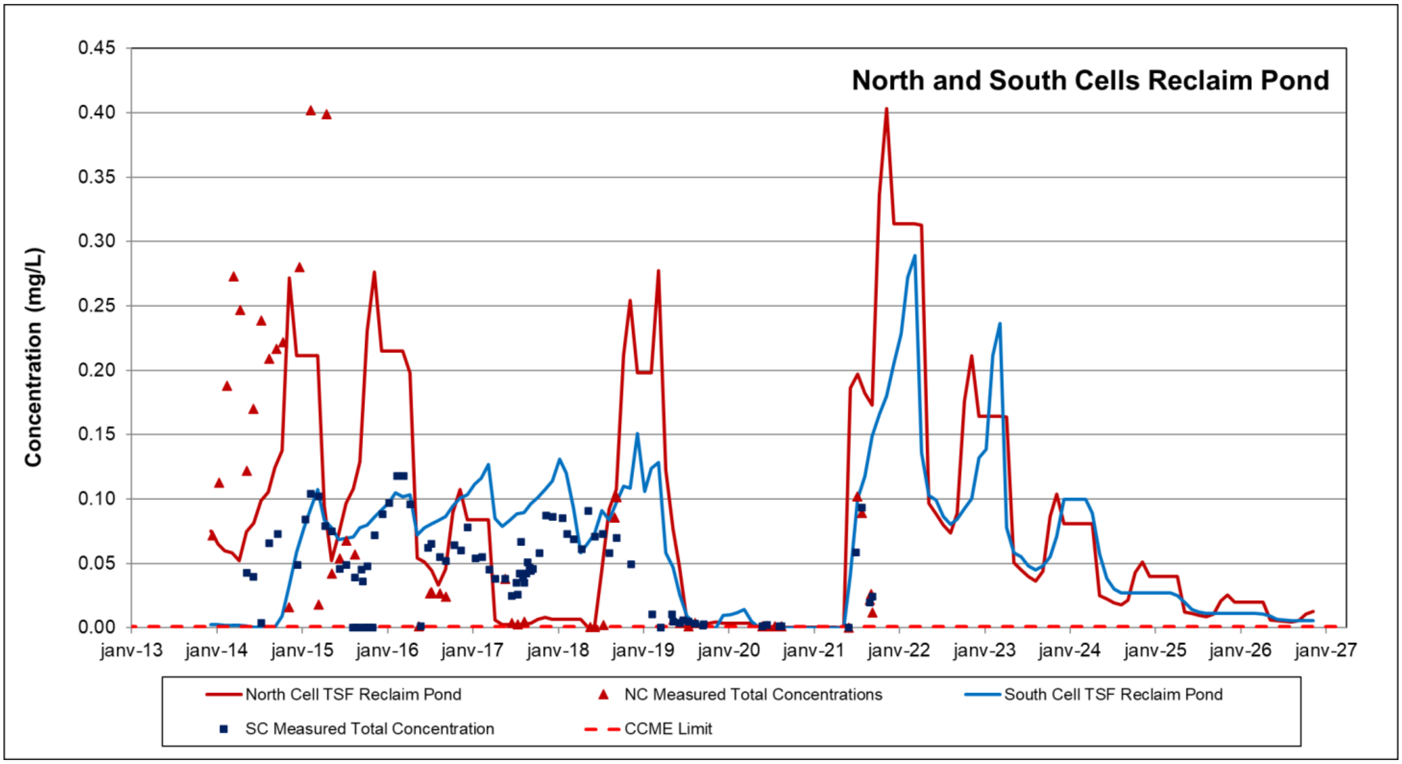


Figure 4-10: Total Selenium Forecasted Concentration



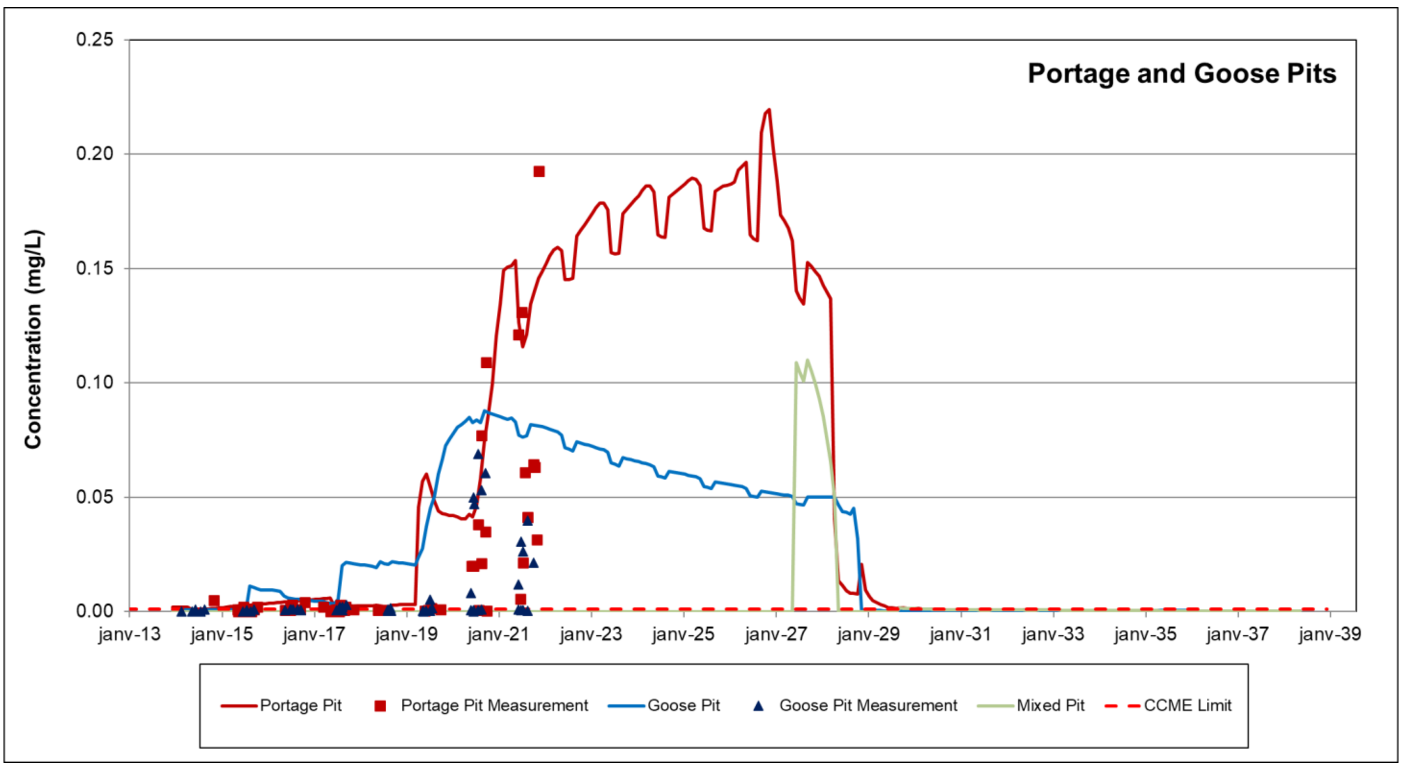
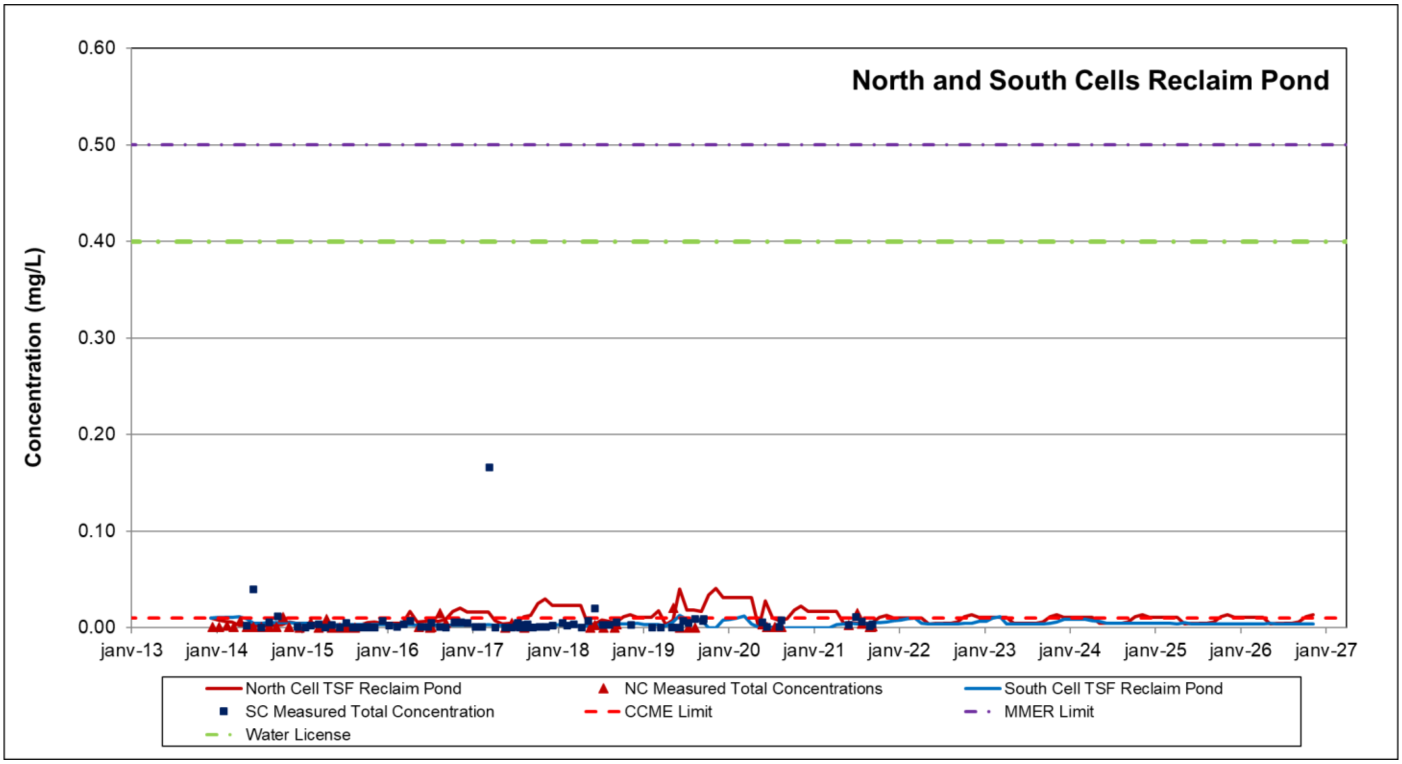


Figure 4-11: Total Zinc Forecasted Concentration



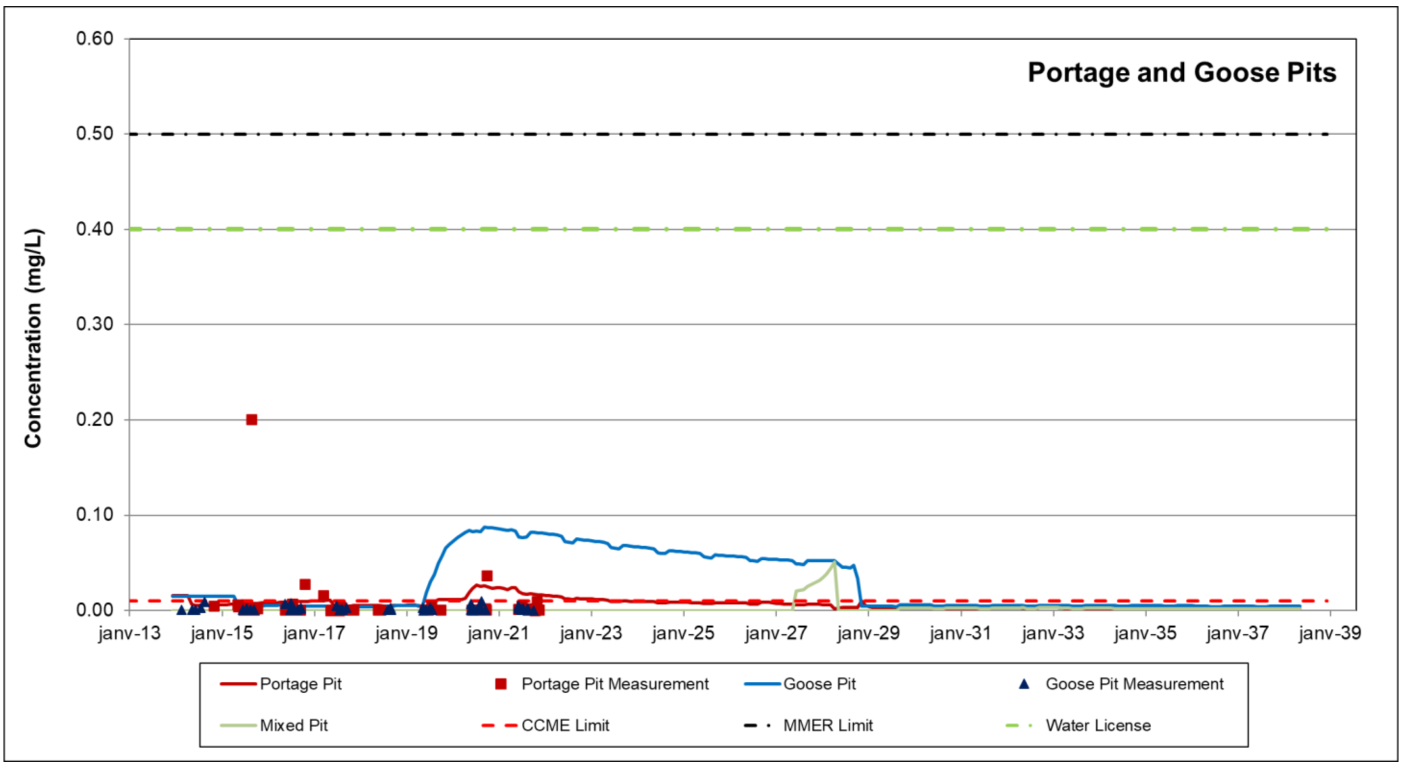
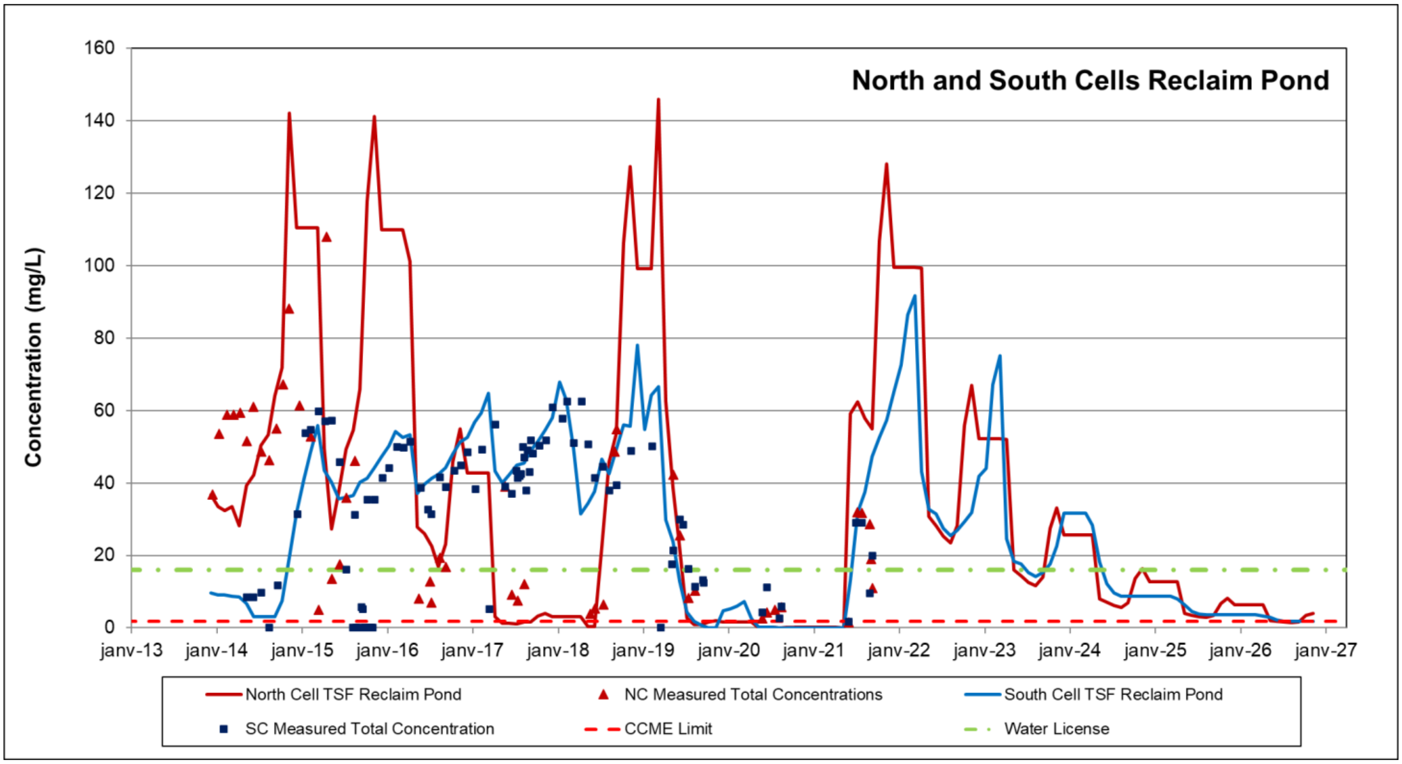


Figure 4-12: Total Ammonia Forecasted Concentration



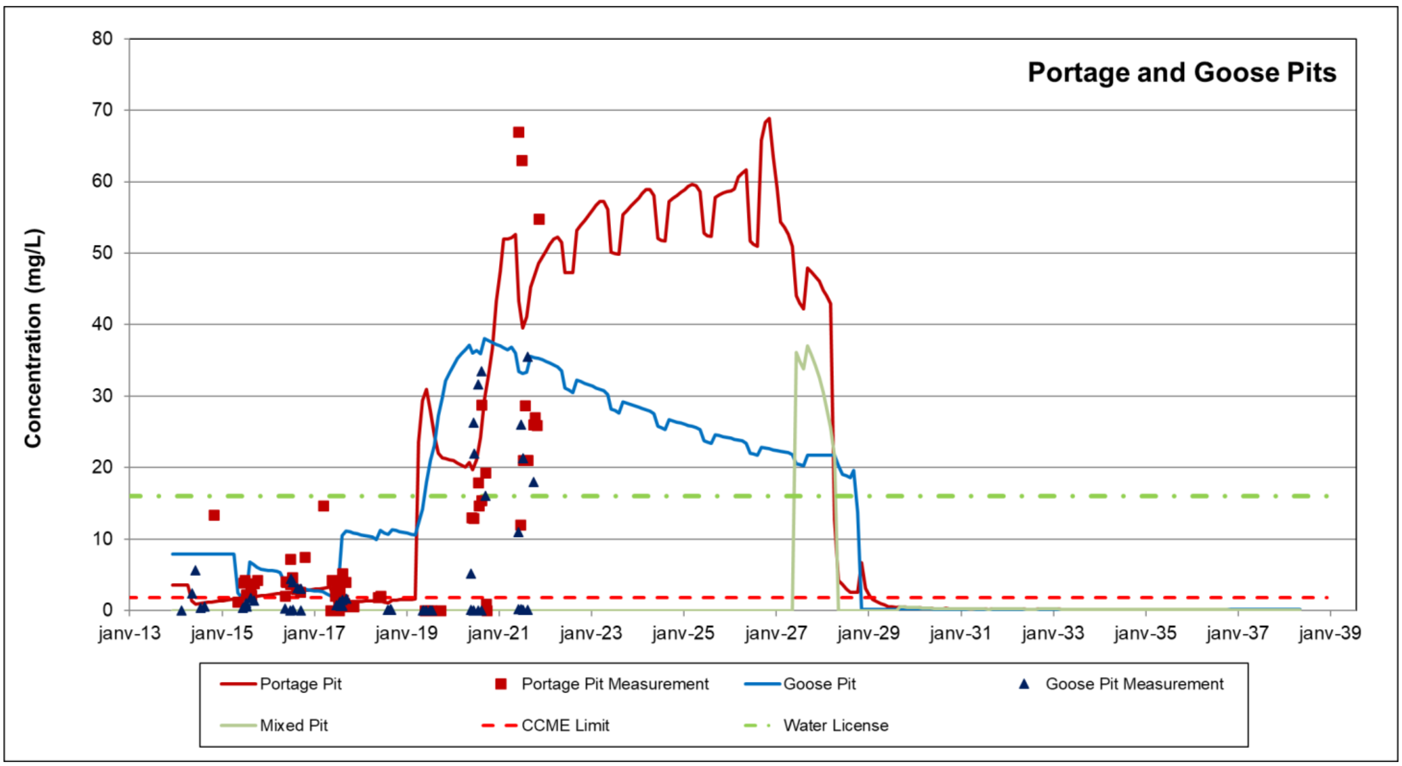
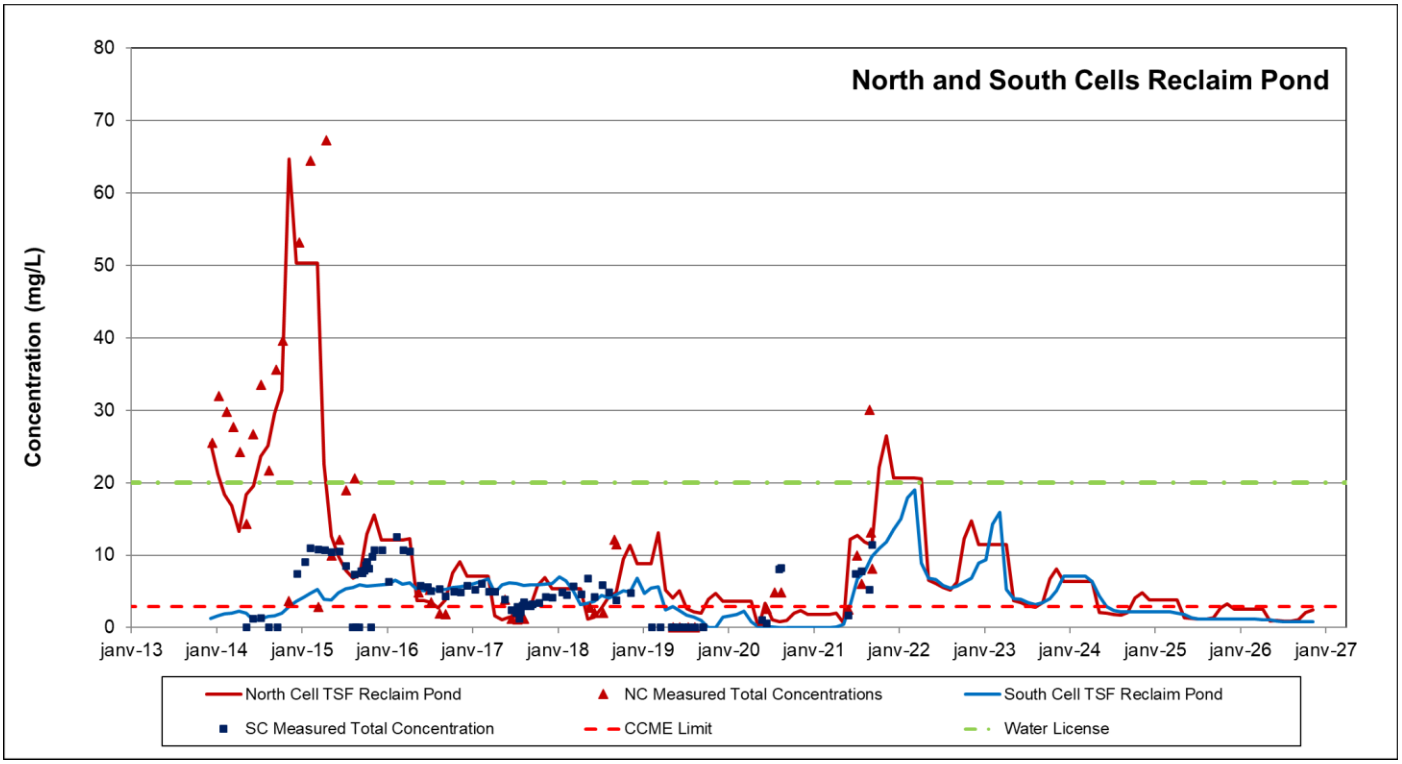


Figure 4-13: Nitrate Forecasted Concentration



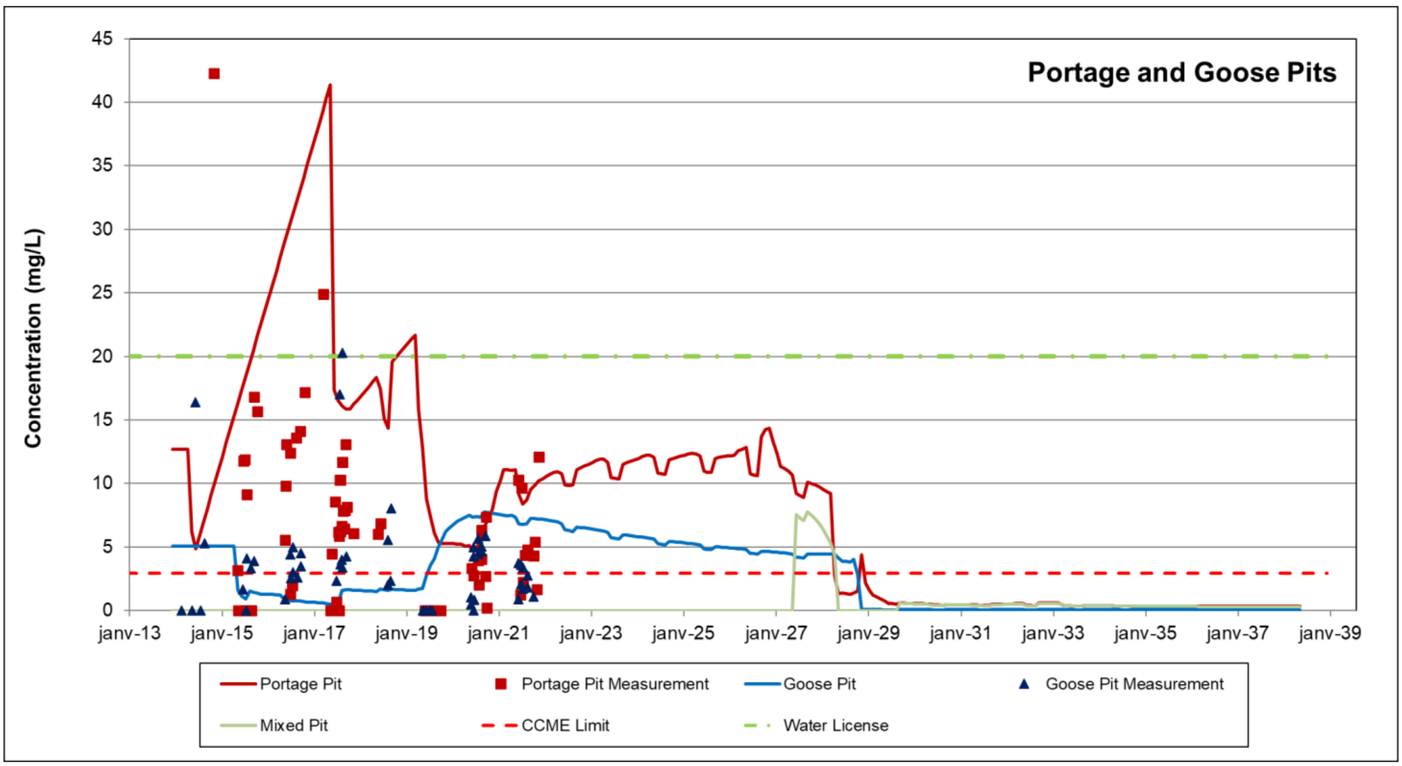
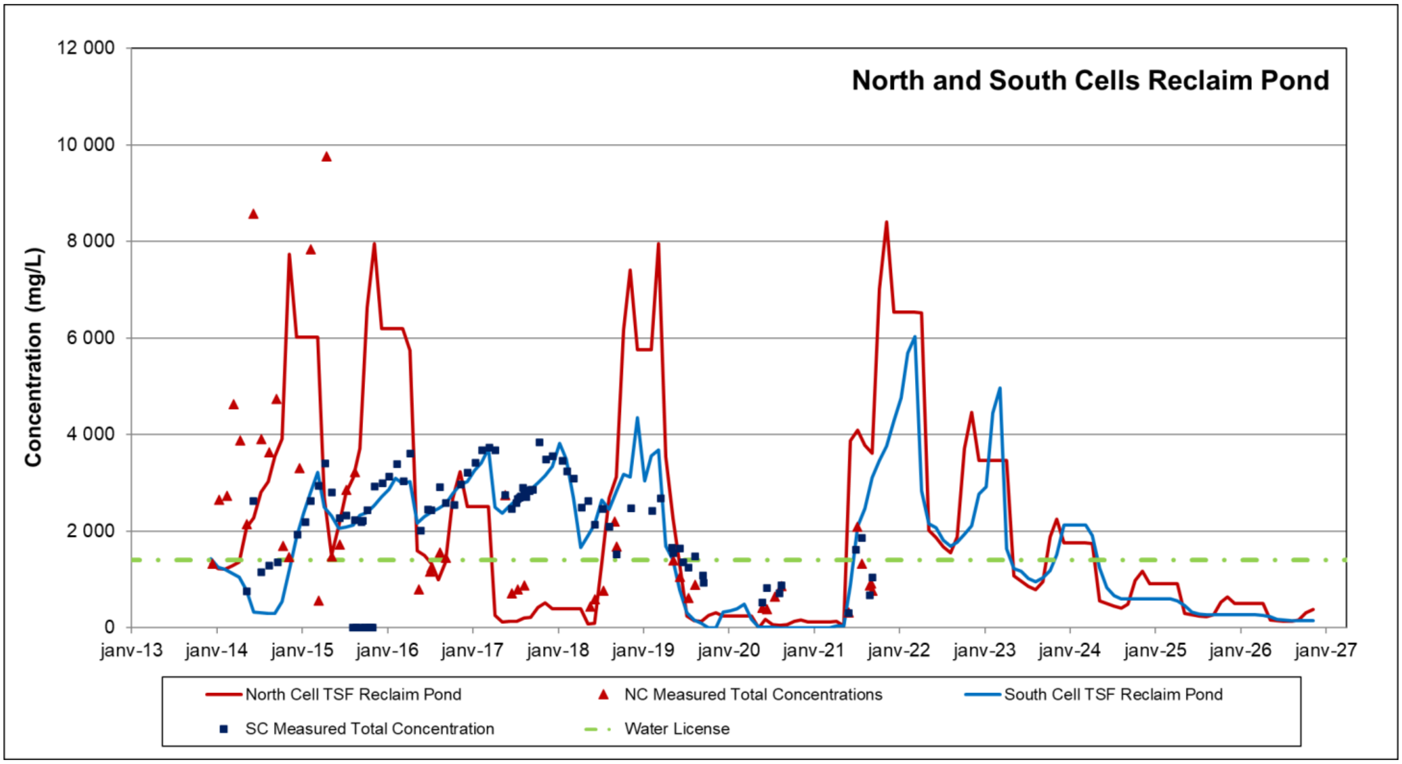


Figure 4-14: Total Dissolved Solids Forecasted Concentration



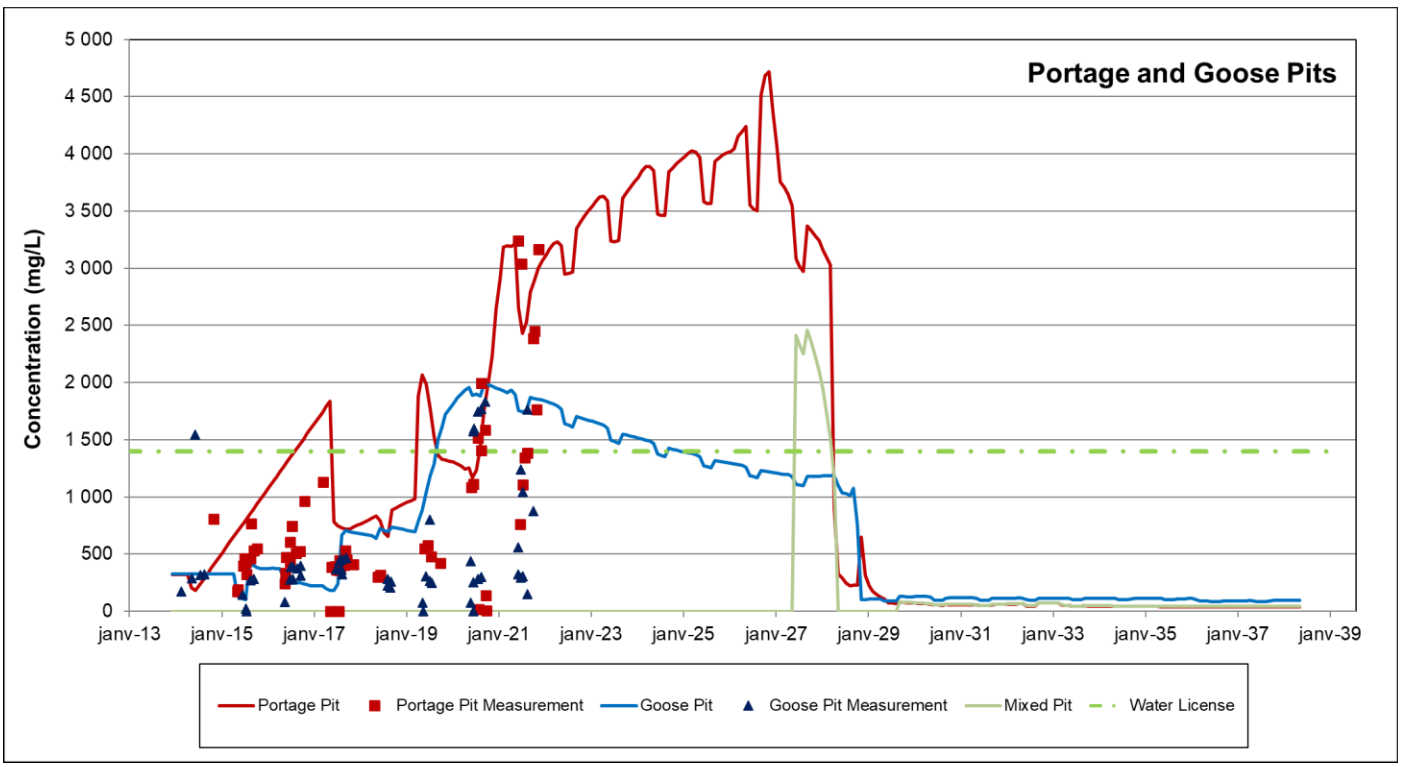
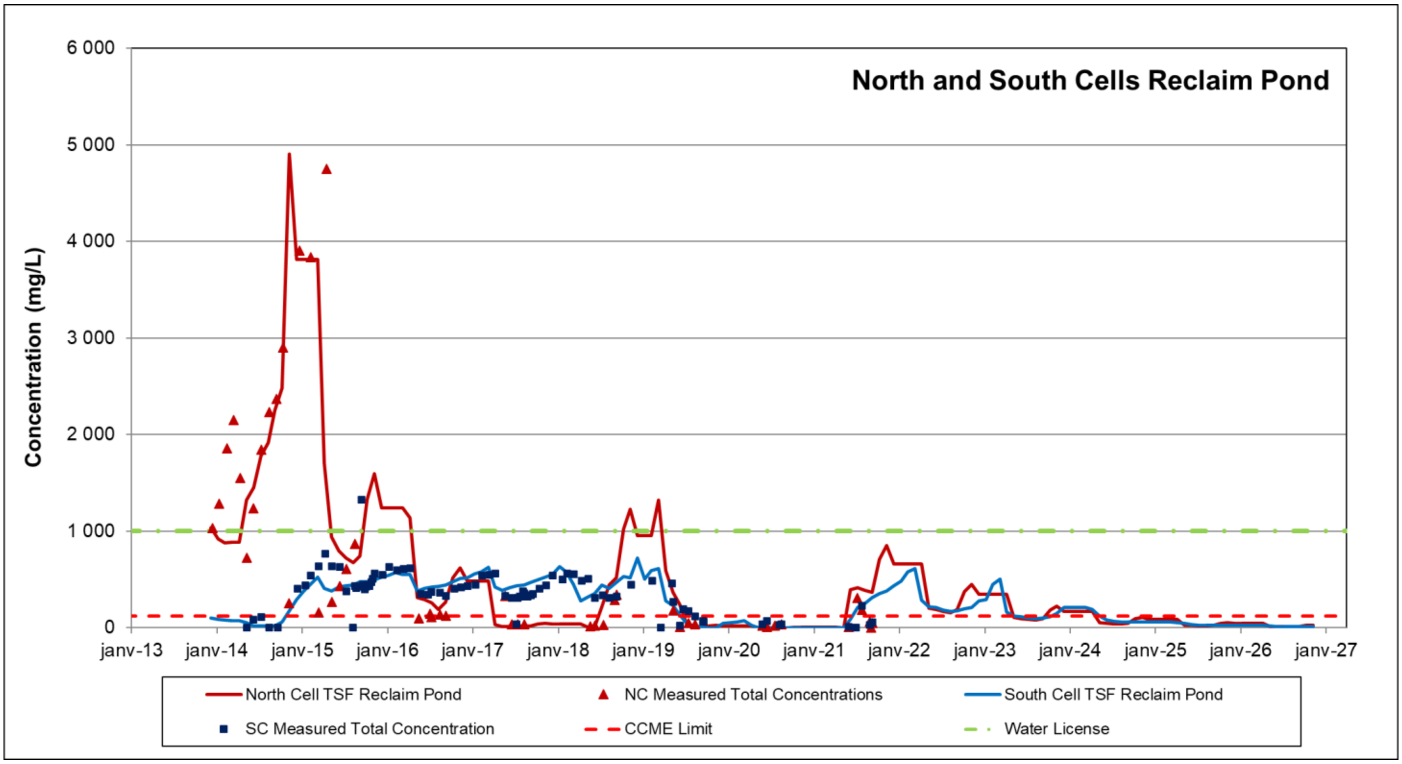


Figure 4-15: Chloride Forecasted Concentration



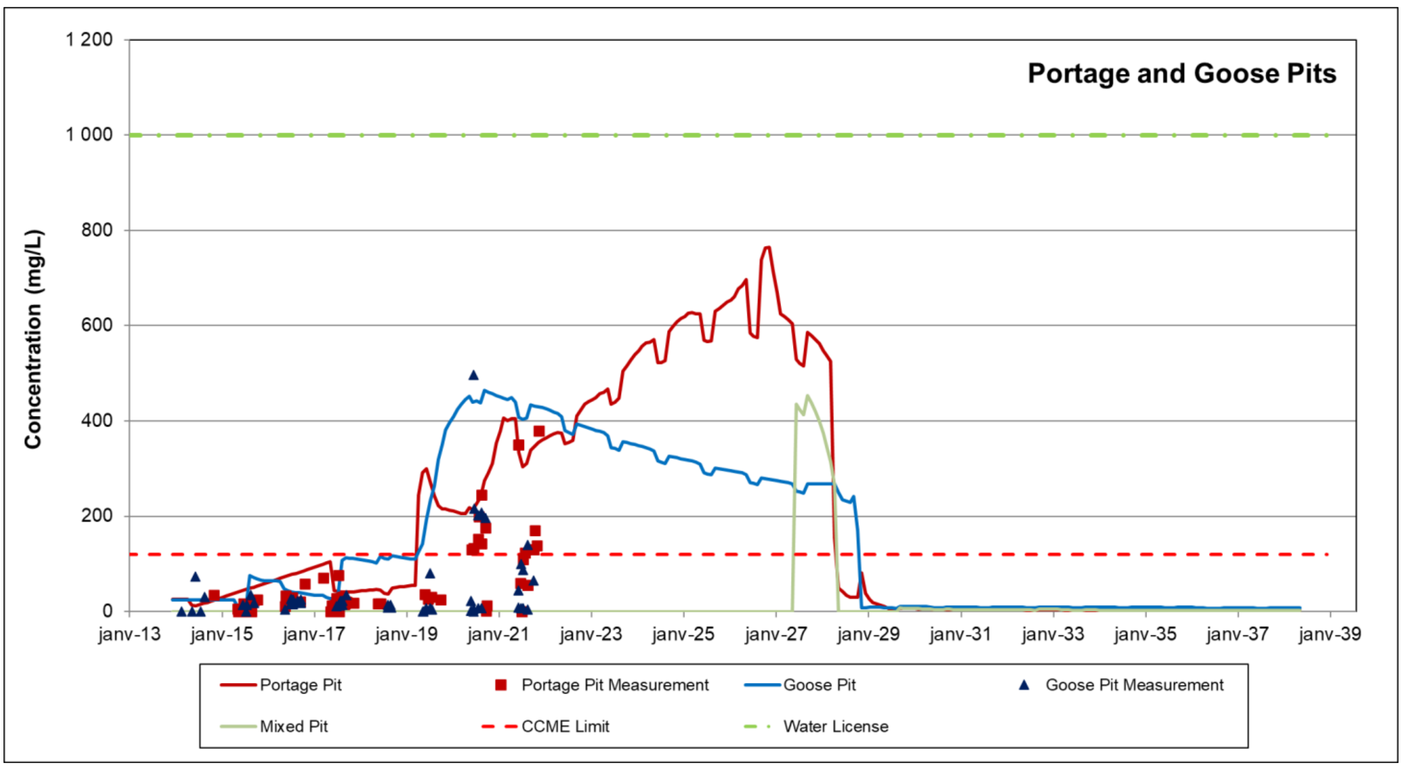
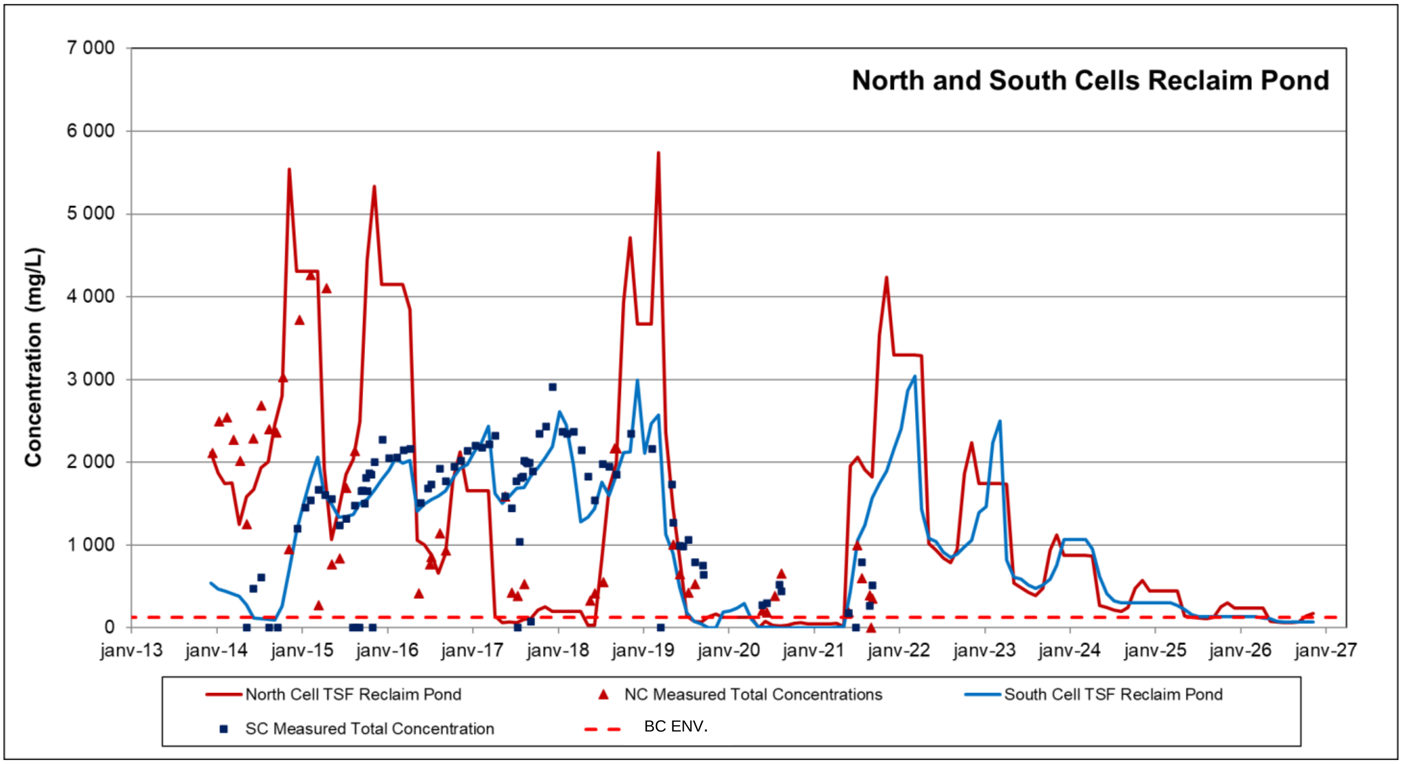


Figure 4-16: Sulphate Forecasted Concentration



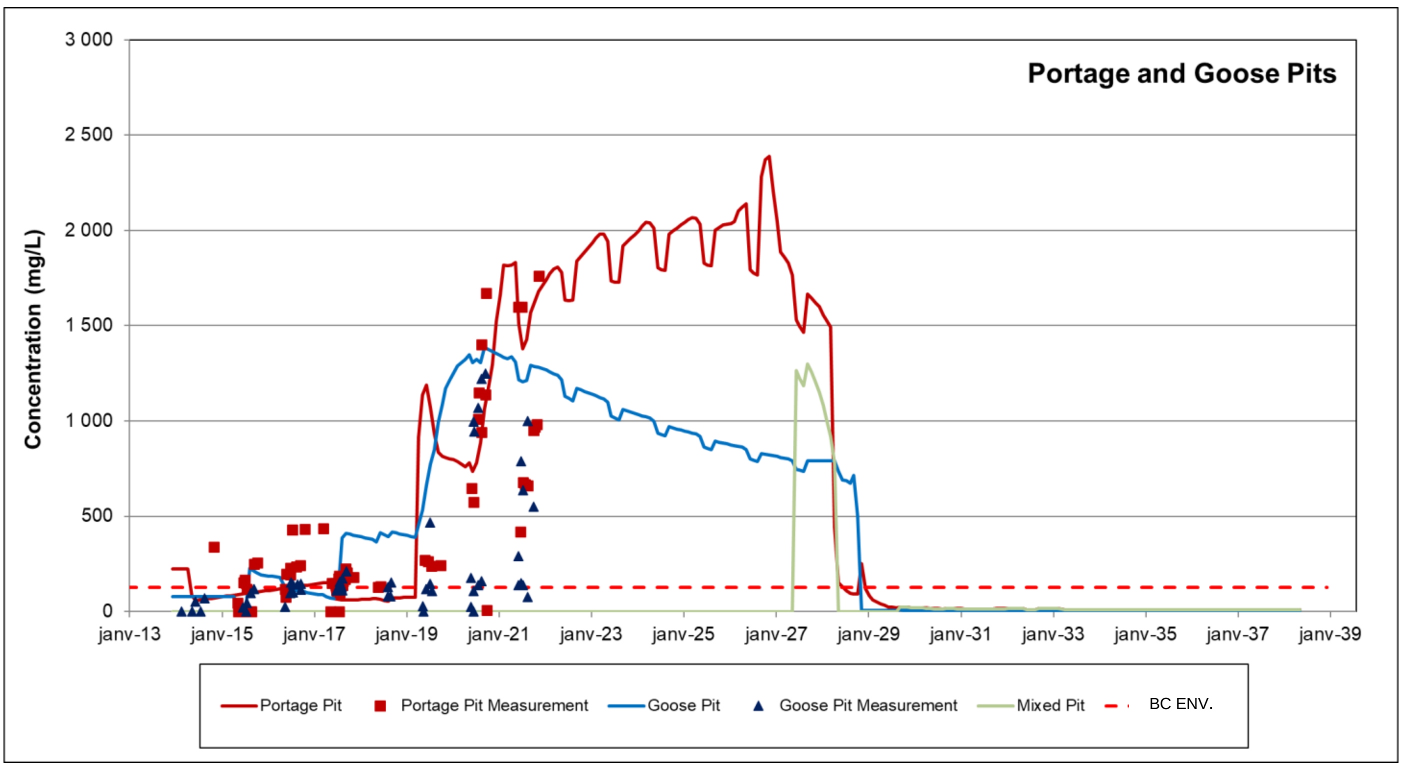
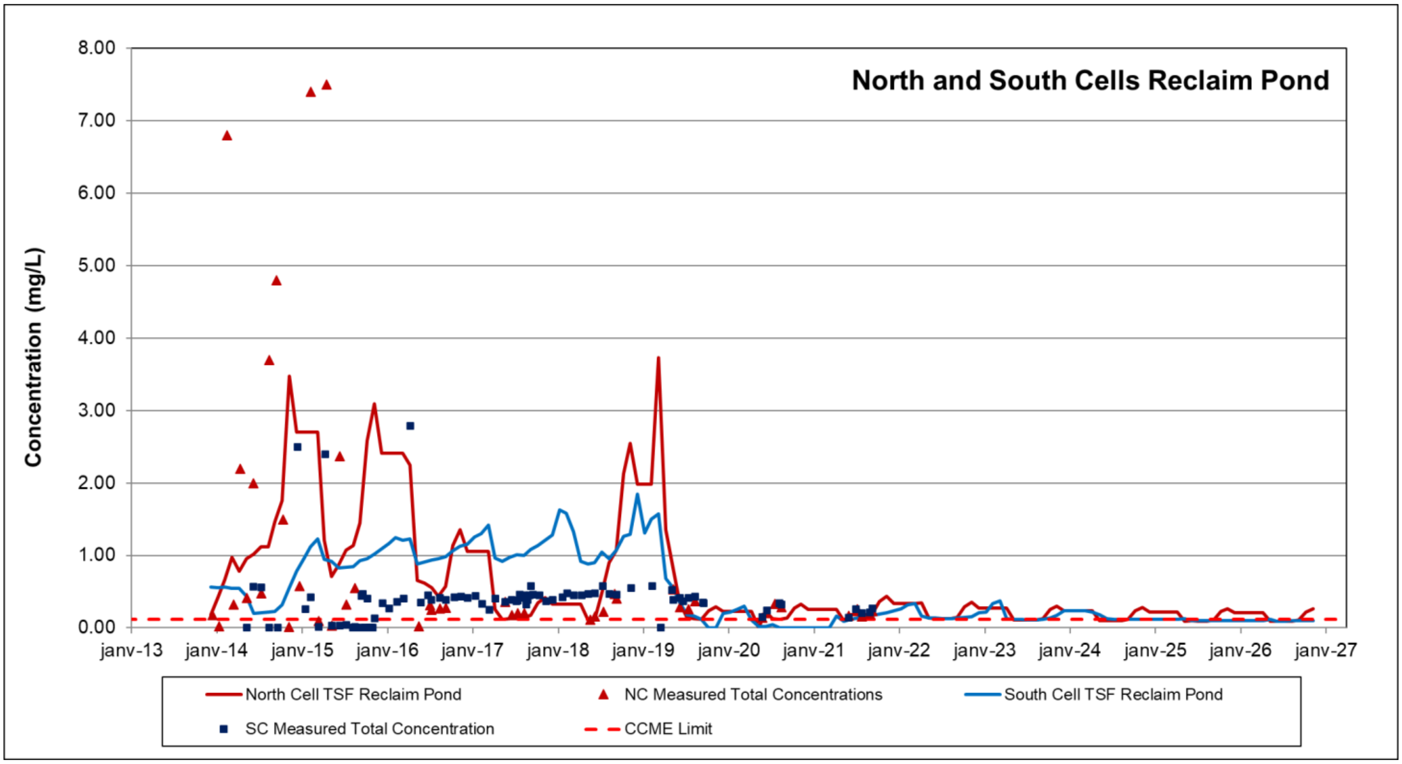


Figure 4-17: Fluoride Forecasted Concentration



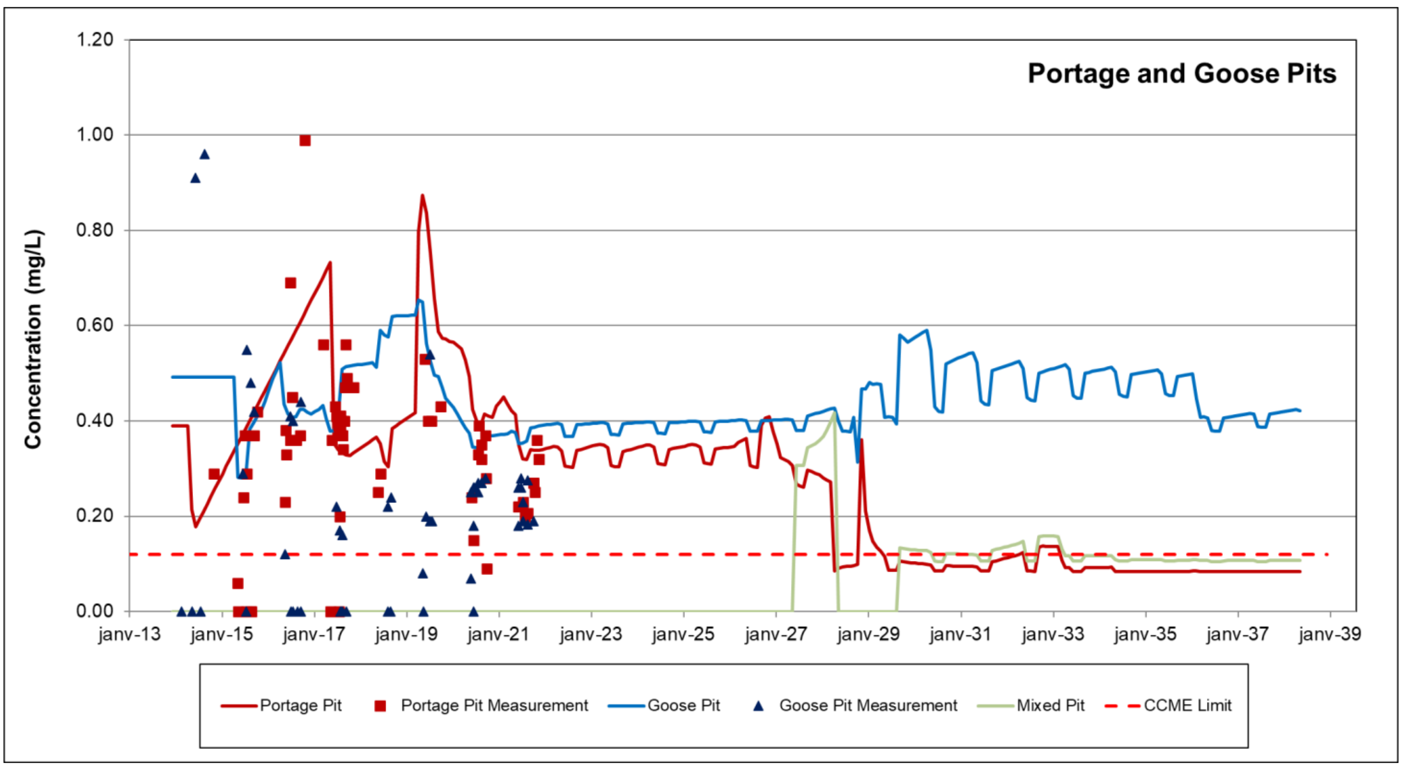


Figure 4-18: Comparison of Forecasted Chloride Concentration in Portage and Goose Pits

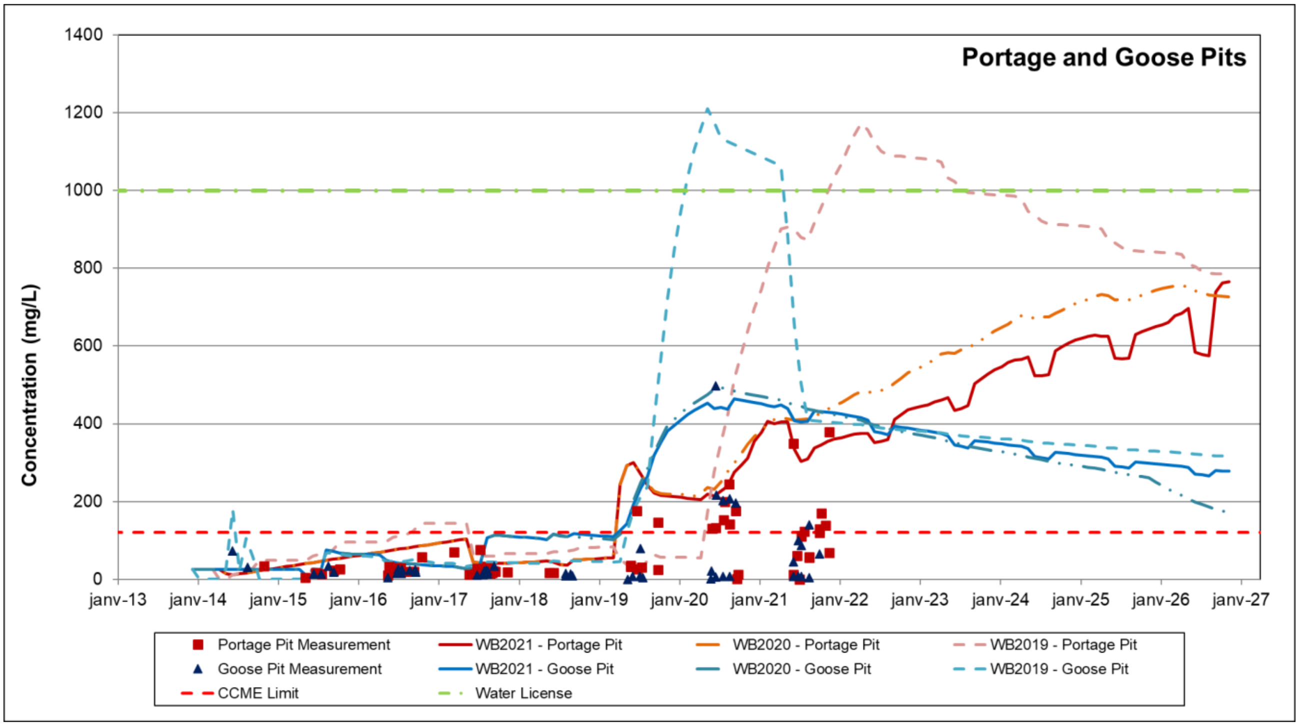
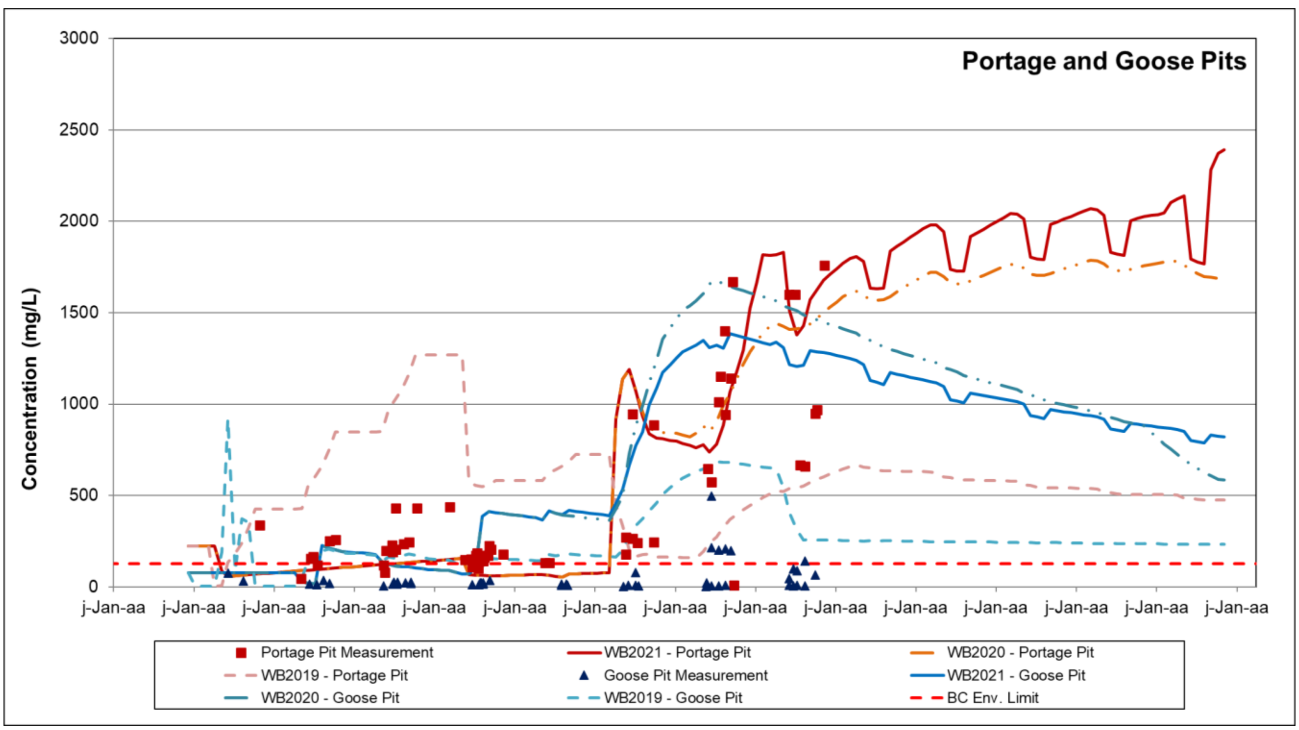


Figure 4-19: Comparison of Forecasted Sulphate Concentration in Portage and Goose Pits



4.3 Water Treatment Requirements

Based on the results of the water quality forecast mass balance presented in Section 4.2, following the end of in-pit tailings deposition, the reclaim water will need to be treated and discharged to Third Portage Lake to be in-line with the ICRP updated in 2019. Assuming a treated effluent discharge criteria similar to the current Water Licence discharge limits at ST-9, treatment may be required for the following parameters:

- Total metals, such as arsenic, copper, nickel and iron.
- Total ammonia
- Total Dissolved Solid (TDS); and,
- Total Suspended Solids (TSS).

The water treatment plant will be designed to treat the specific parameters of concern and could consist of one or a combination of the following treatment approaches:

- If high metal concentrations persist, such as copper, nickel and iron, they can be removed through the following process:
  - Hydroxide precipitation: caustic soda (NaOH) or lime can be added to the effluent to increase the pH to 9, causing the formation of metal hydroxide precipitates, which settle out. The different treatment options that may be considered to implement the precipitation of heavy metals are listed below:
    - A water treatment plant (WTP) will need to be installed close to Portage Pit, and it will be designed for metal precipitation with the addition of lime or caustic dosing system. The water from Portage Pit can be pumped to the WTP for treatment, with the treated water discharged to TPL via a diffuser.
    - Treatment in-situ at Portage Pit (i.e., batch lime treatment).
    - pH adjustment of the treated water will be required prior to its release.
    - TSS removal will be an important part of the treatment system. It is expected that a fraction of the metal present in the water column is as a particulate.
    - If required, additional pre-treatment steps can be added, depending on the actual water quality to be treated, such as an oxidation step to help oxidize any metal complexes, or post-treatment such as media filter for final polishing.
  - Organosulfide precipitation: organosulfide product can precipitate heavy metal into sulfides solids and with the aid of a typical coagulation/flocculation process, these precipitates can settle out from the water. It is to be noted that this process may be combined with caustic/lime precipitation.
  - Ion exchange: the heavy metal contaminants in form of cations can also be removed by ion exchange resin (IX). Prior to IX process, raw water needs to be filtered to remove suspended solids which may cause resin fouling.
  - Membrane separation: heavy metals can be removed by membrane techniques including nanofiltration and reserve osmosis. Prior to the membrane process, raw water needs to present very low suspended solids and turbidity and thus multimedia filtration or microfiltration is required.
- If arsenic concentrations are an issue, one of the most efficient techniques to reduce their concentration is by coagulation-clarification/filtration process in order to co-precipitate it using an iron-based coagulant, such as ferric sulphate, to form a ferric-arsenate precipitate.

- For total dissolved salts, such as chloride and sulphate, membrane separation such as nanofiltration or reverse osmosis can be applied.
- If high total ammonia is present in the Reclaim Water, more active treatment solutions could be implemented, such as:
  - Biological treatment (i.e., nitrification);
  - Ion exchange removal using zeolite;
  - Precipitation of the ammonia using ettringite precipitation; or,
  - pH adjustment of the treated water, near neutral pH, to ensure that most of the ammonia present is as ammonium (NH_4^+) instead of un-ionized ammonia (NH_3).
- Sludge generated from the treatment process could be thickened and/or dewatered and stored in the North Cell or South Cell tailings storage facilities and capped with NPAG rockfill at closure.

A high-level closure water treatment strategy for the Meadowbank site was developed with the objectives to identify conceptual treatment options to meet possible closure discharge criteria, identify activities required for the development and implementation of the closure water treatment system and establish a preliminary schedule to develop and implement the closure water treatment system. The results of this study were presented in the technical note “Meadowbank Closure Water Treatment Strategy”, document 679254-7000-4KER-0001 (SNC Lavalin 2021b).

5.0 Vault Water Quality Forecasting

5.1 Review of Water Quality Data

5.1.1 Review of Water Quality Discharged to Environment

A compilation of actual measured water quality data from the Vault Area sampled in 2021 was performed. The Vault Area includes Vault Pit, Vault Attenuation Pond, Vault Waste Rock Storage Facility, Phaser Pits (Phaser Pit and BB Phaser Pit), Phaser Attenuation Pond, Discharge to Wally Lake and Exposure Area in Wally Lake. The average and maximum for each parameter monitored for the Meadowbank Water Quality Forecast Model is presented in Table 5-1. Total metals were used in this analysis. For measured values that were below the detection limit, a value equal to half of the detection limit was considered in the analysis.

The yellow cells represent the concentrations that are higher than CCME guidelines for Protection of Aquatic Life, which are used for comparison purpose only. The water discharged to Wally Lake is governed by the Water Licence and the MDMER requirements. Any parameters measured at the discharge to Wally Lake (ST-10) that have concentrations above the Water Licence discharge criteria would be highlighted in red, which is not the case based on the samples taken in 2021.

In 2021, no water was discharged to Wally Lake. All of the water was contained within the Vault Attenuation Pond and surrounding pits. No sample collected was above Water Licence criteria. Furthermore, the concentrations of metals and chloride in the water sampled in the Vault Pit, the Vault Attenuation Pond, the Vault Waste Rock Storage Facility (WRSF), the Phaser Pits and the Phaser Attenuation Pond are relatively low compared to the Water Licence requirements.

Some elements were above CCME limits in the water sampled in the Vault Pit, the Vault Attenuation Pond, the Vault Waste Rock Storage Facility, the Phaser Pits and the Phaser Attenuation Pond. More precisely the average value of the following elements was above CCME limits:

> total aluminum : average value in the Vault Pit is slightly higher than CCME limit;

> total copper: average value higher than CCME limit in Vault WRSF, Phaser Pits and Phaser Attenuation Pond;

> total iron: average value higher than CCME limit in Vault Pit;

In 2021, ammonia nitrogen in Vault Pit and Phaser Pit were below CCME limit, as well as nitrate concentrations.

5.1.2 Ammonia Loading to Environment

In 2021, no water was discharged to Wally Lake. Thus, for 2021, there is no ammonia loading discharged to the environment.

Table 5-1: Average and Maximum Concentrations Measured in the Vault Area for 2021

Parameters	Units	Vault Pit (ST-26)		Vault Attenuation Pond (ST-25)		Vault Waste Rock Storage Facility (ST-24)		Phaser Pits (ST-41/42)		Phaser Attenuation Pond (ST-43)		Discharge to Wally Lake (ST-10)	CCME Guidelines	Water License Vault, Max. Avg Conc.
		Avg 2021	Max. 2021	Avg 2021	Max. 2021	Avg 2021	Max. 2021	Avg 2021	Max. 2021	Avg 2021	Max. 2021	No Discharge in 2021		Part F of License
Alkalinity	mg $CaCO_3$/L	40	50	23	27	37	61	31	45	19	26		n/a	n/a
Hardness	mg $CaCO_3$/L	89	117	61	74	95	159	63	86	52	63		n/a	n/a
Total Aluminum (Al)	mg/L	0.21	0.86	0.04	0.06	0.08	0.20	0.09	0.19	0.04	0.06		0.1	15
Dissolved Aluminum (Al)	mg/L	0.016	0.022	0	0	0	0	0.023	0.037	0	0		0.1	1
Total Silver (Ag)	mg/L	0	0	0.000020	0.000020	0.000020	0.000020	0	0	0.000011	0.000016		0.00025	n/a
Total Arsenic (As)	mg/L	0.003	0.004	0.001	0.001	0.002	0.002	0.001	0.002	0.001	0.001		0.005	0.1
Total Barium (Ba)	mg/L	0.0120	0.0162	0.0130	0.0163	0.0110	0.0166	0.0117	0.0176	0.0086	0.0112		n/a	n/a
Total Cadmium (Cd)	mg/L	0.00002	0.00002	0.00001	0.00002	0.00003	0.000044	0.00002	0.00003	0.00004	0.00007		0.00004	0.002
Total Chromium (Cr)	mg/L	0.0010	0.0017	0.0010	0.0010	0.0010	0.0010	0.0002	0.0004	0.0001	0.0001		0.001	n/a
Total Copper (Cu)	mg/L	0.001	0.002	0.002	0.002	0.003	0.005	0.003	0.004	0.003	0.003		0.002	0.1
Total Iron (Fe)	mg/L	0.4	17	0.1	0.1	0.1	0.3	0.2	0.3	0.2	0.3		0.3	n/a
Total Manganese (Mn)	mg/L	0.0180	0.0395	0.0097	0.0190	0.0230	0.0418	0.0201	0.0317	0.0177	0.0344		n/a	n/a
Total Mercury (Hg)	mg/L	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010		0.000026	0.004
Total Molybdenum (Mo)	mg/L	0.019	0.024	0.005	0.006	0.013	0.021	0.006	0.009	0.001	0.002		0.073	n/a
Total Nickel (Ni)	mg/L	0.002	0.004	0.002	0.002	0.003	0.004	0.003	0.004	0.004	0.006		0.025	0.2
Total Lead (Pb)	mg/L	0.0008	0.0026	0.0002	0.0002	0.0002	0.0003	0.0005	0.0009	0.0002	0.0003		0.0010	0.1
Total Selenium (Se)	mg/L	0.0003	0.0003	0.0001	0.0001	0.0002	0.0003	0.0002	0.0002	0.0001	0.0001		0.0010	n/a
Total Thallium (Ti)	mg/L	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0008	n/a
Total Zinc	mg/L	0.0047	0.0050	0.0050	0.0050	0.0050	0.0050	0.0021	0.0035	0.0020	0.0033		0.03	0.2
Ammonia (unionized NH3)	mg N/L	-	-	-	-	-	-	-	-	-	-		0.016	n/a
Total Ammonia Nitrogen (NH_3-NH_4)	mg N/L	0.07	0.10	0.30	0.75	0.44	2.20	0.05	0.05	0.25	0.73		183	20
Chloride	mg/L	6	8	5	11	4	6	2	3	3	3		120	500
Fluoride (F)	mg/L	0.00	0.00	0.10	0.10	0.10	0.11	0.00	0.00	0.10	0.10		0.12	n/a
Nitrate (NO_3)	mg N/L	140	182	0.59	0.88	104	166	0.96	128	0.35	0.60		2.94	50
Total Cyanide (CNt)	mg/L	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005		0.005	n/a
Sulphate (SO4)	mg SO_4/L	45	60	38	48	54	99	32	42	32	42		128 (1)	n/a
Total dissolved solids	mg/L	127	180	89	105	133	230	86	110	75	100		n/a	1400

Notes:

(red) Measured concentration higher than Water License requirement,

(yellow) Measured concentration higher than CCME guidelines. Value highlighted for comparison purpose only.

1) Threshold value for sulfate based on BC Environment guideline for the protection of aquatic life for very soft water (0-30 mg/L) (April 2013).

5.2 Vault Water Quality Forecast

5.2.1 Model Description

A mass balance model was developed to assess the water quality forecast trends in the Vault Attenuation Pond (ATP) for ammonia and nitrate. The starting date for the model was set for June 2014. The end date of the model was set when the dike at Vault will be breached in 2030/2031.

5.2.2 Assumptions

The assumptions used in the development of the mass balance model for the Vault ATP of Meadowbank were the following:

i. The Vault ATP is a combination of Pond A, B, C and D. The model does not take into consideration the transfers between Pond A, B, C and D, only transfers inside and outside the Vault Attenuation Pond.

ii. The model considers water transfers to the Vault ATP from Vault Pit, Phaser Pit, Phaser Lake and runoff from its catchment area.

iii. The model does not take into consideration the variations of volume due to ice (no free volume, as well as ice ratio and water/ice entrapment).

iv. The water quality from Vault Pit, Phaser Pit and Phaser Lake is based on the yearly average measured values and are assumed to be constant over a given year for ammonia and nitrate.

v. The water mass balance is performed around the Vault ATP. The volume of water transferred out of the Vault ATP to the water treatment plant or Wally Lake is assumed to be completely discharged to the lake.

vi. It is assumed that the primary source of ammonia and nitrate loading is from Vault Pit and Phaser Pit. All other inflow contaminant concentrations (Phaser Lake, runoffs, etc.) are assumed to have a negligible impact on ammonia and nitrate loadings.

vii. For simplification of the model, ponds and pits are assumed to be completely mixed systems.

viii. For simplification of the model, the parameters are assumed to be inert: they do not degrade or react with other elements in the system.

ix. For this analysis, it is assumed that the water treatment plant between the Attenuation Pond and Wally Lake does not reduce the concentration of ammonia and nitrate.

5.2.3 Input to Model

The mass balance model is based on the assumptions above and on the following water quality sampled at:

- Vault Pit (ST-23 / ST-26);
- Phaser Pit (ST-41 / ST-42);
- Phaser Lake (ST-43);
- Vault Attenuation Pond (ST-25);
- Final Effluent to Wally Lake (ST-10).

The initial concentration of parameters in the Vault Attenuation Pond is assumed to be the average of 2014-2015 measurements (i.e., ammonia = 2.2 mg N/L; nitrate = 4.7 mg N/L).

Table 5-2 presents the average concentrations used to estimate the loadings from Vault Pit and Phaser Pit to Vault ATP. Transfer of runoff from the Vault Pit area occurred from 2014 to 2018, while runoff transfer from Phaser Pit occurred from 2017 to 2018. As of 2019, surface runoff was allowed to accumulate in the pits.

Table 5-2: Average Concentrations to Estimate Loading to Vault ATP

Year	General Basis	Vault Pit		Phaser Pit	
		Ammonia (mg N/L)	Nitrate (mg N/L)	Ammonia (mg N/L)	Nitrate (mg N/L)
2014	Avg. 2014-15 measured data	18	46	--	--
2015		18	46	--	--
2016	Average 2016 measured data	5	20	--	--
2017	Average 2017 measured data	3.8	4.2	4	30 (note: value adjusted so forecasted value in Vault ATP is similar to monitored data)
2018	Average 2018 measured data	3.1	4.9	7.96	15.8
2019	Average 2019 measured data	1.2	7.5	1.75	3.3
2020	Average 2020 measured data	0.15	2.2	0.06	1.5
2021	Average 2021 measured data	0.07	1.5	0.05	1.1

Measurements taken at the final effluent to Wally Lake and in the Vault Attenuation Pond (ATP) were used to compare the forecasted results.

5.2.4 Forecasting Results

5.2.4.1 Ammonia

Ammonia concentrations sampled in Vault Pit and Phaser Pit are elevated because of the use of ammonium-nitrate explosives during the mining process. Figure 5-1 presents the concentrations monitored in Vault Pit, Phaser Pit, Vault Attenuation Pond and at the final effluent to Wally Lake.

Two monitored values in Vault Pit exceeded the Water Licence limit in 2014 and 2015 and all values measured from 2016 to 2021 were below the limit. For Phaser Pit, there was one value higher than the limit in 2018. All of the samples taken in the Vault Attenuation Pond (ATP) and the final effluent towards Wally Lake were below the Water Licence discharge requirements.

When forecasting the concentration of the water in the Vault ATP until closure, the forecasted concentration of ammonia reached a peak of about 3.7 mg-N/L in 2015 and then decreased to a concentration below 1 mg-N/L before closure.

Agnico is required to meet the criteria for discharge to Wally Lake as stated in the Type A Water Licence which is set at 20 mg N/L. No exceedance occurred and is foreseen with the current Vault water quality forecasting model.

Figure 5-2 shows the forecasted concentration, the monthly loadings and the cumulative loadings of ammonia in the treated effluent discharged to Wally Lake.

Figure 5-1: Measured Ammonia Concentration in Vault Area

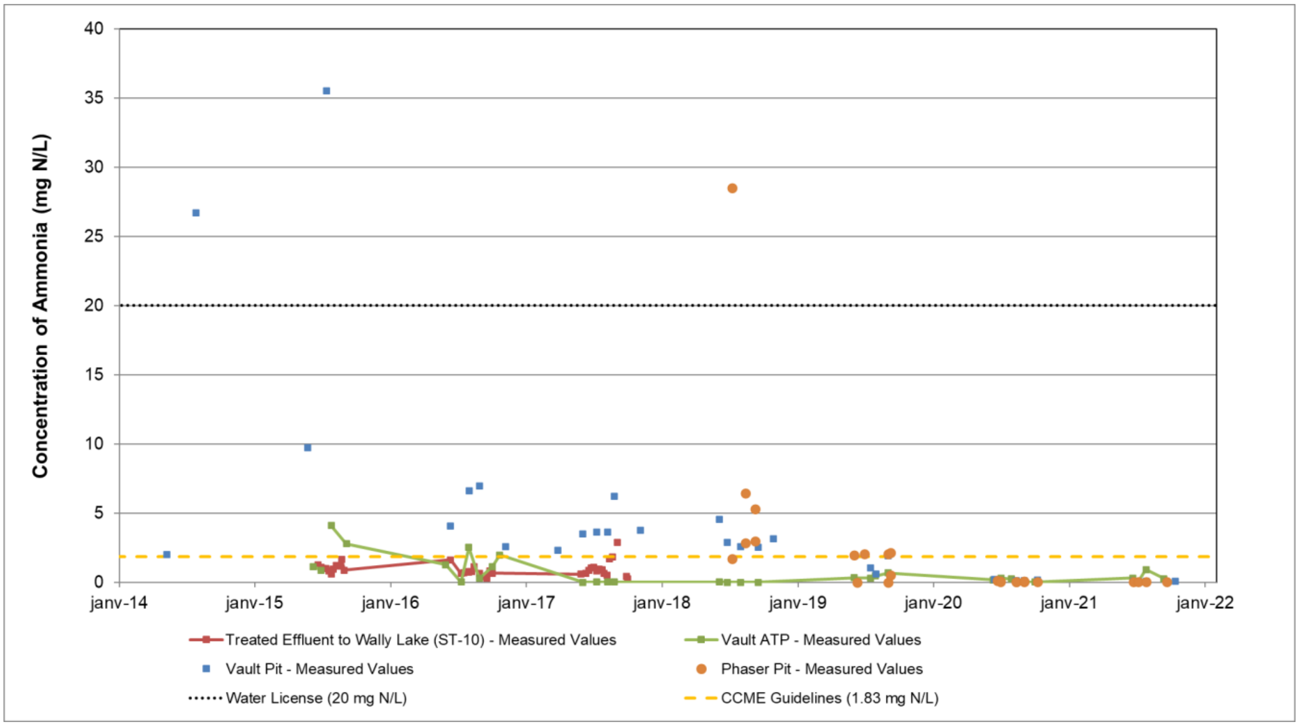
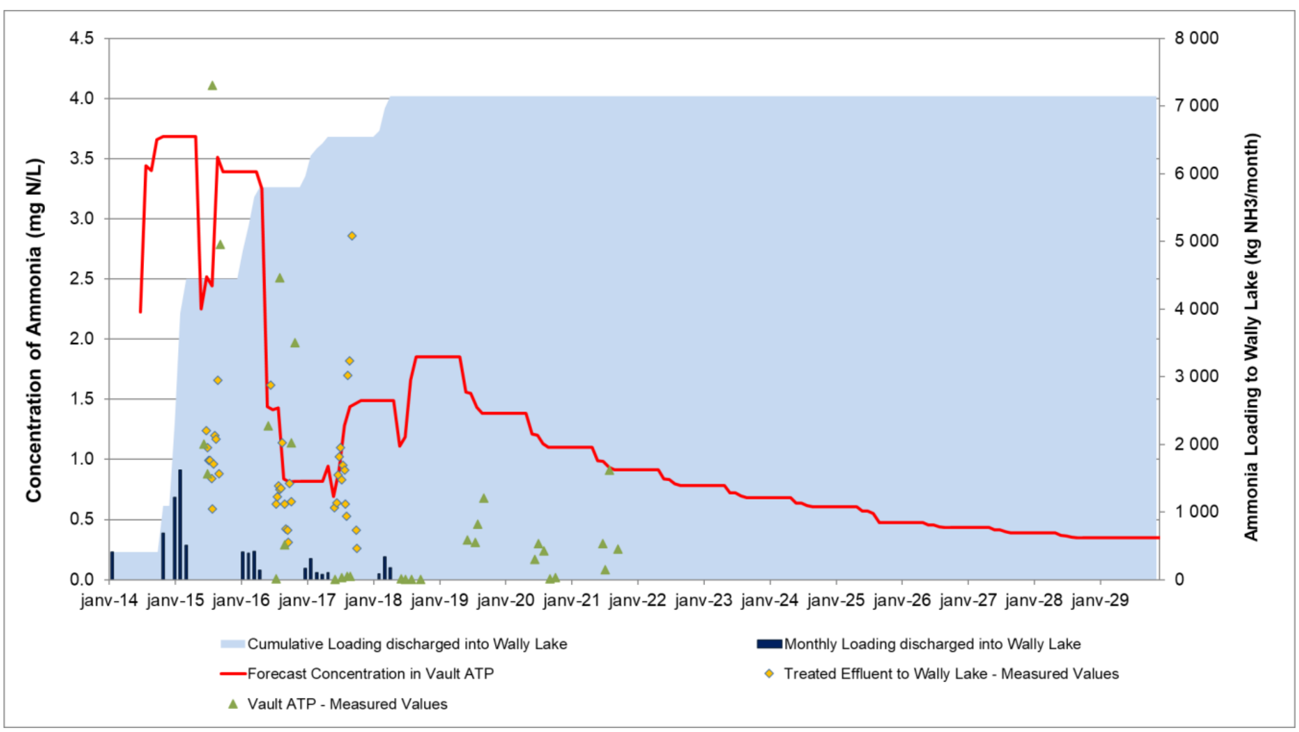


Figure 5-2: Forecasted Ammonia Concentration in Vault Area



5.2.4.2 Nitrate

Nitrate concentrations sampled in the Vault Pit and Phaser Pit are also found to be elevated because of the use of ammonium-nitrate explosives for the pit development. Figure 5-3 presents the concentrations monitored in Vault Pit, Phaser Pit, Vault Attenuation Pond and at the final effluent towards Wally Lake.

Measured nitrate concentrations in the Vault Pit and Phaser Pit were below the Water Licence limit of 50 mg N/L. The monitored values in Vault Attenuation Pond and in the final effluent are also well below the Water Licence requirements.

The forecasted trend of nitrate concentration in the effluent discharged to Wally Lake until closure is similar to ammonia. There is a rise of nitrate to about 8.6 mg-N/L in 2015 and then decreased to a concentration of approximately 1 mg-N/L before closure. Since the Water Licence discharge limit for nitrate is 50 mg N/L, no exceedance is foreseen.

Figure 5-3: Measured Nitrate Concentration in Vault Area

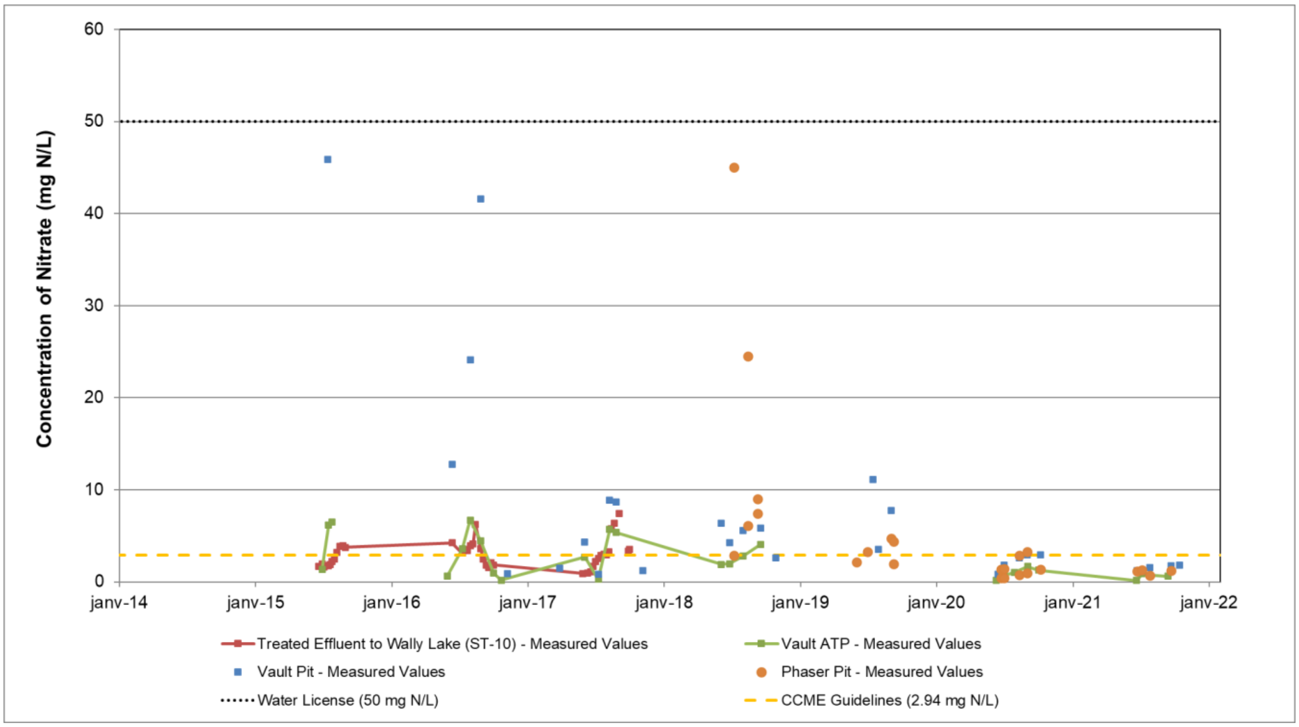
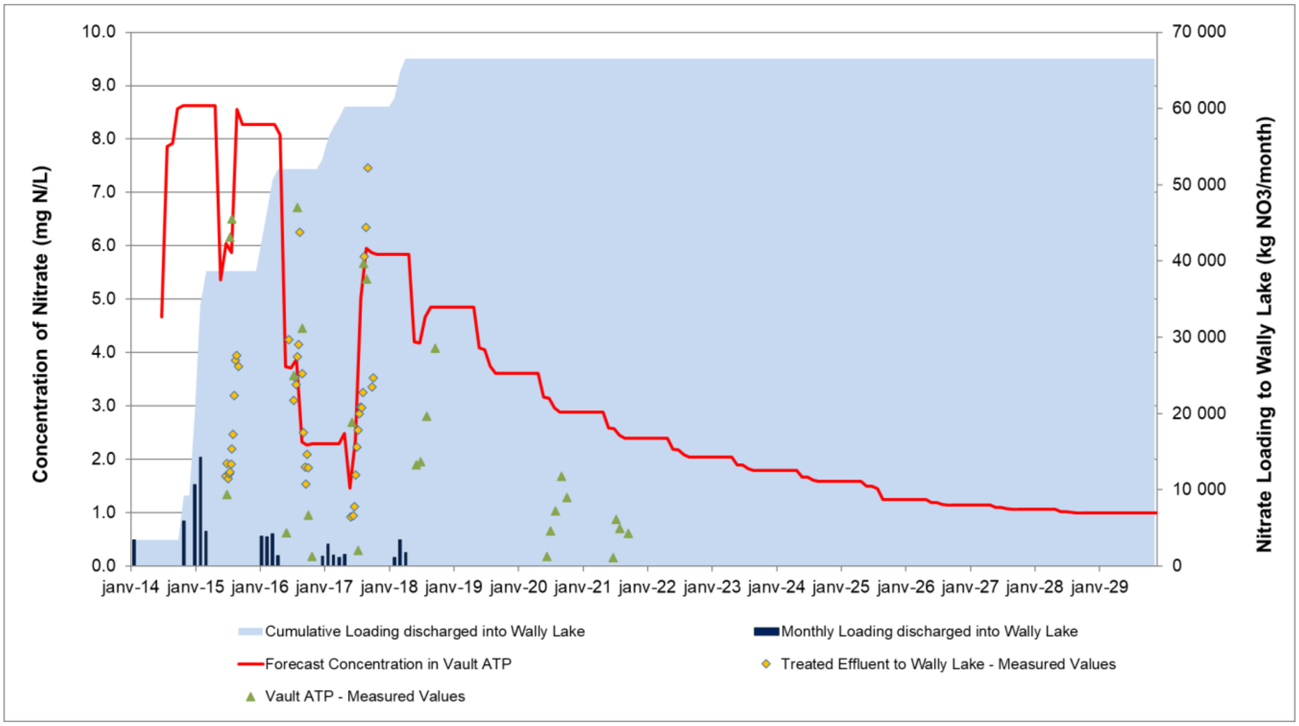


Figure 5-4 shows the forecasted concentration, the forecasted monthly loadings and the cumulative loadings of nitrate in the treated effluent discharged to Wally Lake.

Figure 5-4: Forecasted Nitrate Concentration in Vault Area



5.2.4.3 Final Remarks

In conclusion, the forecasted concentrations for ammonia and nitrate in the Vault ATP are expected to remain below the discharge requirements as defined in the Type A Water Licence. The primary source of ammonia and nitrate in the water comes from the use of ammonium-nitrate based explosive in the development of the Vault Pit and Phaser Pit. Note that the model results are quite conservative when compared to the monitored data since the end of mining operations at Vault and Phaser pits.

6.0 Conclusion

It is important to understand the limitations of the mass balance model and of this Technical Note. The limitations are presented in Section 3.3 and are briefly summarized below:

> In order to simplify the model, the mass balance model assumes the following:
  - Pond and pits are completely mixed systems;
  - No change in the water quality of the Mill Effluent;
  - A monthly time-step.

> The mass balance model is based on a set of water quality analysis results provided by Agnico:
  - Water quality data collected at the surface of the North and South Cell TSF Reclaim Pond;
  - Water quality data available for the Mill Effluent;
  - Water quality data of various inflows and outflows of the North and South Cell TSF Reclaim Ponds;
  - Water quality data collected in Goose and Portage Pits;
  - Water quality data collected from pit seepages.

6.1 Results Summary and Treatment

This year's water quality forecast model ends at the end of in-pit deposition projected for December 2026 and at the end of pit reflooding projected for June 2038 based on the WB 2021. At the end of in-pit deposition, Reclaim Water stored in Goose Pit and Portage Pit shall then be treated and discharged to Third Portage Lake during closure. For the purpose of this study, parameters of concern were identified using the current Water Licence limits. However, final site-specific treated effluent discharge limits for closure will be developed through review of the final closure plan by regulatory agencies.

Based on the results of the water quality forecast mass balance presented in Section 4.2, the following parameters of concerns were detected:

i. Total Arsenic
ii. Total Copper
iii. Total Nickel
iv. Total Iron
v. Total Dissolved Solids
vi. Total Ammonia

All of the parameters listed above were identified in last year's water quality forecast report. The increasing trend observed in Goose Pit and Portage Pit can be mainly attributed to the following:

> As of 2019, tailings are now being deposited in Goose Pit and Portage Pit. Reclaim water is allowed to accumulate in the pits and is pumped back to the mill for re-use.

> As of 2019, the main ore body processed at the Meadowbank site originates from the Whale Tail Pit ore body. The ore body from Whale Tail Pit has a different geochemical behavior than the ore extracted from Portage/Goose/Vault pits. This leads to higher forecasted concentration of certain elements at the end of in-pit deposition, such as arsenic.

> The water quality forecast model was also adjusted based on the mill effluent sampled during 2020 and 2021. The quality of the mill effluent varies from year to year. As of 2019, Whale Tail ore is being

processed and the mill effluent it produces has different geochemical characteristics when compared to the mill effluent quality produced when processing Portage/Vault Pit ore. For example, arsenic concentration is higher in the mill effluent when processing Whale Tail ore.

> Furthermore, additional loads from the pit seepages were considered in the mass balance model. The seepages provide additional loads for certain parameters, such as aluminum, iron, manganese, lead and fluoride.

Water treatment shall be undertaken at the end of in-pit tailings deposition. A potential treatment option for the removal of the metals in Reclaim Water prior to discharge is caustic or lime precipitation, while ammonia could be removed by ion exchange using a zeolite media. Coagulation with ferric sulphate could be used to co-precipitate the arsenic as a ferric arsenate precipitate. Additional treatment steps could be considered once the actual nature of the water to treat is known, such as the addition of an oxidation step to help oxidize metal complexes, or additional polishing steps, like filtration or membrane treatment.

Pit reflooding shall take place following the treatment of the Reclaim Water. The pits shall be reflooded with a combination of natural runoff and active transfer of water from Third Portage Lake. The forecasted water quality concentrations at the end of pit flooding are projected to be lower than the CCME limits. Note that the dikes will only be breached if the water quality within it meets the selected discharge closure criteria.

For the Vault area, in 2021, the entire area is undergoing natural reflooding. No discharge to Wally Lake was reported in 2021. All the water sampled in the area did not exceed any of the Water Licence discharge limits. For comparison purpose only, aluminum, iron and copper concentrations were slightly higher than CCME guidelines. Ammonia and nitrate are showing a decreasing trend as natural reflooding is progressing over time.

6.2 Recommendations

In order to improve the accuracy of the model so that it can better forecast the concentration of certain parameters in the Reclaim Pond or Portage and Goose Pits, the following studies, tests and monitoring are recommended:

1. Continue the current monthly monitoring program of all inflows and outflows of the North and South Cells TSF Pond for cyanide, a complete total and dissolved metal scan, ammonia, nitrate, fluoride, chloride, sulphates, TDS and TSS. This will provide an indication of the runoff quality that is accumulated in these ponds following the end of tailings deposition in these areas.
2. Considering that deposition of the tailings is now occurring in the pits, regularly monitor pit water quality (Portage and Goose), when the site can be safely accessed, and analyze for cyanide, total and dissolved metals, ammonia, nitrate, chloride, fluoride, sulphates, TDS and TSS. This information will be useful in developing and calibrating a water quality forecast model of the pit water quality based on loadings from the mill effluent, surface runoff and possible pit seepages. Consider measuring the conductivity of water in the pits at different depths to detect if there is any stratification occurring in the pit lakes.
3. Once Portage and Goose Pits are hydraulically connected, it is recommended to sample the water at different points in the pit area in order to evaluate the mixing efficiency over the entire area. The samples should be taken at different depths over the entire area of the flooded pits before and after the filling season.
4. Continue to sample and analyze, as per the Water Licence requirement, water from the Vault Pit, Vault Attenuation Pond, Phaser Pit and Phaser Attenuation Pond.
5. Perform a bench scale water treatment test to evaluate the contaminant removal efficiency using treatment approaches such as lime neutralization, coagulation/flocculation with aluminum sulphate or ferric sulphate, and coagulation/flocculation with proprietary coagulants designed for metal removal, as well as alternative treatment options.

7.0 References

Agnico (2022). Water Balance for 2021 Water Management Plan sent February 17, 2022 based on Meadowbank 2021 Waste Management Plan.

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APPENDIX D – 2021 FRESHET ACTION PLAN

MEADOWBANK COMPLEX

MEADOWBANK FRESHET ACTION PLAN

MARCH 2022

EXECUTIVE SUMMARY

The purpose of this Freshet Action Plan is to identify areas of concern around the Meadowbank mine site and the AWAR that need to be managed in an organized and timely manner during the annual freshet period to prevent adverse environmental and operational impacts. The Plan outlines specified actions that will be taken by Agnico to manage and mitigate areas where environmental incidents could occur, as well as addressing historical incidents, specifically seepage on the north-east side of the Portage Waste Rock Storage area, known as sampling location ST-16 (2013) and seepage from the mill (inside) containment structures through the Assay Road southwest of the mill (Mill Seepage - 2013). Any future incidents that have the potential to affect off site water or land will be added and would include any specific mitigation and monitoring actions.

The freshet period is initiated during the annual snow and ice melt, around mid-May. During this period excess water is created and must be managed through additional pumping and management practices at vulnerable areas around the site. Mitigation techniques, timeframes and specified roles and responsibilities are outlined in this document for each area of concern.

The main areas of concern are the excavated pits (Pit A, Pit E, Goose Pit and Vault Pit), , the North and South Cell TSF surrounding infrastructures(East and West diversion ditches, Northwest corner of the North Cell TSF, Saddle Dam 1 corner, Saddle Dam 2 sump, Saddle Dam 3 sump, Saddle Dam 4-5 downstream, Central Dike downstream pond (ST-S-5), Stormwater Dike), the areas around the Portage Waste Rock Storage Facility (RSF) (the northern portions of the NAG waste rock extension, the two collection ponds known as WEP1 and WEP2), Vault Road culverts, Vault Waste Rock Storage Facility, AWAR culverts near the site and along the road to Baker Lake, RSF – ST-16 Seepage, and the Assay Road (Mill) Seepage.

It is important for all water management and associated infrastructure to be in good working order and adequate to manage the expected water flows associated with the freshet period; this includes but is not limited to pumps, ditch, culvert and sump maintenance, critical piping system installation and inspection, as well as adequate resource allocation for preparative work. A concise summary of the 2022 preparation works and roles and responsibilities is presented in the attached Appendix 1 (2022 Freshet Action Plan Procedures). Appendix 1 will be updated yearly to reflect changes in conditions at the Meadowbank site. Appendix 2 contains diagrams depicting the areas of concern and incident response locations.

DOCUMENT CONTROL

Revision				Pages Revised	Remarks
#	Prep.	Rev.	Date		
01	Agnico	Internal	April 2014	All	
02	Agnico	Internal	May 2015	All	Comprehensive update from 2014 Plan
03	Agnico	Internal	October 2015	All	Comprehensive update from May 2015 Plan
04	Agnico	Internal	March 2016	All	2016 Comprehensive review
05	Agnico	Internal	March 2017	All	Comprehensive update from May 2016 Plan
06	Agnico	Internal	March 2018	All	Comprehensive update from 2017 Plan
07	Agnico	Internal	March 2019	All	Comprehensive update from 2018 Plan
08	Agnico	Internal	March 2020	All	Comprehensive update from 2019 Plan
09	Agnico	Internal	March 2021	All	Comprehensive update from 2020 Plan
10	Agnico	Internal	March 2022	All	Comprehensive update from 2021 Plan

Prepared By: Meadowbank Environment

Approved by:

Alexandre Lavallee, Environment and Critical Infrastructure Superintendent

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AGNICO EAGLE
MEADOWBANK

1 INTRODUCTION

The purpose of this Freshet Action Plan is to ensure that Agnico can address and manage excess water associated with the freshet season at the Meadowbank site in a manner to minimize environmental risks, and to ensure Agnico has implemented specific management and mitigation measures in response to environmental incidents with potential for offsite impacts to water or land.

The freshet season is loosely defined as starting approximately May 15th and in some cases, actions and mitigation measures can extend into early fall when freezing re-occurs. There are many areas around the site that are vulnerable to excess water; the goal is to identify these areas and develop a clear plan with defined roles and responsibilities (amongst Agnico Eagle Departments), and to manage the freshet flows.

In addition, several guiding principles are applicable to the formation of this plan. The highest priority principles are:

1) to ensure that the health and safety of Agnico employees is protected, especially with respect to mining operations when excess water is present;
2) to ensure that mine contact water from runoff or seepage is managed to prevent adverse environmental impacts; and
3) to ensure the site is in compliance with the Nunavut Water Board (NWB) License, Part D, Item 19 and Part E, Item 10.

The plan will identify the areas of concern and discuss the potential risks as well as mitigation measures necessary to address the identified issues. Appendix 1 contains the actual defined 2022 procedures, the roles and responsibilities and associated timelines. Agnico's intent is to update the Procedural Appendix on a yearly basis. For example, there may be additional mitigation measures for a defined problem area or, in some cases, a previously defined issue may be permanently rectified.

The main areas of concern are:

- IPD pits and Vault area Pits;
- Area around the Portage Waste Rock Storage Facility (RSF) including the northern portions of the NAG waste rock extension, which include the collection ponds known as WEP 1 and WEP 2;
- Vault Waste Rock Storage Facility;
- North and South Cell TSF surrounding areas:
    - East and West diversion ditches;
    - Northwest corner of the North Cell TSF;
    - Saddle Dam 1 corner;
    - Saddle Dam 2 sump;
    - Saddle Dam 3 sump;
    - Saddle Dam 4-5 downstream;
    - North Cell Internal Structure
- East Dike Seepage
- Vault Road culverts;
- Stormwater Management Pond;

- Fuel Tank Farms;
- AWAR culverts near the site and along the road to Baker Lake;
- RSF – ST-16 Seepage;
- Assay Road (Mill) Seepage;
- Central Dike Seepage.

Each area identified above will be discussed in detail below. All areas of concern are considered priorities based on the guiding principles.

2 AREAS OF CONCERN

2.1 IPD Pits, Vault Pits

All active ramps, and ditches must be cleared of all ice and snow before May in order to access the shoreline of the filling pits. All pumps must be checked and serviced to be in working order prior to May. In addition, a check must be completed confirming that all piping systems starting from the different pits are in working order (leak free).

2.1.1 *Goose Pit*

Mining in Goose Pit was completed in 2015. Tailings deposition began in July 2019. Water transfers from Goose Pit towards either Pit E or Pit A will be performed as required, as part of the deposition plan and water balance exercise. Water accumulating in the surface area around Goose Pit (Bay Goose Dike ring road, NPAG stockpile, Goose sump) will be pumped to Goose Pit as required.

2.1.2 *Pit E*

Mining in Pit E was completed in 2019. Tailings deposition began in August 2020. Runoff water accumulated at the Pit E crest will be pumped into Pit E as required. The Pit E3 ramp requires proper trenching and snow clearing to ensure safe condition for the planned operations of the tailing deposition and mill reclaim systems. Water accumulating in the pit is either transferred to Pit A or reclaimed for the mill process.

2.1.3 *Pit A*

Mining in Pit A was completed in 2018. The pit is now part of the in-pit deposition plan. The Pit A ramp and North Ramp require proper trenching and snow clearing to ensure safe operations of the tailing deposition and mill reclaim systems.

Water from the South Cell, Central Dike seepage, East Dike seepage (depending on water quality) and Stormwater Pond will be directed to Portage Pit A during freshet, whereas accumulating water in Pit A will be reclaimed for the mill process, as required. I

2.1.4 *Vault & Phaser Pits*

Mining activities were completed in the Vault area (including Phaser and BB Phaser) in 2019. No further discharge to Wally Lake are expected. As a result of all mining activity of Vault area being completed, passive pit reflooding has begun, with natural runoff being the only inflow. No active water management is planned in that area at freshet. For safety concern the area is restricted. Procedures are in place to safely access the area for sampling purposes.

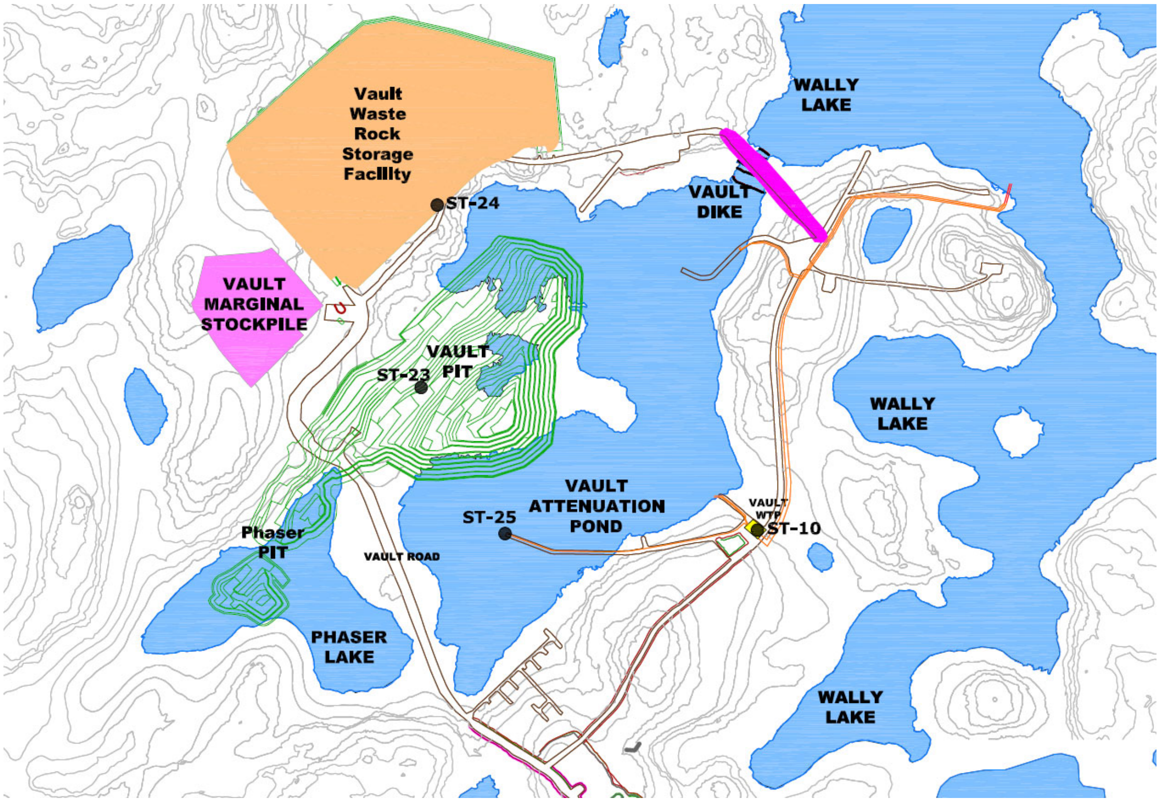


Figure 2-1: View of Vault area and the surrounding area

2.2 Waste Rock Storage Area

2.2.1 *Portage RSF*

The Portage Rock Storage Facility (RSF) will require weekly inspections around the perimeter beginning as soon as the freshet starts until freeze up to identify any seepage. As will be noted in the following section, seepage was identified in 2013 at location ST-16. In the event that additional seepage is observed from the RSF, it must be reported to the Environment Department and samples must be taken to determine the water quality and source. A mitigation plan will be prepared and implemented if necessary.

Active pumping at the Portage RSF towards the North Cell is planned at ST-16 (Section 2.2.1.1), WEP1 (Section 2.3.1.2), and WEP 2 (Section 2.3.1.2).

2.2.1.1 **ST-16 Seepage**

In July 2013, a seepage from the Rock Storage Facility (RSF) was noted (see ST-16 on Figure 2-3). The seepage contained elevated copper, nickel, ammonia and cyanide. It was determined through investigation that the likely source of the contaminants was reclaim water from the North Cell TSF. Further details and discussion can be found in the Agnico Annual Report (Section 8.5.3.1.7).

Water ponding in ST-16 will be pumped to the North Cell Tailings Storage facility. Daily inspections will be undertaken in May until freshet is complete and after rain events to ensure water remains contained within ST-16. Water levels in ST-16 must remain below the till plug. Once the Lake or seep area are ice free, the sample monitoring program will commence. If samples detect any concerns or elevated levels, Agnico will review the monitoring plan immediately, including downstream lakes. Pumped volumes will be documented and daily inspections of the area will be undertaken.

In addition, snow will be removed from the ditches and culvert at the outlet of NP- 2 to NP-1 Lake to ensure freshet flows do not back up and overflow into the ST-16 seep location and that the north watershed non-contact runoff flows freely through to NP-1 Lake and further downstream (Dogleg Lake).

In the event that seepage water flows through the rockfill road reaching NP-2 Lake, the Environmental Department will notify authorities.

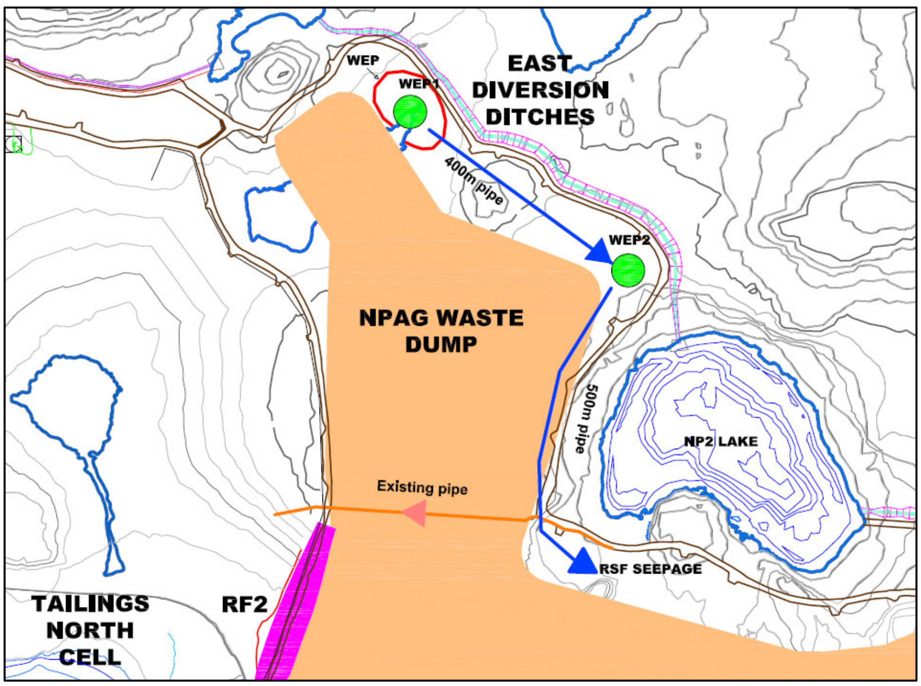


Figure 2-2. View ST-16 station and surrounding area.

Footnote: The dotted red arrow represents the assumed seepage flow. Red Lines represent installed filters and areas where tailings beaches were built up to minimize flow through.

2.2.1.2 **Waste Extension Pool (WEP) sumps**

WEP1 and WEP2 sumps were constructed in September 2015 to manage water around the northeast side of the RSF to ensure all water ponding is transferred to the North Cell TSF (see Figure 2-3). The WEP1 and WEP 2 sumps were replaced in 2016 with the WEP collection system. Water collected at WEP1 will be pumped to WEP2 which will in turn be pumped to ST-16. Daily inspections will be undertaken in May until freshet is complete and after rain events to ensure water remains contained within WEP1 and WEP2 and does not enter the East Diversion Ditch. Both sumps WEP1 (ST-30) and WEP2 (ST-31) will be sampled as per the monitoring plan.

2.2.1.3 North Portion of NAG Waste Rock Expansion

The northwestern area of the RSF, which consists entirely of NAG material, extends towards the East Diversion ditch as shown in Figure 2-4 #6. Runoff from this area, while not anticipated to be contaminated, could, if significant, discharge to NP-2 lake after crossing the tundra. The Environmental Department will conduct daily visual inspections during freshet. Sample monitoring will be undertaken when water is observed in order to determine water quality. Contaminated water must be kept from reaching NP-2 Lake; and if required, water will be pumped or diverted.

2.2.2 *Vault RSF*

The Vault RSF requires monitoring during the freshet period to ensure adequate water management. Weekly inspections around the RSF perimeter will be conducted to identify any seepage as soon as the freshet starts. In the event that seepage is observed, the Environment Department must be notified and samples taken to determine water quality. The sample monitoring will be in accordance with the Water License requirements. No water quality issues are anticipated as primary drainage is towards the Vault Pit and the waste rock stored in the RSF is primarily NAG. No active pumping system is planned for that area.

2.3 North and South Cell Tailings Storage Facility

Water management around both the North and South Cell Tailings Storage Facility (TSF) is required to maintain integrity of the tailings management infrastructure and to prevent any adverse environmental impacts. Water from the North Cell will be transferred to the South Cell which will then be pumped toward Portage Pit A. This section describes the infrastructure in place to control runoff water and reduce possible impact on both the tailings storage facility and the receiving environment. Tailings were last discharged in the North Cell in 2021, while tailings were last discharged in the South Cell in 2018.

2.3.1 *Diversion Ditches*

The East and West Diversion ditches were constructed in 2012 around the North Cell TSF and the Portage RSF. The diversion ditches are designed to redirect the fresh water from the northern area watershed away from the tailings pond and RSF and direct it to Second and Third Portage Lakes. As seen in Figure 2-4, five zones associated with the diversion ditches have been identified where actions will be taken during or before freshet:

1. AWAR culvert – Discharge to Third Portage Lake;
2. West Diversion Ditch elbow;
3. Northwest corner of North Cell TSF;
4. East Diversion Ditch Outlet to NP-2 Lake;
5. Vault road culvert – NP-2 Lake exit to NP-1 Lake.

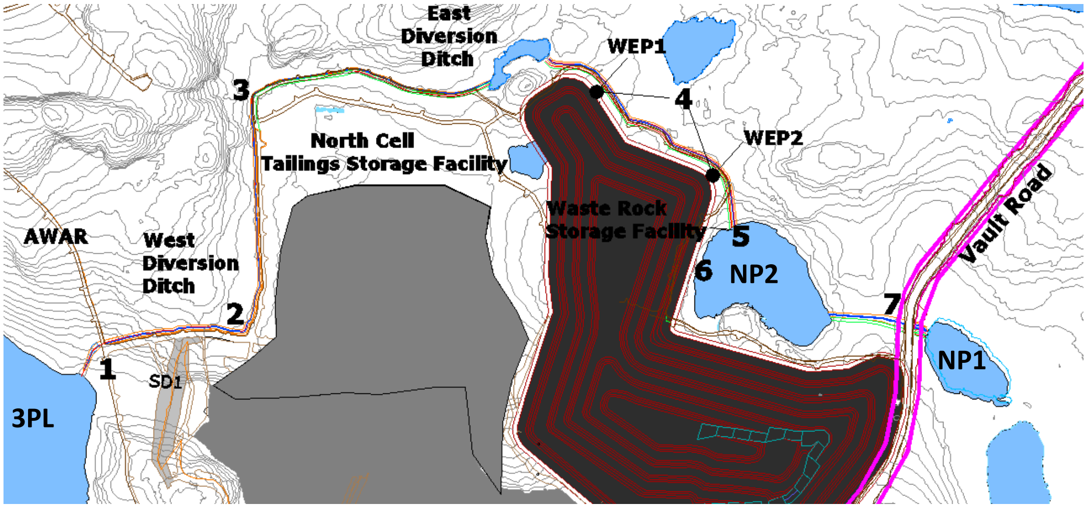


Figure 2-3: Location of the areas of interest for the 2021 Freshet Action Plan

2.3.1.1 AWAR culvert – discharge to Third Portage Lake

Ditch outflows are important to ensure proper flow of freshet drainage. The culvert under the AWAR (Figure 2-3 #1) is a critical section of the West Diversion Ditch. Snow removal must be performed to avoid ponding and damage to the ditch/trench structure as well as to maintain the integrity of the AWAR which, in turn, is critical to transportation at the Meadowbank mine site.Figure 2-5 illustrates this culvert. Snow and/or ice must be removed on each side of the culvert to allow water to flow through to prevent upstream ponding prior to freshet to prevent any back up in the West Diversion ditch. If not completed, this could increase water levels upstream in the ditch causing problems discussed in Section 2.3.1.2.. The culvert may need to be steamed if blocked by ice. Before starting the cleaning operation, it is important to ensure that the electrical cable (5kV) location has been visually identified.

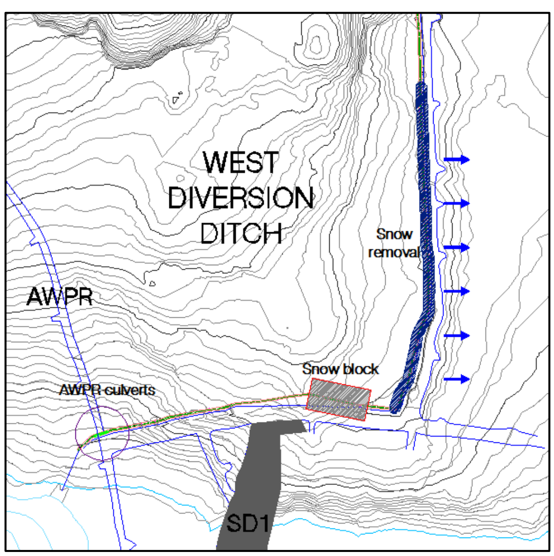


Figure 2-4: West diversion ditches area of interest

A turbidity barrier has been installed in Third Portage Lake as a precautionary measure. This barrier will remain in place over winter and will be replaced if damaged in the future. Additional barriers can be installed after ice melt as a contingency. Daily inspections will be conducted starting in May until Freshet is complete and after rain events. Sample monitoring will commence when open water is present in accordance with the Water License (ST-6). Sampling frequency of ST-6 may be increased if TSS results are near 30 mg/L (grab) and 15 mg/L (monthly average), or visually elevated. If a discharge of TSS occurs, the Environment Department will notify ECCC and NWB.

2.3.1.2 West Diversion Ditch Elbow

One of the deepest sections of the West Diversion ditch is located in the corner next to the Saddle Dam 1 – see Figure 2-6 and Figure 2-4 #2 above. In early May of each year, Agnico will remove the snow accumulation to allow the water to flow freely, preventing the water upstream from increasing in level and hydraulic head pressure. In addition, large flows can scour the ditch system causing sediment migration through the ditches which could impact Third Portage Lake.

As a precaution, Agnico constructed an interception sump located at the west diversion ditch elbow location in 2014. The sump has a capacity of 3,000 m³. Water is pumped into the North Cell, if needed. These measures will prevent any contaminated water from reaching Third Portage Lake. This sump will also act as a settling pond to prevent water with elevated TSS from reaching Third Portage Lake.

Daily inspections will be conducted from May until freshet is complete and after rain events. Sample monitoring will also be conducted. It is planned to let natural overflow to Third Portage Lake, if results are compliant. A pump will be installed preventively and ready to operate.

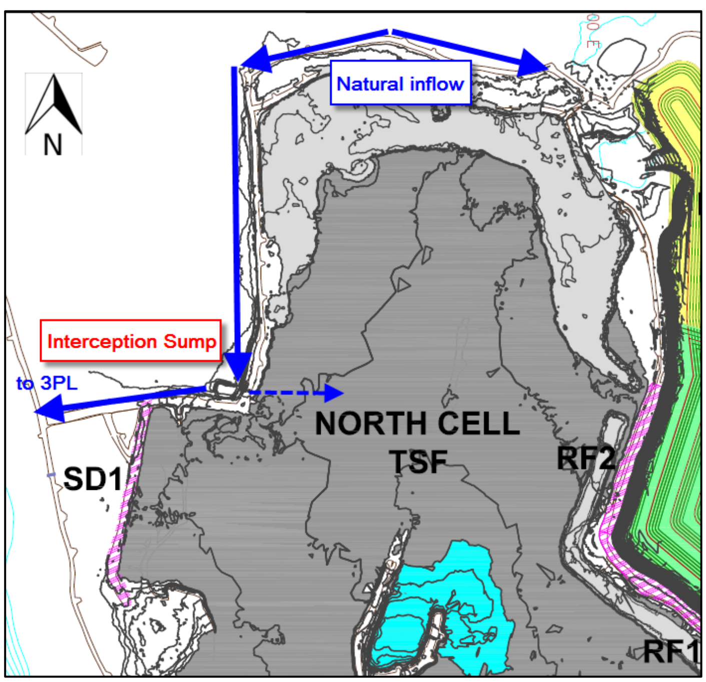


Figure 2-5. View of the Interception Sump in relation to the Diversion Ditches

2.3.1.3 **Northwest Corner of North Cell TSF**

The construction access road at the Northwest corner of the North Cell TSF (see Figure 2-6 and Figure 2-4 #3) was vulnerable to damage from the freshet water flow from the northern watershed (see watercourse flow in Figure 2-6 denoted by blue line). The start of the West Diversion ditch is also located in this area and is designed to collect the freshet. Ponding is limited in this area once the freshet is done.

Agnico will continue to monitor and conduct visual inspections of this area in May until freshet is complete and after rain events.

2.3.1.4 **East Diversion ditch outlet to NP-2 Lake**

This area of the East Diversion ditch, seen in Figure 2-7 and Figure 2-3 #5, acts as the outflow of the North part of the East Diversion ditch into NP-2 Lake. This outlet must be cleared of obstructions – snow and ice – in early May to promote drainage through the ditch and into NP-2 Lake. The presence of ice blocks could be mitigated using the steam machine to melt away the obstruction. Daily inspections will be conducted starting in May until freshet is complete and after rain events. Sample monitoring will be conducted monthly during open water in accordance with the Water License (location ST-5). Sampling frequency of ST-5 may be increased if TSS results are near 30 mg/L (grab) and 15 mg/L (monthly average), or visually elevated. Turbidity barriers have been installed at the ditch outlet into NP-2 in 2013 to mitigate elevated TSS. This barrier will remain in place over winter and will be replaced if damaged in the future. Additional barriers can be installed after ice melt as a contingency. If a discharge of TSS occurs, the Environmental Department will notify ECCC and NWB (CIRNAC water Inspector).

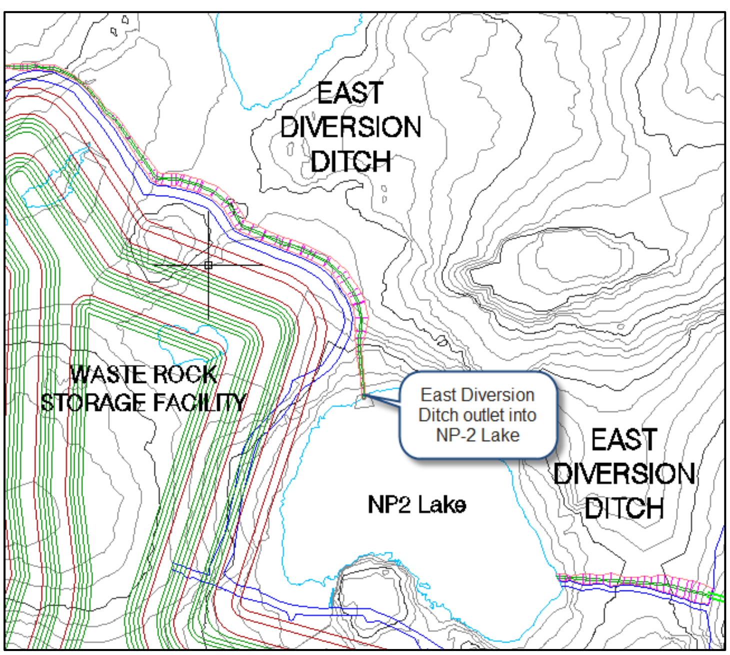


Figure 2-6: View of the East Diversion ditch outlet into NP-2 Lake

2.3.1.5 NP-2 Outlet, Vault Road Culvert and NP1

This area of the East Diversion ditch acts as the outflow of NP-2 Lake through the Vault Road culvert (see Figure 2-3 #7). The culvert seen in Figure 2-8 connects the East Diversion ditch from Lake NP-2 to NP-1. Snow and ice must be removed from the culvert area, including upstream at the exit of NP-2 Lake, in early May, to ensure that the outlet of NP-2 flows freely to NP-1 and ultimately to Dogleg Lake. Back up could cause an upstream water raise in Lake NP-2, which could cause overflow into the RSF ST-16 sump. First, snow from the ditch between NP1 and the road (1) will be removed in early May. Next, the culvert will be steamed, if necessary, to remove any ice/snow. If needed snow/ice around the outlet of NP2 Lake (4) would be removed to allow free flow of melt water. Daily inspections will commence in May until freshet is complete and after rain events. TSS sample monitoring will be conducted monthly and as needed for turbidity. Sampling frequency may be increased if TSS results are near 30 mg/L (grab) and 15 mg/L (monthly average), or visually elevated. If a discharge of TSS occurs, the Environmental Department will notify ECCC and NWB (CIRNAC Water Inspector).

A turbidity barrier was installed at the ditch outlet into NP-1 to mitigate the risk of elevated TSS. Additionally, turbidity barriers and silt barrier were installed around the exit of NP-1 (non fish bearing) and one at the inlet of Dogleg. Barrier inspections will occur throughout freshet to ensure proper functionality. A snow management plan has been implemented, ensuring no large accumulations of stored snow in this area, to minimize runoff.

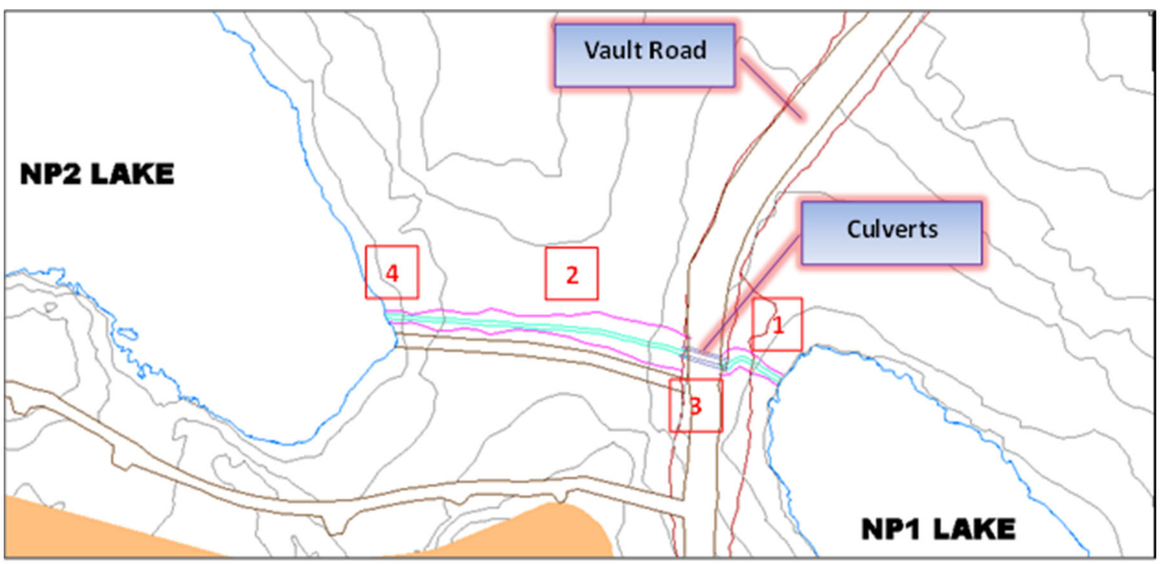


Figure 2-7: View of the diversion ditches at the Vault road area

2.3.2 *Tailings and Dewatering Dikes*

2.3.2.1 Saddle Dam 1

This peripheral dike of the North Cell TSF is required for tailings containment. Daily inspections, starting May until water freezes, will be required for Saddle Dam 1 (SD1) to ensure that runoff water does not pool against the toe of the dike due to low topography. A pumping station located along the toe of the dike is installed to pump water in the North Cell. This pumping station must be operational once water is observed at the toe to pump the water to the TSF. The pumping system will be checked in early May to ensure proper operation. Monthly sampling will be conducted at this station (ST-S-2) during open water conditions in accordance with the Water License.

2.3.2.2 **Saddle Dam 2**

This peripheral dike is located South of SD1, is required for tailings containment. Historically, this structure has not had any issues with water pooling at the toe, therefore monthly inspections starting May until water freezes will be required for Saddle Dam 2 (SD2) to ensure that water does not pool against the toe of the dike. If water is observed at the toe it will be pumped back in the North Cell and a water sample could be taken.

2.3.2.3 **Saddle Dam 3**

This peripheral dike of the South Cell was built in 2015 for water and tailings containment. A permanent sump was established in 2017 at a low spot that facilitates water management at freshet. The downstream area of the SD3 embankment will be pumped to the South Cell TSF to avoid water ponding against the structure. This pumping station must be operational once water is observed at the toe to pump the water to the TSF. The pumping system will be checked in early May to ensure proper operation. Monthly sampling will be conducted at this station (ST-32) during open water conditions in accordance with the Water License.

2.3.2.4 **Saddle Dam 4-5**

Since their initial construction in 2015, ponding in the downstream area is minimal. Localized pooling ponds are sometimes present during the freshet period and will be pumped into the South Cell TSF footprint on their upstream side.

2.3.2.5 **North Cell Internal Structure (NCIS)**

This internal structure was built as an upstream raise in the North Cell in 2018 and allowed for increased tailings storage capacity. Additional sump (NC-A, NC-B, NC-C, NC-D, NC-E) were implemented within the footprint of the North Cell in strategic point at the downstream of this structure to ensure proper water management. Water reporting to these sumps is pumped in the North Cell to reach the main water management station in the North Cell.

2.3.2.6 **Central Dike & ST-S-5**

Central Dike seepage is located at the downstream area of the Central Dike embankment, a peripheral structure of the South Cell used for tailings retention. A permanent pumping system is in place to manage the seeping water beneath the dike by keeping the downstream pond at a constant elevation. More details to be found in the Meadowbank Water Management Plan. Water in this sump is pumped to Portage Pit A. Weekly inspections of the area will be held by environment. Environment department will also conduct monthly sample as per the Water License.

2.3.2.7 **Stormwater Dike**

The Stormwater dike separates the North Cell from the South Cell, and is required for tailings containment. A small pump is installed on the Eastern edge of the dike to collect water and pump it in the North Cell. This will prevent pooling of water against the toe of the dike. The pumping system will be installed and checked in early May to ensure proper operation.

2.3.2.8 **East Dike**

The water quality of the East Dike seepage is monitored throughout the year. When the criteria for discharge are met the water is send to Second Portage lake, otherwise it is sent to the Portage Pits. Historically, at freshet, the water quality of the East Dike seepage does not meet TSS requirement.

2.4 Vault Road Culvert

The Vault road crosses over a connection between two water bodies, Turn Lake and Drill Tail Lake, at approximately km 113. Beginning in May, until freshet is complete and after rain events, it will be important to complete daily inspections. In the case that excessive TSS is observed, samples will be taken and analyzed. In the case, where the TSS levels go beyond 30 mg/L (grab) and 15 mg/L (monthly average), a report will be made to the ECCC and NWB (CIRNAC Water Inspector). Turbidity barriers will be installed as a mitigation measure if needed.

2.5 Stormwater Management Pond

The Stormwater Management Pond (SWMP) is a small shallow and fishless water body that can be seen in Figure 2-9 adjacent to Portage Pit. Treated sewage is discharged into this pond before being transferred to one of the tailing storage facility. The quantity of water transferred each year is recorded. Weekly inspections in the spring and fall are undertaken to determine the commencement of pumping.

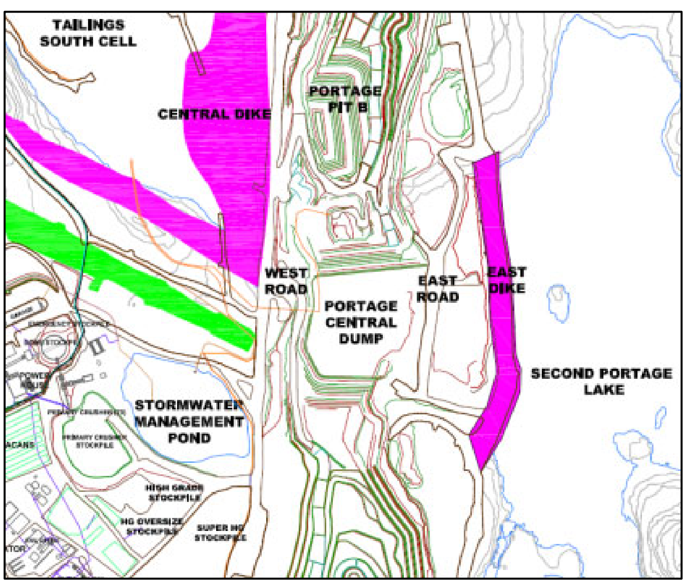


Figure 2-8: Portage Pit area with the Stormwater Management Pond

2.6 Fuel Tank Farms

2.6.1 *Meadowbank Tank Farm*

Snow and ice accumulation within the fuel tank farm must be adequately managed to prevent overflow to the environment and/or damage to the fuel handling systems. The Energy and Infrastructure Department will advise the Environmental Department of their intent to pump the containment area once ice/snow begins to melt. Water samples will be taken in accordance with the Water License to ensure compliance prior to its release. A notice must be provided to the Inspector 10 days prior to this pumping activity. Once sample results have been obtained, the Environmental Department will advise the Energy and Infrastructure Department if pumping can begin. If sample results permit, the pumping may begin; to direct water to the tundra/ground in a way to prevent erosion. In the event that the water sample results do not meet discharge criteria the water shall be sent to the Stormwater Management Pond.

2.6.2 *Baker Lake Tank Farms*

Snow and ice accumulation within the fuel tank farms at Baker Lake must be adequately managed to prevent overflow to the environment and/or damage to the fuel handling systems. The Energy and Infrastructure Department will advise the Environmental Department of their intent to pump the containment area once ice/snow begins to melt. Water samples will be taken in accordance with the Water License to ensure compliance prior to its release. A notice must be provided to the Inspector 10 days prior to this pumping activity. Once sample results have been obtained, the Environmental Department will advise the Energy and Infrastructure Department if pumping can begin. If sample results permit, water can be directed to the tundra but the flow rate shall be such to avoid erosion or damage to the tundra. Environmental inspection of the setup is required prior to starting the discharge. In the event that the water sample results do not meet discharge criteria the water cannot be pumped to the tundra. If this occurs the water will be pumped to a tanker and transported to the Meadowbank site to be disposed of in the TSF or placed in containers for shipment south as hazmat.

2.7 AWAR Culverts on the Baker Lake Portion

Weekly inspections will be undertaken starting in May at all culverts along the AWAR to ensure that water during freshet is flowing freely and no erosion is occurring. If elevated TSS/Turbidity levels are observed, sampling will occur and the results assessed. Turbidity barrier will be installed if required. The Energy and Infrastructure department will also be advised if severe erosion/scouring is observed. In addition, snow and ice removal may be required to allow the water to flow as per design specifications. Inspections will be performed during the freshet period by the Environment department.

2.8 Mill Seepage

In November 2013, Agnico observed seepage containing cyanide and copper at a location west of the access road in front of the Assay Lab (see Figure 2-10). An investigation determined the source was several containments areas within the mill. Repairs to seal all the mill sumps and containment areas were completed in 2014 thus stopping the source of the seep. An interception/collection trench between the mill and TPL was built in 2014. The seepage appears to have been effectively contained and the source area has been repaired. Additional information and discussion surrounding previous sample results are available in the Annual Report in Section 8.5.8.1.6.

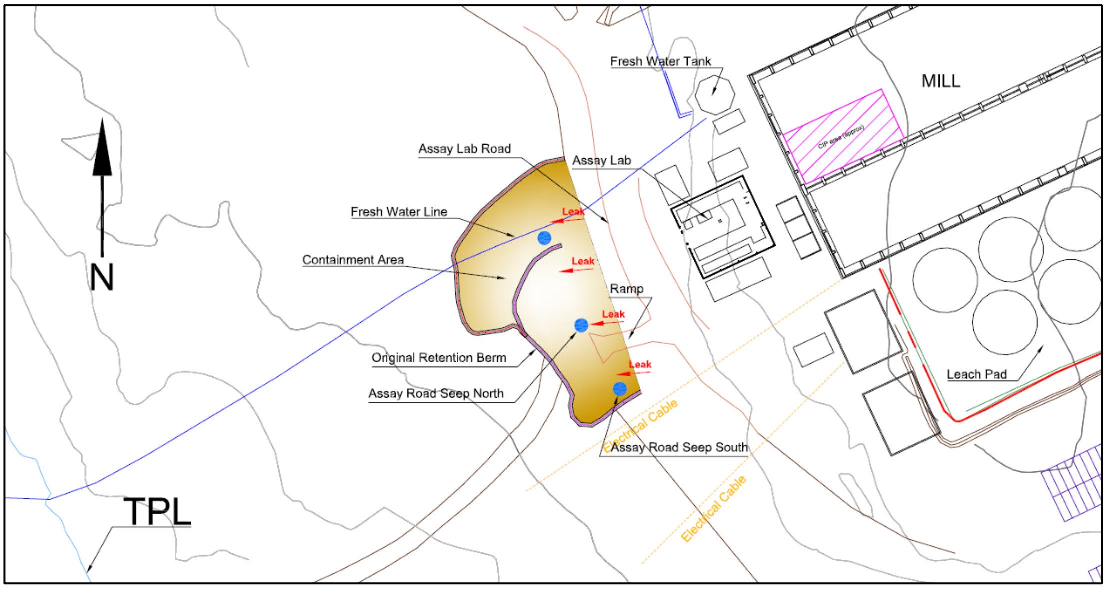


Figure 2-9. View of the mill seepage area and initial retention berm construction

As soon as the trench, monitoring wells and Third Portage Lake are unfrozen a comprehensive monitoring program is implemented. Regular inspections will be conducted of the pumping, collection systems and perimeter area and the pumped volumes will continue to be recorded.

3 SNOW MANAGEMENT

The snow management procedure developed internally in 2015 and updated annually is illustrated in Appendix 3. Temporary snow storage dumps and snow accumulation areas of concern are identified on the map.

APPENDIX 1

2022 Freshet Action Plan Procedure

Section	Area of Concern	Role/Action	Responsibilities	Dates
2.1	**IPD Pits, Vault Pit and Pit Walls**			
2.1	IPD Pits, Vault Pit and Pit Walls – General	1) Clean all ice, mud and snow on all ramps, etc.	E&I	Before May
2.1.1	**Goose Pit**			
2.1.1	Goose Pit	1) Ensure pipes and pumps are serviced and ready to operate. 2) Give guidance as to when and where (Pit E or Pit A) water is to be pumped.	E&I ENV	Early May Early May
2.1.2	**Pit E**			
2.1.2	Pit E	1) Runoff water accumulated in ponds GP-4 and GP-5 will be pumped into Goose pit or Pit E;	E&I	During Freshet Early May
2.1.2	**Pit A**			
2.1.2	Pit A	1) Ensure pipes and pumps are serviced and ready to operate.	E&I	Early May
2.1.3	**Vault Pit Area**			

2.1.3 Vault & Phaser Pits	1) No further action in this area during the freshet period as mining is complete in Goose Pit. Water and/or ice will remain as part of the pit reflooding activity.	ENV	N/A
2.2 WASTE ROCK STORAGE FACILITY			
2.2.1 Portage RSF Inspection	1) Weekly inspection around the RSF perimeter to identify any seepage.	ENV	May - as soon as freshet starts until freeze up
	2) If seepage observed notify Eng and Env Department AND sample for CN and Water License Parameters – ST-16.	ENV	May - as soon as freshet starts until freeze up
2.2.1.1 ST-16	1) Check Piping from pump to discharge area at North Cell TSF.	ENV and E&I	Early May
	2) If the snow accumulation is judged to be too great, then snow must be removed.	ENV to coordinate with E&I	Early May
	3) Daily inspection - keep record.	ENV	May - as soon as freshet starts until freeze
	4) Notify Eng. Dept and E&I when water present and pumping can start. **Water level to be maintained, as a minimum, below the till plug elevation. Water should not pond against the Till plug for extended**	ENV	May/early June - as soon as free water present and ice has melted until freeze

	time periods - i.e. < 2 - 3 hours. For emergencies the water truck can be requested. Start pumping.		
	5) Any seepage through rockfill road to NP-2 must immediately be reported to Env Dept and authorities.	ENV and E&I	May/early June - as soon as water is present until freeze
2.2.1.2 Waste Extension Pool sumps	1) Snow removal to allow free water flow.	ENV to coordinate with E&I	Early May
	2) Daily inspection - keep record.	ENV	May - until Freshet complete and after rain events
	3) Sample monthly during open water as per Water License ST-30 (WEP1) and ST-31(WEP2)	ENV	May - until Freshet complete and after rain events
2.2.1.3 North portion of NAG Waste Rock Expansion	1) Daily inspection - keep record	ENV	May - until Freshet complete and after rain events
	2) Sample for ST-S-XX when water observed; sample upstream (background) in diversion ditch for same parameters and compare results (rush analysis). If results indicate potential for impact, i.e. results are > background, meet with engineering and determine necessity of ditching	ENV	May - as soon as freshet starts until freeze up

	3) Prevent **contaminated** contact water from reaching NP-2.	ENV	May - as soon as freshet starts until freeze up
2.2.2 Vault RSF Inspection	1) Weekly inspection around the RSF perimeter to identify any seepage.	ENV	May - as soon as freshet starts until freeze up
	2) If seepage observed notify Eng and Env Department AND sample for Water License Parameters – ST-24.	ENV	May - as soon as freshet starts until freeze up
2.3 NORTH AND SOUTH CELL TAILINGS STORAGE FACILITY			
2.3.1 Diversion Ditch			
2.3.1.1 AWAR Culvert - West Diversion ditch exit to TPL	1) Snow and/or ice must be removed with an excavator on each side of the culvert to allow water flow.	ENV to coordinate with E&I	Before May 20
	2) If needed, steam to free any ice blockage.	ENV to coordinate with E&I	Before May 20
	3) Before starting snow clearing operation, make sure the electrical cable location has been visually identified in the field.	ENV to coordinate with E&I	Before May 20
	4) Daily inspection - keep record under freshet file.	ENV	May - until Freshet complete and after rain events

		5) ST-6 sampling as per Water License and TSF weekly inspection (keep record).	ENV	Monthly as soon as freshet starts (open water) and continue until freeze
		6) Increase frequency of ST-6 sampling if TSS near 30 mg/L (grab) and 15 mg/L (monthly average), or visually elevated. Any extra samples to external lab.	ENV	TSS result dependent
		7) Have turbidity and silt barriers in place at TPL (2) and maintain.	ENV	May - before freshet starts and until water freezes
		8) Report any discharge of TSS to ECCC/NWB (grab > 30 mg/L).	ENV	May - as soon as freshet starts and until water freezes
2.3.1.2	West Diversion Ditch elbow near SD1	1) Snow and/or ice must be removed with an excavator to allow water flow and prevent ponding upstream.	ENV to coordinate with E&I	Early May
		2) Daily inspection - keep record.	ENV	May - until Freshet complete and after rain events

		3) Sample for TSS monthly (external Lab) and as needed for Turbidity	ENV	May - until Freshet complete and after rain events
2.3.1.3	Northwest corner of North Cell TSF (West Diversion ditch)	1) Daily inspection - keep record.	ENV	May - until Freshet complete and after rain events
2.3.1.4	East Diversion ditch outlet to NP-2 Lake	1) Snow and/or ice must be removed with an excavator on each side of the culvert to allow water flow.	ENV to coordinate with E&I	Early May
		2) If needed, steam to free any ice blockage.	ENV to coordinate with E&I	Before May 20
		3) Daily inspection - keep record.	ENV	May - until Freshet complete and after rain events
		4) ST-5 sampling as per Water License and TSF Weekly inspection (keep record).	ENV	Monthly as soon as freshet starts and until water freezes
		5) Increase frequency of ST-5 sampling if TSS near 30 mg/L (grab) and 15 mg/L (monthly average). Extra samples to external lab if necessary.	ENV	TSS result dependent

		6) Install turbidity barriers in NP-2, if needed, and maintain.	ENV	May - before freshet starts and until freeze up or water clears
		7) Report any discharge of TSS to ECCC/NWB (if grab > 30 mg/L).	ENV	May - as soon as freshet starts and until water freezes
2.3.1.5	East Diversion Ditch - NP2 Outlet and Vault Road culvert.	1) Snow and/or ice must be removed with an excavator on each side of the culvert and upstream at the exit of NP-2 Lake to allow water flow.	ENV to coordinate with E&I	Early May
		2) If needed, steam culvert to free any ice/snow blockage.	ENV to coordinate with E&I	Before May 20
		3) Daily inspection - keep record.	ENV	May - until Freshet complete and after rain events
		4) Install turbidity barriers in NP-1, if needed, and maintain.	ENV	May - before freshet starts and until freeze
		5) Sample for TSS monthly (external lab) and as needed for Turbidity. Increase frequency of sampling if TSS near 30 mg/L (grab) and 15 mg/L (monthly average). Multi Lab for any increased sampling frequency.	ENV	May - until Freshet complete and after rain events

		6) Report any discharge of TSS to ECCCO/NWB (if grab > 30 mg/L).	ENV	May - as soon as freshet starts and until water freezes
2.3.2	**TSF Dikes**			
2.3.2.1	Saddle Dam 1	1) Inspect pumping system	E&I	Early May
		2) Daily inspection - keep record	ENV and E&I	May and until water freezes
		3) Start pumping to TSF when water observed. Keep volume pumped out.	ENV and E&I	May until water freezes
		4) ST-S-2 sampling as per Water License.	ENV	Monthly as soon as freshet starts and until water freezes
2.3.2.2	Saddle Dam 2	1) Prepare pumping system	E&I	Early May
		2) Weekly Inspection - keep record.	ENV	May and until water freezes
		3) Start pumping to TSF when water observed. Keep volume pumped out.	ENV and E&I	May until water freezes
2.3.2.3	Saddle Dam 3	1) Inspect pumping system	E&I	Early May

		2) Daily inspection - keep record	GENV and E&I	May and until water freezes
		3) Start pumping to TSF when water observed. Keep volume pumped out.	ENV and E&I	After May and until water freezes
		4) ST-32 sampling as per Water License.	ENV	Monthly as soon as freshet starts and until water freezes
2.3.2.4	Saddle Dam 4-5	1) Prepare pumping system	E&I	Early May
		2) Monthly Inspection - keep record.	ENV	May until water freezes
		3) Start pumping to TSF when water observed. Keep volume pumped out.	ENV and E&I	May until water freezes
2.3.2.5	North Cell Internal Structure	1) Prepare pumping system	E&I	Early May
		2) Weekly Inspection - keep record.	ENV	May and until water freezes
		3) Start pumping to TSF when water observed. Keep volume pumped out.	ENV and E&I	May until water freezes
2.3.2.6	Central Dike ST-S-5	1) Pump water to the South Cell TSF - volumes documented.	E&I and ENV	All year round

		2) Daily inspection of pumping, collection systems, bermed areas and perimeter area – keep record.	E&I & ENV	All year round
2.3.2.7	Stormwater Dike	1) Prepare pumping system	E&I	Early May
		2) Weekly Inspection - keep record.	ENV	May and until water freezes
		3) Start pumping to TSF when water observed. Keep volume pumped out.	ENV and E&I	May until water freezes
2.3.2.8	East Dike	1) Monitor East dike water quality & coordinate with E&I to stop SPL discharge	ENV & E&I	All year long
2.4	**VAULT ROAD CULVERT**			
2.4	Vault road culvert from Turn Lake to Drill Trail Lake (~km 2 on Vault road)	1) Daily inspection - keep record	ENV	May - until Freshet complete and after rain events
		2) Install turbidity barriers, if needed (elevated TSS observed), and maintain	ENV	May - until freshet complete and after rain events
		3) Sample monitoring for TSS, if excess turbidity observed - use external lab.	ENV	May - until freshet complete and after rain events

		4) Report any discharge of TSS to Drill Tail to ECCC/NWB (if grab > 30 mg/L).	ENV	May - until freshet complete and after rain events
2.5	**STORMWATER MANAGEMENT POND**			
2.5	Stormwater Management Pond	1) Pump Stormwater to applicable TSF in Spring/Fall - pumped volume must be kept.	E&I and ENV	When required in Spring and/or Fall
2.6	**FUEL TANK FARMS**			
2.6.1 Meadowbank Tank Farm		1) E&I Dept to advise Env Dept in advance of intent to pump once ice melts in containment area.	E&I and ENV	As required during summer
		2) Sample water in accordance with Water License to ensure compliance with limits prior to release.	ENV	As required during summer
		3) Provide notice to Inspector 10 days prior to pumping.	ENV	As required during summer
		4) Advise Energy and Infrastructure Dept if pumping can begin based on sample results.	ENV	As required during summer

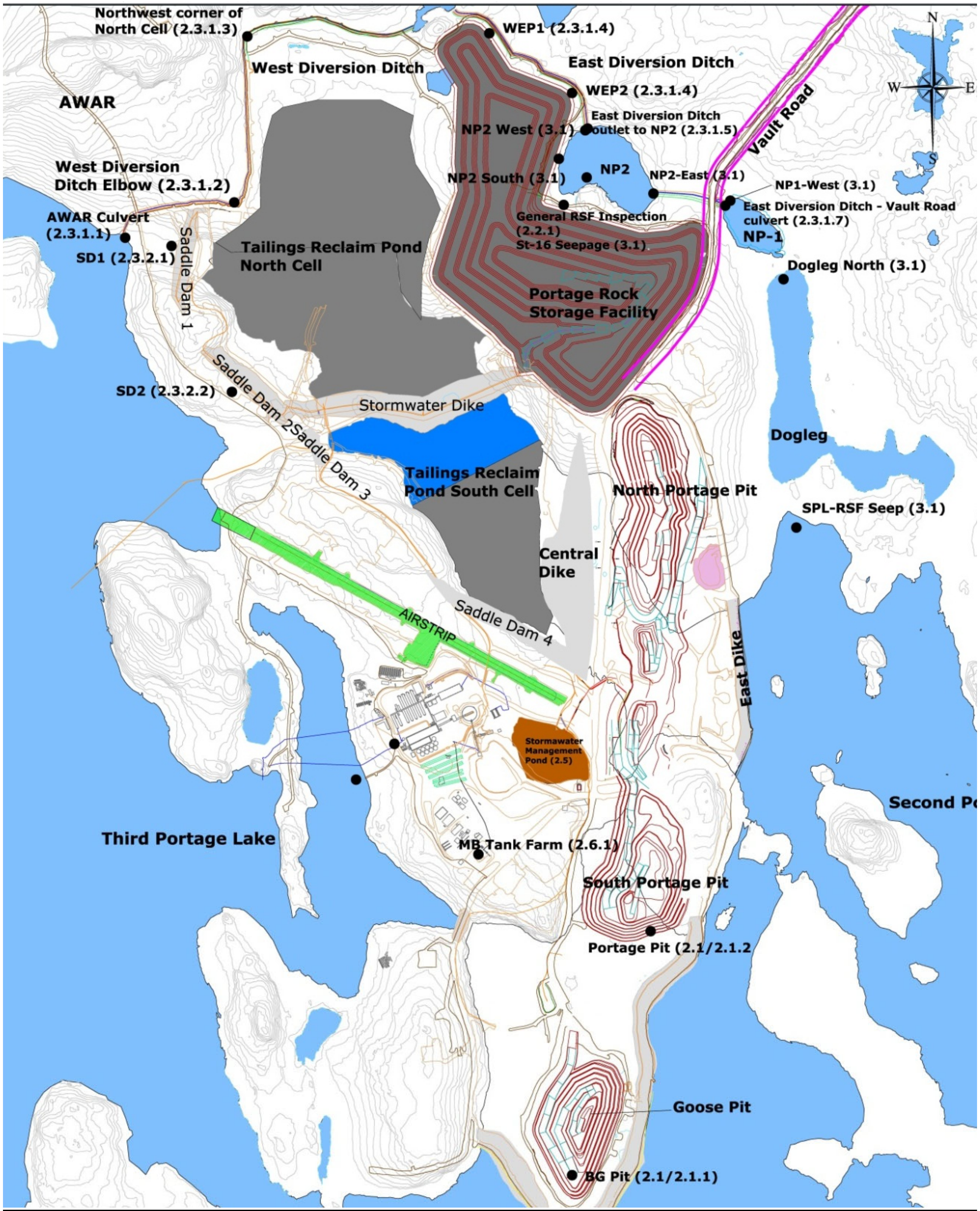
	5) Pump to tundra/ground or Stormwater Mgmt Pond (note pumping to Stormwater Mgmt Pond does not require compliance with limits - at Meadowbank only). **NOTE: The water cannot be pumped out to the tundra if it does not meet the Water License criteria.**	E&I	Following ENV. Authorization & inspection
2.6.2 Baker Lake Tank Farms	1) E&I Dept to advise Env Dept in advance of intent to pump once ice melts in containment area.	E&I and ENV	As required during summer
	2) Sample water in accordance with Water License to ensure compliance with limits prior to release.	ENV	As required during summer
	3) Provide notice to Inspector 10 days prior to pumping.	ENV	As required during summer
	4) Advise Energy and Infrastructure Dept if pumping can begin based on sample results.	ENV	As required during summer
	5) Once approval given by Env Dept, E&I Dept can pump to tundra but must avoid erosion during pumping, i.e., low flow, the volume must also be determined by E&I Dept personnel. **NOTE: The water cannot be pumped out to the tundra if it does not meet the Water License criteria. Any wastewater unsuitable for discharge will be transported back to Meadowbank for disposal in the TSF or shipped south for disposal.**	E&I Dept ENV	Following ENV. Authorization & Inspection

2.7	**AWAR CULVERTS ON THE BAKER LAKE PORTION**			
2.7	AWAR Culverts on the Baker Lake Portion	1) Weekly inspection of culverts along AWAR to Baker Lake.	ENV	May
		1) Sample for TSS and Turbidity if elevated TSS observed.	ENV	May - until freeze
		2) Notify E&I Dept if severe erosion/scouring observed - for repair action.	ENV	May - until freeze
		3) Install turbidity barriers if required.	ENV	May - until freeze
2.8	**Mill Seepage**			
2.8	Mill Seepage	1) Pump water from the trench to the mill - volumes documented.	ENV and E&I	Start May/early June when water present until freeze
		2) Daily inspection of pumping, collection systems, bermed areas and perimeter area – keep record. **For emergencies the water truck can be requested.**	ENV	Start May/early June when water present until freeze

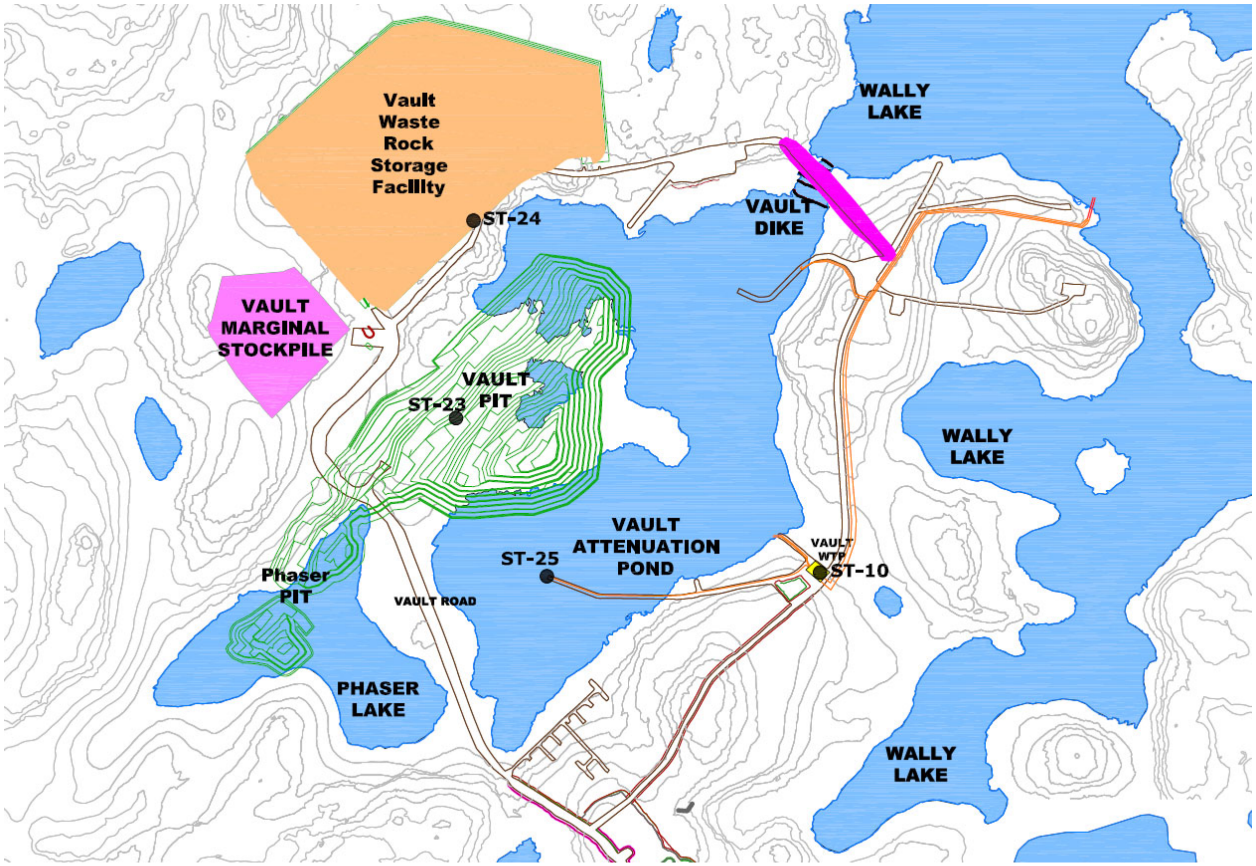
APPENDIX 2

2022 Monitoring Locations and Areas of Concern for the Freshet Action and Incident Response Plan

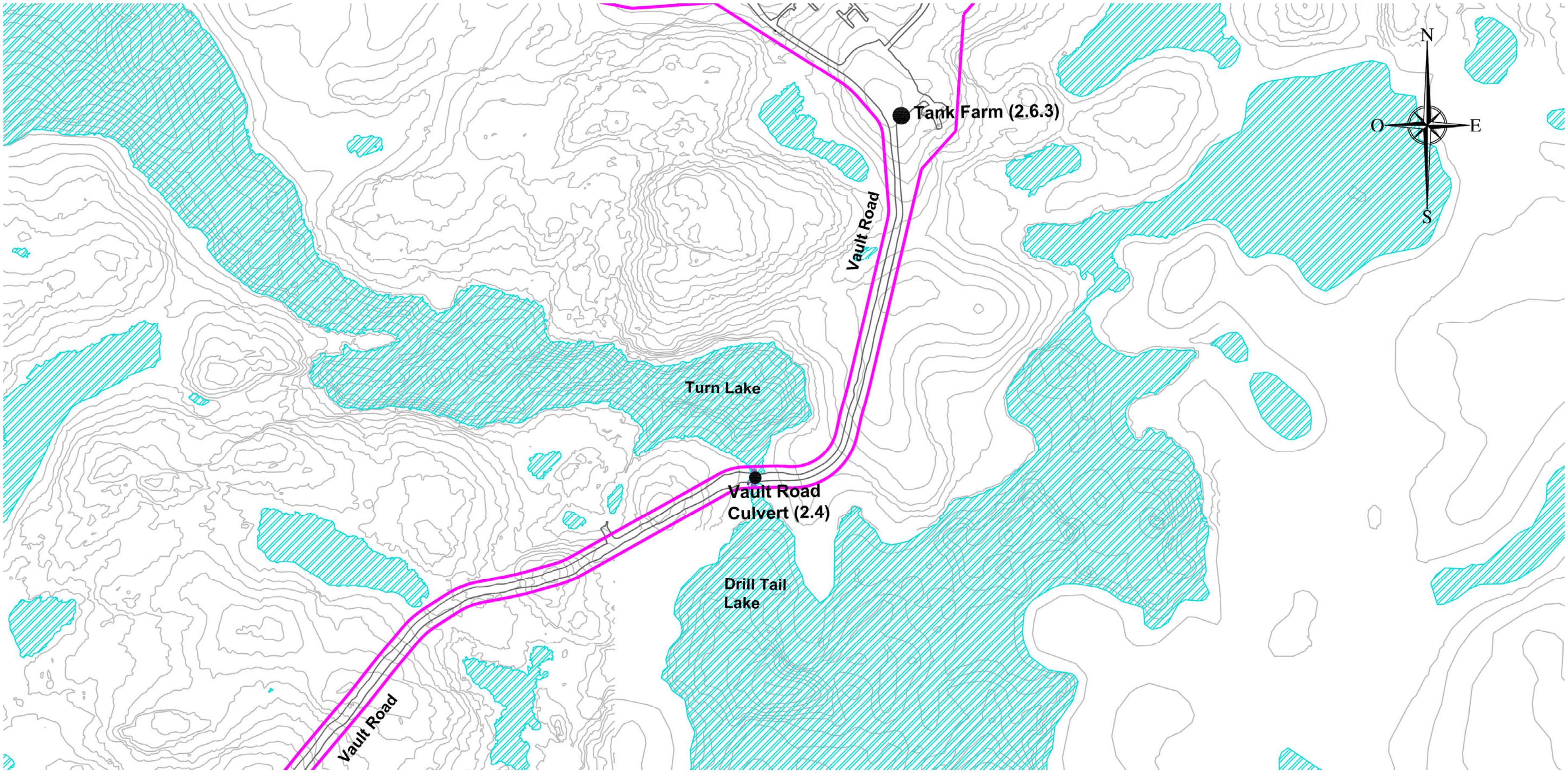
Meadowbank Areas of Concern and Monitoring Locations



Vault areas of concern



Vault Road areas of concern

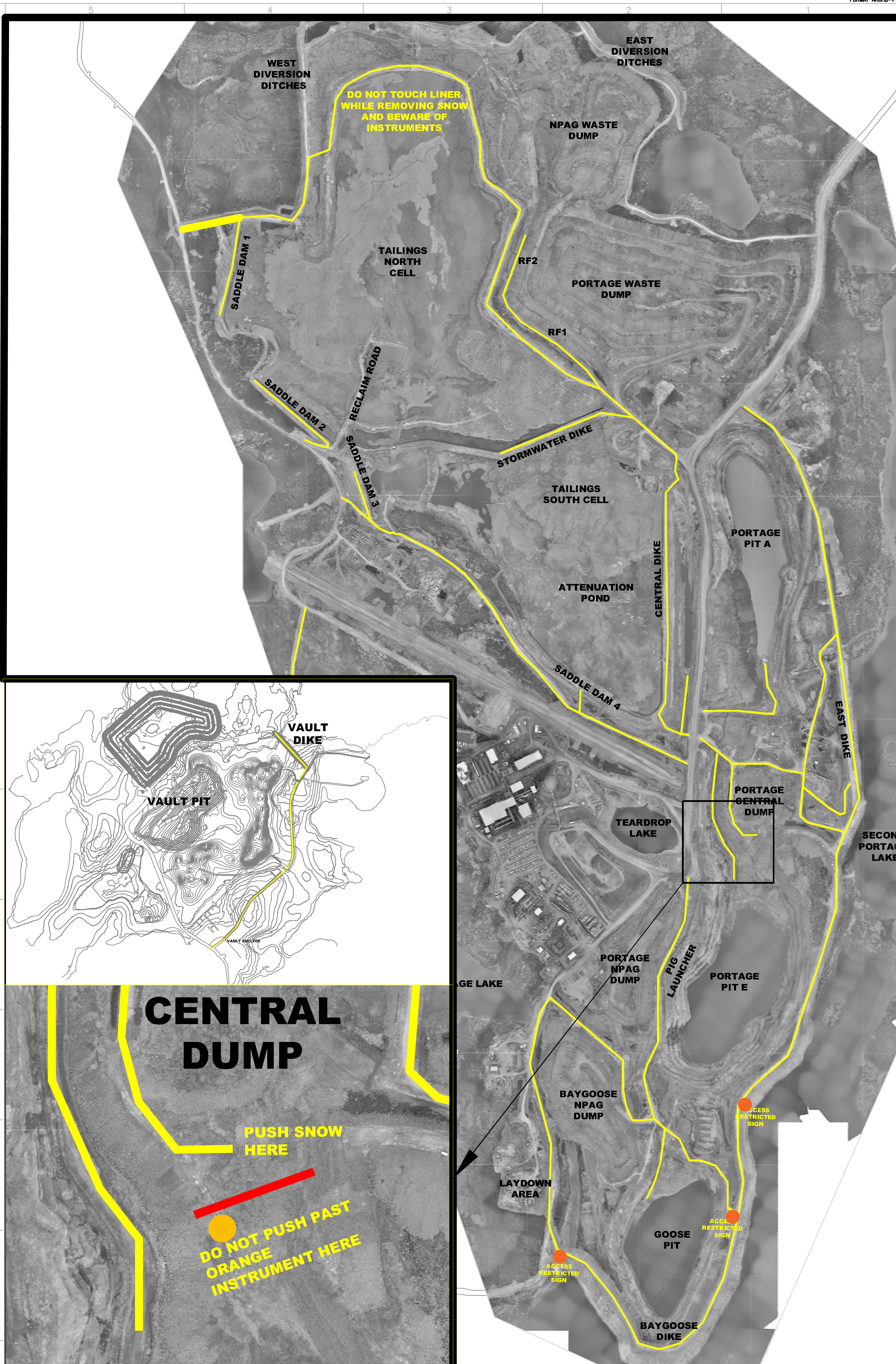


APPENDIX 3

2022 Snow management

DRAWING NO.

FORMAT ARCHD–PORTRAIT



TITLE	# DWG	REV	DESCRIPTION	DATE	BY
REFERENCE DRAWINGS		REVISIONS			

AGNICO EAGLE
MEADOWBANK

T. DAHM	2021-11-05
CHECKED BY	
APPROVED BY	
PROJECT NO.	
DATE	

AGNICO-EAGLE – MEADOWBANK DIVISION
SNOW REMOVAL MAP
2021

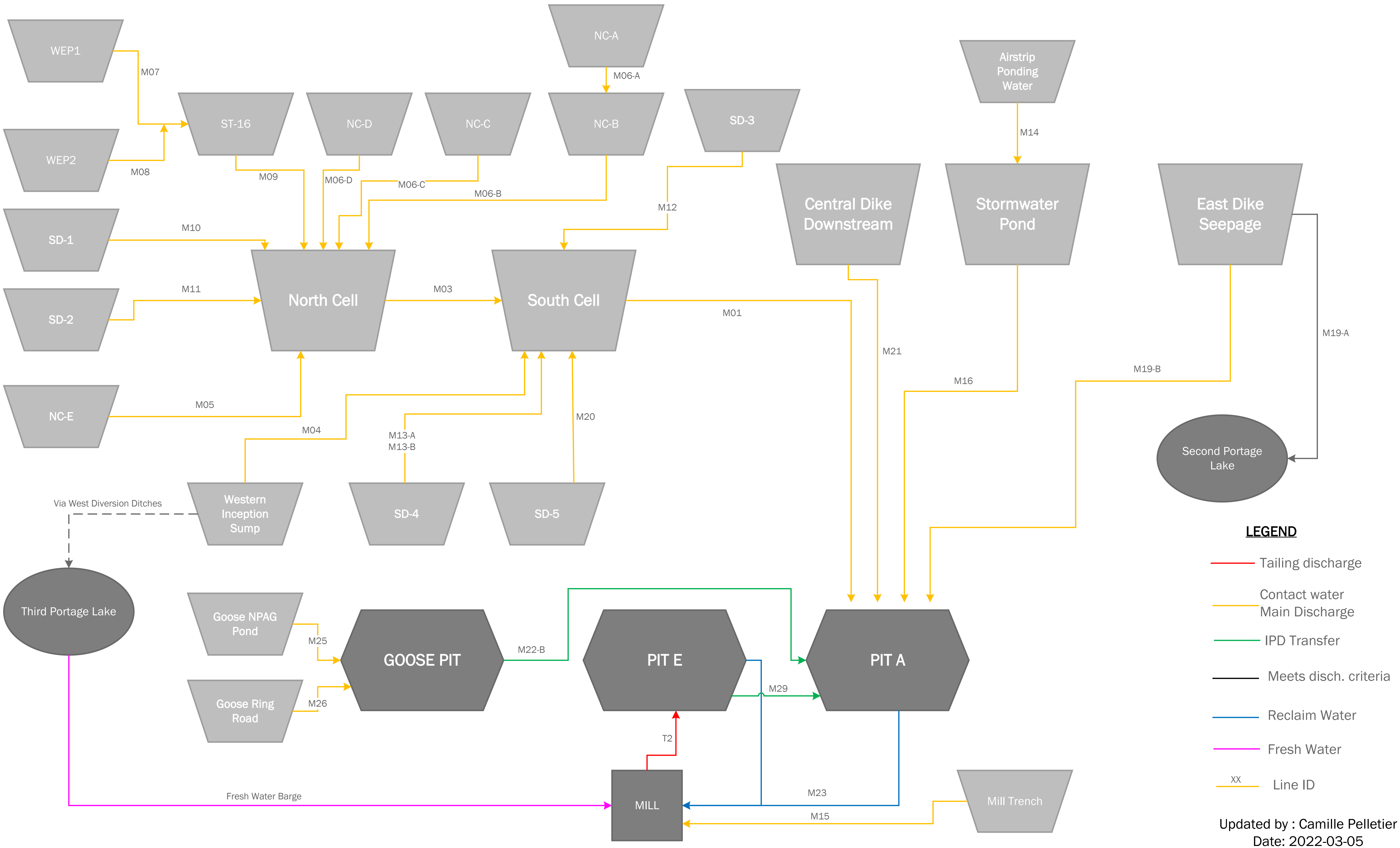
SCALE N.T.S. | FILE .DWG
DRAWING NO. | REVISION | SHEET 1 / 1

P:\Engineering\05-Geotechnic\05-WaterManagement\Snow Removal\MBK Geo Referenced\MBK Georeferenced Snow Map 2021.dwg, 04 Dec 2021

APPENDIX 4

2022 Freshet flowchart and plan view

Meadowbank 2022 Detailed Freshet Flowsheet



Updated by : Camille Pelletier
Date: 2022-03-05

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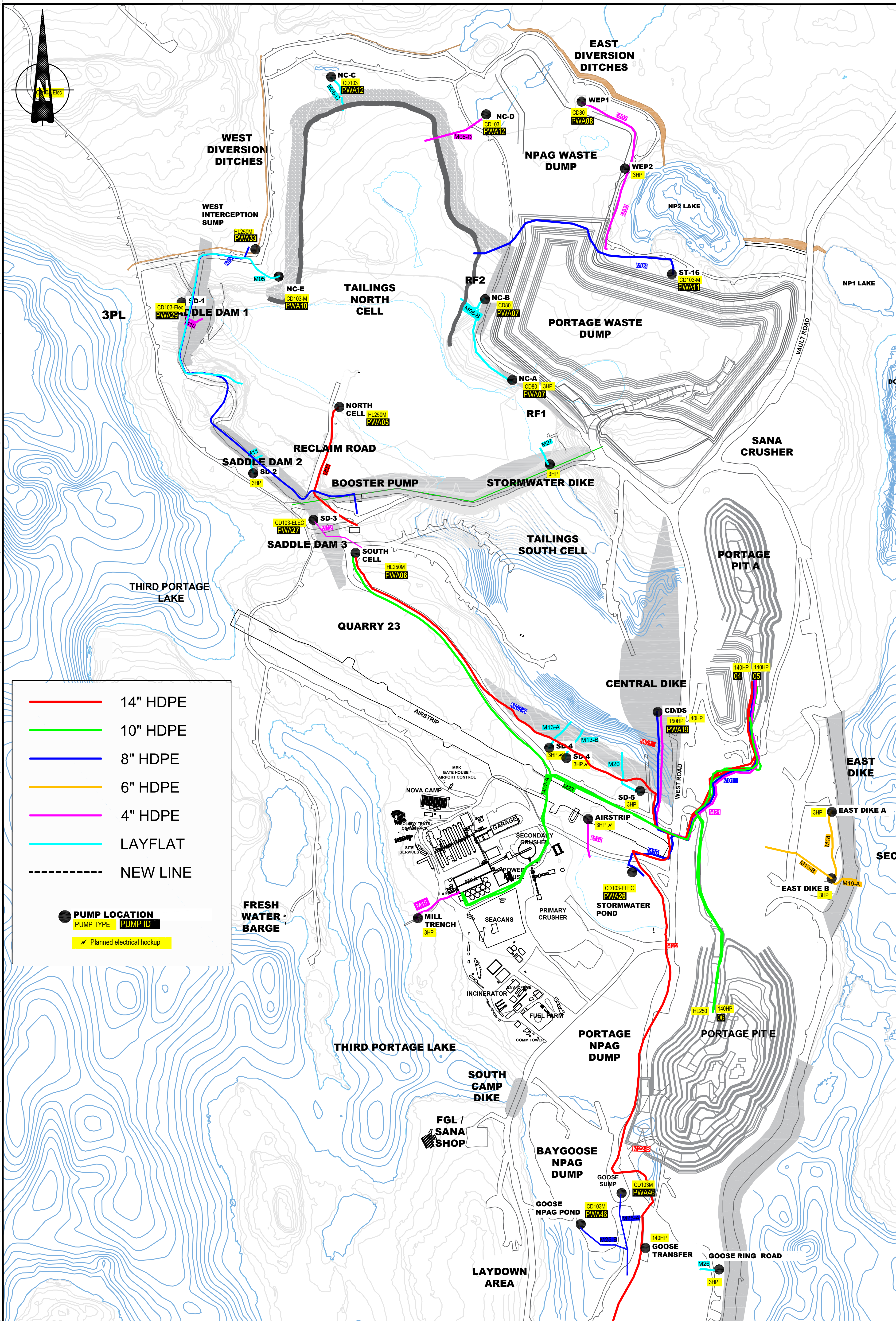

TECHNICAL SPECIFICATION		DRAWN BY	DATE	MODIFIED BY	DATE	MEADOWBANK DIVISION
None	AGNICO EAGLE MEADOWBANK	SURVEY CHECK	DATE	Nicole Brisson	2022-03-07	ENGINEERING - GEOTECH
		GEOLOGY CHECK	DATE			MBK DEWATERING MAPS
		ENGINEERING CHECK	DATE			FRESHET 2022
						Revision1
						SCALE 1:12500 DATE FILE .DWG

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APPENDIX E – 2021 AMMONIA MANAGEMENT PLAN

AGNICO EAGLE

MEADOWBANK COMPLEX

AMMONIA MANAGEMENT PLAN

DECEMBER 2021

VERSION 4

EXECUTIVE SUMMARY

In accordance with the Type A Water License, Agnico Eagle is completing Ammonia Management at the Meadowbank and Whale Tail Projects (e.g., the Meadowbank Complex), which includes monitoring for ammonia in all mine pit sumps, storage pond, tailings storage facility, seeps, etc. Furthermore, Agnico Eagle has implemented a comprehensive, regular inspection program related to explosives management within the mine pits, conducts regular inspections at the explosives manufacturing facility (Dyno Nobel) to ensure all explosive products are stored in locked, sealed containers prior to use, and continues to perform continuous review of analysis results such that mitigation measures can be implemented when increasing trends of ammonia are determined. Agnico Eagle has not exceeded any ammonia discharge criteria (Water License or MDMER) to date.

This Ammonia Management Plan (AMP) is a companion document to the Spill Contingency Plan, the Water Management Plan and the Water Quality and Flow Monitoring Plan and has been updated to provide guidance for monitoring ammonia levels at the Meadowbank and Whale Tail mine sites, as part of the conditions applying to waste disposal and management listed in the water license.

DOCUMENT CONTROL

Revision				Pages Revised	Remarks
#	Prep.	Rev.	Date		
00	SNC		February 2013	All	
01	Agnico Eagle	1	March 2016	13	Table 1 update
				16	Add section 6
				Appendix 1	Add Memorandum to address comments made during water license renewal process
WT	Agnico Eagle	WT	June 2016		Included Whale Tail Pit operations in the updated plan
02_NIRB	Agnico Eagle	2	Dec 2018		For WT Expansion permitting process
02_NWB	Agnico Eagle	2	April 2019		For WT Expansion permitting process
02	Agnico Eagle	2	April 2020	All	Comprehensive review of the plan + incorporates WT
03	Agnico Eagle	3	March 2021	All	Comprehensive update to reflect the current operation
04	Agnico Eagle	4	December 2021	Appendix 5, p.27	Update inspection sheet
				Section 2.1.1, p.9	Update to reflect WT emulsion plan construction

Prepared By: Environmental Department

Approved by: Alexandre Lavallee
Environment and Critical Infrastructures Superintendent

TABLE OF CONTENTS

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ACRONYMNS

AGNICO EAGLE	AGNICO EAGLE MINES LIMITED
AMP	AMMONIA MANAGEMENT PLAN
AN	AMMONIUM NITRATE
ANFO	AMMONIUM NITRATE – FUEL OIL
AWAR	ALL-WEATHER ACCESS ROAD
CCME	CANADIAN COUNCIL OF MINISTERS OF THE ENVIRONMENT
CIRNAC	CROWN-INDIGENOUS RELATIONS AND NORTHERN AFFAIRS CANADA
CNO-	CYANATE
CREMP	CORE RECEIVING ENVIRONMENTAL MONITORING PROGRAM
KivIA	KIVALLIQ INUIT ASSOCIATION
MDMER	METAL AND DIAMOND MINING EFFLUENT REGULATIONS
NIRB	NUNAVUT IMPACT REVIEW BOARD
NWB	NUNAVUT WATER BOARD
TSF	TAILINGS STORAGE FACILITY
WMP	WATER MANAGEMENT PLAN
WRSF	WASTE ROCK STORAGE FACILITY
WTHR	WHALE TAIL HAUL ROAD

1 INTRODUCTION

The Meadowbank Mine Water Management Plan (WMP) was first prepared in 2009 (Doc. 833). This version was subsequently updated, support document (Doc. 500), in preparation for the Type-A Water License Application for the Meadowbank Mine. The WMP was then updated in 2011 (Doc. 1270). In 2015 WMP update, a technical note was added as an appendix, which was the first iteration of the Ammonia Management Plan (AMP) for the Meadowbank Mine. As an extension of the Meadowbank Mine, the 2016 update of the AMP includes measures to manage and monitor ammonia at the Whale Tail satellite open pit operations. Other facilities that are part of the Meadowbank Project are the Baker Lake facility, the All-weather Access Road (AWAR) between Baker Lake and the Meadowbank Mine, the Meadowbank Mine Camp, the Meadowbank Tailings Storage Facility, the 8 km Vault haul road and the 64.1 kilometer Whale Tail Haul Road (WTHR) between the Whale Tail open pit and the Meadowbank Mine site.

The Ammonia Management Plan (AMP) was updated in March 2016 in response to concerns raised during the Water License renewal process (January, 2015 – NWB Technical Meetings – Baker Lake) and was re-issued as part of the management plans update process. These concerns from interveners centered on ammonia loading resulting from mine infrastructure in particular from cyanidation in the Tailings Storage Facility (TSF), the use and management of explosives, and the management of treated sewage. In addition, there was a request for loading calculations of ammonia to the receiving environment. These comments are addressed in the Ammonia Management Plan Version 2 March 2016 and specifically in the SNC 2016 Technical Memorandum – WGFU, which was appended to the revised plan. It should be noted that there is no further planned discharge of mine contact water into Third Portage Lake from the Portage Attenuation Pond. The onsite Core Receiving Environmental Monitoring Program (CREMP), takes into account the overall ammonia levels in Third Portage Lake and to date Agnico Eagle has not reached any level of concern (no trigger levels have been reached for ammonia).

Ammonia management at Whale Tail Pit follows the same practices as outlined in this approved plan and similarly includes conducting routine monitoring in the receiving environment at the Whale Tail Pit site under the CREMP.

This AMP is a companion document to the Spill Contingency Plan, the Water Management Plan and the Water Quality and Flow Monitoring Plan and has been updated to provide guidance for monitoring ammonia levels at the Meadowbank and Whale Tail mine sites, as part of the conditions applying to waste disposal and management listed in the water license. This includes monitoring for ammonia in all mine pit sumps, attenuation ponds, TSF, seeps, etc. in accordance with the Type A Water Licenses. Furthermore, Agnico Eagle implemented a comprehensive, regular inspection program related to explosives management within the mine open pits, conduct regular inspections at the explosives manufacturing facility (Dyno Nobel) to ensure all explosive products are stored in locked, sealed containers prior to use, and continue to perform continuous review of analytical results such that mitigation measures can be implemented when increasing trends of ammonia are noted. Agnico Eagle has not exceeded any ammonia discharge criteria (Water License or MDMER) to date.

Ammonia is a naturally occurring nitrogen compound found in the environment. However, there are two sources at the mine site that can contribute to the mobilization of ammonia in the groundwater or surface runoff:

1. Blasting of ammonium-nitrate (AN) explosives is typically the primary source of ammonia in areas of mining operations. AN readily absorbs water and dissolves easily, thereby mobilizing ammonia in either groundwater or surface runoff.

2. In gold mine operations using a cyanidation process to extract the gold from the ore, the cyanide in solution is oxidized to cyanate (CNO^-) using a sulfur dioxide (SO_2) air process before discharge to the TSF. The cyanate can then hydrolyze to ammonia in the TSF reclaim pond.

Ammonia dissolved in water exists in equilibrium of interchanging un-ionized (NH_3) and ionized (NH_4^+) forms. The equilibrium is influenced by pH, temperature, and ionic strength (salinity) where the amount of un-ionized ammonia is favored as the pH becomes more basic or as the water temperature or salinity increases. Un-ionized ammonia can readily pass across the gill surface and enter into the bloodstream of fish, while ionized ammonia passes with greater difficulty. Once inside the fish, both forms of ammonia can cause toxic effects (CCME, 2010). Furthermore, it should be noted that ammonia oxidizes to nitrite (NO_2) and nitrate (NO_3), the former being particularly toxic to fish and humans. Both nitrite and nitrate have CCME guidelines to ensure the Protection of Aquatic Life.

In addition to ammonia, monitoring of nitrate and nitrite is also considered in the AMP, as both water quality parameters are signature compounds of AN explosives. NO_3 has a discharge criteria threshold specified in the conditions applying to waste disposal and management in the Meadowbank and Whale Tail water licenses. This AMP proposes monitoring of blasting practices for the assessment of explosive quantity used and blast performance, as well as monitoring of water quality to determine ammonia levels in waters within the Project sites. The monitoring results can be used to review and adjust blasting practices or water management if ammonia levels need to be reduced.

2 EXPLOSIVE MANAGEMENT AND BLASTING PRACTICES

2.1 SITE DESCRIPTION

2.1.1 Explosive Storage

Version 4

The primary storage area of explosive products is located at the Meadowbank and Whale Tail site emulsion plant areas (see Appendix 1). The explosive products arrive by barge at the Baker Lake marshalling area. They are then transported by ground to the emulsion plant located at the Meadowbank and starting in January 2022 to the newly built Whale Tail emulsion plant.

Explosive products at the plant facilities are packaged in supplier provided containers, which limit the possibility of spillage into the environment. The products are only removed from these containers prior to use at the emulsion plant areas. Surface areas are graded to collect water runoff within the storage facilities.

The emulsion plant area at Meadowbank is located north of the Meadowbank mill, pits, and camp site and approximately 76 km from the Whale Tail Project. The storage area is accessible from the AWAR. This area consists of an emulsion plant for the preparation of bulk emulsion explosives, two buildings for the storage of AN, and four explosive magazines along the access road to the plant. An Emulsion Plant at Whale Tail will be built in 2021 in a remote area southwest of the Pits and camp site. The plant will be commissioned in January 2022. It will consist of an emulsion plant for the preparation of bulk emulsion explosives, two buildings for the storage of AN, a nitrate pad and seven explosive magazines along the access road to the plant.

The use of explosives at the Meadowbank mine for operations at Vault Pit, Goose Pit, Portage Pit and Phaser Pits ceased when mining was completed in Q4 2019. The existing emulsion plant at Meadowbank supplies explosives to the Whale Tail Pit and IVR Pit. Similar to the previous Meadowbank operations, the emulsion is trucked to Whale Tail Pit and IVR Pit. The current plan for emulsion delivery is to directly deliver to the open pit however, emulsion is also stored in a remote emulsion storage building located where the Whale Tail Pit explosives magazines are stored. In the case of road closures, inclement weather or other operational constraints, the remote emulsion storage will supply emulsion to the Whale Tail Pit and IVR Pit.

Once the Whale Tail Emulsion Plant is commissioned in January 2022, the Meadowbank Emulsion Plant, will no longer be used to produce explosives for the site and will be maintained until its decommissioning. Emulsion delivered to the Whale Tail Pit, IVR Pit and underground operation will be transported from the Whale Tail emulsion plant.

2.1.2 Roads

The 110 km AWAR between the Meadowbank mine site and Baker Lake will continue to be used to transport explosive products from the Baker Lake site facilities to the emulsion plant area located 4 km north of the Meadowbank mine site.

Agnico Eagle will continue to enforce restricted access from km 85 north to the Meadowbank Mine and will enforce the same restrictions along the WTHR (refer to the Whale Tail Pit Haul Road Management Plan). In preparation for blasting operations, explosive products are transported from the emulsion plant area to the appropriate blasting locations via Meadowbank local site roads and haul roads. Explosives are delivered via the WTHR between Meadowbank and the Whale Tail Project site.

Spillage control protocols, procedures and handling of spilled material, and explosive management for both storage and transport have been established by Dyno Nobel Inc. (Dyno) and are provided in Appendix 2. Explosive products and spills on the AWAR/WTHR are referenced in the Spill Contingency Plan.

2.1.3 Pits and Underground Operations

The development sequence of the mine site is provided in the Meadowbank Mine Waste Rock and Tailings Management Plan and the Whale Tail Waste Rock Management Plan. Explosives are used for the excavation of waste rock and mining of the ore at the Portage, Goose and Vault pits at Meadowbank before depletion, and at the Whale Tail pit, IVR Pit, and underground mines.

2.2 AMMONIA PATHWAYS

Emulsion not fully detonated in pit blasting operations provides several pathways for ammonia mobilization. Water from drainage runoff is the primary mechanism of mobilization for ammonia residuals remaining within open pits. This water, being at Meadowbank or Whale Tail, is collected at pit sumps and then is pumped to the associated Attenuation Ponds.

Blasting residuals are also expected to be attached to waste rock and ore materials, which are transported from the open pits to their respective storage and processing facilities. Residuals from waste rock may be washed off by precipitation and be ultimately conveyed to the attenuation ponds. Residuals from the ore may be carried in the tailings to the TSF. All these pathways (mine sumps, attenuation ponds, TSF) are monitored in accordance with the Water License.

At Whale Tail operations, if blasting residues on waste rock are mobilized, they will collect in the Waste Rock Storage Facility (WRSF) pond, which is downslope of the WRSF, or the IVR WRSF contact water collection system. For ore stored within the dewatered portion of Whale Lake, drainage would flow to the attenuation pond. The locations of the WSRF and the storage ponds are shown in the figure for Whale Tail site in Appendix 1.

To avoid any case of poor or incomplete detonation, Agnico Eagle employs the following measures:

- inspection of drilling depth to ensure it is in accordance with blast design;
- inspection of quantity of explosives in each drillhole to ensure it is in accordance with blast design;
- inspection of blast tie-in execution; and
- reporting of any anomalies during loading and priming of explosives to correct situations prior to initiation.

These measures will be reviewed should ongoing cases of poor or incomplete detonation be encountered. This will be included in the next revision of the AMP.

2.3 EXPLOSIVES AND BLASTING

Based on experience at Meadowbank and at other open pit mines in the Canadian Arctic, the largest potential source of ammonia in mine water will be explosive residue from blasting. Depending on the wetness of the site, water may leach explosives from blastholes prior to the blast. Other forms of ammonia released from AN are explosives flowing into cracks and fissures in the rock and not detonating or leading to an incomplete detonation of the explosive column and misfired blastholes. An AN based emulsion is used as a blasting agent at the Meadowbank and Whale Tail sites. This material is designed to repel water thus minimizing the potential for ammonia to impact mine water.

Blasting operations on site include monitoring of explosive quantities, blast design, procedures, and practices. The results of this assessment are used to adjust blasting practices as needed to:

a) Optimize the use of explosives; and

b) Increase the completion and efficiency of explosive detonations.

Any modifications to blast design are intended to decrease the amount of ammonia that may become available for mobilization in mine water.

2.3.1 Explosive Products

Explosive products used at the mine site include bulk explosives (bulk emulsion), packaged explosives, cast boosters, detonating cords, non-electric delay detonators and non-electric lead lines. The material safety data sheets (MSDS) for these products are provided in Appendix 4. Of these products, the greatest potential for water contamination comes from the bulk explosives. Meadowbank and Whale Tail use emulsion as the primary bulk explosive for blasting operations.

Bulk emulsions typically contain some or all of the following components:

- Ammonium, sodium and/or calcium nitrate;
- Fuel and/or mineral oil;
- Methylamine nitrate;
- Emulsifiers; and
- Ethylene glycol.

Although bulk emulsions are water resistant, contaminants can be leached from the product if it is left in contact with standing or flowing water for extended periods of time. The performance of the explosive, and hence the potential for post-blast contaminations, deteriorates with the length of time that the emulsion remains in the blasthole after it has been loaded (i.e., sleep time). Blast procedures currently in use are designed to minimize sleep time so that standing or flowing water is not in contact with the bulk emulsion for extended periods of time.

2.3.2 Procedures and Practices

Quality control procedures are in place to verify AN content in bulk explosives. Quality control procedures for the emulsion occur at the plant and density tests are done at the blast site (on the trucks). Loading procedures specify that blastholes be loaded with emulsion from the bottom of the blastholes to provide a continuous explosive column. Details on the explosive quality control and loading procedures have been established by Dyno Nobel and are provided in Appendix 2.

The primary factors that may reduce the amount of ammonia available for mobilization in mine water are:

- Explosives handling; and
- Completeness of detonation

Bulk emulsion spillage during blasthole loading could (as bulk emulsion is resistant to water) be a source of ammonia that could be carried by water collected in the pits. Spillage control protocols, procedures and handling of spilled material, and explosive management for storage and transport, as well as the emergency response plan, have been established by Dyno and are provided in Appendix 2 and 3.

Incomplete detonation results in higher ammonia residue on the blasted rock. Evidence of incomplete detonation is often observed as an orange fume after a blast and sometimes an orange pigment on the blasted rock. Explosives that have failed to detonate may be observed in the muck pile. Muck piles are routinely inspected by Meadowbank and Whale Tail staff for signs of incomplete detonation.

3 MONITORING

Monitoring of explosive handling and blasting is as follows:

a) Explosive quantities: Records of explosive quantities used for in-pit blasting are kept for each blasting event and will be conserved throughout the mine life. Furthermore, a record of blast location (i.e., pit and elevation), blast date, and bulk explosive type and name used (emulsion, with the corresponding ratio of AN over emulsion) is kept for all events.

b) Design parameters: Blast design parameters, as well as changes in the blast design parameters from the standard are recorded and dated.

c) Loading instructions: Loading instruction forms are completed for each blast event and provide a record of the as-loaded parameters for all blastholes in the blast pattern including:
   - Hole depth
   - Collar height
   - Priming (single or double)
   - Other observations made by the blast crew (e.g., wetness of holes, use of liners, collapsing holes or difficulty loading)

d) Video footage: Videos are taken of each blast. This practice provides a visual, qualitative record of the results of each blast and provides insight into potential problems such as incomplete detonation (e.g., orange fumes) and misfires, as well as areas of poor muck pile heave and forward movement.

e) Blast audits: Blast audits are conducted on a monthly basis to ensure that best practices are being followed in the field (audits may be adjusted to a lesser frequency if low ammonia levels are consistently observed, or conversely may be adjusted to a higher frequency if high ammonia levels are consistently observed).

An additional monitoring technique commonly used is the measurement of the Velocity of Detonation (VOD), which has been shown to be directly related to the volumetric fraction of the explosive that has been consumed. This technique will be implemented if poor or incomplete detonation is consistently suspected.

4 MILL EFFLUENT

4.1 SITE DESCRIPTION

The mill effluent consists of tailings produced at the mill that is pumped as slurry and deposited in the TSF/in-pit disposal where the tailings particles can settle and consolidate. The reclaim water is pumped back to the mill for re-use. Prior to discharge of the mill effluent to the TSF, the effluent is sent to the cyanide destruction process. The cyanide destruction process at Meadowbank uses the sulfur dioxide (SO_2) and air process to oxidize weak acid dissociable cyanide (CN-WAD) to a less toxic form: cyanate (CNO^-) based on the following reactions:

$$SO_2 + O_2 + H_2O + \text{CN-WAD} \rightarrow CNO^- + H_2SO_4$$

The process can also use sodium metabisulfite ($Na_2S_2O_5$) instead of sulfur dioxide in case there are operating issues with the dosing of sulfur dioxide gas in the process. This ensures that chemicals required for the cyanide destruction process (either SO_2 or $Na_2S_2O_5$) are always available.

4.2 AMMONIA PATHWAY

Cyanate produced from the oxidation of CN-WAD can readily hydrolyze to ammonia (NH_3) and carbon dioxide (CO_2) based on the following reaction:

$$CNO^- + H^+ + H_2O \rightarrow NH_3 + CO_2$$

Thus, the mill effluent provides an ammonia loading to the TSF reclaim water.

During the operation of the TSF, the reclaim water will be pumped to the mill for re-use in a closed loop system. Consequently, there will be no discharge of reclaim water to the environment during this period. Furthermore, it is expected that the ammonia concentration will gradually increase in the TSF/in-pit reclaim pond over time, even though (1) there may be some slight attenuation of ammonia due to microbial/algae activity in the summer and (2) ammonia may oxidize to nitrite and nitrate, particularly near the top of the pond where oxygen is most present.

Annual Water Quality Forecasting provides a forecast of the concentration for ammonia in the TSF reclaim pond during the life of the mine. Furthermore, the report provides a forecast of the ammonia concentration in the Portage and Goose Pit once flooding activities has started. This modeling has been updated for Whale Tail operations to include predictions for Portage and Goose Pit end pit water quality and will be updated according to the Type A Water License requirements.

4.3 MONITORING

Concentrations of ammonia, nitrate and nitrite are parameters that are monitored on a monthly basis as part of this sampling campaign of the TSF/in-pit reclaim water.

In the Water Quality Forecasting, a maximum ammonia concentration in the TSF reclaim water is evaluated in order to meet the Type A water license criteria which for benchmarking are compared to CCME guidelines for the Protection of Aquatic Life in the Portage and Goose Pits once in-pit disposal and flooding activities are completed. If this concentration is exceeded before the end of the flooding operation, measures could be undertaken to lower the ammonia concentration, as well as nitrate and nitrite if required, in the TSF reclaim pond prior to the transfer of TSF reclaim water to the pits.

Ammonia treatment technologies that could be further investigated, if the need arises, include:

i) Biological nitrification / denitrification during the summer months.

ii) In-situ volatilization of ammonia during the summer months.

iii) Ammonia removal by snow making.

5 WATER MANAGEMENT

For details on the site wide water management, please refer to the Meadowbank Mine Water Management Report and Plan and the Whale Tail Pit Water Management Plan.

In addition to controlling contact water through design, the Meadowbank Water Quality and Flow Monitoring Plans and Type A water license requires monitoring stations that are used for the monitoring of ammonia loadings around the mine site and waste rock storage areas from explosive residuals, as well as ammonia concentration found in the TSF reclaim pond. These monitoring requirements ensure contact water that may contain elevated ammonia, nitrates or nitrites are managed, treated if necessary and do not impact the receiving environment. Monitoring at Whale Tail site is presented in the Whale Tail Water Quality and Flow Monitoring Plan and in the Type A water license.

In addition to the monitoring listed in the Water Quality and Flow Monitoring Plan, the following actions are undertaken at Meadowbank and Whale Tail as part of the AMP:

- If runoff or seepage is detected at the rock storage facility, water samples collected at the Portage, Vault, Whale Tail, or IVR WRSFs during late operations will also be analyzed for nitrate and nitrite to complete the suite of signature compounds found in explosive residuals.
- Tailings slurry volumes and density from the mill pumping facility to the TSF are recorded on a monthly basis.
- The records of water volumes pumped from the Meadowbank and Whale Tail sumps or WRSF pond to the attenuation ponds are recorded on a monthly basis.
- The records of water volumes pumped from the attenuation or storage ponds to the receiving environment will be recorded on a monthly basis.

Sampling frequency at the pit sump will also be increased if high variability is identified in observed constituent concentrations as a result of the blasting schedule.

The WRSF ponds at Whale Tail will collect all drainage from the WRSFs. Any drainage from the ore storage area will collect in the Whale Tail/IVR Attenuation Ponds. The open pit, water storage ponds and the Attenuation Ponds at Whale Tail and IVR Pits are shown in Appendix 1.

6 REPORTING

Reporting of ammonia concentrations at the Type A sampling stations listed is included as part of the requirement of the water license. The reporting frequency is prescribed by the Nunavut Impact Review Board (NIRB) Kivalliq Inuit Association (KivIA), and Nunavut Water Board (NWB) and include, but may not be limited to:

- Brief monthly reports of the compiled water quality monitoring results, sent to the NWB, the CIRNAC, Water License Inspector and to the KivIA; and
- An annual report submitted to the NWB, KivIA, CIRNAC, NIRB, Government of Nunavut, and other interested parties. This report summarizes monitoring results for each sampling station, annual seep water chemistry results, annual groundwater monitoring results, receiving water monitoring results, spills and any accidental releases, measured flow volumes, effluent volumes and loadings, and results of QA/QC analytical data.

Mine operation personnel reviews on a monthly basis the data gathered from the sampling stations in the Type A water license and from the monitoring action proposed under the AMP. If the data indicates that further studies and/or significant changes to the water management infrastructure are required to assess or control ammonia concentrations, Agnico Eagle will notify the NWB and KivIA as early as practical. Results of these further studies and/or changes to the AMP monitoring actions will be transmitted to the NWB for review.

7 INSPECTION

On a weekly basis, the environment department will conduct inspection in the blasting area to ensure that the Dyno Nobel loading procedures are being implemented (this will minimize blasting residues). In addition, inspections will be undertaken at explosive product storage facilities (Dyno Nobel) to ensure that explosives products are stored in sealed containers and there is no spillage. If any non-conformities are observed follow up action will be undertaken, and corrective measures will be put in place. See Appendix 5 for copy of the AMP inspection form.

8 REVIEW OF AMMONIA MANAGEMENT PLAN

Review of the results of the site water quality and AMP monitoring during the year may provide new information, and/or indications that changes to the AMP are necessary. When revisions are warranted, an updated AMP will be submitted to the NWB for review.

9 REFERENCES

Agnico Eagle (2020), Meadowbank Water Quality and Flow Monitoring Plan. July 2020.

Agnico Eagle (2016), Whale Tail Pit Project FEIS and Type A application documents. Volume 8 – Monitoring and Mitigation and Management Plans. June 2016.

CCME (2010), Canadian Water Quality Guidelines for the Protection of Aquatic Life, Ammonia.

Golder (2009). Updated Water Management Plan. Agnico-Eagle Mines. July 2009

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NWB (2020). Water License No: 2AM-MEA1530. Agnico- Eagle Mines Ltd. March 2020.

NWB (2020). Water License No: 2AM-WTP1830. Agnico- Eagle Mines Ltd. March 2020.

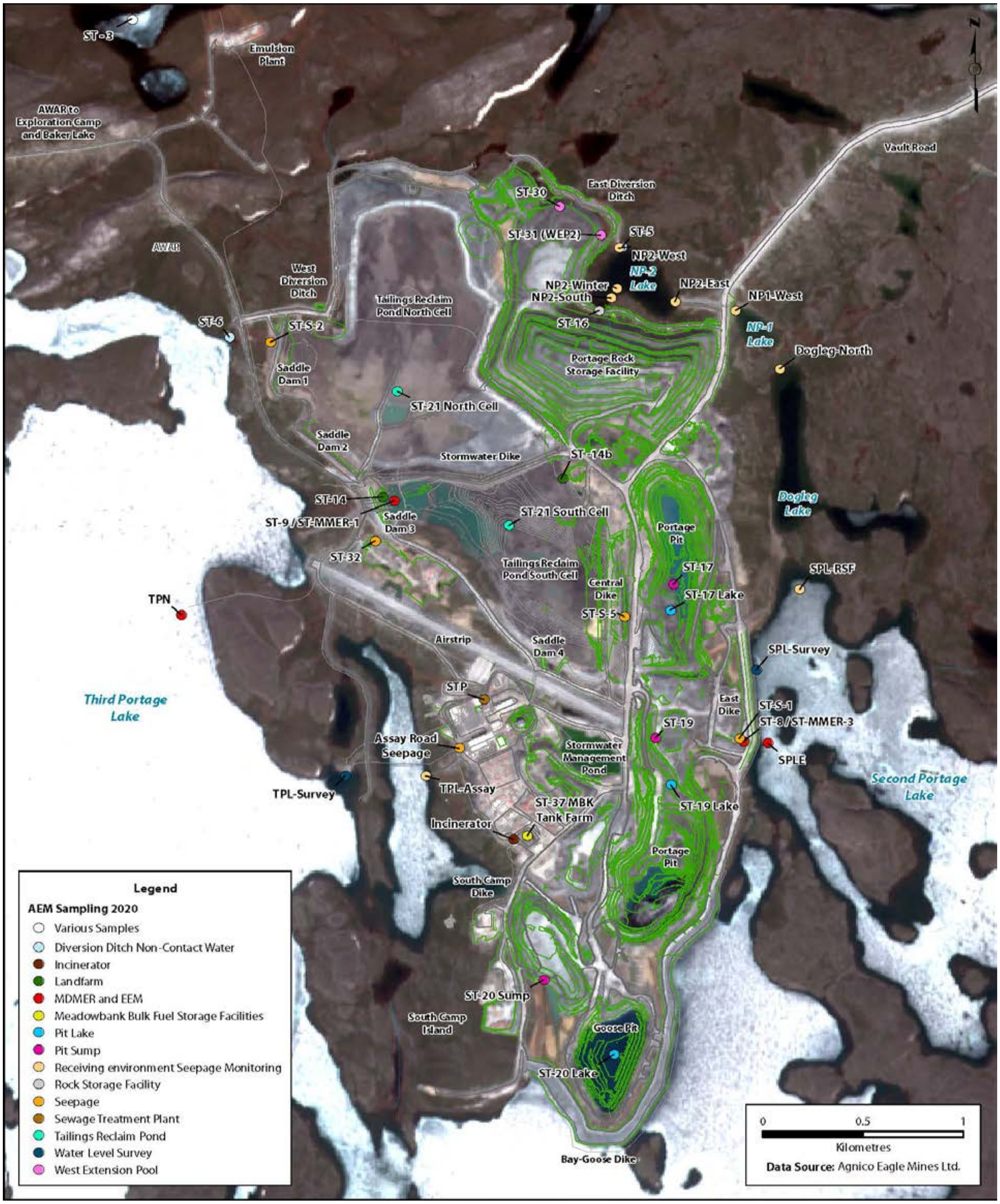
SLI (2012). Water Management Plan 2012. Agnico-Eagle Mines. Document No. 610756- 0000-40ER-0001, Rev. 02. March 2013.

SLI (2012). Water Quality Forecasting for the Portage Area 2012-2025. Agnico-Eagle Mines. Document No. 610756-0000-40ER-0002, Rev. 01. March 2013

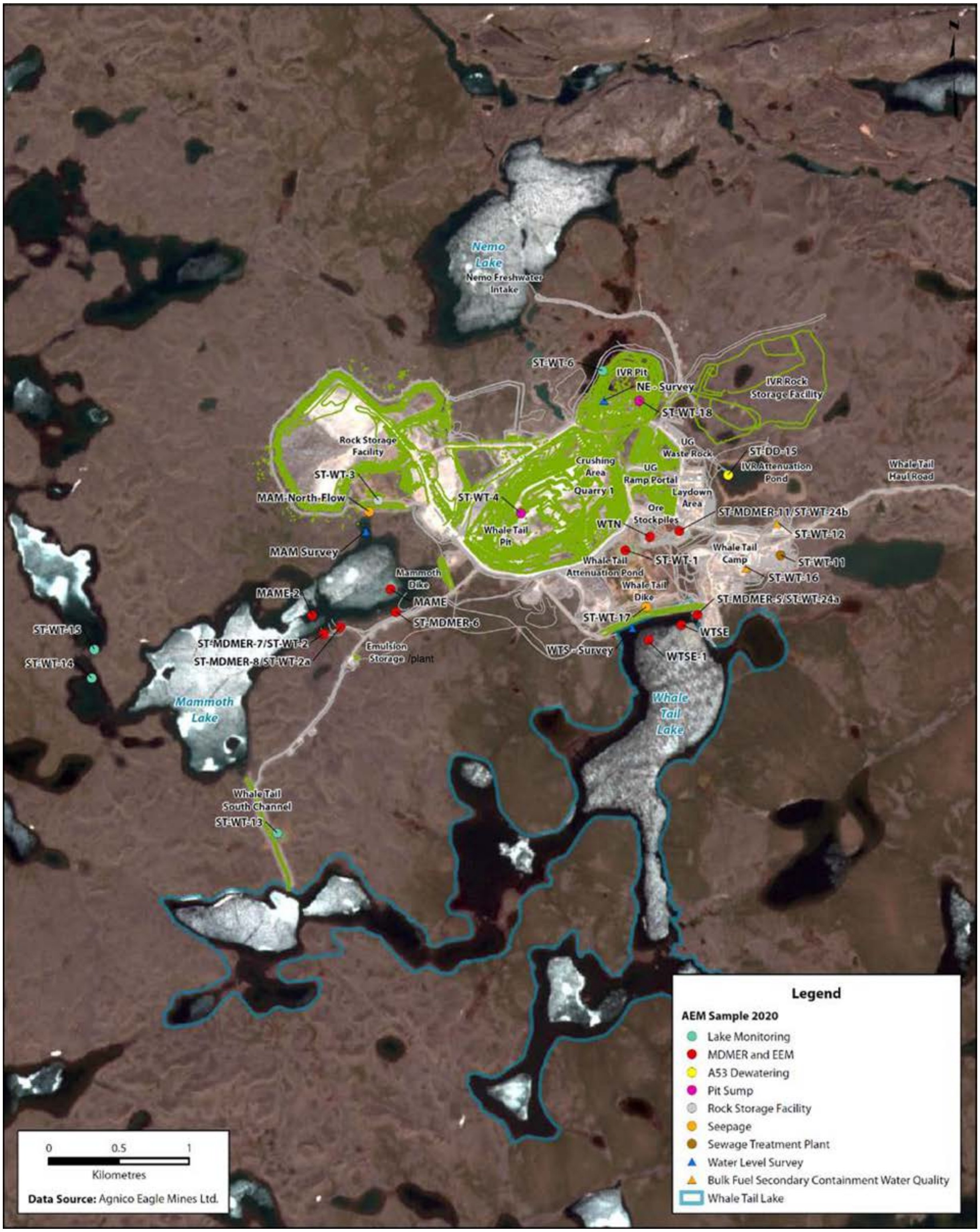
APPENDIX 1

ENVIRONMENT FIELD STATIONS – MINE SITE VIEW

Meadowbank Mine Site Layout Area



Whale Tail Mine Site Layout Area



APPENDIX 2

SPILL CONTROL AND LOADING PROCEDURE PLAN

Dyno Spill Control and Loading Procedure Plan

1) All trucks are washed inside shop to contain any residue that may have contacted trucks. The water from the washing of the trucks and or the shop floors themselves is then picked up by the AEM e vacuum and disposed of in the onsite Stormwater Management Pond.

2) A.N. Prill is brought to the Emulsion Plant site in 20 ft Seacans and is stored in the Seacans on the A.N. Pad for the site till it is needed. It is then taken out of the Seacan /s and brought into the Plant for use. Sometimes enough product for the next batch is stored outside to speed up Batching time when it is necessary. A.N. Prill is not left outside if weather looks like it is going to be damp or raining to prevent the leaching of Prill through the Tote bags and on to the ground surface.

3) Any A.N. spills that occur are promptly cleaned up and disposed of in 1 of 2 ways:
    i. Any contaminated prill is put into containment barrels or buckets inside Plant, depending on amount, and put into the next Ansol batch to be made.
    ii. Any contaminated Prill is put in Barrels or Buckets (depending on amount) and then transferred from barrels to buckets for the Emulsion Truck Operators to take to the Blast Pattern and placed into the boreholes after they have been loaded (disposal via blast).

    Any spills that are too difficult (some of our drummed Products) to take care of in this manner are placed in Metal Drums or HAZMAT bins etc. with absorbing materials, sealed and sent to AEM HAZMAT AREA (for shipment south).

4) Emulsion waste (with contaminants) is also either contained in drums or bins until it can be transferred into buckets and taken to Blast patterns and placed into boreholes for disposal (disposal via blasting).

    Any non contaminated Emulsion is put back through the system and on to Trucks.

    When Trucks need to be de-contaminated or process lines of trucks or plant need to be cleaned out, the excess water is strained through a Sack (this allows the water to go through, but contains the Emulsion) to minimize nitrites in our plant sump containment.

5) When an Emulsion Truck has completed loading on a blast pattern the remaining emulsion is flushed out of the loading hose by running water through the hose (water holding tank on trucks) until water discharges out the end of the hose into the borehole.

    This does not completely remove all of the Emulsion out of the Hose; there is still a residue amount left in the hose. Thus, when the Truck operator starts up on the next blast pattern, the hose is put into the borehole and the Operator primes the hose and all the residue Emulsion is contained in borehole and disposed of when hole/s are blasted.

APPENDIX 3

DYNO NOBEL EMERGENCY RESPONSE PLAN

DYNO NOBEL CANADA

EMERGENCY RESPONSE PLAN

AMARUQ NUNAVUT

REVISION STATUS

Revision #	Date	Revision Description	By	Checked by	Approved by	Revision Due
1.0	July 31, 2019	New Standard	P.St-Georges	D. Wall; P. Piprell	T. Medak	
1.1	October 26, 2020	Site Manager change		P.Piprell a& Shanno Ryan	T.Medak	
1.2	October 26, 2021	Review ERP	PSt-G.			October 2022

Approved for release by:

Signature: Patrick Piprell _____________ Date: October 22, 2021
Title: Site Supervisor

CONTENTS

All incident involving the manufacturing, importation, exportation, sales or storage of explosives and restricted components, and the use of fireworks, must be reported to the Chief Inspector of Explosives as soon as circumstances permit. For accident involving fatality, serious injuries or major property damage, call 1-855-912-0012 as soon as possible. All other accident/incidents must be reported to 1-613-948-5200. The completed Explosive Incident Report form F07-01 should be sent by email to ERDmms@nrcan.gc.ca or by fax to 613-948-5195. The inspector of explosives responsible for your area should also be contacted.

1.0 SITE INFORMATION

The entrance to the site is south of AMARUQ mine site at the Explosive Manufacturing Road (EMR).
Latitude (North): 65° 23’43.45”N
Longitude (West): 96° 44’1.00”W
Office: +1 819 759-3555 ext 4606806 & 4606808

2.0 PURPOSE

The purpose of the ‘Emergency Response Plan’ is to provide guidelines for the protection of all employees and company property in the event of an emergency occurring on company premises. It outlines the setting up of emergency control within the site and the emergency procedures in place to ensure the safety and protection of people, property and the environment.

- Notifying all on-site personnel of emergencies.
- Organizing the site based emergency response, where applicable.
- Facilitating communications with Emergency Services.
- The plan provides procedures for:
  - Training of site personnel in emergency response.
  - Reviewing and updating emergency procedures.
  - Facilitating recovery operations.

To provide a management system for Dyno Nobel Canada and stakeholders, to deal with emergencies to protect people, property and the environment.

Objectives:

- To minimize adverse effects on people, property and the environment
- To control or limit the effects of an emergency
- To facilitate an emergency response and to provide appropriate assistance to the emergency services
- To communicate vital information to all relevant persons as soon as possible
- To provide for competency-based training so that a high level of preparedness can be continually maintained
- To provide a basis for updating and reviewing emergency procedures
- To provide a system to manage an emergency
- To link current site plans with the corporate plan
- To identify and utilize an effective communication system

3.0 SCOPE

This plan has been prepared for Dyno Nobel Canada Inc. The plan covers the emergency response requirements for Dyno Nobel's AMARUQ Operations.

SCOPE OF OPERATION

Bulk Explosives Factory Site includes;

Emulsion transferring site
storage of 182,500 NEQ
- 50,000 liters of diesel;

4.0 REFERENCES

- Site Emergency Response Plan (Template)
- Emergency Risk Assessment Worksheet
- IPL HSE MS Element 9.1, Emergency Response Planning
- CSA-Z731-03 Standard – Emergency Procedures
- Regulatory Agencies, Groups, Industry and Community
- Environmental Emergency Regulation – Environment Canada

The regulatory agencies administering explosives are:

- Transportation of Dangerous Goods (TDG)
- Natural Resource Canada (NRC)
- Explosives Regulatory Division (ERD)
- Environment Canada (EC)

5.0 EMERGENCIES COVERED UNDER THE PLAN

Based on a risk assessment conducted the following natural or man made disasters could impact our business:

On-site Emergencies

- White outs
- High Winds
- Explosion – equipment (boiler/fuel or other)
- Fire in plant
- Injury or illness
- Wildlife interaction (wolverine; bear; caribou; other)
- Environmental contamination
- Spills
- Severe weather
- Product shortage
- Raw ingredient shortage
- Critical replacement parts unavailable
- NOX gas release possible.

Off-site Emergencies (including transportation)

- Transportation incident rollover or collision
- Blast pattern incident with drill
- Blast pattern incident near highwall
- Blast patten incident – lightning
- Fire –threat to vehicle
- Fire – toxic fumes
- Explosion – product detonation
- Security
- Injury or illness
- Wildlife interaction (wolverine; bear; caribou; other)
- Spills
- Severe weather
- NOX gas release possible.

6.0 HAZARDOUS OPERATIONS

The following zones, activities and equipment are hazardous and may require an emergency response:
The following is a prioritized list of hazardous operations and storage areas.

	Operation	Comments / Instructions
1.	Emulsion Transfer	Plant
2.	Operating loader	Yard; site access road
3.	Fuel storage area (bulk)	Bulk tank in yard
4.	Product delivery to blast pattern	Plant; Site yard; Mine road; pit
5.	Driving on a pattern	Pit
6.	Transferring chemicals	Plant; Process vehicles
7.	PTW activities	Confined Space Entry; Working at Height; Hot Work; Loading and unloading (Emulsion, Traces, Fuel); Lockout/Tagout; Critical Lifts

7.0 HAZARD CHEMICALS AND MATERIALS

The following is a prioritized list of or hazardous chemicals, materials and intermediates of significant quanities on site or transported by site:

	Chemical / Material	Quanties	Location
1.	Fuel oil	50,000L	Outside plant
2.	Trace 1 (citric acid)	284 L	
3.	Trace 2 (sodium nitrite)	284 L	
4.	ANP	120,000 kg	Outside

8.0 EMERGENCY CONTACT INFORMATION

Dial 6-9-1-1 in an emergency or call CODE 1 – CODE 1 – CODE 1

Non-Emergency Police / Fire

- Baker Lake RCMP (867) 93-1111

Regulatory Contacts: (NRCan via H&S or Regulatory Affairs Coordinator)

- H&S: Seamus Kilcommons Cell: 403 815-4066
- Reg: Pierre St-Georges Cell: 613 677-1051

DN Title	Name	Cell Phone	Work Phone	Home Phone
Manager of the Site	Patrick Piprell & Shannon Ryan	NA	819 759-3555 EXT 4606804	
Operations Manager	Tom Medak	403-818-4434	403-723-7530	
General Manager	Jim O'Brien	913-940-5170	913-940-5170	
HSEC Manager	Seamus Kilcommons	403-837-2685	403-723-7547	
Emergency Supervisor (ES)	Patrick Piprell & Shannon Ryan		819-759-3555 EXT: 4606804	

Local Emergency Services may be required to take control of the emergency situation. Dyno Nobel personnel will assist the Local Emergency Services with information and advice and will ensure that the Emergency Services are briefed with all appropriate information when attempting to take control of the situation.

9.0 EMERGENCY FUNCTIONS AND RESPONSIBILITIES

The following people will participate in emergency planning and crisis management.

Name	Role / Responsibitlies
	Responsible for updating emergency response plan
Patrick Piprell & Shannon Ryan	Site Supervisors will be the EMERGENCY MANAGER, or in his/her absence the next most senior manager on site will assume this role. Responsibilities are to ensure ERP is site specific: Lead drills twice a year
Jim O'Brien	General Manager: Overall reviewer and sign off. General Manager; Media Liaison.
Tom Medak	Operations Manager: responsible to review and ensure adequate: review of drills conducted; Bulk Site Operations Advisor

Seamus Kilcommons	HSEC Manager: responsible to review and ensure adequate: review of drills conducted; Liaison with regulatory authorities
Benoit Choquette	Environment Manager; Liaison with relevant regulatory authorities
Pierre St Georges	Regulatory Affairs Manager; Liaison with all relevant regulatory authorities

Emergency response responsibilities for all personnel on site are describe as follows:

Roles	Responsibilities
Emergency Manager (EM)	This position will usually be filled by the Site Supervisor / Acting Site Supervisor and will be responsible for: • Overall responsibility for management of the emergency. • Contact with other external organizations (e.g. Police) • Contact with employees and relatives • Declaration of "All clear" to approve re-entry • Implementation of the DNA Crisis Communication Plan
Emergency Supervisor (ES)	This position will usually be filled by the one of the operators or designate and will be responsible for: • Liaison with the EM. • Arrange the removal of equipment (e.g. truck explosives). • On-site security. • Collect visitors book during evacuation (if safe to do so) • Conducting head count of all personnel on site In the event that there is only 1 person on site then that person will assume responsibilities of both the EM & ES.
Other personnel on site	This position will usually be filled by any other employee on site. • If safe to do so, personnel holding appropriate licenses will attempt to remove all explosive trucks from the vicinity of the fire and shut down all equipment. • Follow the direction by EM to control the situation (e.g. extinguish fire) if directed • Make their way to the nearest designated evacuation point. • Visitors and contractors must proceed directly to the evacuation / muster point: The scale house.

10.0 ALARM COMMUNICATION SYSTEM

- Type of warning/alarm system (including back-up): Alarms tied into AMARUQ mine site Notified system to security / ERT
- The communication system used: Two way radios and phone
- Location of Alarms: Emulsion plant and office – Internal and external alarms

- We will communicate an on-site in an emergency situation to employees by: Alarm System Bell. In the event of a disaster we will communicate with employees by: Two way radio
- In event no one is on site, the alarm system will activate by: Automatic alarm: sensored for smoke and heat??
- We will test the warning system and record results at least __1___ time per year. Results are recorded by the mine. Mine owns the Dyno Nobel building

11.0 EMERGENCY RESPONSE EQUIPMENT

The following emergency response equipment is located on site:

Location	Equipment
Emulsion plant	**Spill Kits; Fire extinguishers; First Aid Kits**
Process Vehicles	**Spill Kits; Fire extinguishers; First Aid Kits**
Pickup trucks	**Fire extinguishers; First Aid Kits**

EMERGENCY RESPONSE KITS & MATERIAL

All DNCI worksites will maintain the following emergency response equipment, that is appropriately packaged, stored and easily loaded onto a pick-up truck and / or aircraft for immediate transfer to an accident scene:

VERIFY WHAT IS READILY AVAILABLE IN SPILL KITS AS PER LIST BELOW

I - Spill Recovery Material
1000 ft. of 3 inch fluorescent yellow security tape
3 explosion-proof lanterns / flashlights
1 roll (200 ft.) of 10 mil. clear plastic for ground or product cover
3 "explosives" signs plus assorted 1.1 / 1.5 "placards and labels"
4 polyethylene / non-ferrous 45 gal. drums with removable lids
1 doz. large heavy duty garbage bags (to line drums and for trash)
3 non-ferrous shovels
1 spill kit containing 1 - 25 lb. bag of granular absorbent material
30 ft. of 5 in. sorbent booms
10 ft of 3 in. sorbent socks
1 case of sorbent pads
1 - 3 ft. x 3 ft. neoprene sheet (drain seal)

6 heavy-duty cardboard boxes for repackaging broken boxes
2 rolls of 3″ duct tape
2 rolls of 3″ packing tape
1 push broom
6 blank (TDG) shipping documents

II – Personal Protective Equipment
6 reflective safety vests
6 safety "goggles"
6 particulate respirators (dust masks)
1 doz. disposable ear plugs
6 pr. nitrile gloves
6 pr. cotton gloves
Industrial First Aid Kit

(Note: all DNCI Emergency Responders must wear CSA approved protective footwear and Type II (lateral protection) hard hats when on the job. As well, a camera should be readily available to photograph the scene of an accident and remedial measures for inclusion in the accident investigation report).

An inventory list of the emergency response kit/material will be kept with the cache, which must be inspected quarterly, to ensure the contents are present and in good working order (note: Emergency response kit cache may be witness/lock-wired closed, in which case only an annual verification that the contents are present and in good working order is necessary, so long as the witness/lock-wire is present and unbroken).

12.0 EMERGENCY CONTROL CENTER

The Site Manager or Supervisor will nominate the most appropriate location of the Site Emergency Control Centre when all site personnel, contractors and visitors have mustered at the designed evacuation area. The Site Emergency Control Centre will depend upon type and location of the emergency.

In the event of an emergency that requires all personnel to be evacuated from the site, the Site Emergency Control Center will be located at the main gate.

13.0 EMERGENCY INSTRUCTIONS

- Ring the alarm.
- Evacuation Procedure.
- Evacuation of people includes alarms, designation of staging areas and alternative routes/assembly points, and a system of head counts to determine if all individuals have been evacuated.
- Activating the emergency plan.
- Activating the emergency services.

- Terminating the emergency.
- Health and safety functions, such as roll call and search and rescue.
- To identify those responsible for conducting this work and detail procedure to clean and contain spills.

13.1 EXTREME TEMPERATURES

Working in cold environments can be not only hazardous to your health but also life threatening. It is critical that the body be able to preserve core body temperature steady at + 37°C (+ 98.6°F). This thermal balance must be maintained to preserve normal body functioning as well as provide energy for activity (or work!). The body's mechanisms for generating heat (its metabolism) has to meet the challenge presented by low temperature, wind and wetness - the three major challenges of cold environments.

Uncomfortably cold working conditions can lead to lower work efficiency and higher accident rates. Cold impairs the performance of complex mental tasks. Manual tasks are also impaired because the sensitivity and dexterity of fingers are reduced in the cold. At even lower temperatures, the cold affects the deeper muscles resulting in reduced muscular strength and stiffened joints. Mental alertness is reduced due to cold-related discomfort. For all these reasons accidents are more likely to occur in very cold working conditions.

Protective clothing is needed for work at or below 4°C. Clothing should be selected to suit the temperature, weather conditions (e.g., wind speed, rain), the level and duration of activity, and job design. These factors are important to consider so that you can regulate the amount of heat and perspiration you generate while working. If the work pace is too fast or if the type and amount of clothing are not properly selected, excessive sweating may occur. The clothing next to body will become wet and the insulation value of the clothing will decrease dramatically. This increases the risk for cold injuries.

13.2 INJURY/ILLNESS

Medical emergencies may arise due to serious injury caused by machinery, entrapment, heart stoke. Limited first aid is available on site and casualties would likely be transferred by ambulance to nearess Hospital for treatment. A transport vehicle is always readily available on site for transportation needs. The site is accesible to local emergency services at all time.

A means of communication is mandatory for all employees working on site at all time. For emergencies requiring immediate medical attention, quickly assess the scene then call for assistance. Qualified Site First Aiders will assess the casualty, and if required, **call 6911** or CODE 1 – CODE 1 – CODE 1 on Two Way radio

The site has several trained first aid attendants and these people will be the first to assist in an emergency.

FIRST AID ATTENDANTS	EXPIRY DATE
Louis-Philippe Cote	
Chris Paul	
Adrian Friesen	
Foster Bullock	
Dale Wearmouth	
Joe MacLaren	
Kumanaa Autut	
Patrick Piprell	
Shannon Ryan	
Aubrey Chaulk	
Billy Harrison	
Frank Walsh	

*** Report incident details in SHAERS database when the Emergency is over.**

13.3 EXPLOSION / FIRE CONTROL PROCEDURE

EXPLOSION

All site personnel should be evacuated as soon as possible. In the event of an explosion the Emergency Services should be contacted immediately and the evacuated personnel assembled at the Muster area. No personnel should enter the site until at least one hour after the explosion or until the resultant fire has burnt out.

Dyno Nobel personnel should restrict access to the plant and nearby area until the Police and emergency services arrive at which time all access roads should be blocked off at a suitable distance. Emergency services should be advised not to enter the site but if they choose to do so they should be fully briefed before entering.

The Dyno Nobel Compliance Manager shall be notified of any explosion immediately so as to inform Government authorities of any incident that has occurred. There should be no attempt made at clean up or repair of the site until authorisation from the appropriate authorities has been received.

13.3 EXPLOSION / FIRE CONTROL PROCEDURE (Continued)

FIRE CONTROL PROCEDURES

Fires will vary in location and the materials involved. Each kind of fire shall have inherent risks associated with them. In general the following guidelines should be adhered to:

- Do not fight a fire that has become established and involves explosives or precursors used in the manufacture of explosives;
- Proceed with extreme caution when fighting fires involving Oxidizing agents as toxic fumes may be evolved;
- Never fight a fire unless you are comfortable to do so and have the correct equipment;
- Always leave an escape route when approaching or fighting a fire; and
- Always fight a fire from upwind.

IF YOU ARE UNABLE TO CONTAIN THE FIRE WITH A FIRE EXTINGUISHER THEN YOU MUST EVACUATE THE AREA.

13.4 SECURITY

The Site can be secured by a locked gate at the main entrance (main emergency exit and gathering point) of the site. Due to 24 hour operation the gate is not locked to allow access for DYNO personell and mine blasters. A sign in, sign out book is located at the main entrance for visitor and employee manlimits as per the site ERD Factory License. Only Dyno Employee's have keys to the locked gate.

'A' & 'B'. Sign includes ; Danger - Explosives, No Trespassing, Penalty-Section 18, Canada Explosives Act, $ 5,000.00 fine. Man Limit. No smoking. A match/lighter box. PPE requirements, and a 24 hour Emergency Contact Number.

13.5 BOMB THREAT

In the event of a "Bomb" threat the telephone operator or other person receiving the call should obtain as much information as possible. Where practicable the person receiving the call should have access to the "Bomb Threat Checklist".

Action if bomb or other explosive device is found:
If object or parcel, suspected of being a "bomb" or other type of explosive device is found by anyone, the following action should be taken:

- Do not touch, tilt or otherwise tamper with the object, whether it is a bomb, improvised explosive device (IED) or other suspect object.
- Immediately evacuate the area surrounding the object.

13.5 BOMB THREAT (Continued)

- Consider the consequential damage and effect - both on site and off site -if process equipment, storages or pipelines are involved.

Use the following guidelines:

- Evacuate the area concerned.
- The possibility of shrapnel must be considered.
- Evacuate all persons to the emergency evacuation area. Safety perimeters must be maintained until the device is rendered safe.
- Quick detailed observations should be taken of a suspected IED. Time spent near an IED must be kept to absolute minimum.

Observations should include:

- Exact location and proximity to hazards such as dangerous chemicals or substances.
- Size, shape and colour of object.
- Any writings or labels appended to the device.
- Any other peculiarities.
- Notify Police simultaneously with the commencement of evacuation.
- approach police upon their arrival to supply all details of information.
- Police will, upon their arrival, coordinate and control all necessary procedures.

13.6 CHEMICAL SPILL/RELEASE

Spills of materials on site are most likely to originate from damaged containers and drums whilst unloading raw materials. The action taken to deal with a spill is dependent on the type of material spilt and the associated hazards with that material.

Environmental considerations should be taken into account when cleaning up a spill. To ensure that the appropriate action is taken to clean up a spill the MSDS (Material Safety Data Sheet) should always be consulted before any clean up attempt is made.

Care should also be taken that the spill does not mix with other raw materials as violent reactions or the generation of toxic fumes may be possible. In the case of reactions or fume generation the emergency services should be called and the area evacuated.

The Ministry of Environment is to be notified. Contact Dyno Nobel Canada Environmental Manager.

13.7 TRESPASSING/VANDALISM

If there has been a breech of security or obvious signs of trespassers, notify the police. Do not disturb scene.

Determine if there has been any damage or theft. Follow instructions of the mine security or police. If there has been a theft of explosive materials proceed to the appropriate section of this Plan.

Take temporary actions to prevent recurrence until permanent actions can be implemented.

13.8 LOSS/THEFT OF EXPLOSIVES

LOSS

Determine the nature of the loss. **Implement** the appropriate sections of the Notification Plan. **Retrace** all routes of travel. **Verify** security and inventory level with personnel at the place of origin and destination. **If material cannot** be accounted for, the HSE Advisor and Site Manager shall notify ERD & the RCMP.

THEFT OF EXPLOSIVES

Immediately call the police. **Implement** the Emergency Notification Plan.

The Site Manager, HSE Advisor or Regional Operations Manager will call, as soon as possible and within 24 hours, the RCMP & ERD. **Determine** exactly what product, how much and code date(s) was stolen from the magazine(s). **Be careful** not to disturb the magazine or its contents so as not to destroy evidence such as fingerprints, shoe marks, etc. **Do not** handle tools or equipment that may have been used to break in. **Allow** Police personnel access but protect the scene from others that may disturb the evidence.

Do not permit news media personnel or any other non-company personnel (excluding Police) to enter the site. **Do not** make any statements to the media or non-company personnel. Refer the media to the Company Spokesperson. **The** Site Manager shall be the direct liaison between the company and the police and regulatory agencies. **Keep a log,** (documentation), of all activities regarding the break-in investigation for the company record. **The** Regional Operations Manager, HSE Advisor, and Site Manager will review all information and determine prevention measures to be taken to deter future break-ins.

13.9 PROCESS LOSS/INTERRUPTION

The possibility of a power outage on the site is very thin. The site has a generator.

13.11 TRANSPORTATION VEHICLE ACCIDENT

Ensure the accident scene is safe. Check if there are injuries. Whether the victim is conscious. Ask someone to call emergency assistance. Provide First aid and take control of the scene of an accident. Take care of the victims until help arrives.

13.12 TRANSPORTATION VEHICLE BREAKDOWN

Call **911** and contact Regulatory Manager Pierre St-Georges at (613) 677-1051.

13.13 BLAST SITE INCIDENT

If the emergency involves a blasting incident, the crew at the blast site shall follow the emergency instructions outlined in the Blasting Guidelines and Procedures. This site shall implement the appropriate sections of the Notification Plan as directed. The site shall support the blasting crew with personnel and equipment as needed.

13.14 TRANSPORTATION CHEMICAL SPILL

Initiate the ERAP by calling 1-800-367-4629 and call 911. The Emergency Response Advisor will contact the authorities.

Determine what material(s) has spilled or leaked and secure the area. Do not walk through the spilled material. **Put** on appropriate Personal Protective Equipment.

Protect the area from ignition sources. If a vehicle is involved, engage the battery disconnect switch. **Keep** unauthorized persons away.

Make every effort to confine and contain the spill, using spill kit and all available resources. **Determine** the source of the spill, and stop the leak if possible. **Make** every attempt to see that the material does not reach any waterway. **Prevent** rain or water from coming in contact with the product. Diking may be possible with gravel, soil or any ground material. **Use** what resources you have to begin cleaning up the product, outside equipment may be required. **Return** uncontaminated product to the original containers.

If the material has spilled into a waterway, an outside clean-up contractor will be called to assist with the clean-up operation. Call the main office as soon as possible. Seek corporate counsel as soon as the situation is stable.

13.15 TRANSPORTATION FIRE/EXPLOSION INCIDENT

Should there be explosive detonations, or the risk of detonations due to the presence of fire or other detonating factors, advise the First Responders (or anyone within the immediate vicinity if First Responders are not at the scene) of the risk of an explosion. Help organize perimeter guards to prevent people from entering the evacuation zone. The minimal distance to evacuate for a 20,000 kg tanker is 1.2 km or 4000 feet.

14.0 AMMONIUM NITRATE (E2 REGULATION)

14.1 Physical and chemical properties

Ammonium nitrate in solid form (prill) is of a light or off-light color and is commercially available in small beads of various sizes. It gives off a light ammonia smell. It is considered an oxidizer (risk class 5.1). Its density varies between 0.72 and 1.0 g/cc. Its solubility in water is high at 192 g/100 ml at 20°C. Its boiling point (decomposition) varies between 177 and 210 °C and its fusion point is 170°C.

Ammonium nitrate is stable in normal conditions. However, when involved in a fire, it will give off toxic compounds of nitrogen oxides and may emit ammonia vapors in the air. When confined or exposed at high temperatures, it can explode. It becomes more sensitive to explosion when contaminated by organic matters or other combustible materials.

14.2 Potential environmental impact

Ammonium nitrate is a fertilizer composed of nitrate ion (NO_3^-) and ammonium nitrogen ion (NH_4^+). Nitrate is essential to life. Most crop requires a large quantity of nitrates to support growth. In moderate quantities, nitrate is a harmless component of food and water. The nitrate ions are very soluble in water. They are easily solubilized and transported by surface and groundwater. Ammonium nitrogen is a reduced form of nitrogen which has the potential in water to release ammonia gas and be toxic to aquatic life. This ion is not very mobile in soils. This ion normally stays attached to clay or humus soil particles. Ammonium nitrogen will normally be converted in nitrates by soil bacteria in a few weeks.

A high level of nutrients (nitrates) combined with the presence of phosphorus in water support the rapid growth of algae and aquatic plants in water. It may reduce dissolved oxygen level in water. Insufficient oxygen levels may create dead zones where fish species requiring cold and well oxygenated water could no longer live in. Nitrates can therefore contribute to the eutrophication phenomena of lakes and rivers. The closest water bodies that can be impacted by a spill are located within a kilometer of the plant site and testing is completed by Meadowbank environment regularly. No potable water wells are present at the site.

14.3 What to do in case of a spill

In case of a spill, the product must be recovered rapidly to avoid exposure to water. Protect it with tarp and build berms around it if necessary to avoid exposure to surface water and rain. Avoid any contact with a flame. The product can be recovered manually using plastic shovels or brooms and put into plastic bags or containers. A HEPA filter can also be used if desired. In case of a very large spill, the product can be recovered using a mechanical shovel or loader and put in a sealed steel (20 cubic yards) bin equipped with a cover. The bin must be clean and not contaminated by any organic material.

In low concentrations in water, nitrates will be absorbed by surrounding vegetation and will support their growth. If there are water wells nearby, there is a potential to contaminate the potable water. The drinking water standards for nitrates is 10 mg/l (as N). Therefore, prevent contaminated water to enter sanitary and surface water drains. Recovered product can be re-used if clean, recycled as a fertilizer or disposed off-site as an oxidizer to an approved waste disposal company. Do not fight fires involving ammonium nitrate because of the risks of explosion.

14.4 Maximum quantity planned during the year:

10,000,000 kg.

14.5 Location of the subtance :

In seacans at plant site (EMR)

14.6 Training required for emergency responders

- First aid
- Transportation of Dangerous Goods
- WHMIS
- Emergency Response Plan (this plan)

Emergency Response equipment

- Danger tape
- Tote bags with internal plastic liner
- Plastic shovels
- Drain cover
- Brooms
- Polyethylene tarps

Note: equipment must be readily available at the Quaatuq location.

14.7 Personnel Protective Equipment

- Reflective vests
- Safety Glasses
- Dust masks
- Plastic gloves
- Safety boots
- First aid kit

Note: equipment must be readily available at the Quaatuq site location.

15.0 TRAFFIC CONTROL

In the event of an emergency it is essential that the traffic movements to the site be limited to essential vehicles only. The control of traffic will be achieved by posting sentries at the evacuation point. The sentry shall use the company vehicles onsite so that they can stay in contact via cell phone with the Emergency Manager or Emergency Services Coordinator.

During an emergency the only vehicles that will be allowed to enter the site will be:

- Emergency Services;
- Any equipment providers which have been requested to attend to the emergency; and
- Dyno Nobel personnel that are directly involved in the response effort.

Any other entry to site will require the permission of the Emergency Manager after consultation with the Emergency Services Coordinator.

If an employee or visitor is injured and can safely be transported to the mine without incurring additional harm to the employee/worker, or posing any additional risk to the safety of the person, Dyno vehilces can be used to transport.
Where specific stabilization of an injured person is required, or where moving an injured person may result more serious injury or life threatening concerns, the injured person is to be stabilized as per first aid training and AMARUQ emergency services dispatched to site.

In the event that there is a chance of an explosion or release of toxic fumes roadblocks should be at least **1200m** from the scene.

The Mine security or local Police are the only personnel authorised to close any public roads, as a result, the need to close the road should be established early. The road would need to be closed at a distance of no less than **1200m** from the facility in order to prevent damage to vehicles or people outside the site.

16.0 PROTECTION OF VITAL ASSETS / EMERGENCY SHUTDOWN

Under no circumstance are lives to be put at unacceptable risk in order to preserve material assets or intellectual property.

To avoid knock on effects of an emergency such as escalated destruction or business disruption, consideration should be given to preserve critical company assets by shutdown or removal of equipment such as:

- Mobile Processing Units (MPU's)
- Raw Materials/Handling equipment

Materials handling equipment and energy sources should be shutdown or isolated by activating emergency stop buttons or closing valves on the following systems:

- Electrical

Isolation are clearly identified by color coded labeling. All personnel must know location and operation of these devices.

- Switches

The decision to isolate energy sources or remove assets may be made at the time of evacuation notification or post evacuation by the Emergency Manager or Supervisor. Either way, this action must not be made if it is considered that it will not delay the evacuation process or put personnel at an unacceptable level of risk in terms personal injury or health.

Energy Source / Equipment	Type of Isolation	Location
Electrical Systems & Equipment	Switch	

17.0 SEARCH AND RESCUE

Search and rescue shall be the responsibility of emergency services only as Dyno Nobel are not equipped to carry out search and rescue operations in a safe manner.

Search and rescue operations should only be conducted if it is safe to do so and if there is no potential of an explosion occurring. Very careful consideration should be made to limiting casualties.

Before attempting search and rescue, personnel must be knowledgeable of the following:

- Site layout;
- Hazardous effects from hazardous substances;
- Fumes/poisoning;
- Explosion;
- Burns;
- Use of proper PPE;
- Breathing apparatus;
- Fire extinguishers;
- Recovery gear;
- Practiced search and rescue techniques; and
- Possible casualties.

18.0 RECOVERY PLAN

The Emergency Manager has the responsibility to declare the emergency over after consultation and agreement with Local Emergency Services:

- When the damage is localised to the extent that normal operations could resume in unaffected areas;
- Work in unaffected areas will not contaminate the emergency scene and destroy causal evidence;
- Affected areas are secure with actual or potential energy sources neutralized and controlled; and
- The all clear / re-entry approval should be communicated to all personnel in consideration of any special conditions.

19.0 CLEAN UP

Environmental aspects and impacts need to be considered when dealing with chemical waste and approval for disposal of chemicals must be obtained before disposal.

20.0 RESUMPTION OF BUSINESS

The EM will carry out the following:

- Arrange for appropriate personnel to complete a risk assessment of the area and assess the impact of the emergency; and
- Provide DNA appropriate personnel with an update as soon as practicable.

In conjunction with Dyno Nobel's VP of HSEQ and VP of Operations, the Emergency Manager shall develop an action plan to ensure that:

- The site is secure and safe for all personnel;
- Pollution due to leaking storages and firewater run-off is minimised;
- Production facilities are re-established; and
- Supply contingencies are activated.

Senior Management shall be informed of any loss and they will ensure that the underwriters are informed. It is essential that all costs of recovery and increased costs due to the incident be identified.

21.0 CRISIS COMMUNICATION PLAN

The Site Media plan is only activated if the media has arrived at your site and is asking questions.

If the media is contacting you by phone, fax or email, refer them to Diana Roising, Crisis Media Advisor in Salt Lake City, cell: 801- 321 5338 or office: 801 328 6536

IF THE MEDIA HAS ARRIVED AT YOUR SITE

The First Critical Statement may be made by a trained spokesperson (generally the Manager on Site) who has received permission from a member of the DNA Crisis Management Team. ***In most cases Media contact will be referred to the General Manager, Mike Soter, or his designate.***

If permission is granted, the Supervisor of the Site should fill in the information in the First Critical Statement template

After the statement is presented to the media on site, it is important not to attempt to answer additional questions. All other information will be done at the direction of the DNA Crisis Management Team, unless otherwise directed.

If additional personnel are available, have an assistant to this spokesperson remain behind to gather business cards and write down questions while the spokesperson leaves. This person must NOT answer any questions

Fax/email a copy of the Statement to DNA Crisis Management Team member and wait for further instructions

When the Media Arrives at Your Site Say ONLY the following:

Site Media Statement

At approximately _________ am/pm on ___________ we experienced

____

____

(Only obvious facts - No explanation - No elaboration)

This is all I can confirm at the present time. I am sure you understand that we are assessing the situation so we can provide the most accurate information.

Our company spokesperson will be in touch with you and other media representatives as soon as possible to provide more information. In the interim, we ask for your patience as we conduct our investigation.

(You are now free to turn and walk away.

(If you are asked additional questions, make the following statement:)

22.0 TRAINING

All Dyno Nobel employees will be trained to cope with an outbreak of fire in the site and MPU operation, at minimum all DNCI employees should be fully trained in the use of fire extinguishers.

All employees shall be trained in the roles they are expected to play during an emergency and/or an evacuation.

Regular evacuation and emergency drills shall be conducted in order to evaluate the effectiveness of the overall strategy and identify any deficiencies in the procedures. Emergency drills should be conducted every six months for DNCI internal drills with at least one of these involving local Emergency Service teams. Local Emergency Service providers shall be briefed on potential site emergencies by the Site Management team.

After conducting drills has a meeting shall be conducted to identify the gaps found during the emergency drill.

Training shall include:

- Fire extinguisher training;
- WHMIS;
- Transportation of Dangerous Goods,
- Emergency Response Training.

23.0 INFORMATION

Emergency procedures are posted on the Safety board. A copy of the Emergency Response Plan was provided to all employees during the Training.

Information on this Emergency Response Plan is recorded electronically on NEXUS.

APPENDIX I – BOMB THREAT

INITIAL INFORMATION:
Date :
Person receiving call:
Exact time of call:
Time of the call end:
Exact words of caller :

QUESTIONS TO ASK	
Where is the bomb?	
When is bomb going to explode?	
What does it look like?	
Did you place the bomb?	
Why?	
Where are you calling from?	
Are you an employee?	
Caller Gender : F / M	Age :

CALLER'S VOICE (circle)				
Calm	Fast	Distinct	Joker	Throat clearing
Angry	Soft	Lisp	Disguised	Deep breathing
Excited	Mocking	Nasal	Loud	Stuttering
Slow	Crying	Irregular	Deep	Mumble

LANGUAGE OF THE CALLER				
Articulate	Educated	Coarse	Irrational	Incoherent
Recorded	Message read by the author of the threat			

BACKGROUND NOISES					
Traffic	Telephone booth	House sound	Music	Motor	Dishes
Soft	Long Distance/Local call	Machinery	Static	None	Animal
Others :					

APPENDIX II – EMPLOYEE ACKNOWLEDGEMENT, REVIEW & TRAINING CERTIFICATION RECORD

Signature indicates that person has been given an opportunity to review and make comments regarding this safe work instruction and revisions. Signature indicates that person has received training about and understands the information contained in this document, related operating procedures, and requirements imposed by this program.

PRINT NAME	SIGNATURE	DATE

APPENDIX 4

MSDS FOR BULK EMULATION AND PRESPLIT

1. MSDS – Dyno Gold Lite Bulk Emulsion

2. MSDS – Detagel Presplit

Material Safety Data Sheet

Dyno Nobel Inc.
2650 Decker Lake Boulevard, Suite 300
Salt Lake City, Utah 84119
Phone: 801-364-4800 Fax: 801-321-6703
E-Mail: dnna.hse@am.dynonobel.com
FOR 24 HOUR EMERGENCY, CALL CHEMTREC (USA) 800-424-9300
CANUTEC (CANADA) 613-996-6666

MSDS # 1052
Date [redacted]

Supercedes
MSDS # 1052 03/21/05
Added Dyno® RG3

SECTION I - PRODUCT IDENTIFICATION

Trade Name(s): DYNO GOLD® C, DYNOGOLD® C EXTRA
DYNO GOLD® C LITE, DYNO GOLD® C LITE SUPER
DYNO GOLD® CS LITE
DYNO GOLD®, DYNO GOLD® LITE
DYNO GOLD® B, DYNO GOLD® B LITE
HD
1116, 1126P, 1136P, 1146P
IREMEX 362, IREMEX 562, IREMEX 762, IREMEX 764
RJ5
RG1-A
RUG-1 (Canada Only)
DX 5007; DX 5010
DX 5013; DX 5013G; DX 5013 PB
TITAN®XL1000
TITAN® 1000, TITAN® 1000 G, TITAN® PB 1000
DYNO® RG3

Product Class: Bulk Emulsion

Product Appearance & Odor: Translucent to opaque, viscous liquid. May be silvery in color. May have fuel odor.

DOT Hazard Shipping Description: As Transported:
Oxidizing Liquid, n.o.s. (Ammonium Nitrate) 5.1 UN3139 II
After Blending with Density Control Agent On-site:
Explosive, Blasting, Type E 1.5D UN0332 II

NFPA Hazard Classification: Not Applicable (See Section IV - Special Fire Fighting Procedures)

SECTION II - HAZARDOUS INGREDIENTS

Ingredients:	CAS#	% (Range)	ACGIH TLV-TWA
Ammonium Nitrate	6484-52-2	30-80	No Value Established
Sodium Nitrate[1*]	7631-99-4	0-15	No Value Established
Calcium Nitrate	10124-37-5	0-35	No Value Established
Fuel Oil	68476-34-6	0-10	100 ppm
Mineral Oil	64742-35-4	0-7	5 mg/m^3
Aluminum *	7429-90-5	0-5	10 mg/m^3

[1] Our source of Sodium Nitrate (Chilean) may contain perchlorate ion, which occurs naturally. Although Dyno Nobel does not analyze for the presence of perchlorate anion, based on published studies, the products listed above may contain between 0 and 300 ppm perchlorate.

* The hazardous ingredients marked with an asterisk are not found in the majority of listed products.

Ingredients, other than those mentioned above, as used in this product are not hazardous as defined under current Department of Labor regulations, or are present in deminimus concentrations (less than 0.1% for carcinogens, less than 1.0% for other hazardous materials).

SECTION III - PHYSICAL DATA

Boiling Point: Not Applicable
Vapor Density: (Air = 1) Not Applicable
Percent Volatile by Volume: <30

Evaporation Rate (Butyl Acetate = 1): <1

Vapor Pressure: Not Applicable
Density: 0.8 - 1.5 g/cc
Solubility in Water: Nitrate salts are completely soluble, but emulsion dissolution is very slow.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point: Not Applicable
Flammable Limits: Not Applicable
Extinguishing Media: (See Special Fire Fighting Procedures Section)
Special Fire Fighting Procedures: Do not attempt to fight fires involving explosive materials or emulsion explosive precursors. Evacuate all personnel to a predetermined safe location, no less than 2,500 feet in all directions.
Unusual Fire and Explosion Hazards: May explode or detonate under fire conditions. Burning material may produce toxic vapors.

SECTION V - HEALTH HAZARD DATA

Effects of Overexposure

Eyes: Can cause irritation, redness and tearing.
Skin: Prolonged contact may cause irritation.
Ingestion: Large amounts may be harmful if swallowed.
Inhalation: May cause dizziness, nausea or intestinal upset.
Systemic or Other Effects: *Perchlorate*: Perchlorate can potentially inhibit iodide uptake by the thyroid and result in a decrease in thyroid hormone. The National Academy of Sciences (NAS) has reviewed the toxicity of perchlorate and has concluded that even the most sensitive populations could ingest up to 0.7 microgram perchlorate per kilogram of body weight per day without adversely affecting health. The USEPA must establish a maximum contaminant level (MCL) for perchlorate in drinking water by 2007, and this study by NAS may result in a recommendation of about 20 ppb for the MCL.

Emergency and First Aid Procedures

Eyes: Irrigate with running water for at least fifteen minutes. If irritation persists, seek medical attention.
Skin: Remove contaminated clothing. Wash with soap and water.
Ingestion: Seek medical attention.
Inhalation: Remove to fresh air. If irritation persists, seek medical attention.
Special Considerations: None.

SECTION VI - REACTIVITY DATA

Stability: Stable under normal conditions. May explode when subjected to fire, supersonic shock or high-energy projectile impact, especially when confined or in large quantities.
Conditions to Avoid: Keep away from heat, flame, ignition sources and strong shock.
Materials to Avoid (Incompatibility): Corrosives (strong acids and strong bases or alkalis).
Hazardous Decomposition Products: Nitrogen Oxides (NO_X), Carbon Monoxide (CO)
Hazardous Polymerization: Will not occur.

SECTION VII - SPILL OR LEAK PROCEDURES

Steps to be taken in Case Material is Released or Spilled: Protect from all ignition sources. In case of fire evacuate area not less than 2,500 feet in all directions. Notify authorities in accordance with emergency response procedures. Only personnel trained in emergency response should respond. If no fire danger is present, and product is undamaged and/or uncontaminated, repackage product in original packaging or other clean DOT approved container. Ensure that a complete account of product has been made and is verified. Follow applicable Federal, State and local spill reporting requirements.
Waste Disposal Method: Disposal must comply with Federal, State and local regulations. If product becomes a waste, it is potentially regulated as a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR, part 261. Review disposal requirements with a person knowledgeable with applicable environmental law (RCRA) before disposing of any explosive material.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Ventilation: Not required for normal handling.
Respiratory Protection: None normally required.
Protective Clothing: Gloves and work clothing that reduce skin contact are suggested.
Eye Protection: Safety glasses are recommended.
Other Precautions Required: None.

SECTION IX - SPECIAL PRECAUTIONS

Precautions to be taken in handling and storage: Store in cool, dry, well-ventilated location. Store in compliance with Federal, State and local regulations. Keep away from heat, flame, ignition sources and strong shock.
Precautions to be taken during use: Avoid breathing the fumes or gases from detonation of explosives. Use accepted safe industry practices when using explosive materials. Unintended detonation of explosives or explosive devices can cause serious injury or death.
Other Precautions: It is recommended that users of explosives material be familiar with the Institute of Makers of Explosives Safety Library publications.

SECTION X - SPECIAL INFORMATION

The reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372 may become applicable if the physical state of this product is changed to an aqueous solution. If an aqueous solution of this product is manufactured, processed, or otherwise used, the nitrate compounds category and ammonia listings of the previously referenced regulation should be reviewed.

Material Safety Data Sheet

Disclaimer

Dyno Nobel Inc. and its subsidiaries disclaim any warranties with respect to this product, the safety or suitability thereof, the information contained herein, or the results to be obtained, whether express or implied, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND/OR OTHER WARRANTY. The information contained herein is provided for reference purposes only and is intended only for persons having relevant technical skills. Because conditions and manner of use are outside of our control, the user is responsible for determining the conditions of safe use of the product. Buyers and users assume all risk, responsibility and liability whatsoever from any and all injuries (including death), losses, or damages to persons or property arising from the use of this product or information. Under no circumstances shall either Dyno Nobel Inc. or any of its subsidiaries be liable for special, consequential or incidental damages or for anticipated loss of profits.

Detagel Presplit

Material Safety Data Sheet

5700 N. Portland, Suite 301 / Oklahoma City, OK 73112 / Phone: (405) 947-0765 / Fax: (405) 947-0768

SECTION 1 - PRODUCT INFORMATION

TRADE NAME:	Presplit
SYNONYM:	NA
CHEMICAL FAMILY:	Watergel Slurry High Explosive
FORMULA:	Mixture
CAS NUMBER:	None
UN/NA NUMBER:	UN0241
DOT HAZARD CLASS:	Explosive, Blasting, Type E, Class 1.1 D

SECTION 2 - HEALTH ALERT

DANGER - If misused or disposed of improperly, material could explode and cause death or serious injury.
DO NOT HANDLE WHEN IN DOUBT!!
See section VIII - Personal Protection
CHEM-TEL, INC. (800) 255-3924.

SECTION 3 - HEALTH HAZARD INFORMATION

EYE: May cause moderate irritation.
SKIN: May cause moderate irritation characterized my redness and/or rash.
INHALATION: Inhalation of decomposed products may irritate the respiratory tract. Prolonged exposure to these fumes may result in respiratory difficulties (shortness of breath, etc.) and possibly more severe toxic effects.
INGESTION: Swallowing large quantities may cause toxicity characterized by dizziness, bluish skin coloration, methemoglobinemia, unconsciousness, abdominal spasms, nausea, and pain.

SECTION 4 - EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: Flush with large amounts of water. Seek medical aid.
SKIN CONTACT :Remove contaminated clothing. Wash skin thoroughly with soap and water.
INHALATION: Remove from exposure. If breathing stops or is difficult, administer artificial respiration or oxygen. Seek medical aid.
INGESTION: Give 8-16 oz. of milk or water. Induce vomiting. Seek medical aid.

SECTION 5 - RECOMMENDED OCCUPATIONAL EXPOSURE LIMIT/ HAZARDOUS INGREDIENTS

EXPOSURE LIMIT (PRODUCT): None required for product. *React to form Hexaminedinitrate

HAZARDOUS INGREDIENTS:	PERCENT	EXPOSURE LIMIT	PPM	MG/M3
Ammonium Nitrate	<65%	NONE		
Sodium Nitrate	<20%	NONE		
Sodium Perchlorate	<7%	NONE		
Nitric Acid*	<5%	ACGIH - TLV	2	5
Hexamine*	<15%	NONE		
Aluminum	<7%	ACGIH - TLV		
Pentaerythritol Tetranitrate	<2%	NONE		

NOTE: All ingredients are present in a gelled slurry matrix and individual hazard may not be present in this formulation.

SECTION 6 - REACTIVITY DATA

CONDITIONS CONTRIBUTING TO INSTABILITY: Heat (confinement); Stacking (burning).
INCOMPATIBILITY: Can react violently or explode, with reducing agents and organic materials. Avoid amines, strong alkalies & acids. ***HAZARDOUS REACTION / DECOMPOSITION PRODUCTS:*** At high temperatures, especially >374 F, may emit severe toxic fumes of nitrogen oxides. ***CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION:*** Not applicable.

SECTION 7 - FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT & METHOD: NA ***AUTO IGNITION TEMPERATURE:*** Explodes ***FLAMMABLE LIMITS (% BY VOLUME/AIR): LOWER:*** NA ***UPPER:*** NA ***EXTINGUISHING MEDIA:*** Water ***FIRE-FIGHTING PROCEDURES:*** When explosive is burning, ***EVACUATE AREA.*** Avoid breathing vapor. Don't disturb fire, as dusty cloud containing aluminum may form explosive mixture with air. ***FIRE & EXPLOSION HAZARDS:*** Dangerous when exposed to heat or flame. Can support combustion of other materials involved in a fire and is capable of undergoing detonation if heated to high temperatures, especially under confinement including being piled on itself in a burning fire. When heated to decomposition, highly toxic fumes may be emitted. Do not return to area of explosion until smoke and fumes have dissipated. Dry alkali or amine salts are explosive.

Detagel Presplit

Material Safety Data Sheet

SECTION 7 - FIRE AND EXPLOSION HAZARD INFORMATION (con't.)

Internally, product contains detonating cord, consisting of flexible cord with and explosive core of PETN (pentaerythritol tetranitrate) within a textile casing covered by a seamless polyethylene jacket. This portion, if removed from the cartridge, may explode when subjected to fire or shock. PETN crystals, if separated or spilled, are substantially more sensitive to initiation by impact and friction than other components of the product, and care should be taken to avoid shock, friction, and excessive heat.

SECTION 8 - PERSONAL PROTECTION INFORMATION

EYE PROTECTION: Safety goggles approved for the handling of explosives materials.
SKIN PROTECTION: Neoprene, natural rubber, polyethylene or polyvinyl chloride gloves. Use barrier creams, hand protection and protective clothing. ***RESPIRATORY PROTECTION:*** Not normally required. Mechanical filter or supplied air type respirator as required for concentrations exceeding the occupational exposure limit.
VENTILATION: Maintain adequate ventilation. Use local exhaust if needed.

SECTION 9 - PERSONAL HANDLING INSTRUCTIONS

HANDLING: Explosives should not be abandoned at any location for any reason. Do not handle during electrical storms.
STORAGE: Store in a cool, dry, well-ventilated area remote from operations. Storage area should be of non-combustible construction and in accordance with appropriate BATF regulations. Organic materials, flammable substances and finely divided metals should be stored separately. Flames, smoking and unauthorized personnel are prohibited where this product is used or stored. Protect against physical damage, static electricity and lightning.
WARNING: Use of this product by persons lacking adequate training, experience and supervision may result in death or serious injury. Obey all Federal, State, and local laws / regulations applicable to transportation, storage, handling, and use of explosives.
DISTANCE: Always stay from area of explosion or disposal sites. Stay behind suitable barriers.

SECTION 10 - SPILL & LEAK PROCEDURES

PROCEDURES IF MATERIAL IS RELEASED OR SPILLED (IN ADDITION, SEE SECTION 8): Isolate area. Eliminate ALL sources of ignition. Avoid skin contact. Scrape up. Remove soiled clothing.
WASTE DISPOSAL - USE APPROPRIATE METHOD(S): Disposal of unexploded or deteriorated explosives material can be hazardous. Expert assistance is positively recommended in destroying explosives. Accidents can be prevented by thorough planning and handling in accordance with approved methods. Consult your supervisor, or the nearest SEC Regional Office for assistance. If improperly disposed of, material could explode and cause death or serious injury.

In all cases, follow facility emergency response procedures. Contact Facility Environmental Manager for assistance. Report any discharge of oil or hazardous substance that may enter surface waters to the National Response Center (800) 424 - 8802.

Observe all applicable local, state, and federal environmental spill and water quality regulations.

SECTION 11 - PHYSICAL DATA

BOILING POINT: NA ***BULK DENSITY:*** 1.25 g/cc ***MELTING POINT:*** NA ***%VOLATILE BY VOLUME:*** NA
VAPOR PRESSURE: NA ***EVAPORATION RATE (ETHER=1):*** NA ***SOLUBILITY IN WATER:*** Negligible with short term exposure
APPEARANCE/ ODOR: Odorless ,gray/white gel packaged in polyethylene cartridges ***DECOMPOSITION POINT:*** 200 C

SECTION 12 - COMMENTS

This product is classified as a Class 1.1D High Explosive and must be stored in a high explosive magazine. Storage should be in a well constructed, well ventilated, dry structure located to conform with local, state, and federal regulations. The area surrounding an explosive magazine must be kept clear of combustible materials for a distance of 50 feet. Magazine floors and containers must be properly cleaned. Normal operating conditions are assumed unless otherwise stated. If any given information is not clear or does not apply to your situation, STOP, store the material suitably, and seek correct help from your supervisors, Institute of Makers of Explosives or Slurry Explosive Corporation.

Disposal sites must be clear of people at the time of disposal.

NOTICE: The data and recommendations presented herein are based upon data which are considered to be accurate. However, SEC makes no guarantee or warranty, either expressed or implied, of the accuracy or completeness of these data and recommendations. For more detailed information on the hazards of this product, contact the Regulatory Compliance Department at the address below:

Slurry Explosive Corporation
P. O. Box 348
Columbus, Kansas 66725
(620) 597-2552

Revised 6-2001

APPENDIX 5

EMULSION PLAN / BLAST AREA INSPECTION SHEET

Environmental Inspection Report for the Emulsion Plant Area and the Loading of Blast Holes

Date:
Time:
Location: Emulsion Plant

Inspected By:

Weekly Inspection

In Compliance with	Subject	Conform	Non-conform	N/A	Comments
NWB Part B Item 10	Sign posted to inform of a waste disposal facility				
NWB Part D Item 17 MBK SCP MBK NIRB Condition 26	Are there any visual spills?				
NWB Part F Item 10	All Hazardous Waste disposal is located 30m from the ordinary high water mark.				
NWB Part H Item 2	Resources in place to prevent any chemicals, petroleum products, or unauthorized Wastes from entering a water body.				
NWB Part H Item 3 Ammonia Management Plan	Is secondary containment for chemical storage provided.				
NWB Part I Item 7	Monitoring signs are posted in English, French, and Inuktitut.				
MBK SCP	Spill Kits Present				
MBK NIRB Condition 26	Ensure that spills, if any, are cleaned up immediately and that the site is kept clean of debris, including wind-blown debris.				
MBK NIRB Condition 25	Management and control waste in a manner that reduces or eliminates the attraction to carnivores and/or raptors.				

MBK NIRB Condition 27 Ammonia Management Plan	Ensure the hazardous material are contained using environmentally protective methods based on practical best management practices				
Hazardous Management Plan	Are storage containers clearly labelled to identify Hazardous substance?				
Ammonia Management Plan	Are storage containers in good condition? Is there any visible damage or leaks? Can the doors be sealed shut?				
Ammonia Management Plan	Where necessary – Are containers with product stored in an upright position?				
Ammonia Management Plan	Do you see any potential environmental hazards posed by these HAZARDOUS containers/materials?				
BMP	Are there any additional environmental hazards/potential impacts that require attention?				
MINE ACT	Are there any Health and Safety issues that should be addressed to prevent injury to workers?				

Pit Location: **Blast Pattern:**

In Compliance with	Subject	Conform	Non-conform	N/A	Comments
NWB Part D Item 17 MBK SCP MBK NIRB Condition 26	Are there any visual spills, including emulsion?				
Ammonia Management Plan	Is there presence of Emulsion outside of the holes that are being loaded?				
NWB Part F Item 10	All Hazardous Waste disposals are located 30m from the ordinary high water mark.				

NWB Part H Item 2	Resources in place to prevent any chemicals, petroleum products, or unauthorized Wastes from entering a water body.				
NWB Part H Item 3 Ammonia Management Plan	Is secondary containment for chemical storage provided?				
MBK NIRB Condition 27 Ammonia Management Plan	Ensure the hazardous material are contained using environmentally protective methods based on practical best management practices				

Comments/Recommendations:

Environmental Personnel Name:

Actions Corrected: None

____
____
____
____
____

Dyno Nobel Supervisor Name: ______________________________

Signature: ______________________________