# Appendix 36

# Meadowbank 2022 Freshet Action Plan

AGNICO EAGLE

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

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| # | 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 |
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| 06 | Agnico | Internal | March 2018 | All | Comprehensive update from 2017 Plan |
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| 10 | Agnico | Internal | March 2022 | All | Comprehensive update from 2021 Plan |

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# 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.

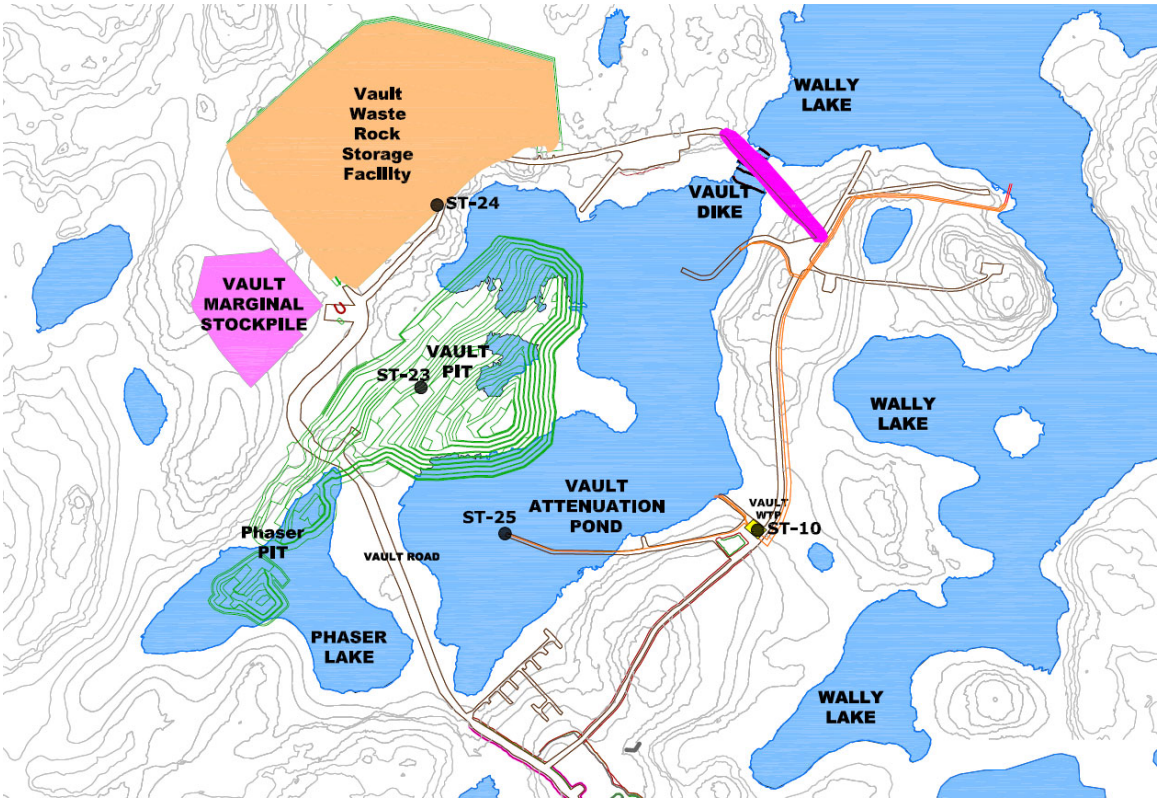



**Figure 2-1: View of Vault area and the surrounding area**

## 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.

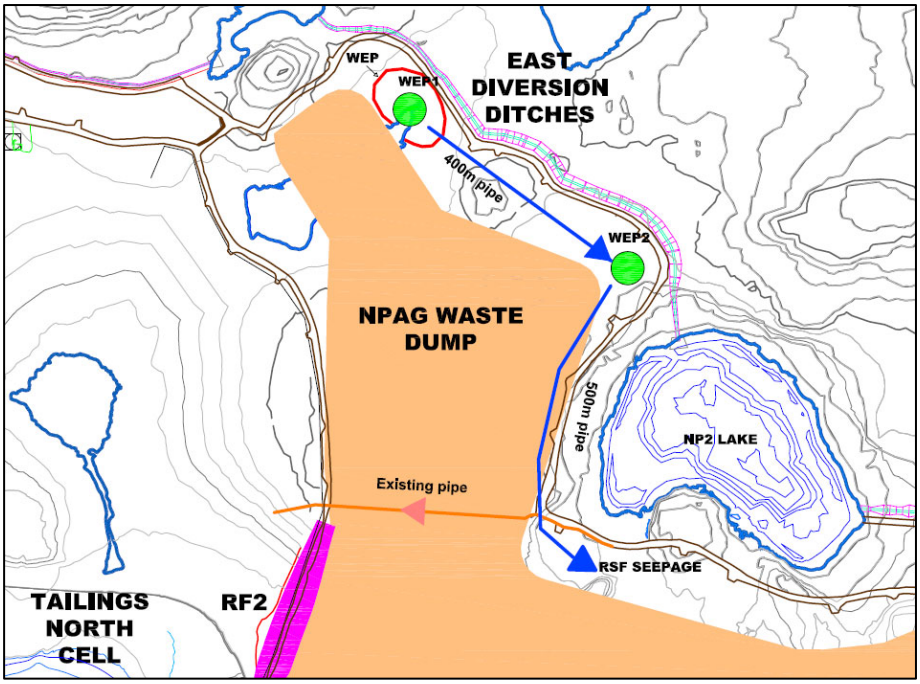



**Figure 2-2. View ST-16 station and surrounding area.**

*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.

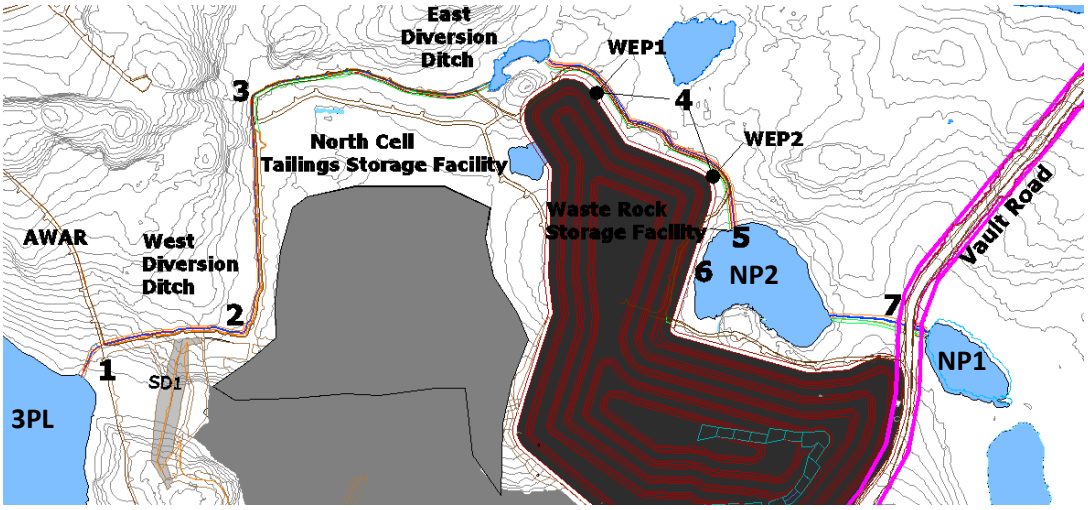



**Figure 2-3: Location of the areas of interest for the 2021 Freshet Action Plan**

### 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.

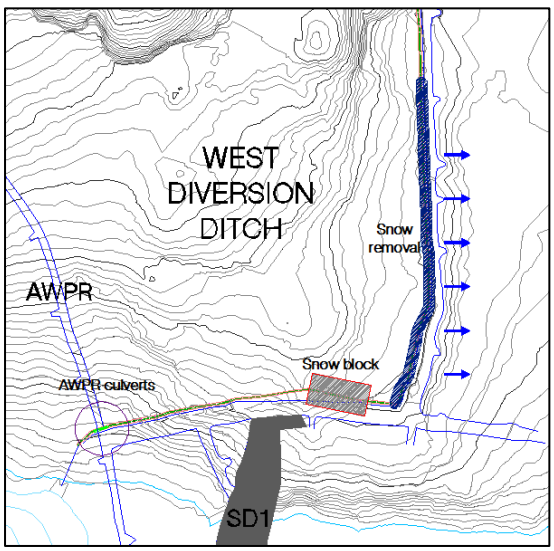



**Figure 2-4: West diversion ditches area of interest**

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.

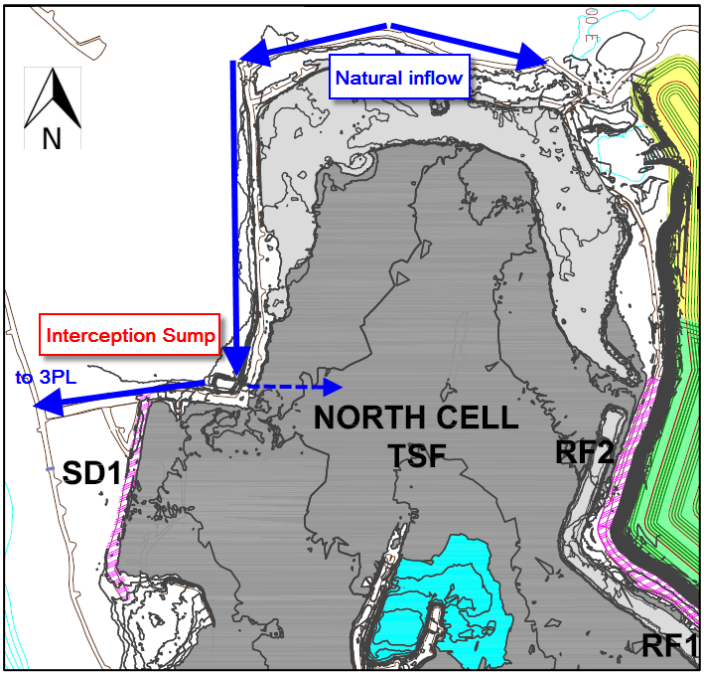



**Figure 2-5. View of the Interception Sump in relation to the Diversion Ditches**

#### 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).

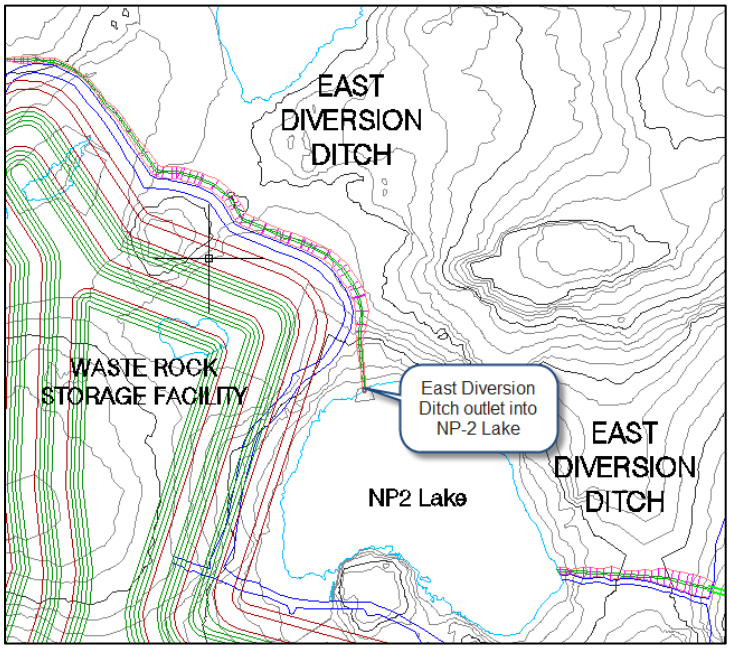



**Figure 2-6: View of the East Diversion ditch outlet into NP-2 Lake**

#### 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.

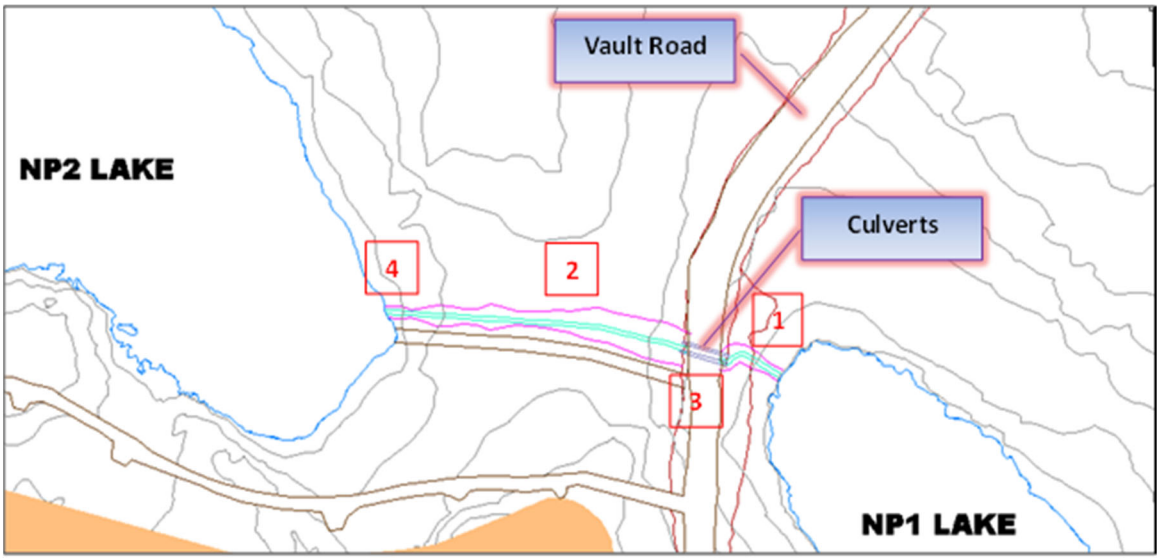



**Figure 2-7: View of the diversion ditches at the Vault road area**

### 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 contaiment. 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.

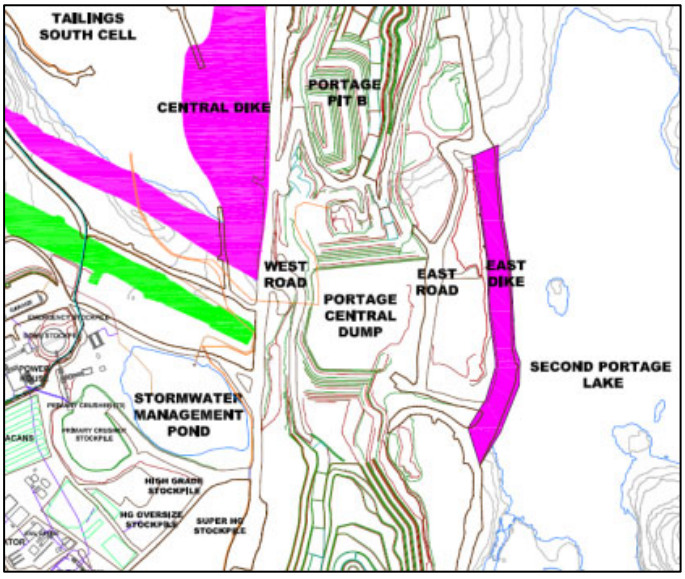



**Figure 2-8: Portage Pit area with the Stormwater Management Pond**

## 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.

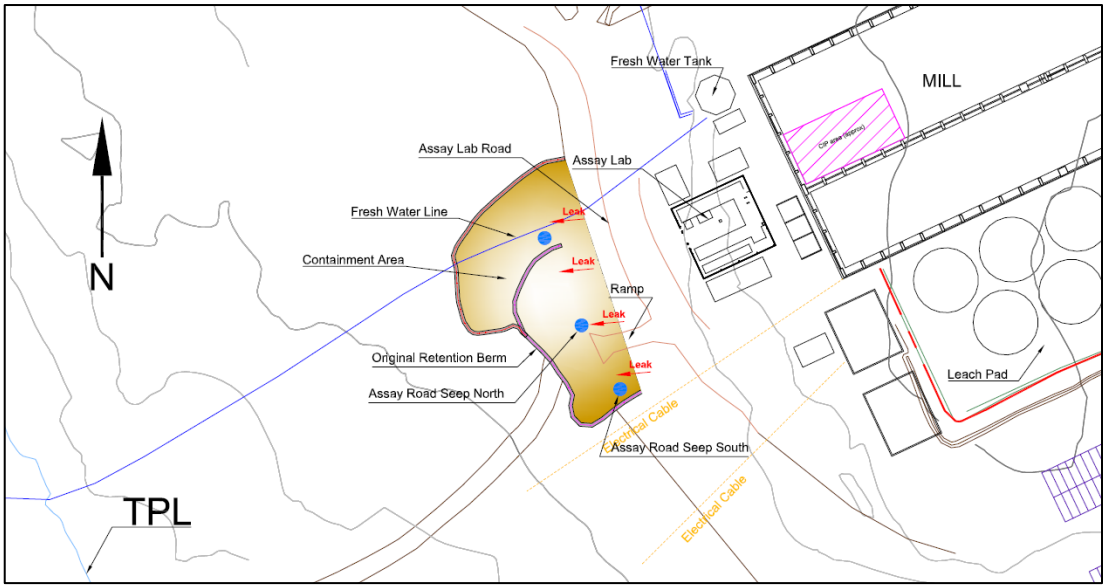



**Figure 2-9. View of the mill seepage area and initial retention berm construction**

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.<br>2) Give guidance as to when and where (Pit E or Pit A) water is to be pumped. | E&I<br>ENV | Early May<br>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<br>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 |

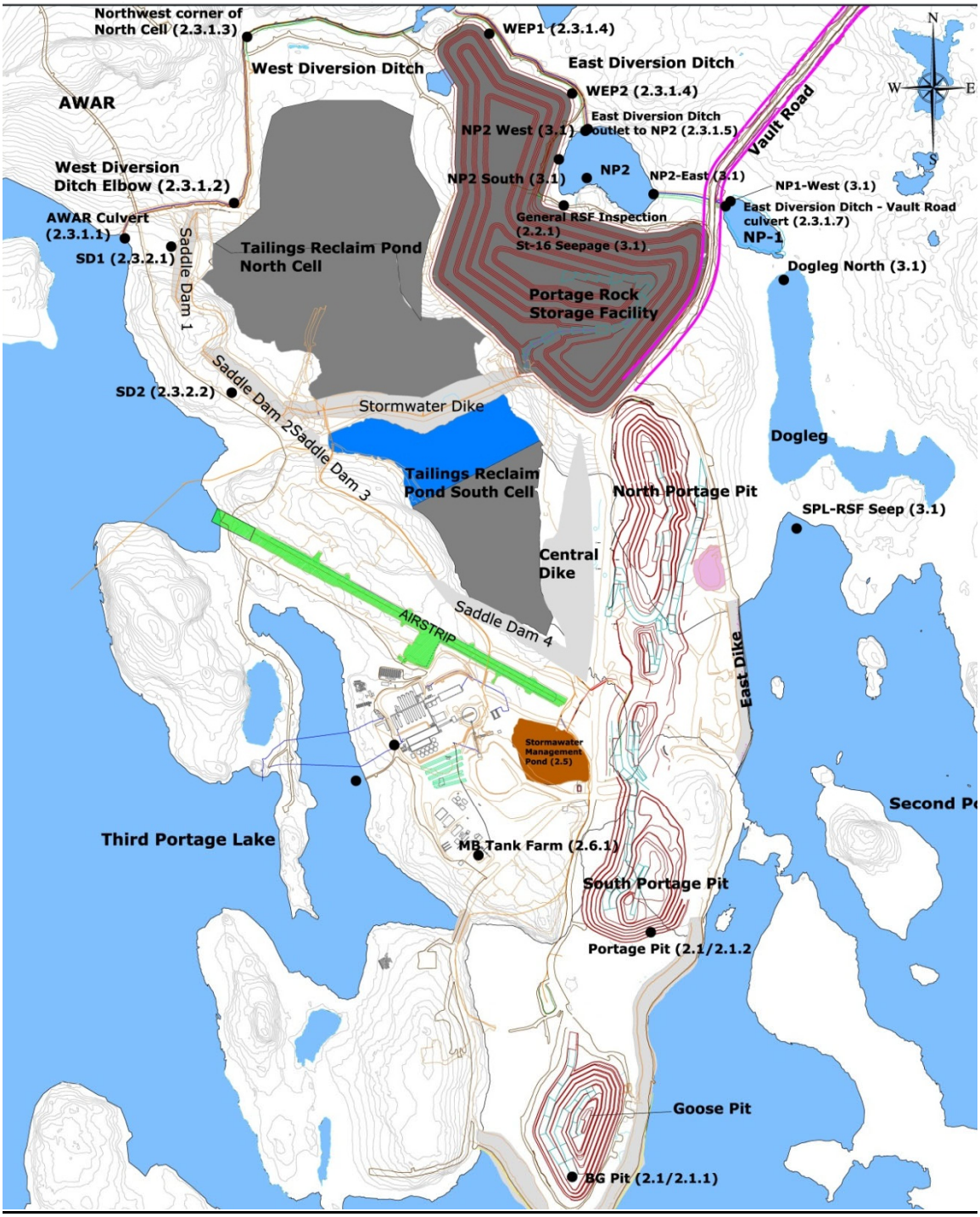
| | | | | |
|---|---|---|---|---|
| | | 5) Pump to tundra/ground or Stormwater Mgmt Pond (note pumping to Stormwater Mgmt Pond does not require compliance with limits - at Meadowbank only). **NOTE: The water cannot be pumped out to the tundra if it does not meet the Water License criteria.** | E&I | 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<br>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 |

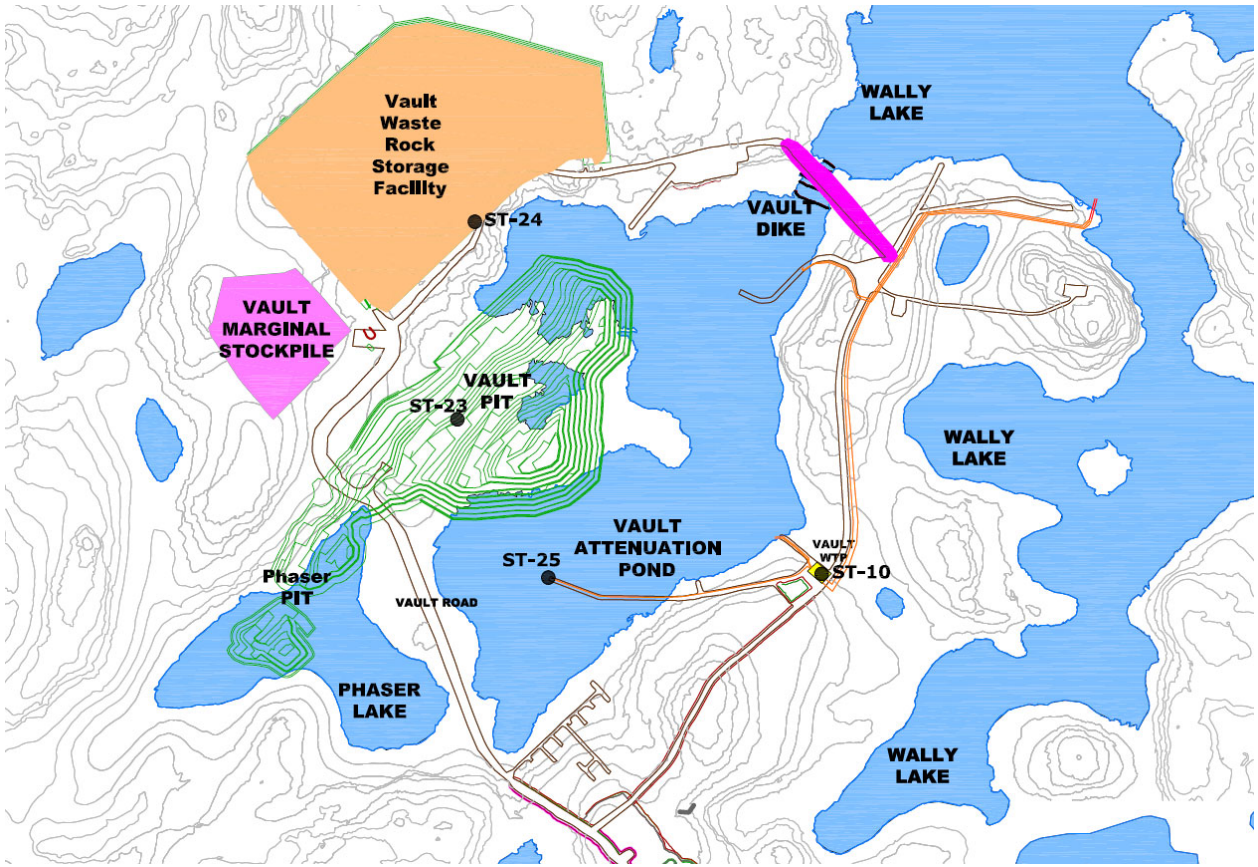
**APPENDIX 2**

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

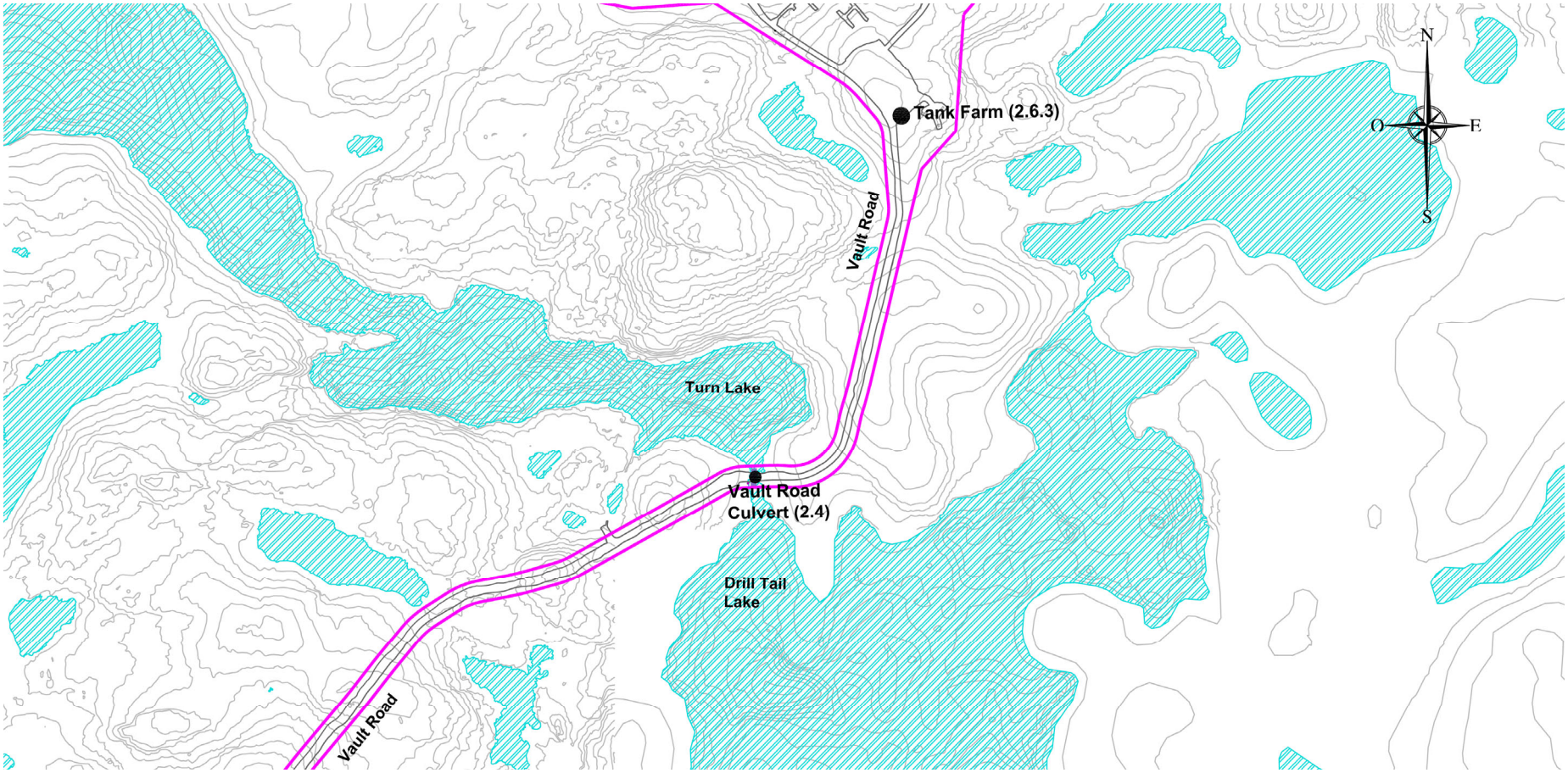
## Meadowbank Areas of Concern and Monitoring Locations



## Vault areas of concern



## Vault Road areas of concern



**APPENDIX 3**

**2022 Snow management**

DRAWING NO.

FORMAT ARCHD–PORTRAIT

WEST DIVERSION DITCHES

EAST DIVERSION DITCHES

DO NOT TOUCH LINER WHILE REMOVING SNOW AND BEWARE OF INSTRUMENTS

NPAG WASTE DUMP

SADDLE DAM 1

TAILINGS NORTH CELL

RF2

PORTAGE WASTE DUMP

RF1

RECLAIM ROAD

SADDLE DAM 2

SADDLE DAM 3

STORMWATER DIKE

TAILINGS SOUTH CELL

PORTAGE PIT A

CENTRAL DIKE

ATTENUATION POND

SADDLE DAM 4

EAST DIKE

PORTAGE CENTRAL DUMP

TEARDROP LAKE

SECON PORTAG LAKE

VAULT DIKE

VAULT PIT

VAULT SHELTER

PORTAGE NPAG DUMP

PIG LAUNCHER

PORTAGE PIT E

GE LAKE

BAYGOOSE NPAG DUMP

ACCESS RESTRICTED SIGN

LAYDOWN AREA

GOOSE PIT

ACCESS RESTRICTED SIGN

ACCESS RESTRICTED SIGN

BAYGOOSE DIKE

CENTRAL DUMP

PUSH SNOW HERE

DO NOT PUSH PAST ORANGE INSTRUMENT HERE

| 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 | FILE |
|---|---|
| N.T.S. | .DWG |

DRAWING NO. | REVISION | SHEET 1 / 1

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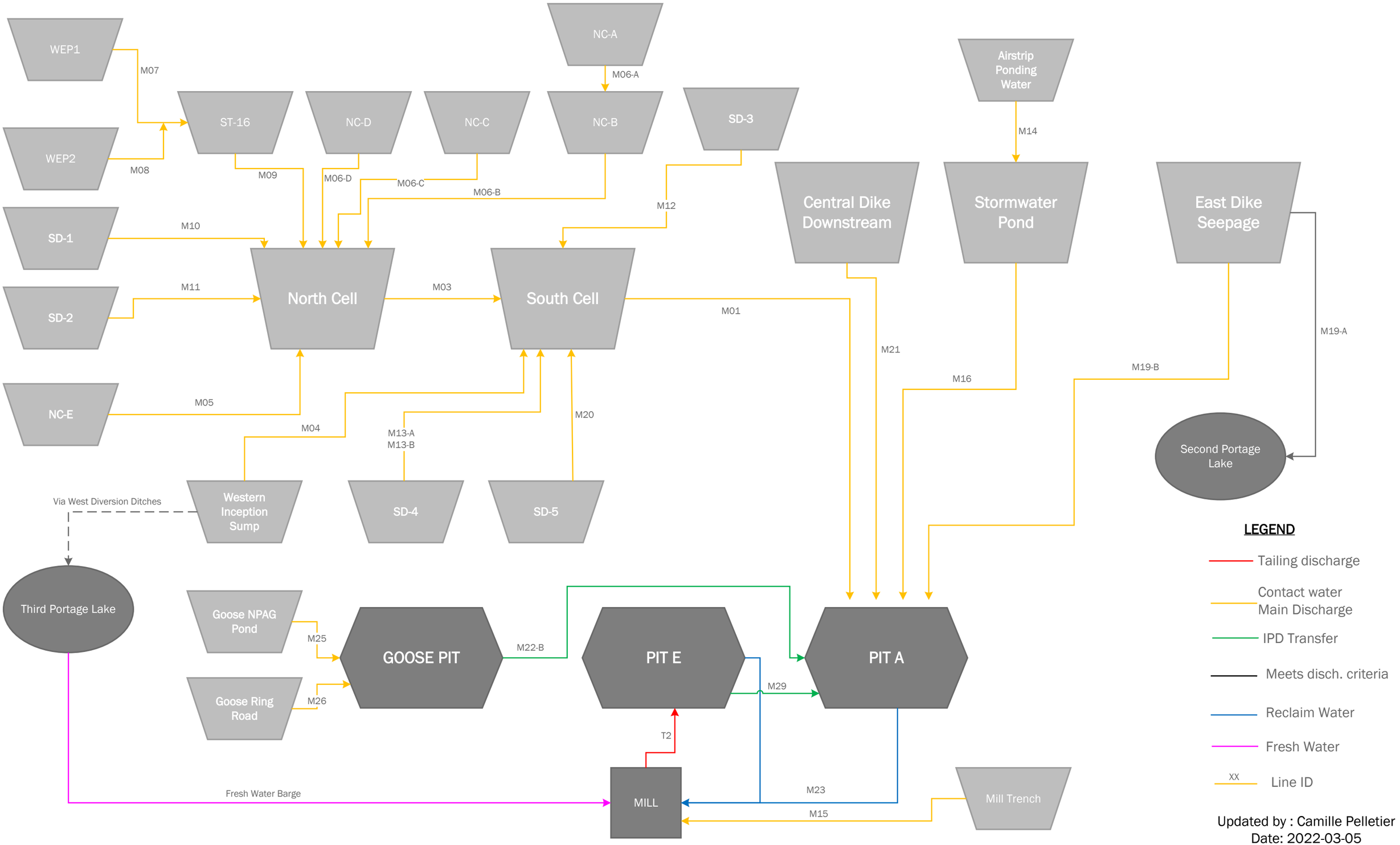
## APPENDIX 4

## 2022 Freshet flowchart and plan view

# Meadowbank 2022 Detailed Freshet Flowsheet



FORMAT ANSI B–PORTRAIT

EAST DIVERSION DITCHES
WEST DIVERSION DITCHES
NPAG WASTE DUMP
WEST INTERCEPTION SUMP
NP2 LAKE
NP1 LAKE
TAILINGS NORTH CELL
RF2
PORTAGE WASTE DUMP
VAULT ROAD
3PL
SADDLE DAM 1
RF1
SANA CRUSHER
NORTH CELL
RECLAIM ROAD
SADDLE DAM 2
BOOSTER PUMP
STORMWATER DIKE
SADDLE DAM 3
TAILINGS SOUTH CELL
PORTAGE PIT A
THIRD PORTAGE LAKE
QUARRY 23
CENTRAL DIKE
AIRSTRIP
WEST ROAD
EAST DIKE
NOVA CAMP
SECONDARY CRUSHER
PRIMARY CRUSHER
SEACANS
MILL TRENCH
FRESH WATER BARGE
INCINERATOR
FUEL FARM
COMM TOWER
PORTAGE NPAG DUMP
PORTAGE PIT E
SOUTH CAMP DIKE
FGL / SANA SHOP
BAYGOOSE NPAG DUMP
GOOSE NPAG POND
GOOSE SUMP
GOOSE TRANSFER
GOOSE RING ROAD
LAYDOWN AREA
GOOSE
THIRD PORTAGE LAKE

NC-C CD103 PWA12
NC-D CD103 PWA12
WEP1 CD80 PWA08
WEP2 3HP
NC-E CD103-M PWA10
HL250M PWA33
SD-1 CD103-Elec PWA29
NC-B CD80 PWA07
NC-A CD80 3HP PWA07
ST-16 CD103-M PWA11
NORTH CELL HL250M PWA05
SD-2 3HP
SD-3 CD103-ELEC PWA27
SOUTH CELL HL250M PWA06
CD/DS 150HP 40HP PWA19
140HP 04
140HP 05
SD-4 3HP
SD-5 3HP
AIRSTRIP 3HP
EAST DIKE A 3HP
EAST DIKE B 3HP
CD103-ELEC PWA26 STORMWATER POND
MILL TRENCH 3HP
3HP STORMWATER DIKE
HL250 140HP 06
GOOSE SUMP CD103M PWA46
GOOSE NPAG POND CD103M PWA46
140HP GOOSE TRANSFER
GOOSE RING ROAD M26 3HP

M05-C M06-D M07 M08 M09 M05 M10 M11 M03 M12 M06-B M01 M13-A M13-B M20 M17-A M23 M14 M16 M15 M27 M22 M22-B M25-A M25-B M18 M19-B M19-A M21

14" HDPE
10" HDPE
8" HDPE
6" HDPE
4" HDPE
LAYFLAT
NEW LINE

PUMP LOCATION
PUMP TYPE PUMP ID
Planned electrical hookup

TECHNICAL SPECIFICATION
None



AGNICO EAGLE
MEADOWBANK

| | | |
|---|---|---|
| DRAWN BY | DATE | |
| SURVEY CHECK | DATE | |
| GEOLOGY CHECK | DATE | |
| ENGINEERING CHECK | DATE | |

| MODIFIED BY | DATE |
|---|---|
| Nicole Brisson | 2022-03-07 |

MEADOWBANK DIVISION
ENGINEERING - GEOTECH
MBK DEWATERING MAPS
# FRESHET 2022
Revision1

SCALE 1:12500 | DATE | FILE .DWG

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