MEADOWBANK IN-PIT DISPOSAL MODIFICATION – NIRB TECHNICAL MEETING

JUNE 12TH, 2018

PRESENTATION OVERVIEW

AGNICO EAGLE

- Introduction
- Project description
- Section 90 review
- Environmental impact assessment overview
- Prefeasability study
  - 1D tailings consolidation modeling assessment of the tailings in the pit;
  - Development of deposition methodology and strategy;
  - Development of pit closure strategy;
  - Water and tailings mass balance around Portage and Goose Pits;
  - Update of the water quality forecast model;
  - A hydrogeological modeling - 3D contaminant transport;
  - Development of infrastructures required for in-pit deposition;
  - Review pit wall stability during in-pit deposition.
- Conclusion
- Summary of monitoring
- Response to parties

SUMMARY OF SUBMISSIONS

- In 2017, Agnico Eagle began discussions with NWB regarding the modification of activities to extend the use of the TSF to include In-pit deposition.
- Discussions with Nunavut Impact Review Board, Kivalliq Inuit Association, Nunavut Water Board, Environment Canada and Department of Fisheries and Oceans in 2017 and 2018
- Nunavut Planning Commission application on December 14, 2017
- Response to NIRB and NPC on February 15, 2018
- NIRB and NWB application submitted on February 23, 2018
- Agnico Eagle's submission letter dated May 18th, 2018

INTRODUCTION

- Meadowbank Life Of Mine and use of the Tailings Storage Facility has been extended through approval of Whale Tail Pit.
  - NIRB PC and Ministerial decision on March 15th, 2018
  - NWB positive decision on May 29th, 2018.
- Tailings are currently stored in approved TSF under Meadowbank Type A 2AM MEA1526
  - Schedule II of Northwest arm of Second Portage Lake in 2008
  - Includes fisheries offsetting
- Currently approved TSF has capacity until Q1 2019 without any raises
- Engineering feasibility studies began in 2016
- Engineering for permitting was completed in 2017

INTRODUCTION

Excerpts from the MDRB Report #19:

The Board was impressed with the scope and depth of the Multiple Accounts Analysis (MAA) carried out to evaluate the tailings options, and with the quality of the information utilized.

The Board is in agreement with the conclusion that In-Pit Disposal (IPD) is the preferred option for the way forward. The Board wishes to point out that In Pit Disposal would be recognized as a Best Available Technology (BAT) and has precedence in the Northwest Territories and the Yukon. Moreover, IPD is a valuable asset going forward to implement AEM's Nunavut Vision.

Meadowbank Dike Review Board members

- Dr. Nobert Morgenson
- Anthony Rattue
- Don Haley

INTRODUCTION

- Project net benefits:
  - Using an existing impacted area;
  - If the pits are used for full capacity for tailings, freshwater consumption for pit flooding at closure will be reduced by 60% (22Mm^3);
- Agnico Eagle performed a review of the predicted impact of the proposed modification based on the value ecosystem component (VECs) : Permafrost, Water quantity and quality, and Fish and fish habitats. The comparaison to what was originally predicted, the proposed in-pit tailings disposal modification is predicted to have the same or less impact to the VECs.

INTRODUCTION

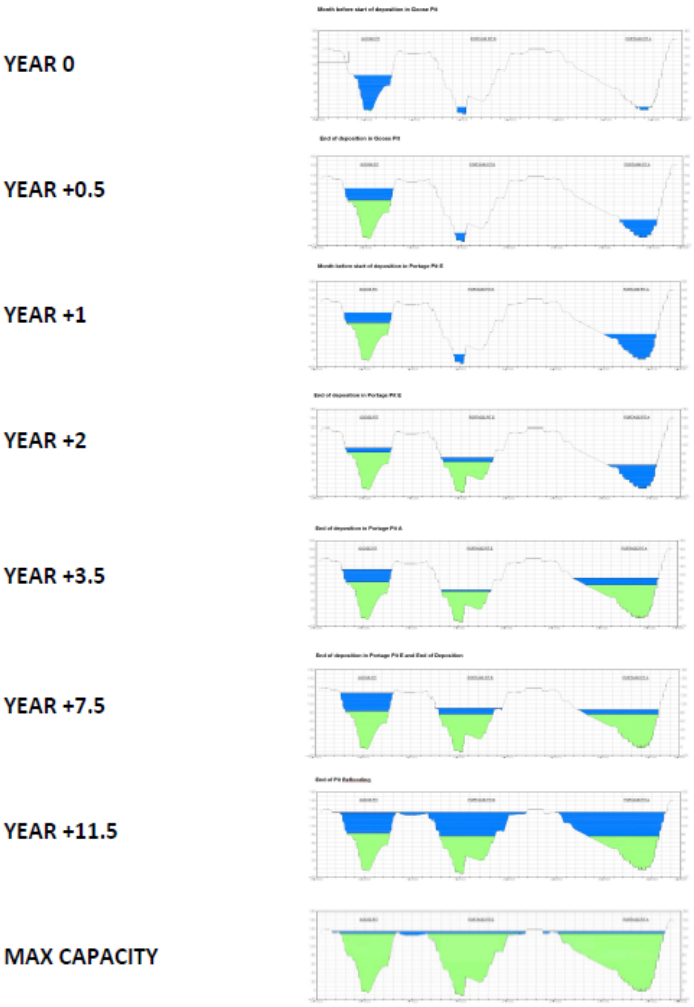
- In Q2 2017, Agnico Eagle began discussions with NWB regarding the modification of activities to extend the use of the TSF to include In-pit deposition.
- This approach gained general acceptance from NWB as the Meadowbank NIRB Project Certificate No. 4 Condition states:

> 29. Cumberland shall report to NIRB if and when Cumberland develops plans for an expansion of the Meadowbank Gold Mine, and in particular if those plans affect the selection of Second Portage Lake as the preferred alternative for tailings management.
>
> 18. Cumberland shall commit to a pro-active tailings management strategy through active monitoring, inspection and mitigation. The tailings management strategy will include the review and evaluation of any future changes to the rate of global warming, compliance with regulatory changes, and the ongoing review and evaluation of relevant technology developments, and will respond to studies conducted during the mine operation.

- As per Agnico Eagle's letter dated May 18th, 2018, we believe this is a non-significant modification that can proceed within the context of the monitoring programs established in Appendix D of the Project Certificate No 004 (and other relevant authorizations and Type A 2AM MEA1525).

IN PIT DEPOSITION - PROJECT DESCRIPTION

- Existing Meadowbank Tailings Storage Facility will reach it's capacity in 2019.
- In pit deposition is consistent with current operations at Meadowbank:
  - Backfilling waste in Portage
  - Optimize freshwater use and efforts to reduce freshwater consumption during operations
- In pit deposition of tailings through subaqueous deposition will allow storage capacity:
  - Portage Pit - 29.8Mm³;
  - Goose Pit – 6.4Mm³;
- In pit disposal follows best practices for Tailings Management in Canada:
  - Reduces geotechnical risks
  - Reduces freshwater use (up to 60%)
  - Optimizes existing impacted footprint
  - Recommendation of Meadowbank Dike Review Board



IN-PIT DEPOSITION – PROJECT DESCRIPTION

- As currently approved by NWB, closure of Meadowbank pits requires Agnico Eagle to:
  - Water quality modelling
  - Treatment required in operation to meet closure criteria;
  - Reflooding to meet NWB future WQ limits in closure (as a condition of the future Type A);
  - Adhere to a closure plan that requires reflooding using freshwater (natural water);
  - Adhering to offsetting plans (i.e. fulfilling concepts to construct fish habitat);
- In-pit disposal modification is built on these same assumptions
- With approval of the Whale Tail Pit Project, Closure of Meadowbank is as follows:
  - 2026 – 2029 - begin active closure including flooding of pits – monitor water quality
  - 2029 – 2035 – monitoring (depending on water quality)
  - Physical opening of the dikes = reconnection to the lake
- To ensure these closure criteria are met:
  - Treatment of water
  - Use of clean lake water to flood (siphoning)
  - Erosion protection during flooding
  - Capping tailings with clean material (ie milled or NPAG waste material)
  - Creating fish habitat or shoals as per offsetting plan
  - Physical opening of the dikes = reconnection to lake – erosion control measures

REGULATORY PROCESS TO DATE

- Discussions with Nunavut Impact Review Board, Kivalliq Inuit Association, Nunavut Water Board, Environment Canada and Department of Fisheries and Oceans in 2017 and 2018
- Nunavut Planning Commission application on December 14, 2017

NUPPAA SECTION 90 SCREENING

- Agnico Eagle has considered each of the s. 90 factors and has concluded it not a significant modification, in the context of the In-pit Tailings Disposal modification:

  (a) the entire geographic area to be used for the In-pit Tailings Disposal modification is within pits that have previously been impacted by ore extraction, therefore the modification results in no additional impacted geographic area;

  (b) by re-purposing the existing area of disturbance (pit areas), the modification does not cause impacts to an ecosystemically sensitive area;

  (c) by re-purposing the pit areas, the modification will result in a negligible change in impacts to an area of historical, cultural or archaeological significance;

  (d) the modification is not expected to result in changes to impacts on human and animal populations;

  (e) by re-purposing the pit areas, this modification will result in a negligible change to the Meadowbank Mine environmental impacts, including the nature, magnitude and complexity of the impacts;

  (f) there will be negligible change to the probability of impacts occurring;

  (g) there will be negligible change to the frequency and low to negligible change in duration of the impacts;

  (h) there will be negligible change to the reversibility or irreversibility of the impacts; and

  (i) there will be negligible change to the cumulative impacts.

NIRB PROCESS TO DATE

- NIRB/ NWB modification was submitted on February 23rd, 2018
- Pits are within an area that (i) was reviewed by the NIRB as part of the Meadowbank environmental review, (ii) was included as an impact in the terrestrial environment impact assessment, (iii) was included in the freshwater environment impact assessment, and (iv) is within the scope of the original tailings storage facility (Cumberland 2007, included seven potential tailings storage sites which included “option A” sub-aqueous slurry deposition in Second Portage Arm and North Portage Pit).
- Agnico Eagle submitted to NIRB an environmental assessment for applicable VECs, compared the original impact assessment predictions to the inpit tailings deposition proposal. Specifically evaluating:
  - Permafrost
  - Water Quantity and Water Quality
  - Groundwater Quality
  - Aquatic Organisms and Fish Habitat

PERMAFROST

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Table 5-1 : Summary of Impacts of the Meadowbank In-pit Tailings Deposition versus Meadowbank EIS 2005 on Permafrost

Period	Assessment Criteria	Impact Significance (Meadowbank EIS 2005)	Impact Significance (In-pit Tailings Deposition)
Operation	Type:	Negative	Negative
	Magnitude:	Low	Low
	Extent:	Local	Local
	Frequency:	Infrequent	Infrequent
	Duration:	Medium-term	Medium-term
	Significance (residual impact):	Low	Negligible
	Probability:	Certain	Certain
	Reversibility:	Not assessed	Yes
Closure/Post Closure	Type:	Negative	Negative
	Magnitude:	Low	Low
	Extent:	Local	Local
	Frequency:	Infrequent	Infrequent
	Duration:	Permanent	Permanent
	Significance (residual impact):	Low	Negligible
	Probability:	High	High
	Reversibility:	No	No

WATER QUANTITY

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Table 5-2 : Summary of Impacts of the Meadowbank In-pit Tailings Deposition versus Meadowbank EIS on Water Quantity

Period	Assessment Criteria	Impact Significance (Meadowbank EIS 2005)	Impact Significance (In-pit Tailings Deposition)
Operation	Type:	Negative	Negative
	Magnitude:	Low	Low
	Extent:	Local	Local
	Frequency:	Continuous	Continuous
	Duration:	Medium-term	Medium-term
	Significance (residual impact):	Negligible	Negligible
	Probability:	Certain	Certain
	Reversibility:	Not assessed	Yes
Closure/Post Closure	Type:	N/A	N/A
	Magnitude:	N/A	N/A
	Extent:	N/A	N/A
	Frequency:	N/A	N/A
	Duration:	N/A	N/A
	Significance (residual impact):	N/A	N/A
	Probability:	N/A	N/A
	Reversibility:	N/A	N/A

WATER QUALITY

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Table 5-3 : Summary of Impacts of the Meadowbank In-pit Tailings Deposition versus Meadowbank EIS 2005 on Surface Water Quality

Period	Assessment Criteria	Impact Significance (Meadowbank EIS 2005)	Impact Significance (In-pit Tailings Deposition)
Operation	Type:	Negative	Negative
	Magnitude:	Very High	Very High
	Extent:	Footprint	Footprint
	Frequency:	Continuous	Continuous
	Duration:	Medium-term	Medium-term
	Significance (residual impact):	Low	Low
	Probability:	Medium	Medium
	Reversibility:	Not assessed	Yes
Closure/Post Closure	Type:	Negative	Negative
	Magnitude:	Medium	Medium
	Extent:	Local to regional	Local to regional
	Frequency:	Continuous	Continuous
	Duration:	Medium to long term	Medium to long term
	Significance (residual impact):	Low	Low
	Probability:	Low	Low
	Reversibility:	Not assessed	Yes

GROUNDWATER QUALITY

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Table 5-4 : Summary of Impacts of the Meadowbank In-pit Tailings Deposition versus Meadowbank EIS 2005 on Groundwater Quality

Period	Assessment Criteria	Impact Significance (Meadowbank EIS 2005)	Impact Significance (In-pit Tailings Deposition)
Closure/Post Closure	Type:	Negative	Negative
	Magnitude:	Medium	Medium
	Extent:	Footprint	Footprint
	Frequency:	Continuous	Continuous
	Duration:	Long term	Long term
	Significance (residual impact):	Low	Low
	Probability:	Moderate	Moderate
	Reversibility:	Not assessed	No

AQUATIC ORGANISMS AND HABITATS

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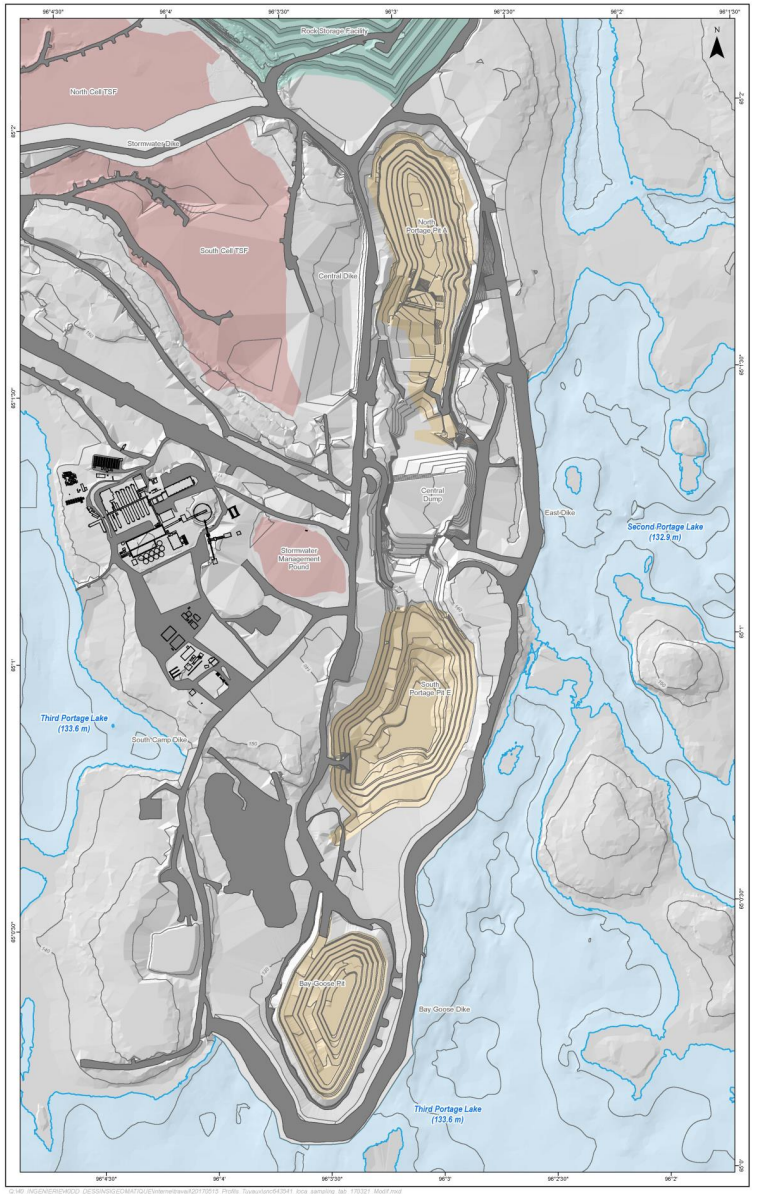
Table 5-5 : Summary of Impacts of the Meadowbank In-pit Tailings Deposition versus Meadowbank EIS on Aquatic Organisms & Habitats

Period	Assessment Criteria	Impact Significance (Meadowbank EIS 2005)	Impact Significance (In-pit Tailings Deposition)
Closure/Post Closure	Type:	Positive	Positive
	Magnitude:	Low	Low
	Extent:	Local	Local
	Frequency:	Frequent	Frequent
	Duration:	Permanent	Permanent
	Significance (residual impact):	Non-significant	Non-significant
	Probability:	High	High
	Reversibility:	N/A	N/A

PREFEASIBILTY STUDY

- The Prefeasibility Study (PFS) design for in-pit deposition included the following studies:
  - A hydrogeological modeling of groundwater flow in and around the Portage and Goose Pits including a 3D contaminant transport model;
  - 1D tailings consolidation modeling assessment of the tailings in the pit;
  - Development of deposition methodology and strategy;
  - Development of pit closure strategy;
  - Update and refinement of the water and tailings mass balance around Portage and Goose Pits;
  - Update of the water quality forecast model;
  - Development of infrastructures required for in-pit deposition;
  - Review pit wall stability during in-pit deposition.
- PFS report was submited with the NWB and NIRB applications on February 2018



TAILINGS DEPOSITION METHODOLOGY AND STRATEGY

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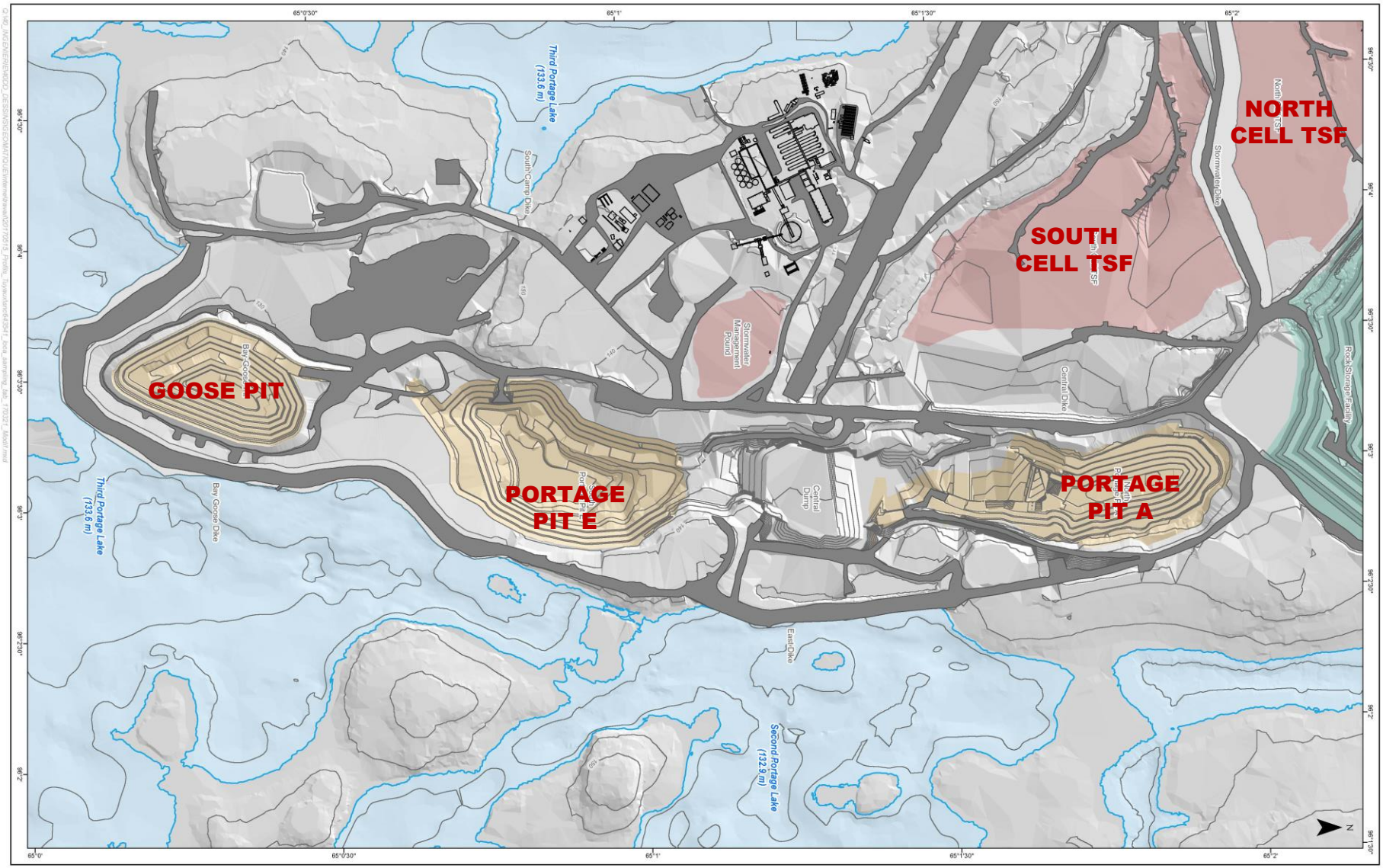


PIT CLOSURE STRATEGY

- Pit flooding and reconnection with 3rd Portage Lake.
- Return existing surrounding lakes to pre-mining state by joining the in-pit water bodies to the surrounding receiving environment.
- To achieve this objective, the following steps will have to be realized:
  - In-pit tailings deposition to a maximum elevation up to 125.6 masl. Provide water cover of about 8 m.
  - Treatment of the reclaim water to remove total/dissolved metals and other parameters of concern;
  - Pit flooding with Third Portage Lake water if required;
  - Freshwater required for pit flooding at closure drop from 32M o 10Mm^3. Reduction of 22Mm^3 in freswater consumption;
  - During the monitoring period, natural runoff will enter and fill the Portage and Goose Pit until the water elevation is close to the water elevation of Third Portage Lake (133.6 masl).
  - Reconnection will be completed once the water quality meets site-specific closure criteria as per NWB Type A.
- No change to security bonding

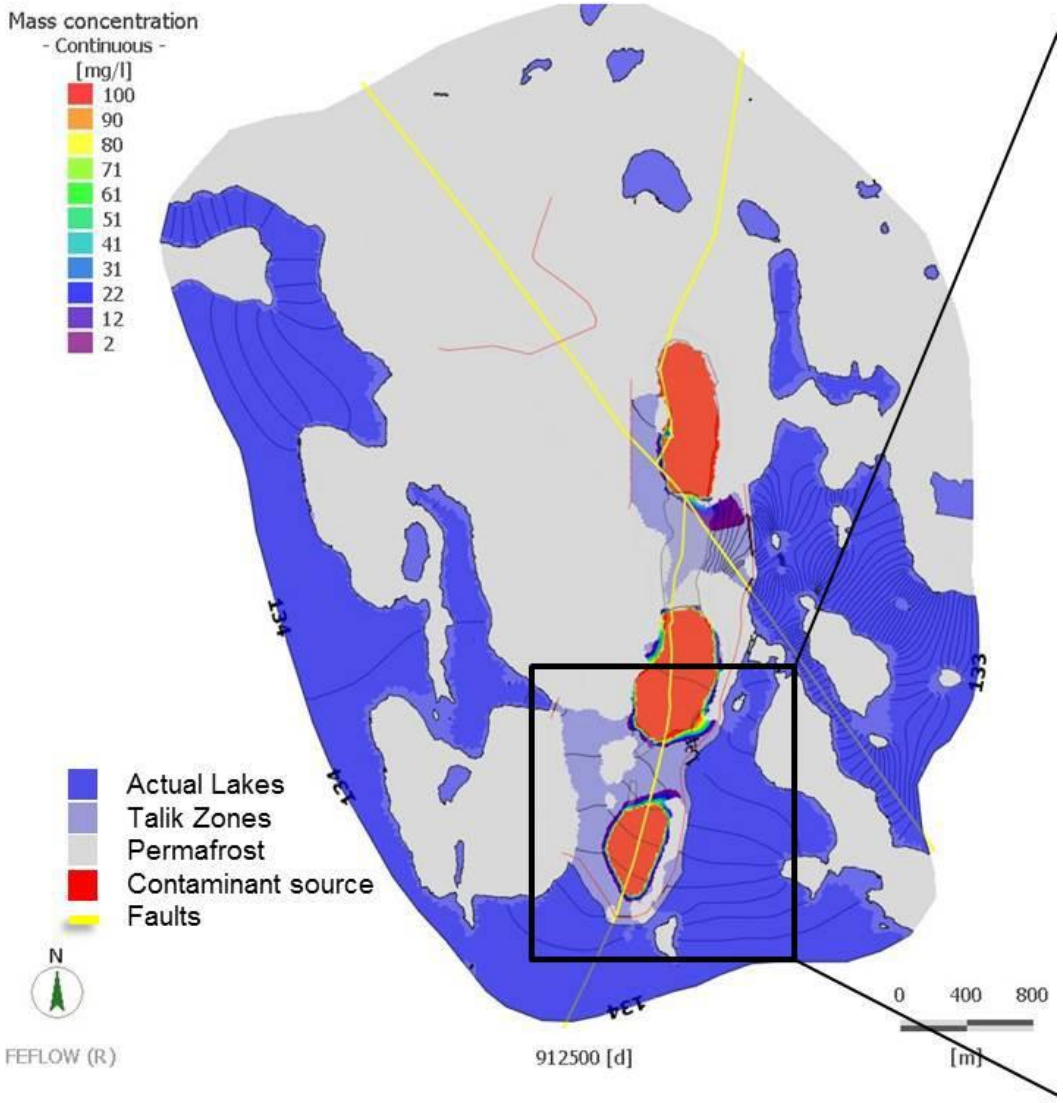
WATER QUALITY FORECAST

KEY FINDINGS

- Water licence requires annual water quality forecasting
- Current water quality forecast recommends water treatment at closure for treatment of pit water to reduce total and dissolved metals, and could be designed to address issues with ammonia and any other parameters of concern.
- Type A water licence will dictate pit lake reconnection process

CONTAMINATION TRANSPORT MODELING

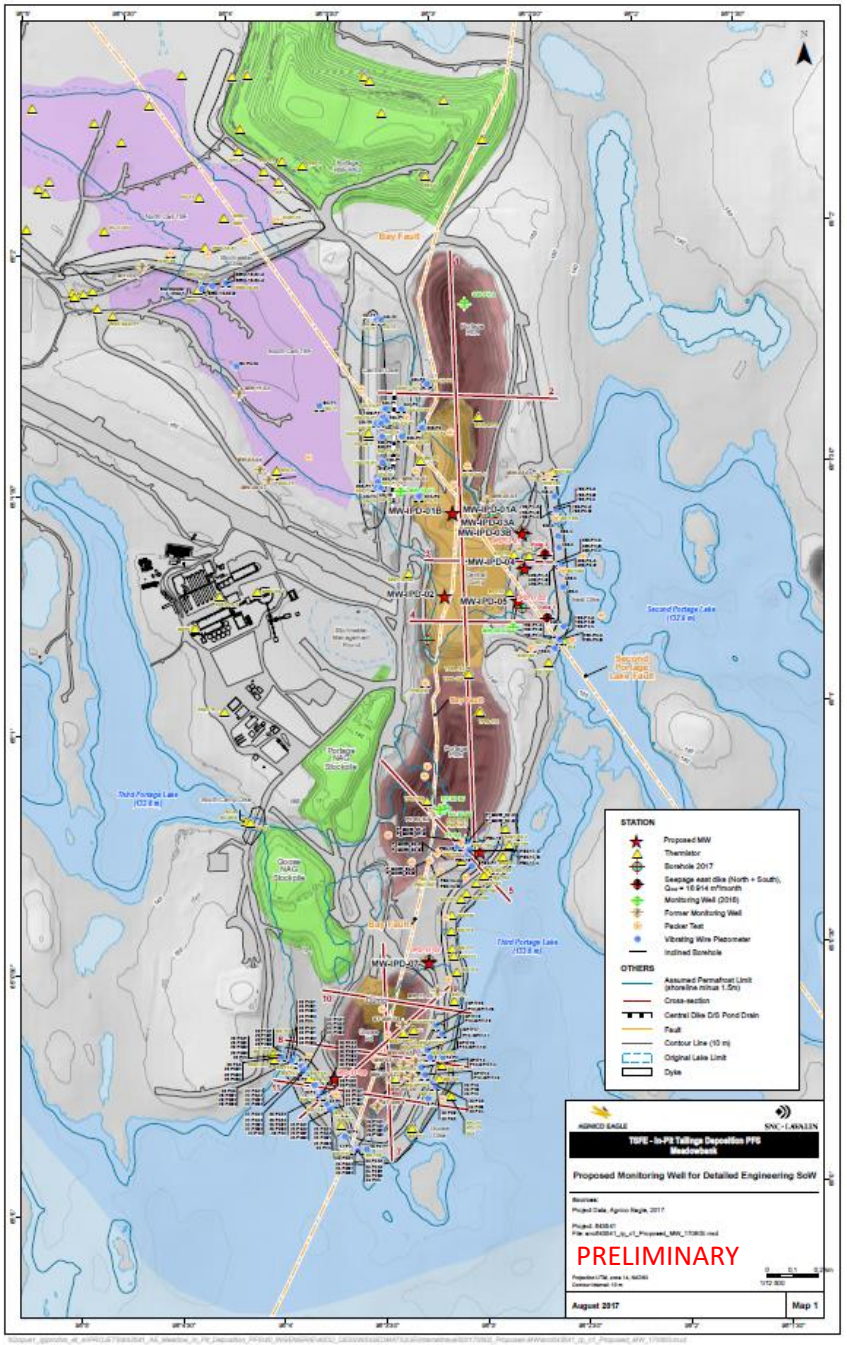
- Key findings from the simulations
  - At closure, once all pits filled with tailings: Natural GW flow will be reestablished and potential contaminants will migrate to east, in lake direction, but at a low rate, since hydraulic gradient will be low.
  - If source concentration remains constant over time, the plume would reach only 250m from Portage Pit A, 100 m from Portage Pit E and 150 m from Goose Pit, in lakes direction over 2,500 years (at 3% of the initial concentration).
  - Water treatment required at closure before the pit lake reconnection will mitigate this risk.



GROUNDWATER MONITORING

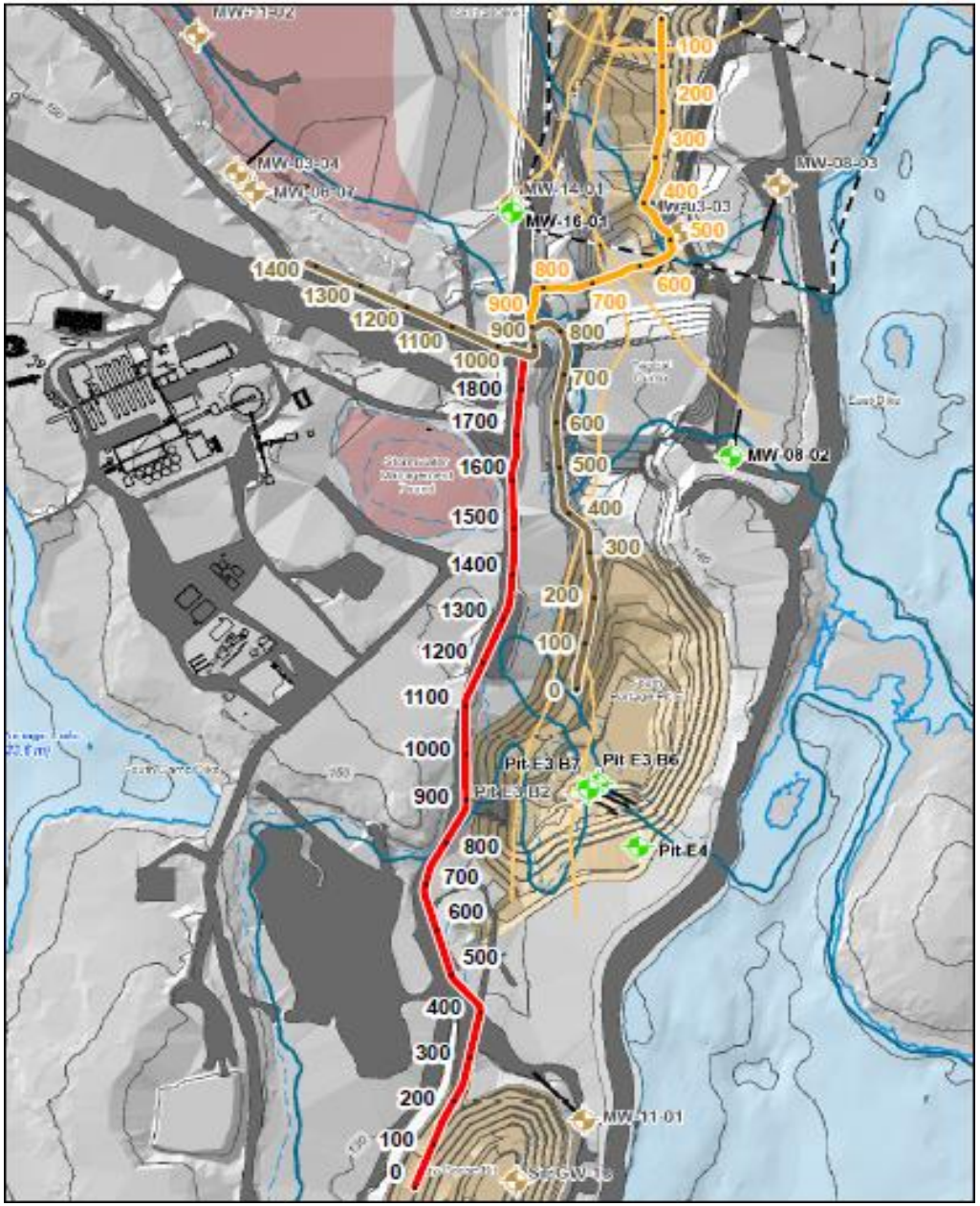
- Install monitoring Wells (MW) network
  - Add 4 deep MW (60 to 180 mbgs) at key location
  - Talik area between pits and lakes are targeted

- GW monitoring program for IPD
  - Background GW quality already assessed
  - During IPD: Sample GW
    - Total and dissolved metals
    - Chloride
    - Fluoride
    - Total cyanide
    - Nitrate
  - During IPD: Continue water level and temperature monitoring
  - After IPD (for a minimum of 2 years): Continue MW sampling once a year at spring



INFRASTRUCTURE REQUIREMENTS

- Tailings Pipeline Routing Overview
- Piping Required:
  - HDPE DR11
  - Tailings: 14-in
  - Reclaim Water: 14-in
  - Transfer Water: 8-in

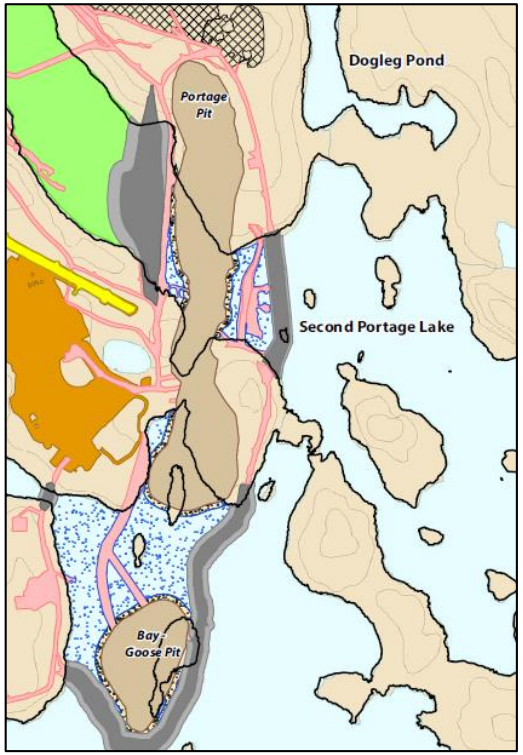


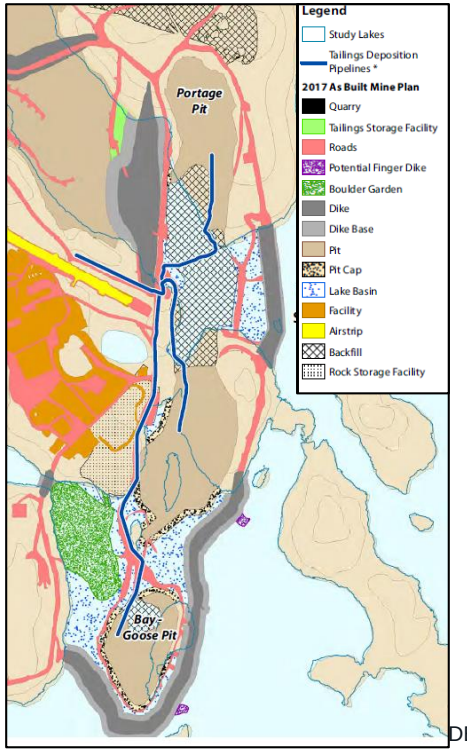
PORTAGE AREA NNLP UPDATE FOR IN-PIT DEPOSITION

2017 NNLP UPDATE

- Addendum to 2012 offsetting plan to support Inpit disposal
  - The areas of mine site features (habitat patches) within the Portage area were updated to reflect:
    - As-built designs (pit area and backfilled pit area, road network)
    - New design plans (boulder garden area, in-pit disposal pipeline, dike breaches)
    - No changes were made to areas of dikes or finger dikes.

2012





2017

FISH HABITAT COMPENSATION PLAN

- Existing offsetting and fish habitat compensation plan will continue to be implemented.

Bay-Goose Area

- Backfill of Goose Pit with tailings and rock material will create more natural water depth of 8 - 9 m (previously this pit was not planned to be backfilled)
- Increase in area of proposed boulder garden from 3 to 15 ha

Overall

- Small increase in the number of calculated habitat units gained for reflooding the Bay-Goose + Portage area under the in-pit deposition scenario.

FISHERIES OFFSETTING

- Fisheries Act Authorization for Meadowbank Mine Activities:
  - Agnico Eagle has a Section 35 Authorization (NU 03-0191.3) and recently, DFO issued a Letter R (modification) on December 19th, 2017 to extend our authorization until 2019.
- Agnico Eagle will continue working with DFO to address any changes to the offsetting plan required

CONCLUSION

- In-pit tailings disposal does not represent a major technical change for tailings management, and is not associated with any new deposit or expansion of the Meadowbank Mine;
- Pit areas were assessed during the original Meadowbank assessment. The area of impact was included in the original FEIS and now impacted due to mining - the proposed modification is fully within the existing disturbed areas of the existing pits and supported by a Section 90 screening provided to NIRB in February 2018;
- The In-pit Disposal Modification activities are supported by NTI/KIA;
- The concept has been reviewed with Baker Lake and the proposed modification is not the subject of any outstanding Baker Lake community concerns;
- In-pit tailings disposal is consistent with and required by the existing Meadowbank Project Certificate No. 4 terms and conditions 18 and 29; and
- The technical details of the in-pit tailings disposal will be fully considered within the Nunavut Water Board and any applicable *Fisheries Act* process.

SUMMARY OF THE UPDATED MONITORING

Refer to table 1 in the February 15th submission to NIRB

The following mangement and monitoring plans will be updated as per Meadowbank Licence A (2AM-MEA1526):

- Groundwater monitoring plan
- Water quality and flow monitoring plan
- Tailings storage facility operation maintenance and surveillance manual
- Mine wasterock and tailings management plan
- Water management plan
- QA/QC monitoring plan
- Closure plan

- Offsetting plan
- NIRB PEAMP

SUMMARY OF KIA/NTI SUBMISSION TO NIRB OF MAY 3, 2018

- “In summary, the plan to use the Portage A and E Pits and the Goose Pit to permanently manage future tailings storage under a water cover appears to be an excellent option from an environmental and social perspective and would not appear to represent a major technical change for tailings management, assuming certain commitments are maintained.”

- “…it is noted that the use of an open pit for long-term storage of mine tailings under a water cover is regarded as the best available technology to minimize long-term geotechnical and geochemical issues.”

- “In terms of long-term physical stability, storage of tailings within an open pit is typically superior to any other form of storage, as other forms would likely be more susceptible to erosion, require engineered containment structures, require maintenance, etc.”

- “In terms of geochemical stability, management of tailings with a water cover, as proposed, is also typically ideal to prevent weathering, and acid rock drainage / metal leaching (ARD/ML).

- “It is the KivIA’s opinion that the proposal, as described in the April 13th letter, and in the documents provided on the NIRB website, does not show a significant deviation within the operating environment of an operating mine site.”

- “In addition, if managed properly with the appropriate adaptive management that AEM has used on the Meadowbank Project to date there should be minimal to negligible negative environmental and social effects as described above.”

- “The proposal for Meadowbank to use the open pits for storage of tailings has several specific environmental and social advantages compared to other deposition option.”

AEM SUMMARY RESPONSE TO KIA AND NTI SUBMISSIONS

- AEM confirms that it will maintain the following commitments suggested by KIA/NTI:
  - Treatment of open pit water within the pit/tailings storage facilities until it is determined that water quality is acceptable for release to the environment without further treatment, and the dikes to Third Portage Lake can be breached;
  - Maintenance of an adequate water cover over tailings during deposition and post-closure, such that tailings are not disturbed by wind and wave action;
  - Additions to both the permafrost monitoring program and the groundwater quality monitoring program to confirm that no significant effects on the environment occur through a groundwater pathway;
  - Further consideration of the geotechnical stability of the pit walls and on-going monitoring programs to confirm that there are no significant issues with the pit wall stability;
  - The tailings deposition method should consist of subaqueous deposition year round to avoid ice build-up within the tailings; and
  - the in-pit tailings deposition program should be reviewed on a regular basis, such as annually, to ensure that is proceeding as planned and the effects are as predicted.

AEM SUMMARY RESPONSE TO GC SUBMISSIONS OF MAY AND JUNE 2018

AGNICO EAGLE

- Per this presentation and AEM's s. 90 assessment, AEM does not believe that the in-pit disposal modification is a significant modification – the modification does not significantly change the original Meadowbank project
- AEM is of the view that updating the Meadowbank monitoring program and proceeding with the modification process under the Type A Water Licence is the appropriate regulatory process for this modification
- With respect to water management and water quality, the proposal offers significant potential benefits, as outlined at previous slides, and technical details can be evaluated by NWB in modification process
- With respect to fish, fish habitat management and offsetting, the detailed stringent regulatory requirements relating to these topics can be managed by DFO in accordance with the Fisheries Act and its regulations

AEM SUMMARY RESPONSE TO GC SUBMISSIONS OF MAY AND JUNE 2018 (CONT.)

AGNICO EAGLE

- If NIRB determines the in-pit disposal modification is a significant modification, a streamlined reconsideration process is the most appropriate NIRB process
- In-pit tailings disposal is consistent with and required by Project Certificate No. 4 terms and conditions 18 and 29
- In-pit modification is “within the scope of the assessment of the original project” - integrally linked to the original Meadowbank project, the existing PC terms and conditions are sufficiently broad in scope, and the concept of in-pit disposal (in Second Portage Arm and North Portage Pit) was included as an alternative in the original assessment. The Meadowbank Dike Review Board has confirmed that in-pit is the best available technology (see s. 112(1)(c) of NuPPAA).
- If a reconsideration process is selected, it must be completed by September 2018 in order to meet project timelines and should be fully coordinated with the NWB modification process.
- The information provided by AEM to the NIRB and NWB to date should be sufficient to proceed immediately with a coordinated reconsideration/ NWB (2AM-MEA1525) modification process, should the NIRB make that determination
- Streamlined reconsideration should be a paper-based process and no public meeting should be necessary for the in-pit disposal process - No significant public (Baker Lake) concern expressed about in-pit – KIA/NTI are supportive