

# MELIADINE PROJECT SALINE EFFLUENT DISCHARGE TO MARINE ENVIRONMENT



**WATERLINE - OPERATION AND REMOVAL/RECLAMATION**

# AGENDA



- Waterline operation
- Modelling and design
- Removal/Reclamation Plan
- Questions

# WATERLINE OPERATION



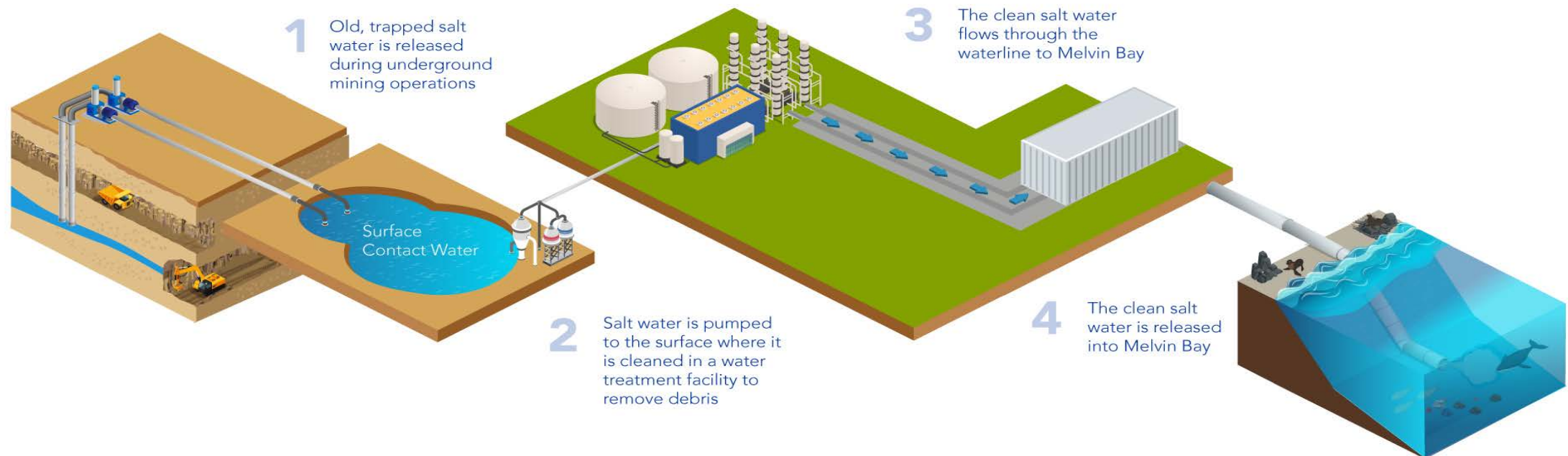


# WATERLINE PROJECT



AGNICO EAGLE

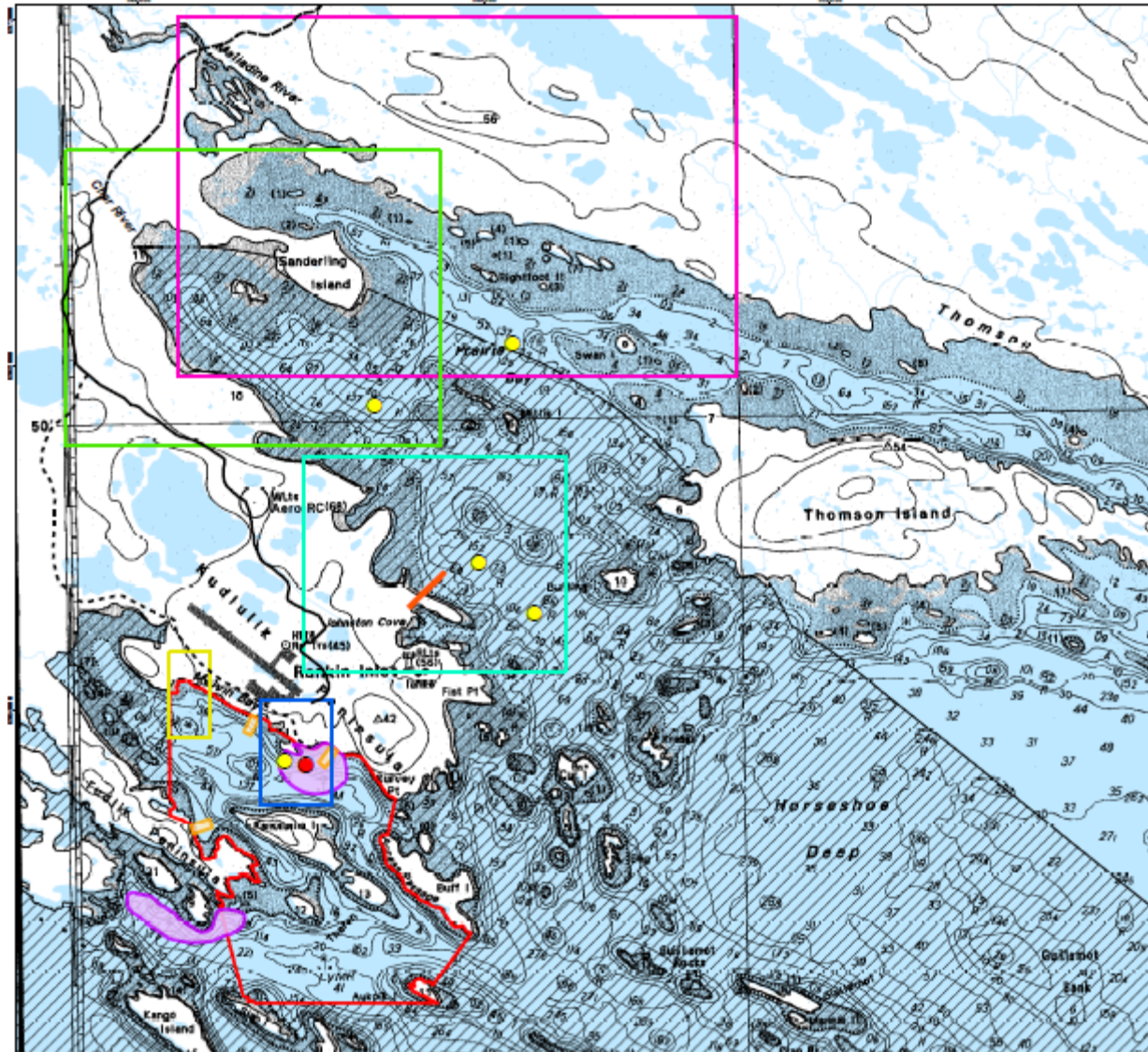
- The waterline project is an amendment to the Meliadine Diffuser project that was approved in 2018 and **is a more sustainable solution to the water management challenges than increasing trucking.**
- To transport the current approved amount of water requires 20 - 40 trucks on the road per day. **To transport the increased amount of water by truck would require 150 – 300 trucks per day.**
- Rather than permanently increasing the number of trucks to move saline water from Meliadine to Itivia, a 34-kilometer waterline from Meliadine to Itivia is proposed.
  - 2 x 16-inch-high density polyethylene (HDPE, a type of plastic) lines
  - The volume of water being released into Melvin Bay would increase from 800 – 1,600 m<sup>3</sup> per day to 6,000 - 12,000 m<sup>3</sup> per day (around 1.6 - 3.2 million US gallons per day)



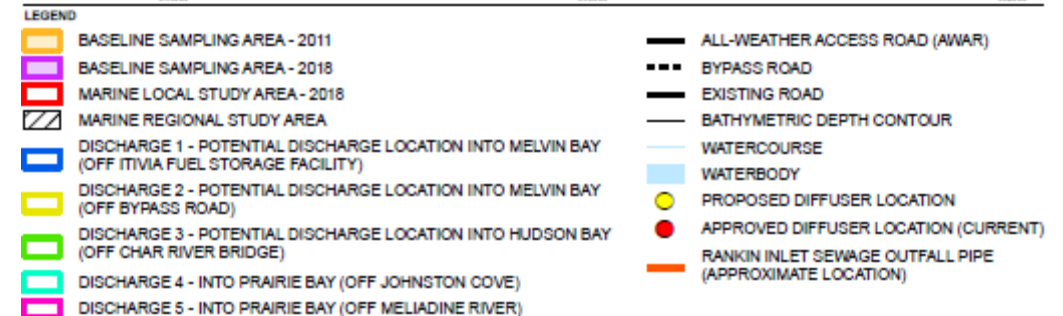
# MARINE ENVIRONMENT



**AGNICO EAGLE**



- Treated groundwater will be discharged through an engineered marine outfall
- Discharge volumes of 6,000 - 12,000 m<sup>3</sup> per day (alternative 20,000 m<sup>3</sup> per day)
- Effects to marine valued components limited to nearshore where construction and installation occurs and primarily limited to the construction period of a few months
- Effects from the discharge are limited to the mixing zone
- Discharge not anticipated to have measurable impacts to water quality or other valued components beyond the mixing zone
- 3D modelling confirms the discharge will meet edge of mixing zone criteria





# MODELLING AND DESIGN



# SALINE WATER INFLOWS



Table 1. Annual Saline Water Treatment Results (Average Year Scenario)

Year	Surface Water Inventory (m³)	Total Discharge to Melvin Bay (m³/day)
2020	187,245	1,600
2021	333,953	1,600
2022	503,806	11,630
2023	277,768	11,515
2024	47,688	7,444
2025	0	7,987
2026	0	8,159
2027	0	7,729

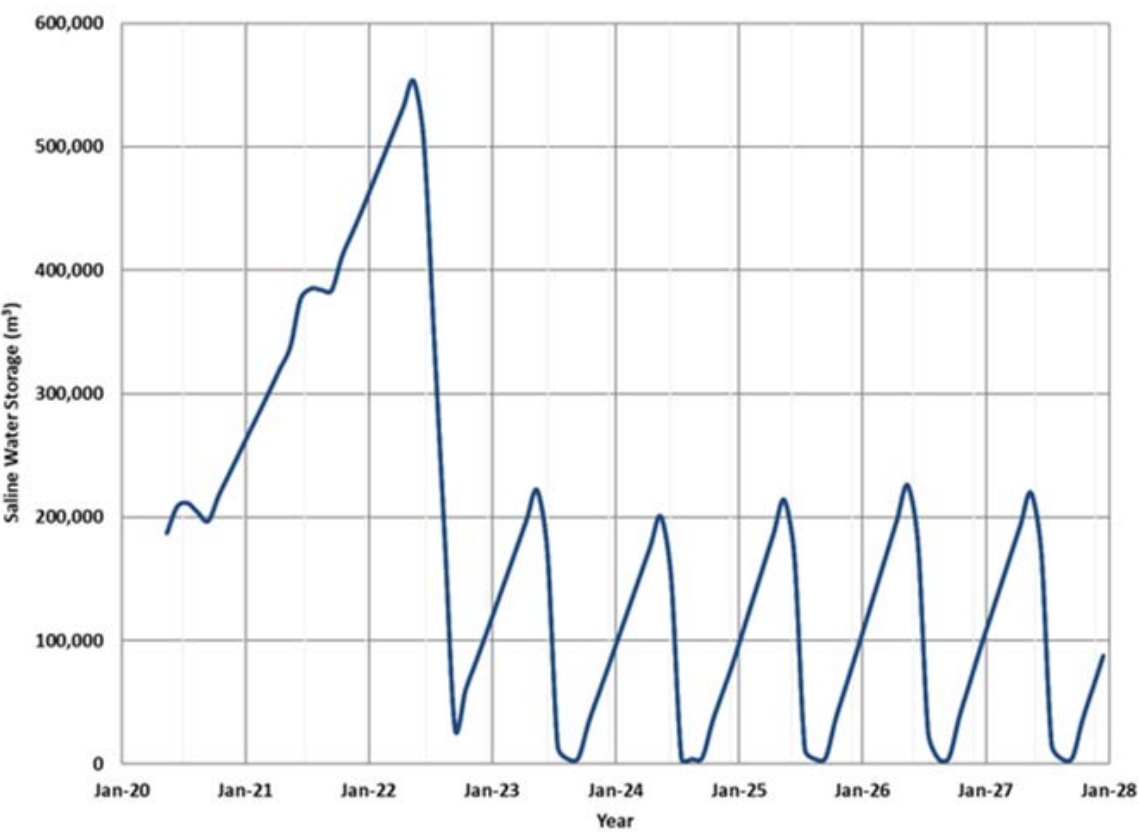
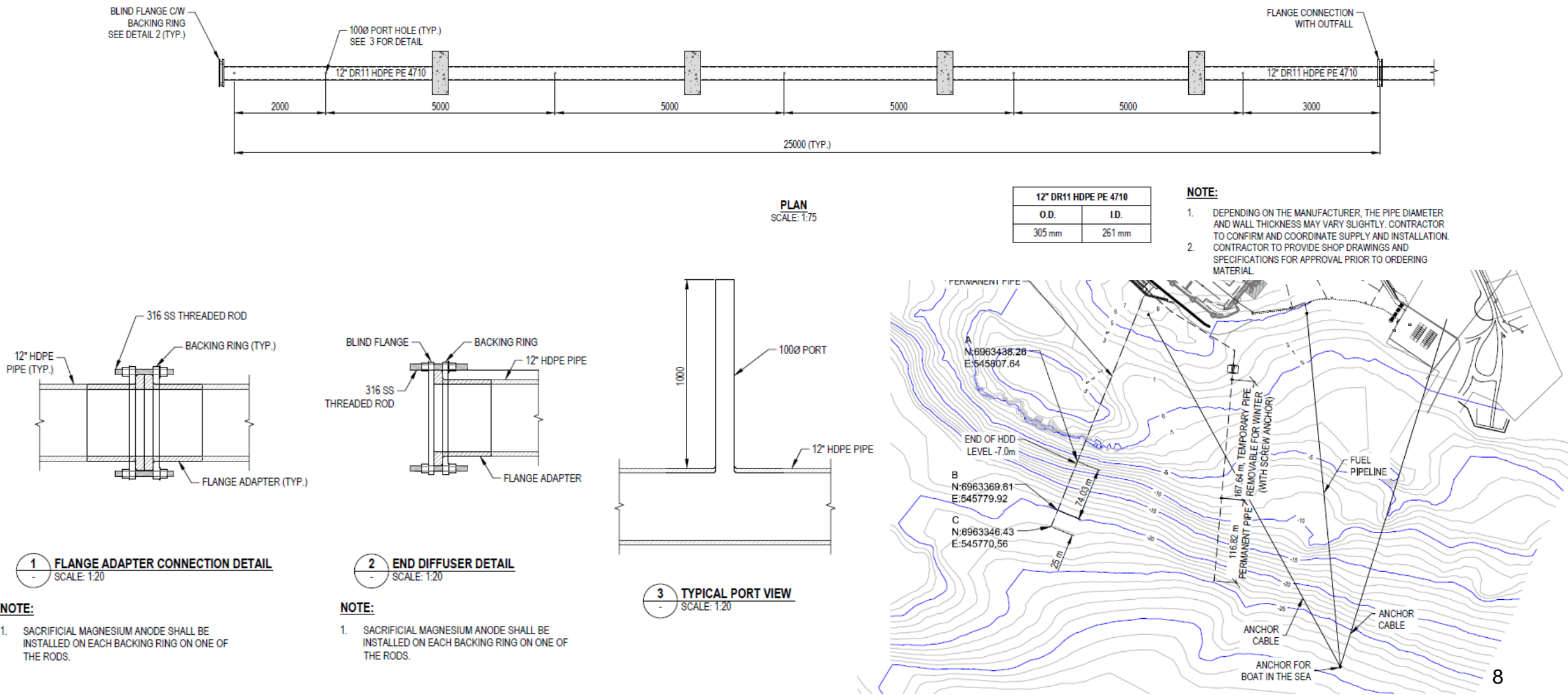


Figure 1: Accumulated Saline Water Storage on Site (Average Year Scenario)

# MELVIN BAY DIFFUSER



## Diffuser Section with its 5 Discharge Ports





# HORIZONTAL DIRECTIONAL DRILLING

- Recent investigations indicate that horizontal directional drilling may need to occur below the highwater mark due to the presence of bedrock
- Agnico Eagle intends to prepare a Request for Review for DFO



# REMOVAL/RECLAMATION PLAN



# REMOVAL/RECLAMATION PLAN



- Infrastructure will be dismantled and removed upon cessation of activities related to ocean discharge.
- Infrastructure will be removed consistent with the Interim Closure and Reclamation Plan
- Removal of all physical hazards



QUESTIONS ?

