



# BACK RIVER PROJECT

NWB Final Hearing: August 8 – 9, 2018



# Forward Looking Information

Statements relating to our belief as to the timing of completion of the environmental assessment, the results of the final public hearings, the timing of receipt of a project certificate and permits and the timing of the start of construction and the first gold pour, and the results of further optimization studies to the feasibility study, the potential tonnage and grades and contents of deposits and the potential production from and viability of Sabina's properties are forward looking information within the meaning of securities legislation of certain Provinces in Canada. Forward looking information are statements that are not historical facts and are generally, but not always identified by the words "expects," "plans," "anticipates," "believes," "intends," "estimates," "projects," "potential," "opportunities," and similar expressions, or that events or conditions "will," "would," "may," "could," or should occur. The forward looking information is made of the date of this presentation. This forward looking information is subject to a variety of risks and uncertainties which could cause actual events or results to differ materially from those reflected in the forward looking information, including, without limitation: the effects of general economic conditions; changing foreign exchange rates; risks associated with exploration and project development; the calculation of mineral resources and reserves; risks related to fluctuations in metal prices; uncertainties related to raising sufficient financing to fund the planned work in a timely manner and on acceptable terms; changes in planned work arising from weather, logistical, technical or other factors; the possibility that results of work will not fulfill expectations and realize the perceived potential of the Company's properties; risk of accidents, equipment breakdowns and labour disputes; access to project funding or other unanticipated difficulties or interruptions; the possibility of cost overruns or unanticipated expenses in the work program; title matters; government regulation; obtaining and receiving necessary licenses and permits; the risk of environmental contamination or damage resulting from Sabina's operations and other risks and uncertainties including those described in Sabina's annual information form for the year ended December 31, 2016 available at [www.sedar.com](http://www.sedar.com)

Forward looking information is based on the beliefs, estimates and opinions of Sabina's management on the date the statements are made. Sabina undertakes no obligation to update the forward looking information should management's beliefs, estimates or opinions, or other factors, change, except as required by applicable law

# Who is Sabina Gold & Silver Corp.?

- Sabina is a Vancouver, Canada based precious metals company on track to become a mid-tier gold producer
- Listed on the Toronto Stock Exchange (TSX: SBB)
- Skilled staff with extensive northern experience
- The Company is committed to sustainable northern development and acknowledges the need for effective community engagement
- Projects in Nunavut
  - **Back River Gold Project, Nunavut**
  - Wishbone Greenstone Belt, Nunavut
  - A significant silver royalty on the Hackett River Project, Nunavut

# Presentation Outline

- Project Overview
- Project Application
- Mitigation, Management, and Monitoring Plans
- Closure and Post-Closure
- Technical Comments Moving Forward
- Response to NWB Technical Commitment Appendix D to the Pre-Hearing Conference Decision
- Type A Water Licence Final Submissions





Goose Property

Summer 2017





Goose Property

Fall 2017





Marine Laydown Area

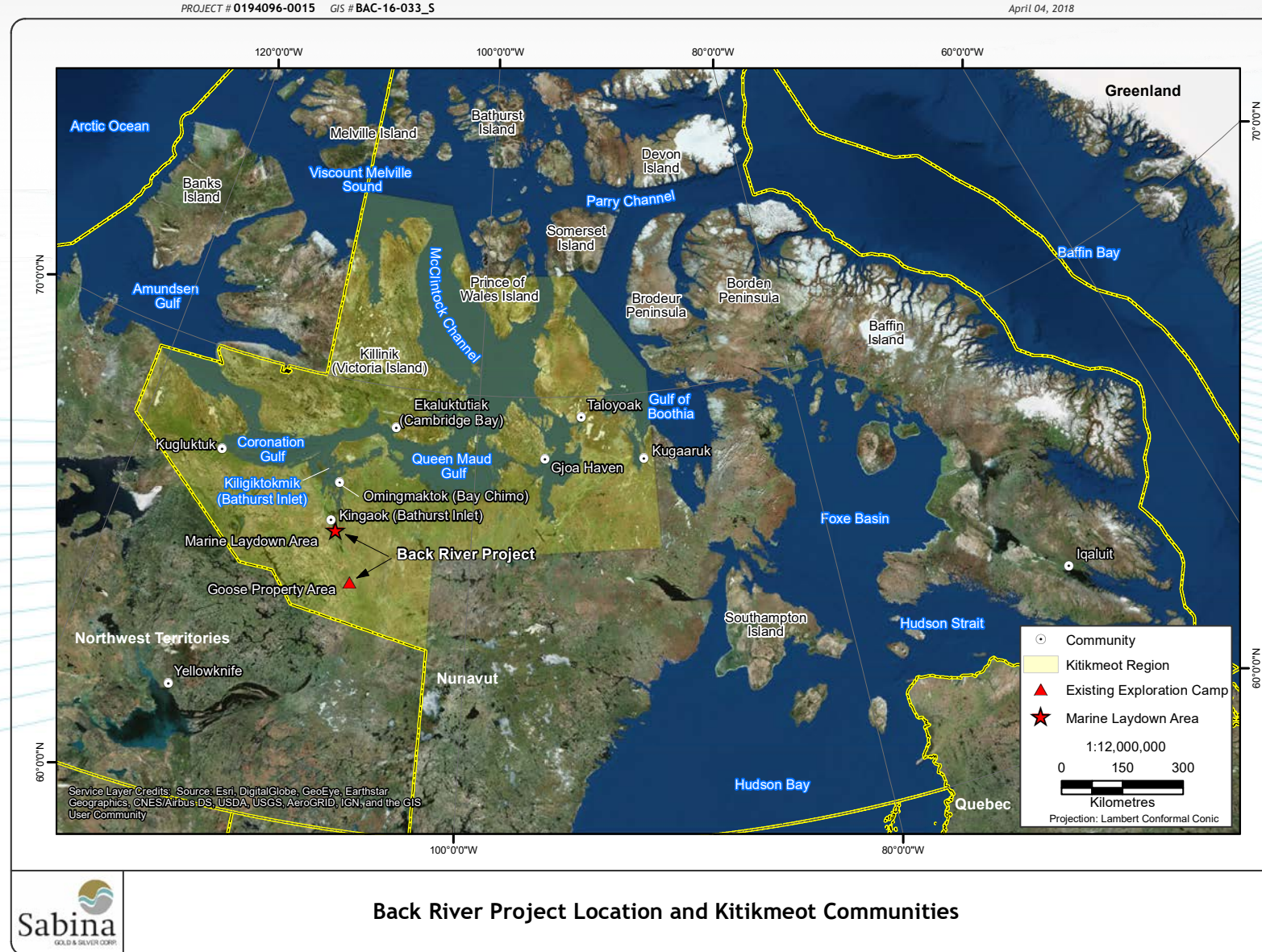
Summer 2018







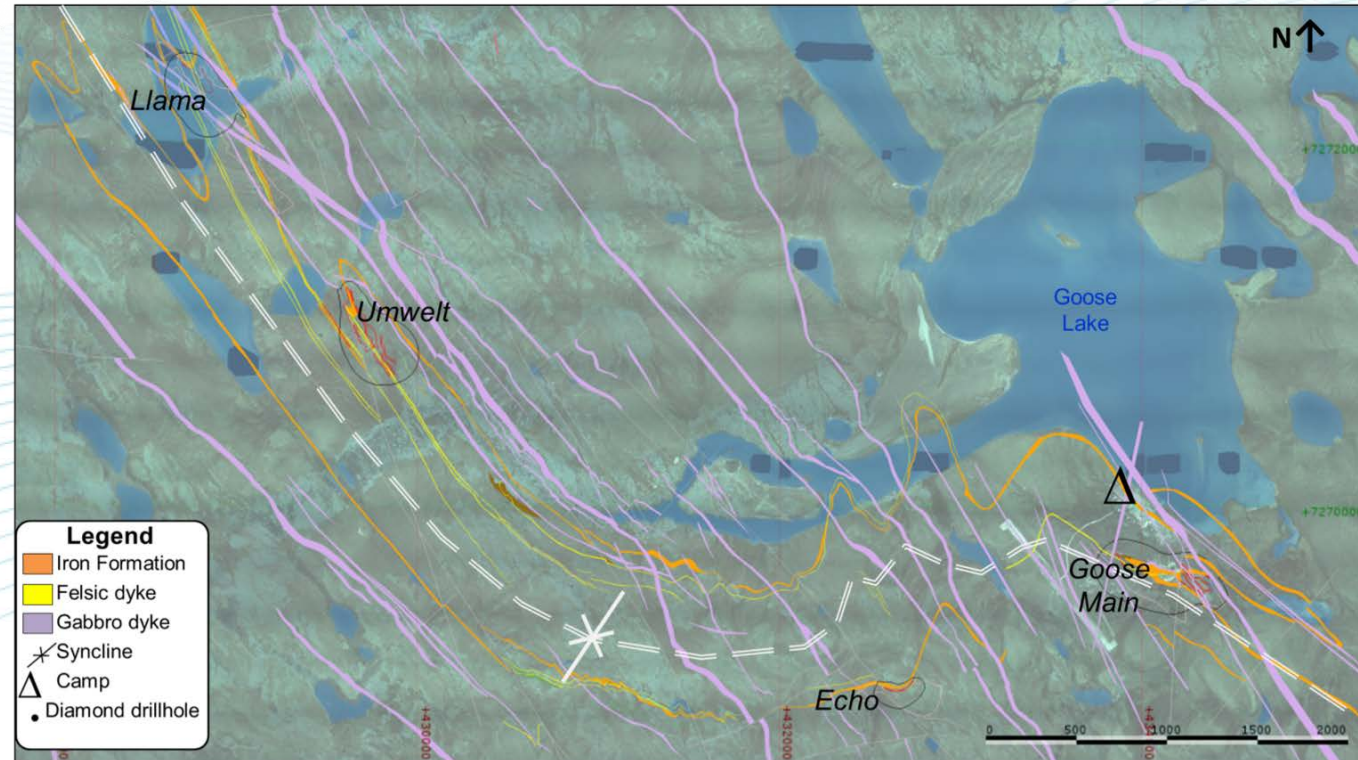
# Overview – MAP OF AREA





# Overview – DEPOSITS

- The Back River Project is composed of 4 known gold deposits
  - Umwelt, Llama, Goose Main, Echo
- Sabina Gold & Silver proposes to develop these deposits in a phased approach to better manage the initial capital investment required and to allow production to commence while ongoing exploration continues to increase the known ore reserve





# Overview - PROJECT FACTS

- 10 Year Active Mine life
  - 4 Years construction
  - 10 Years Active Mining
  - Up to 6000 tonnes per day
- Open Pit and Underground Mining
  - 4 open pit and 4 underground mines: Umwelt, Llama, Goose Main, Echo
  - proposed underground mining methods include post pillar cut-and-fill, drift and fill, and longitudinal open stoping
  - the proposed open pit mining method is truck and shovel
- Total of 19.8 Mt of Ore



# Overview - EXISTING WATER LICENCES

## 2BE-GOO1520

- Exploration on Goose Property
- Expires February 18, 2020
- Request permit be maintained as stand-alone Type B

## 2BE-GEO1520

- Exploration on George Property
- Expires May 29, 2020
- Request permit be maintained as stand-alone Type B
- \*Outside current application process

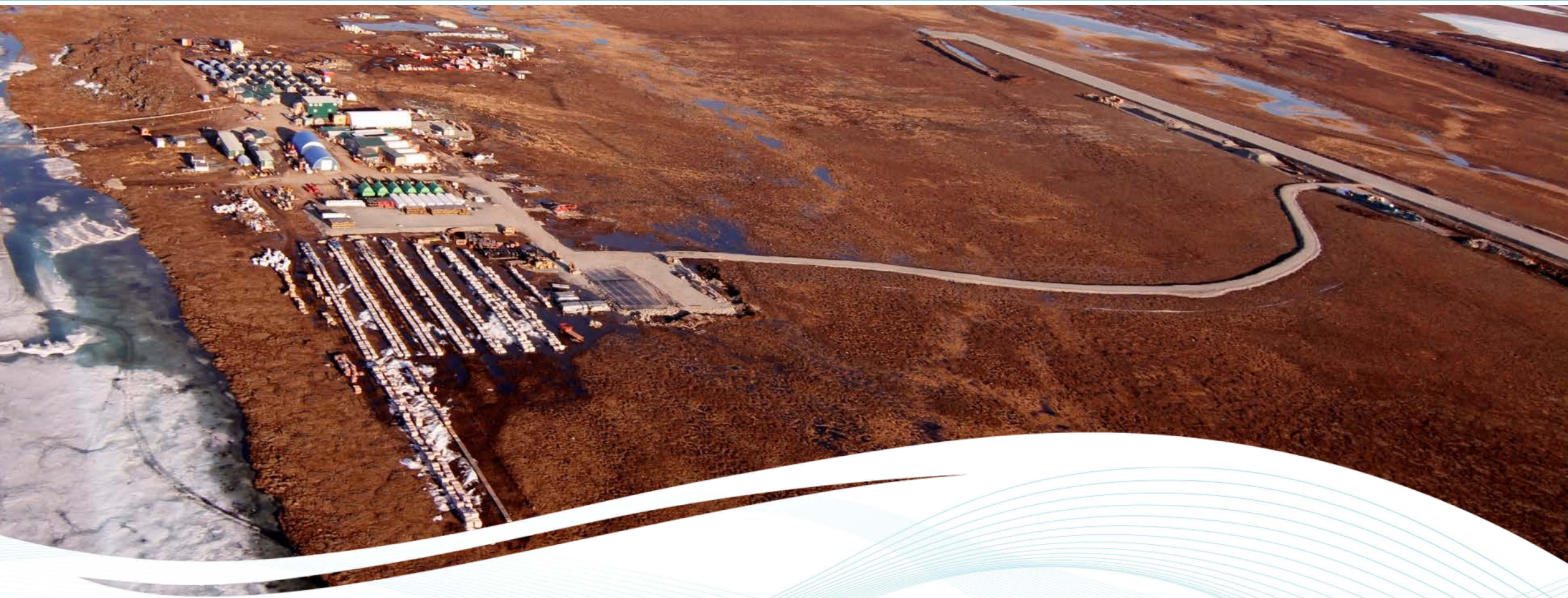
## 2BE-MLL1722

- Exploration on Wishbone Malley Property
- Expires June 29, 2022
- Request permit be maintained as stand-alone Type B
- \*Outside current application process

## 2BC-BRP1819

- Development activities at Back River Project
- Expires April 30, 2019
- Will roll into Type A







# Project Application – PROJECT SCHEDULE

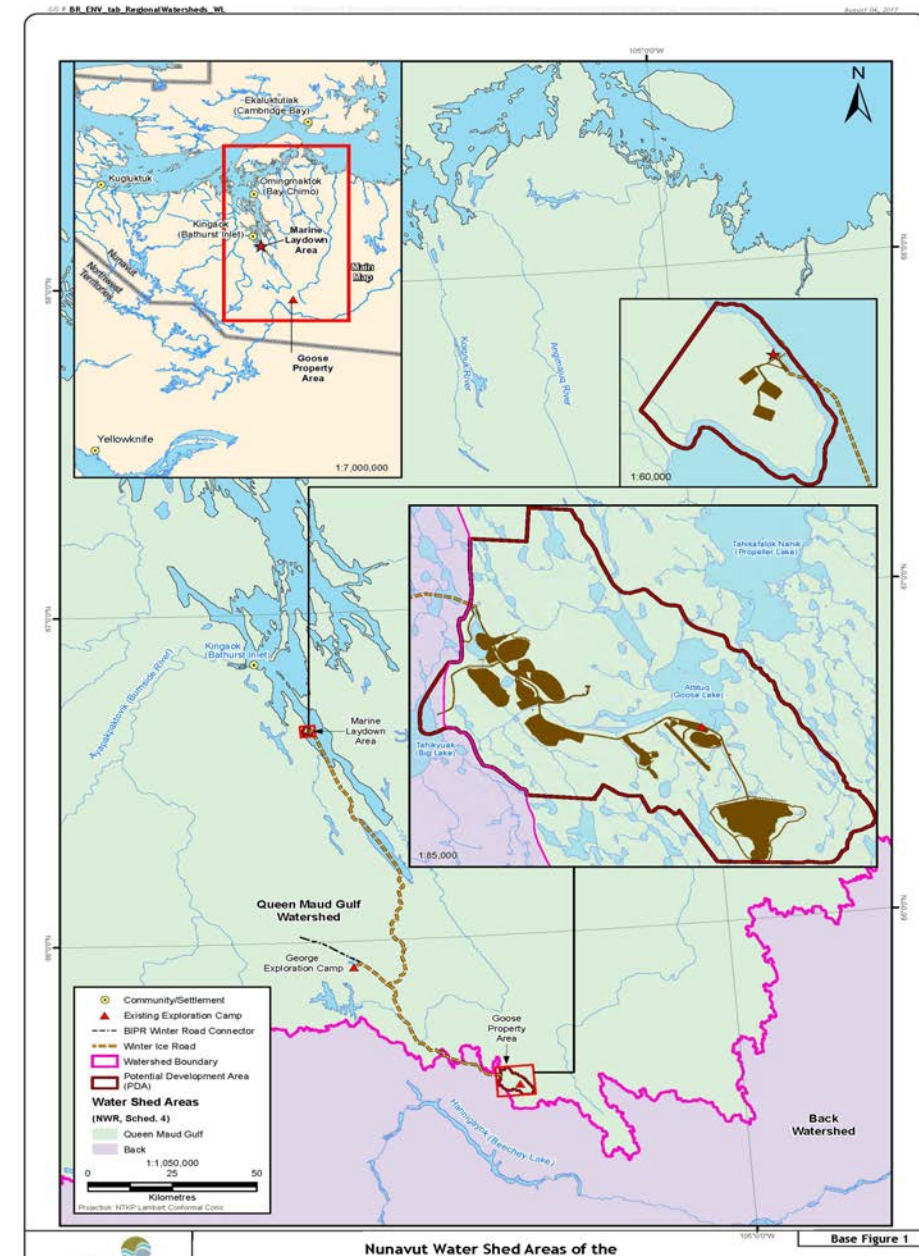
- Mobilization
  - Year -4 (2018)
- Construction
  - Year -3 to Year -1 (2018 – 2020)
- Operations
  - Year 1 to Year 10 (2020 – 2030)
- Closure
  - Year 10 to Year 18 (2030 – 2038)
- Post – Closure
  - Year 18 to Year 23 (2038 – 2043)



# Project Application - MAP

The Back River Project is comprised of two main areas with an interconnecting winter ice road:

- Goose Property
- Marine Laydown Area

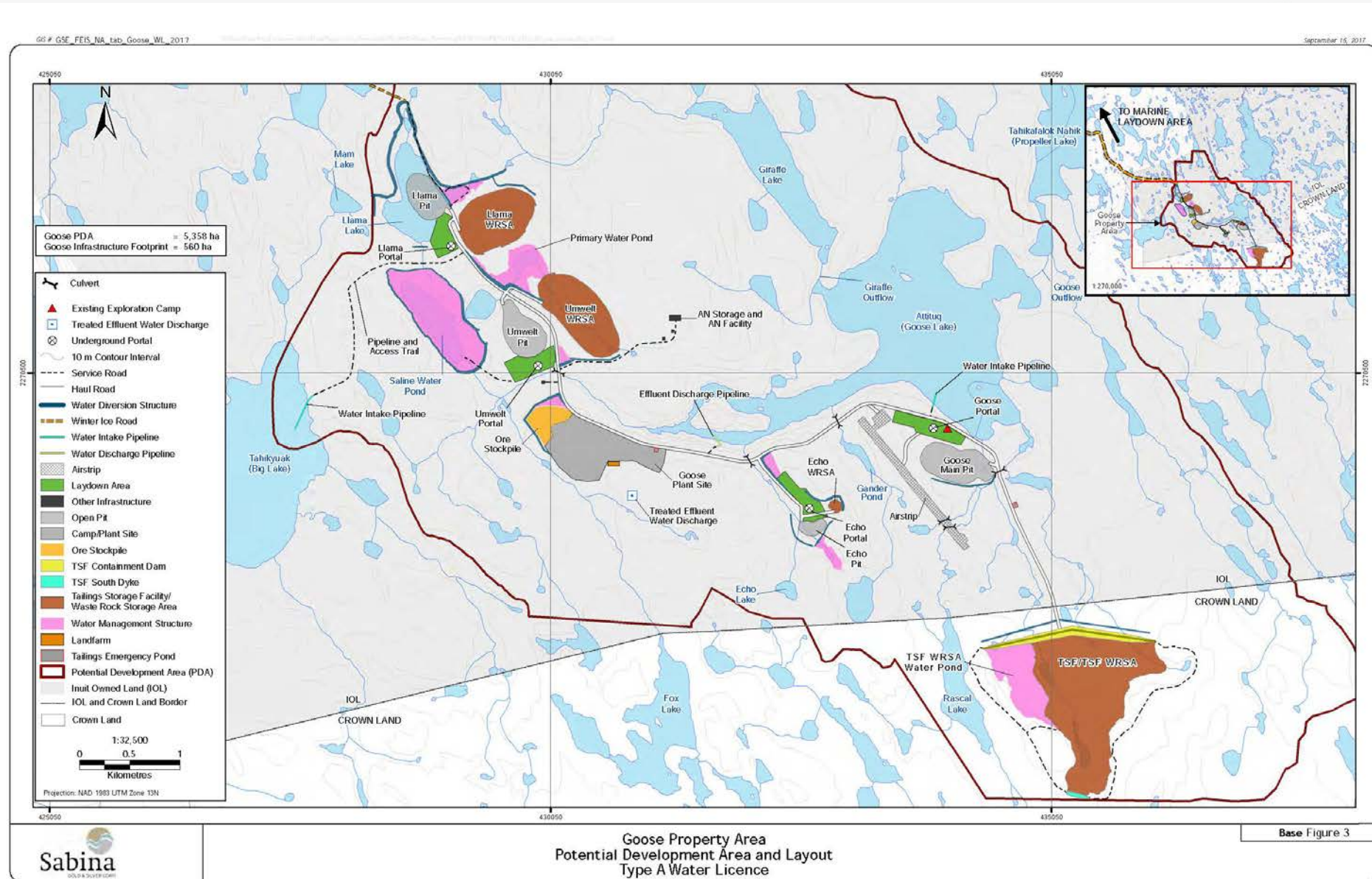




# Project Application – GOOSE INFRASTRUCTURE

- Mining and Milling Infrastructure
  - 4 mining areas
  - 10 years + of production
  - Ore Storage Facilities
  - Process Plant
- Water Use and Management Infrastructure
  - Contact water, non-contact water, saline water diversion berms and ponds
  - Water Treatment Plant
  - Water Intakes: Goose Lake, Big Lake
  - Water Discharge: Goose Lake
- Waste Management Infrastructure
  - Landfill
  - Incinerator
  - Landfarm
  - Sewage Treatment Plant
  - Hazardous Waste Management Area
  - Waste Rock Storage Areas
  - Tailing Storage Facility
- Accommodation and Associated Infrastructure
  - Camp
  - Explosive Production and Storage
  - Laboratory/Core Shack
  - Quarries and Borrow Pits
  - Maintenance, Warehouse, and Laydown
  - Fuel Storage Area
  - All-Weather Roads





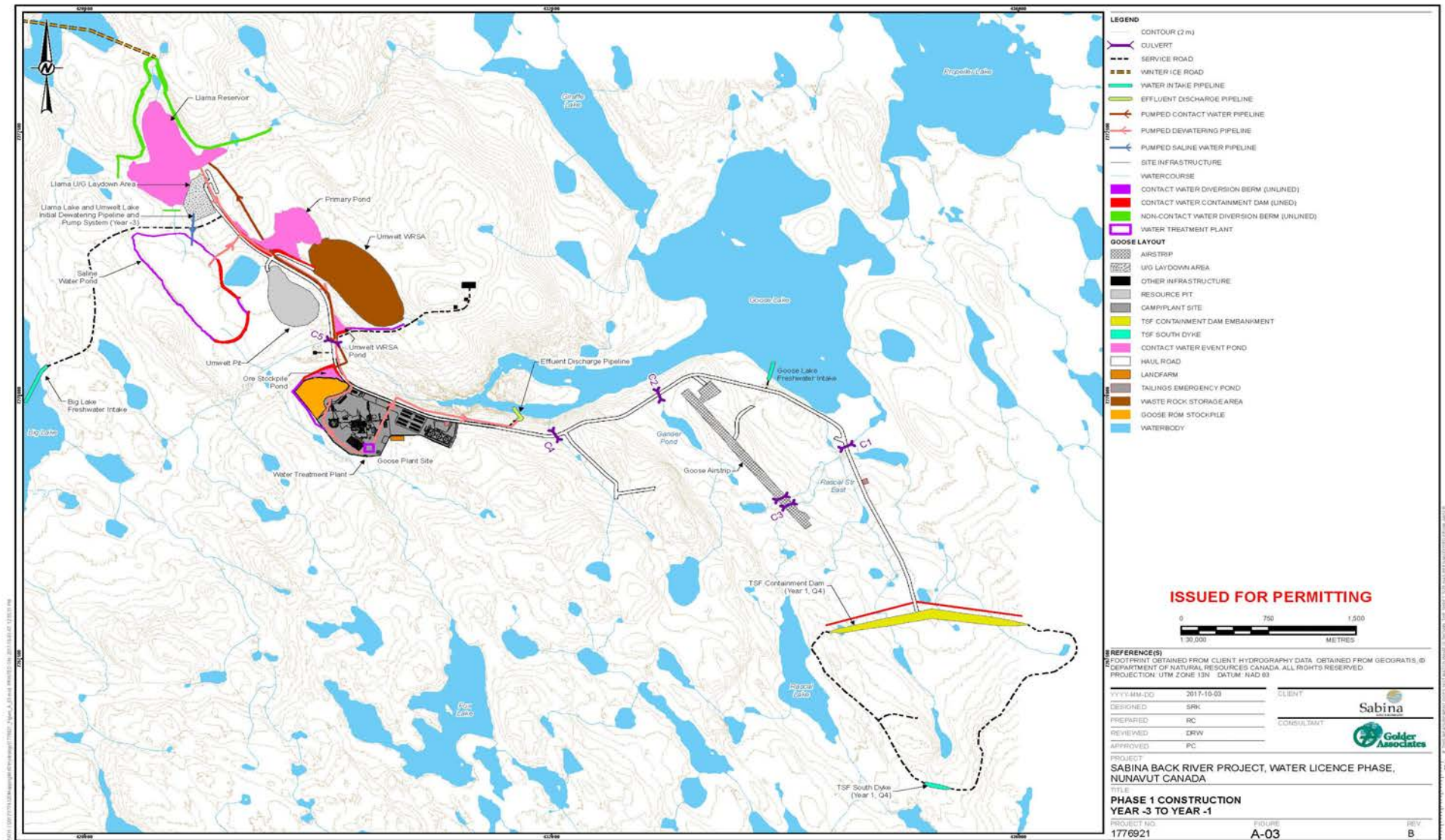


# Project Application – GOOSE WATER MANAGEMENT – Overview

- Water and tailings management changes through out the Project life
- Sabina defines the Project Phases and Stages by how water and tailings are managed
- Construction Phase
  - Phase 1: Llama and Umwelt Lake Dewatering, Llama Reservoir, Saline Water Pond (Year -3 to Year -1)
- Operations Phase is divided into three Stages as determined by the active tailings management facility
  - Phase 2, Stage 1: Tailings Storage Facility (Year -1 to Year 2)
  - Phase 2, Stage 2: Umwelt Tailings Facility [TF] (Year 3 to 6)
  - Phase 2, Stage 3: Goose Main TF (Year 7 to Year 10)
- Mine closure is anticipated to be 13 years and consists of three periods
  - Phase 3, Stage 1: Active Closure (Year 11 to 12)
  - Phase 3, Stage 2: Passive Closure (Year 13 to 18)
  - Phase 4: Post-Closure (Year 19+)

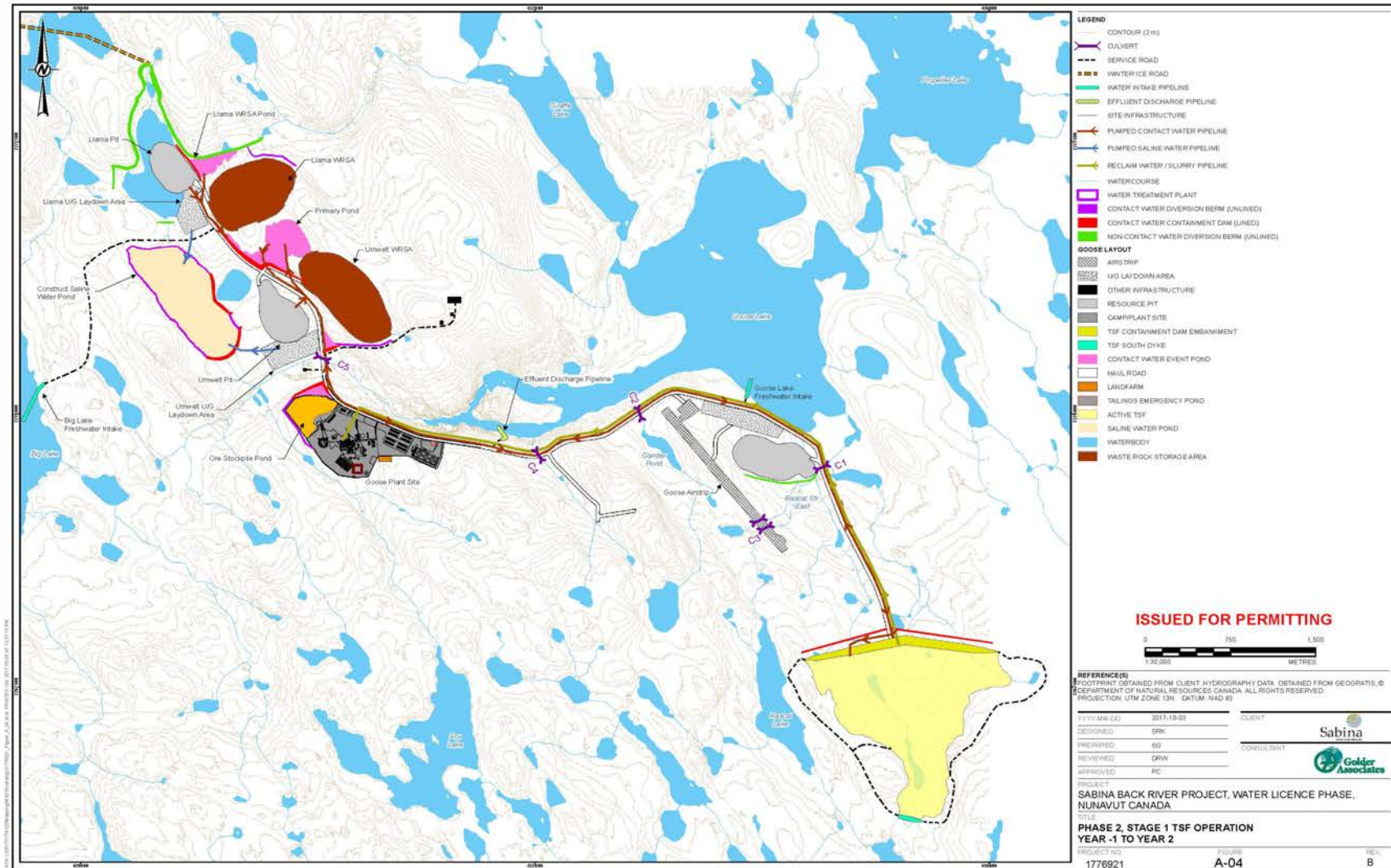


# Project Application – GOOSE WATER MANAGEMENT – Construction



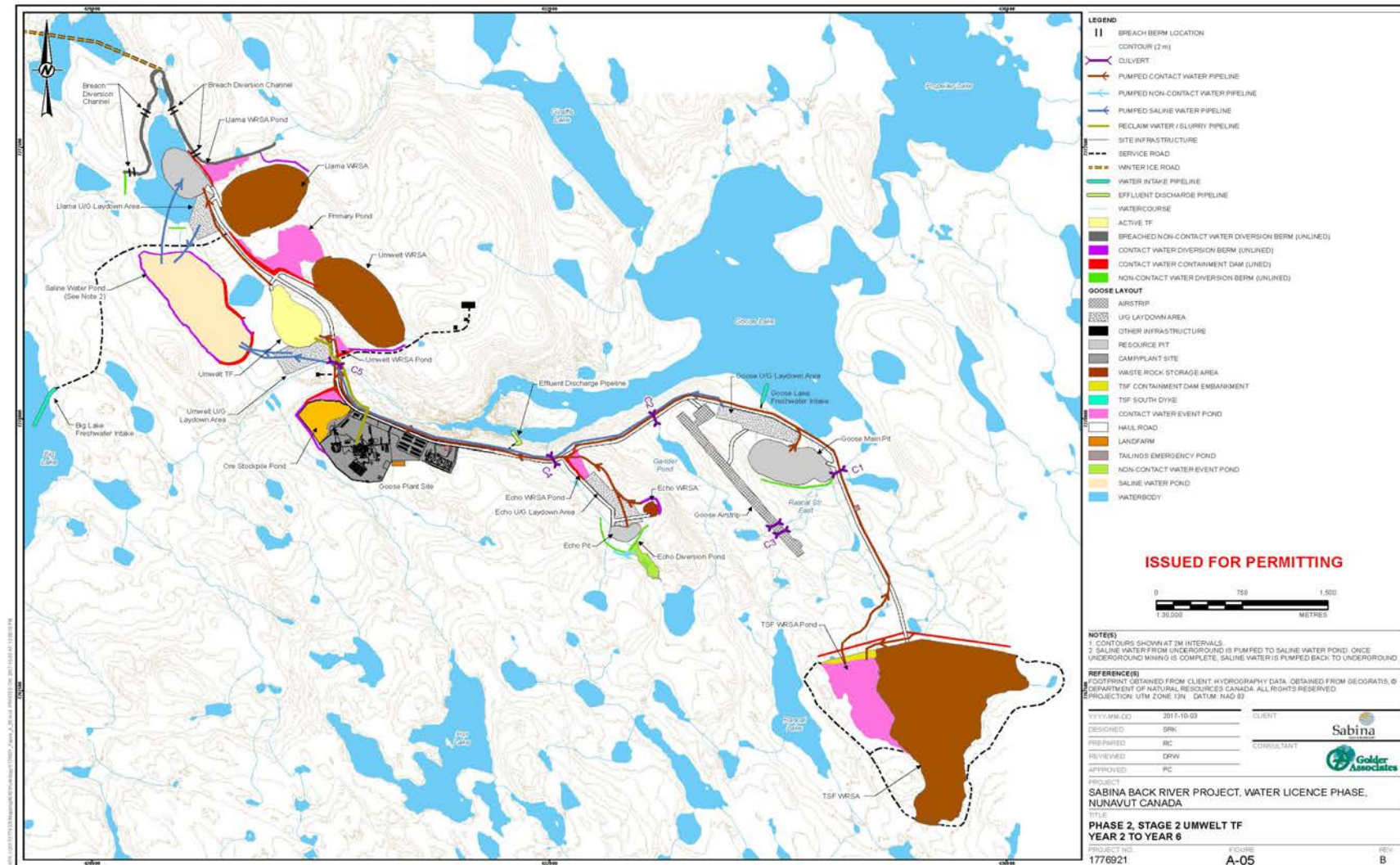


# Project Application – GOOSE WATER MANAGEMENT– Operations (Stage 1: Tailings Storage Facility)





# Project Application – GOOSE WATER MANAGEMENT– Operations (Stage 2: Umwelt Tailings Facility)

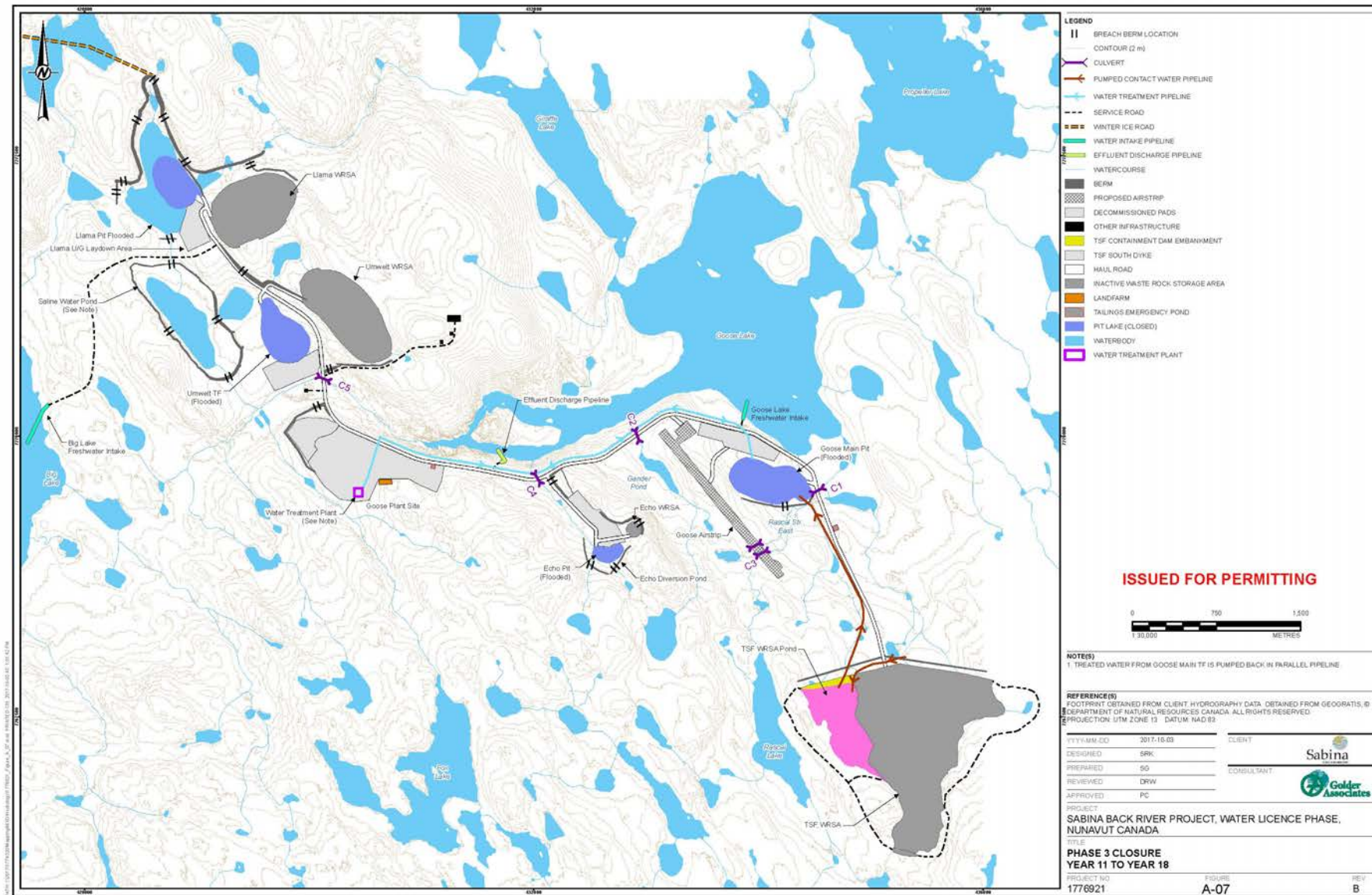






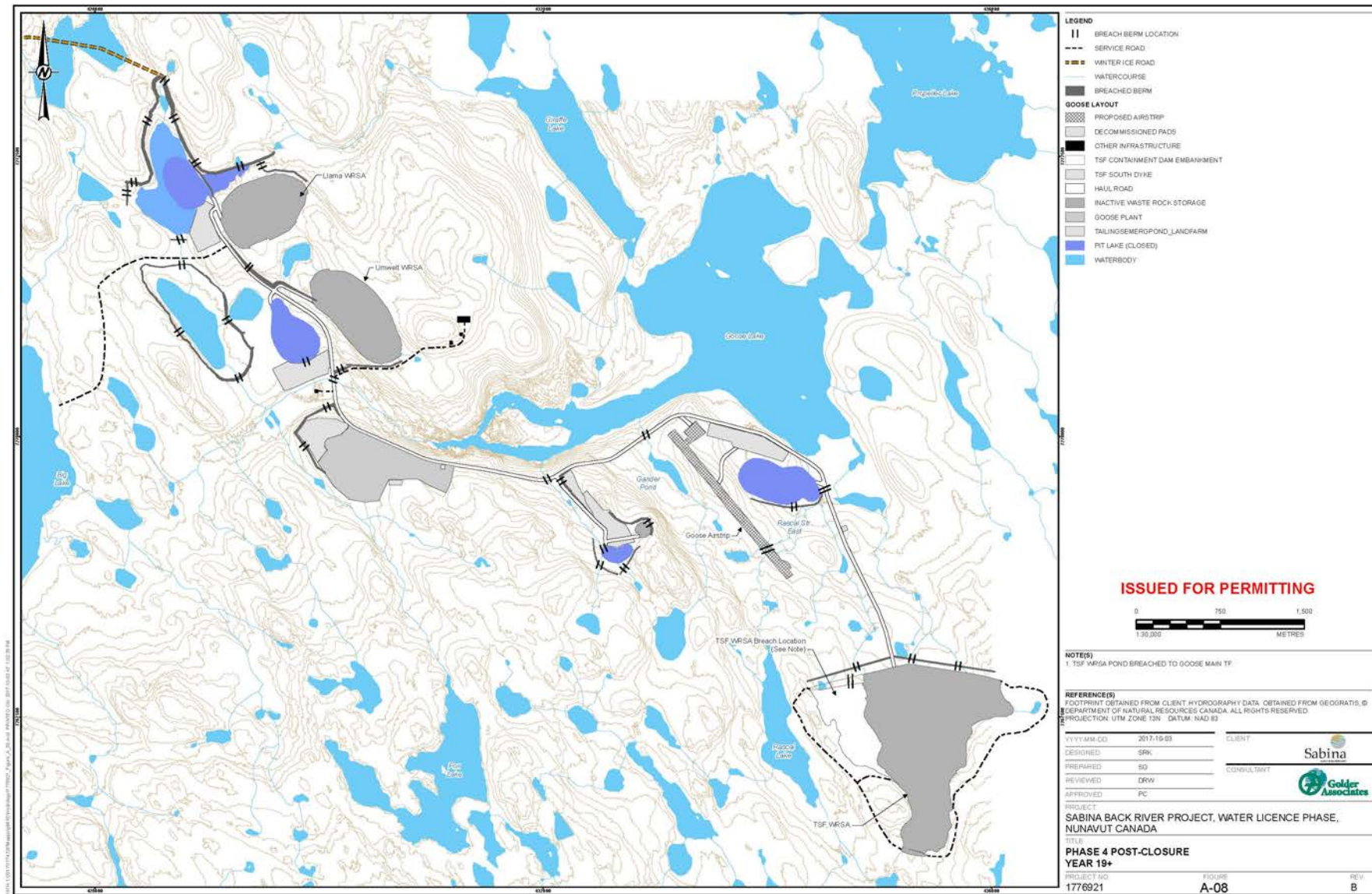


# Project Application – GOOSE WATER MANAGEMENT – Closure



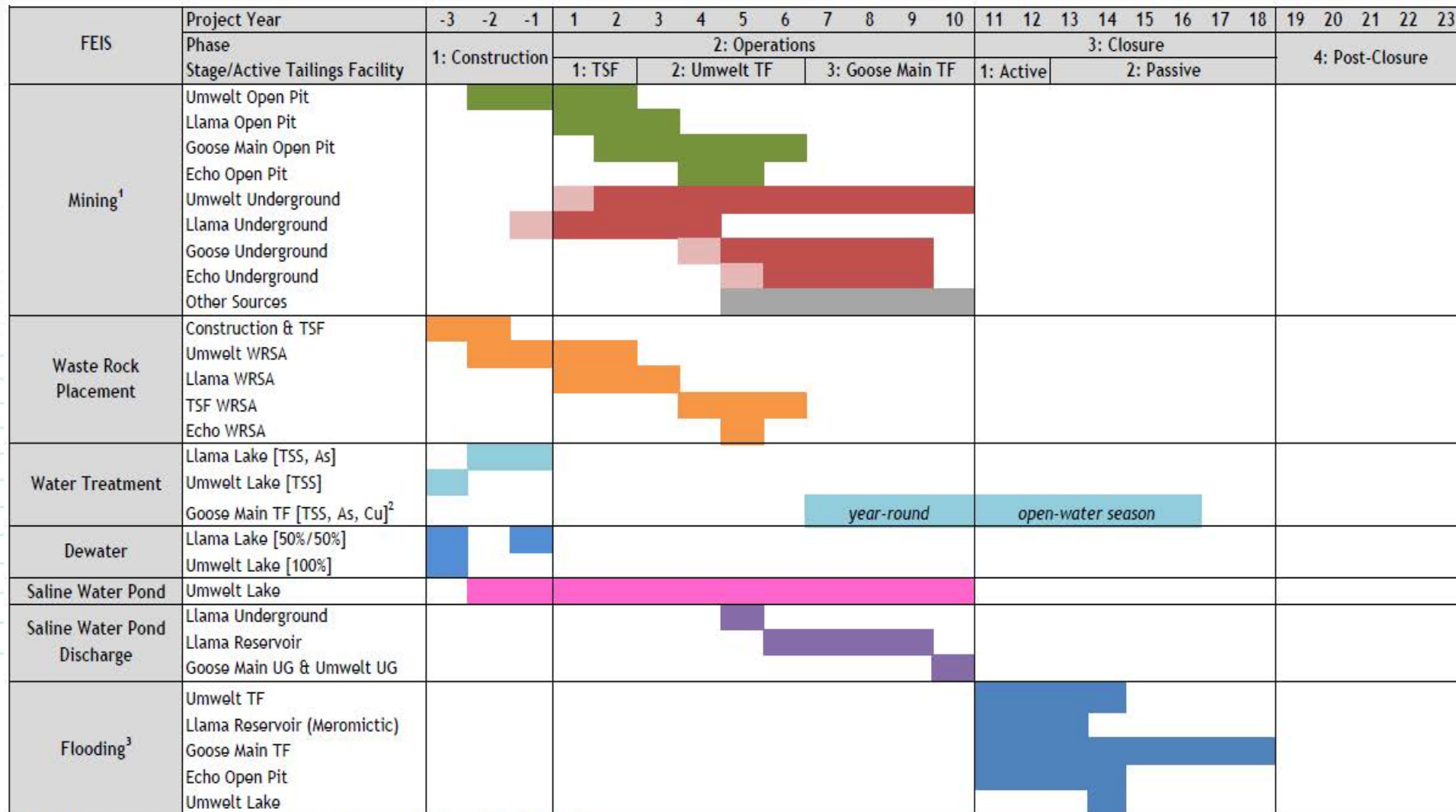


# Project Application – GOOSE WATER MANAGEMENT – Post-Closure





# Project Application – GOOSE WASTE / WATER MANAGEMENT TIMELINE



1: Lighter red on undergrounds denotes Development in advance of Production.

2: TSS = total suspended solids, As = arsenic, Cu = copper.

3: Dark blue for pits denotes flooding timelines.



# Project Application – MLA – Infrastructure

- Water Management Infrastructure

- Water Intake: Bathurst Inlet
- Water Discharge: Bathurst Inlet
- Desalination Plant
- Greywater Discharge: on land (1.5 km from Inlet)
- Oil Water Separator

- Accommodation and Associated Infrastructure

- Camp
- Explosive Production and Storage
- Quarry
- Maintenance, Warehouse, and Laydown
- Fuel Storage Area
- All-Weather Roads

- Key Water Activities

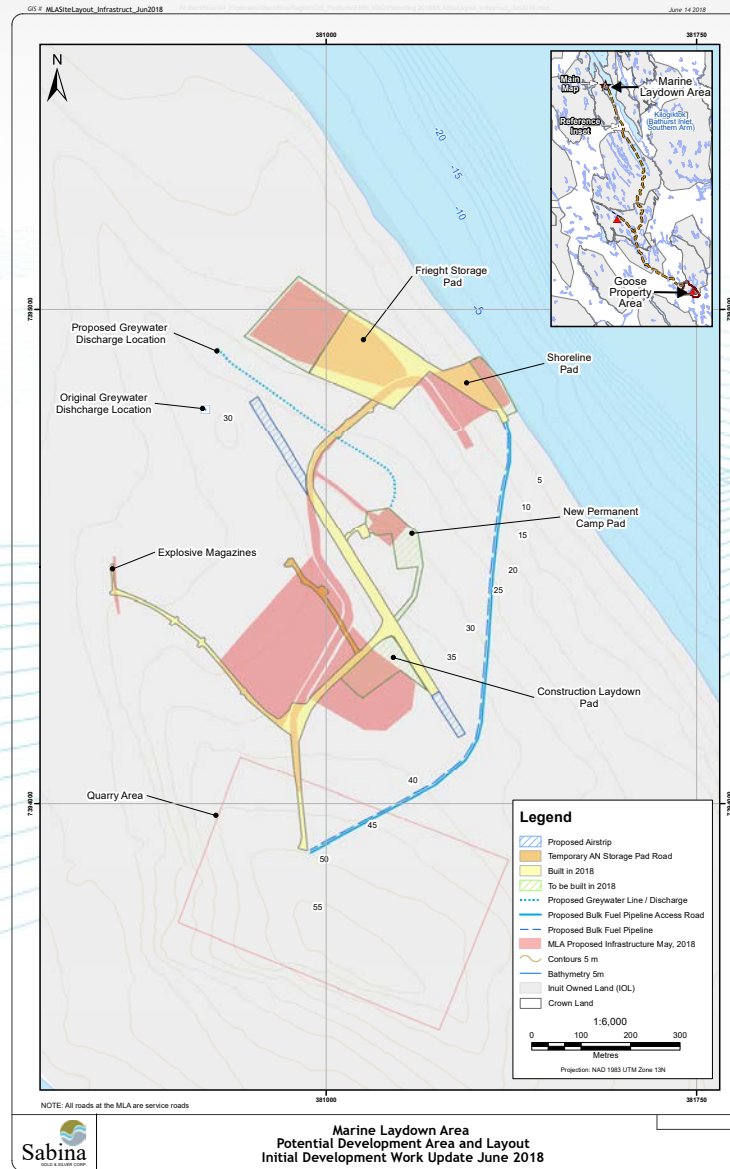
- Desalination of saline water for potable use
- Runoff Management [TSS]
- Discharge of Greywater

- Waste Management Infrastructure

- Landfarm
- Pactos
- Incinerator
- Hazardous Waste Management Area



# Project Application – MLA – Site Plan



\* Layout to be updated at the end of 2018 using as built





# MITIGATION, MANAGEMENT, AND MONITORING PLANS



# MMMP - PHILOSOPHY

- Sabina intends to build a mine which is safe, environmentally responsible, and beneficial to all parties involved
- Sabina will balance good stewardship in the protection of human health and the natural environment
- Sabina's management practices will limit the potential for adverse impacts to receiving waters, to aquatic ecosystems, and to fish and fish habitat
- Sabina has in place a systemic adaptive management approach to decision making whereby operational practices can be adapted and adjusted as required to reduce or eliminate any unforeseen negative impacts throughout the life of the Project



# MMMP – MANAGEMENT PLANS - Type A Water License

Document	Construction	Operations and Ongoing Maintenance	Temporary Closure / Care and Maintenance	Final Closure	Post-Closure
<b>Infrastructure and Access Management Program</b>					
Road Management Plan (SD-02)	x	x	x	x	
Borrow Pits and Quarry Management Plan (SD-03)	x	x	x	x	
<b>Water Management Program</b>					
Water Management Plan (SD-05)	x	x	x	x	
<b>Waste Management Program</b>					
Ore Storage Management Plan (SD-07)		x	x		
Mine Waste Rock Management Plan (SD-08)	x	x	x	x	
Tailings Management Plan (SD-09)	x	x	x	x	x
Landfill and Waste Management Plan (SD-10)	x	x	x	x	
Incineration Management Plan (SD-11)	x	x	x	x	
Landfarm Management Plan (SD-12)					
Hazardous Materials Management Plan (SD-13)	x	x	x	x	
<b>Emergency Response Program</b>					
Risk Management and Emergency Response Plan (SD-15)	x	x	x	x	
Fuel Management Plan (SD-16)	x	x	x	x	
Spill Contingency Plan (SD-17)	x	x	x	x	
Oil Pollution Emergency Plan* (SD-18)	x	x	x	x	
<b>General and Aquatic Effects Monitoring Program</b>					
Environmental Management and Protection Plan(SD-20)	x	x	x	x	x
Aquatic Effects Management Plan (SD-21)	x	x	x	x	
Conceptual Fish Offsetting Plan* (SD-22)	x	x		x	
Marine Monitoring Plan (SD-23)	x	x	x	x	
Quality Assurance / Quality Control Plan (SD-24)	x	x	x	x	x
<b>Interim Closure and Reclamation Program</b>					
Interim Closure and Reclamation Plan (SD-26)		x	x	x	x
Interim Closure Cost Estimate					



# MMMP – WATER MANAGEMENT PLAN

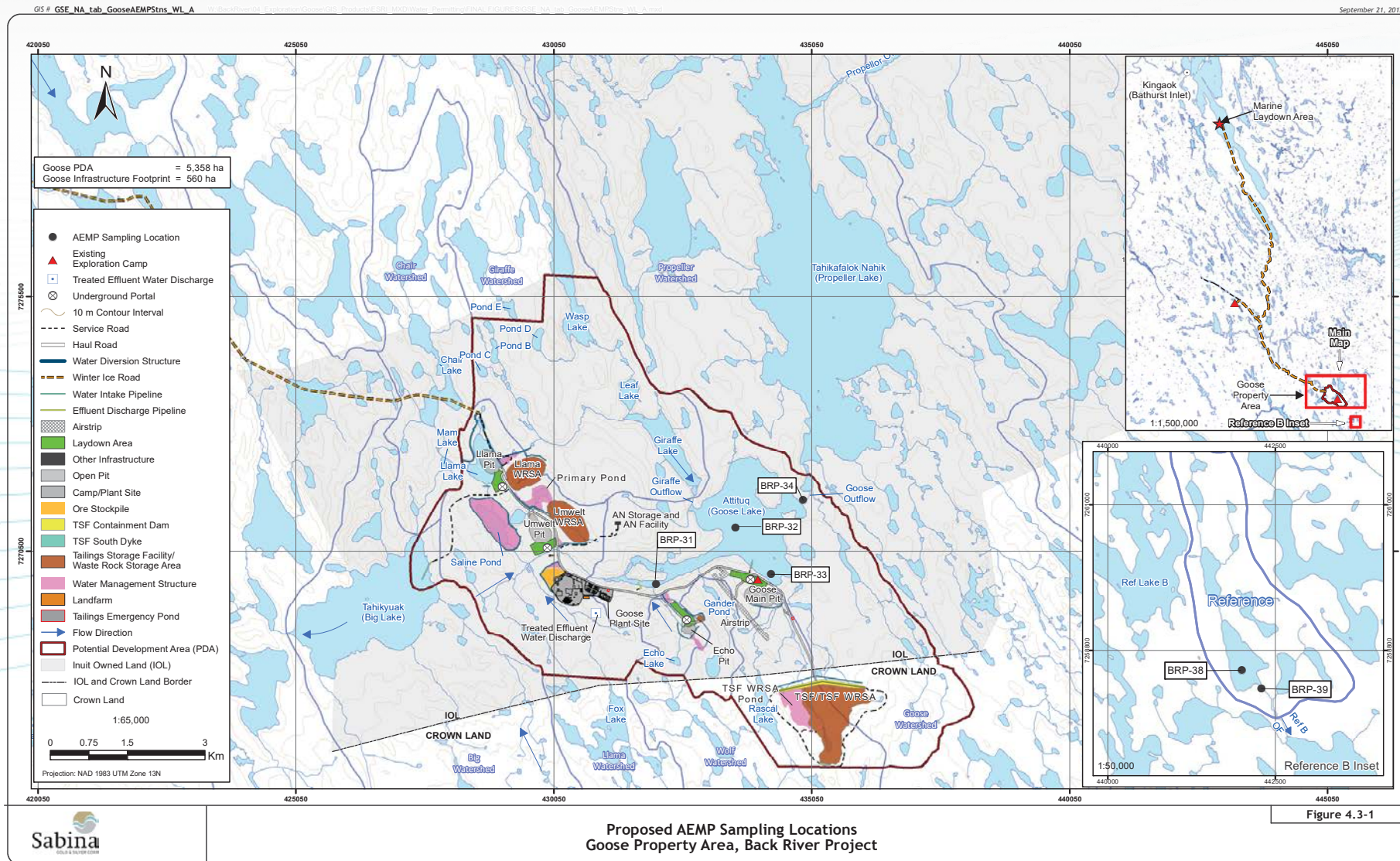
- Outlines the procedures necessary to manage the quality and quantity of water interacting with the Project during each Project phase
- Includes management practices that reduce the potential for adverse impacts to receiving waters, to aquatic ecosystems, and to fish and fish habitat
- Outlines environmental monitoring, including:
  - regulated discharge monitoring (i.e., set by legislation or authorization requiring specific discharge/effluent criteria to be met for compliance)
  - verification monitoring (i.e. internal operation management monitoring)
  - general monitoring (i.e., NWB general monitoring requirements set in Type A Water Licence)



# MMMP – RECEIVING ENVIRONMENT MONITORING

- Aquatic Effects Management Plan (AEMP)
  - Comprehensive monitoring of the freshwater receiving environment
  - Monitoring is harmonized to meet MMER Environmental Effects Monitoring requirements
- Marine Monitoring Plan (MMP)
  - Monitors for Project effects related to MLA activities, including seafill, fuel offload and desalination
- Sampling of water, sediment and aquatic life, including fish at locations potentially impacted by Project activities as well as at reference locations
- Results confirm mitigation efficacy, prediction accuracy, and identify Project related effects which may inform further mitigation and management actions







# MMMP – WASTE MANAGEMENT PROGRAM

- The Waste Rock Storage Areas (WSRSA) and the Tailings Storage Facility (TSF) were designed to be operated to minimize the impact on the environment and to consider geotechnical and geochemical stability
- Mined out open pits will be utilized as Tailings Facilities (TFs)
- Waste will be managed through WSRA, TSF, TFs, landfarm, landfill, incineration and off-site facilities







# Closure and Post-Closure – PHILOSOPHY

- A key closure objective is to return the operational footprint to both a physically and a chemically stable condition in the long term for the protection of people and the natural environment
- Post-Closure environmental monitoring will continue until it has been verified that reclamation has successfully met closure and post-closure objectives



# Closure and Post-Closure – SUMMARY

- Progressive Reclamation Stage

- Year 2 onward
- Most significant progressive reclamation is WSRAs
- Year round water treatment beginning in Year 7
- Underground mine flooding
- If efficient and cost effective, other activities could include decommissioning of facilities, removal of materials and equipment that can be reused off-site, and on-site disposal of remaining materials

- Closure Stage

- Year 10 – Year 18
- Decommissioning of facilities, passive pit flooding, water treatment, removal of hazardous materials, ensuring physical and geophysical stability of WSRAs and TSF

- Post Closure Stage

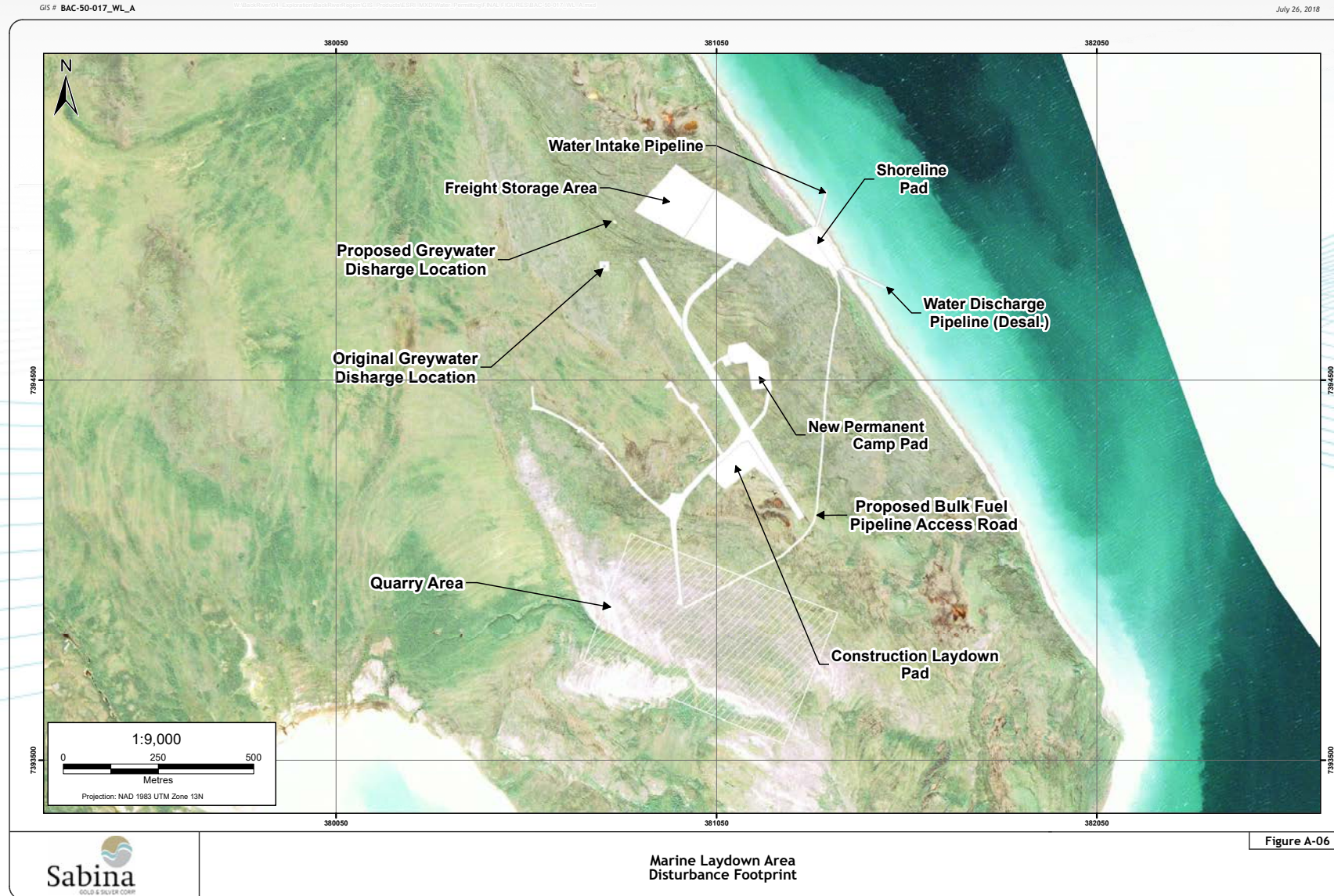
- Year 18 – Year 23
- Continued monitoring and maintenance







# Closure and Post-Closure – MARINE LAYDOWN AREA SITE LAYOUT



\* Layout to be updated at the end of 2018 using as built



# Closure and Post-Closure – CLOSURE AND RECLAMATION PLAN

- Implementation of Interim Closure and Reclamation Plan
- Temporary, progressive, and final closure

## CLOSURE

- Deconstruction, decommissioning, reclamation, WRSA closure, passive pit flooding, water treatment
- Monitoring of water quality, geotechnical, terrestrial and aquatic effects

## POST-CLOSURE

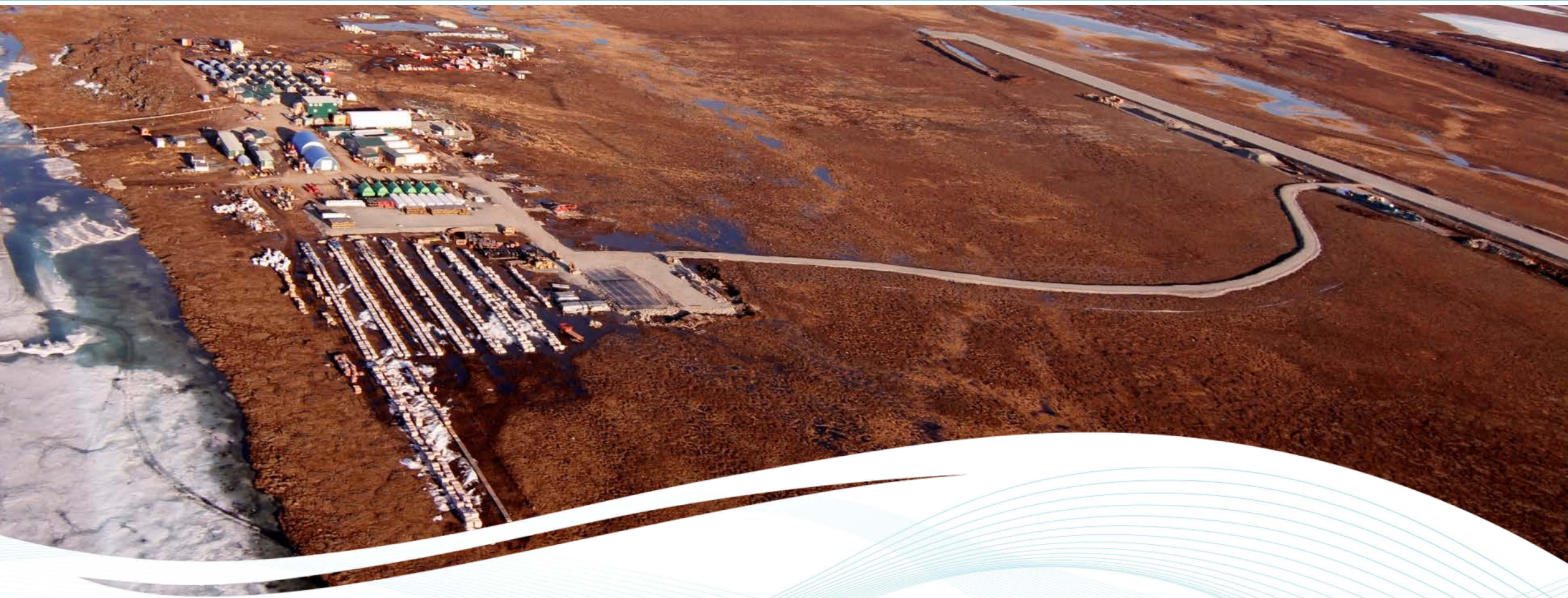
- Monitoring of water quality, geotechnical, terrestrial and aquatic effects



# Closure and Post-Closure – SECURITY BONDING

- Sabina, KIA ,and CIRNA have agreement on the Interim Closure and Reclamation Plan (ICRP) Overall Cost Estimate (\$43.2M)
- Closure Bond Split
  - Discussions ongoing between all parties; anticipate no overbonding
- Closure Bond Staging
  - All parties have agreed on a staged payment approach; discussion ongoing
- Sabina is confident all parties will resolve the remaining details prior to the issuance of the Type A Water Licence





# TECHNICAL COMMENTS AND INFORMATION REQUESTS



# Technical Comments - OVERVIEW

- Received Technical Comments on April 4<sup>th</sup>, 2018
- Responded to Technical Comments on April 11<sup>th</sup>, 2018
- 76 Technical Comments received from KIA, CIRNA, DFO, and ECCC
  - 66 Technical Comments addressed in full
  - 10 Technical Comments requiring supplemental information that Sabina committed to provide prior to Technical Meeting



# Technical Comments - KIA

- 32 Technical Comments
  - Groundwater, Water and Load Balance Model, TSF, Climate Change, AEMP, Winter Ice Road, Waste Rock, Quarries, Water Management, Dust, Waste Management, Emergency Response, Fuel Management, Spill Contingency, Closure, Licence length, Saline Water, Water Quality
- Technical Comments addressed in Full = 28
- Technical Comments requiring Supplemental Information = 4
  - Water and Load Balance Update (WT-KIA-NWB-03;WT-KIA-NWB-26)
  - Groundwater Inflows (WT-KIA-NWB-06)
  - Water Quality (WT-KIA-NWB-29)



# Technical Comments - CIRNA

- 27 Technical Comments
  - Water Management, Culvert Crossings, Saline Water, TSF, Groundwater, Landfill, Waste Management, Waste Rock, Winter Ice Road, Emergency Response, Spill Contingency, Marine Sediment Quality, Closure
- Technical Comments addressed in Full = 25
- Technical Comments requiring Supplemental Information = 2
  - Culvert Crossing Figures for Water Management Plan (WT-INAC-TRC-4)
  - Saline Water Management (WT-INAC-TRC-4)



# Technical Comments - DFO

- 5 Technical Comments
  - Blasting Operations, Culvert Crossings, Dewatering, Rascal Stream Fish Passage, Fish-Out
- Technical Comments addressed in Full = 5
- Technical Comments requiring Supplemental Information = 0



# Technical Comments - ECCC

- 12 Technical Comments
  - Water Quality, Closure, Saline Water, Water and Load Balance, Site Specific Water Quality Objective, EMPP, In-water works mitigation, AEMP, Geochemistry, Waste Rock
- Technical Comments addressed in Full = 8
- Technical comments requiring Supplemental Information = 4
  - Water and Load Balance Update (WT-ECCC-TC-03; WT-ECCC-TC-04; WT-ECCC-TC-05)
  - Aquatic Effects Management Plan (WT-ECCC-TC-09)

# Response to NWB Technical Commitment Appendix D to the Pre-Hearing Conference Decision - OVERVIEW

- Received Technical Meeting/ Pre-Hearing Conference Report on May 29, 2018
- Responded to Appendix D Commitment List on June 8 and June 25, 2018
- 17 Commitments from responsible parties (NWB, KIA, CIRNA, DFO, and ECCC)
  - 13 Commitments are addressed in full
  - 4 Commitments are proposed to be addressed throughout the term of the license as acknowledged by all responsible parties
- Sabina provided the NWB with a Draft Water License Framework on June 8, 2018 for review by all parties



# Response to NWB Technical Commitment Appendix D to the Pre-Hearing Conference Decision - KIA

- 5 Commitments
  - Water and Load Balance Model, Saline Water Management, Water Treatment, Hydrodynamic Modelling
- Commitments addressed in Full = 2
- Commitments proposed to be addressed throughout the term of the license = 3
  - Water and Load Balance Update (WTM-Commitment 4, WTM-Commitment 7)
  - Hydrodynamic Model (WTM-Commitment 9)

# Response to NWB Technical Commitment Appendix D to the Prehearing Conference Decision - CIRNA

- 5 Commitments
  - TSF Drawings, Primary Pond Capacity, Saline Water Pond Containment, TSF Containment, Revegetation
- Commitments addressed in Full = 5



# Response to NWB Technical Commitment Appendix D to the Prehearing Conference Decision - DFO

- 0 Commitments

# Response to NWB Technical Commitment Appendix D to the Prehearing Conference Decision - ECCC

- 3 Commitments
  - Saline Water Pond Closure, Water and Load Balance Model, Explosives Management
- Commitments addressed in Full = 3



# Response to NWB Technical Commitment Appendix D to the Pre-Hearing Conference Decision - NWB

- 4 Commitments
  - Closure Cost Estimate, Security Management, NWB License Battery Limits, Water Management Plan
- Commitments addressed in Full = 3
- Commitments proposed to be addressed throughout the term of the license = 1
  - Water Management Plan Update (WTM-Commitment 6)

# Type A Water Licence Final Submissions- OVERVIEW

- Received Final Submissions on July 11, 2018
- 6 Final Submission Comments from responsible parties (KIA, CIRNA, DFO, and ECCC)
  - KIA – 0 Comments
  - CIRNA – 4 Comments
  - DFO – 0 Comments
  - ECCC – 2 Comments



# Type A Water Licence Final Submissions- CIRNA

- 2 Comments

- INAC #1 - WTM-Commitment 10 (INAC-TRC-2) – Grading and Drainage of Tailings Storage Facility (TSF); recommend Sabina address remaining concerns (tailings erosion, pump capacity exceedance, closure tailings re-mobilization) with respect to TSF Grading and Drainage
- INAC #2 - WTM-Commitment 11 (INAC-TRC-3) – Adequacy of Primary Pond and Saline Water Pond (SWP) sizing; request Sabina confirm SWP design event and design capacity, and reconsider Primary Pond design event and design capacity

# Type A Water Licence Final Submissions- ECCC

- 4 Comments

- ECCC #1 - Water Quality (WQ) Closure Objectives and Criteria; recommend additional statements (WQ and discharge points) be included in future iteration of the Interim Closure and Reclamation Plan (ICRP)
- ECCC #2 - Saline Water Pond Closure Water Quality Objective; recommend additional statements (sediment tracking and pore water chloride concentrations) to be included in future iteration of the Saline Water Management Plan
- ECCC #3 - Nitrite; Recommend Sabina clarify nitrite inputs for rock sources and identify reasons for reductions in nitrite concentrations
- ECCC #4 - Aquatic Effects Management Plan (AEMP); recommend updated version of AEMP be submitted for approval



# Type A Water Licence Final Submissions- KIA and DFO

- KIA

- As indicated in the May 2018 Technical Meeting, the KIA has resolved all technical issues with Sabina Gold & Silver Corp. for the Back River Project (hydrology, hydrogeology, fisheries, aquatic environment, and water quality monitoring)

- DFO

- DFO has no further outstanding issues or recommendations to bring forward to the NWB as part of the water licence process

