

APPENDIX G

TRANSPORTATION MANAGEMENT PLAN



**Back River Project
Transportation Management Plan
2015 Site Preparation Activities**

October 2014

Table of Contents

1. INTRODUCTION AND BACKGROUND	1
1.1. Purpose.....	1
1.2. Sabina Social and Environmental Policy.....	1
2. ONGOING AND PROPOSED SITE PREPARATION ACTIVITIES	3
2.1. Description of Ongoing Activities	3
2.2. Description of Proposed Site Preparation Activities	4
2.2.1 Goose Property	4
2.2.2 Temporary Laydown Area	5
2.3. Site Preparation Construction Schedule	6
3. AIRSTRIP AND ROAD CONSTRUCTION AND OPERATION	8
3.1. All-weather Road and Airstrip Infrastructure	8
3.2. Rock Quarries	8
3.3. Water Crossings	9
3.4. Winter Road and Ice Airstrip Infrastructure	9
4. INSPECTIONS AND MAINTENANCE	12
4.1. Surface Inspection and Maintenance	12
4.2. Watercourse Crossings Inspection and Maintenance	13
Regular Crossing Inspection and Maintenance.....	14
Event Crossing Inspection and Maintenance	14
Culvert Location Inspection	14
4.3. Snow Clearing.....	14
4.4. Accidents and Malfunctions	15
Emergency Response	15
5. ENVIRONMENTAL MANAGEMENT	16
5.1. Wildlife	16
5.2. Water	17
General Runoff.....	17
Quarries	17
Water Crossings	17
6. MONITORING PROGRAM	18
6.1. Wildlife	18
6.2. Water Quality.....	18
7. REVIEW OF THE TRANSPORTATION MANAGEMENT PLAN	18

1. INTRODUCTION AND BACKGROUND

1.1. Purpose

This Transportation Management Plan (TMP) has been developed to outline construction, operation and management of access and transportation associated with the 2015 Site Preparation Activities including the all-weather airstrip and all-weather access road.

This TMP provides construction and operating maintenance methods and best management practices that will be used during the 2015 Site Preparation activities.

The purpose of this TMP is to ensure sound management of water and waste associated with construction and operation of transportation corridors to minimize impacts to the local environment. Implementing best management practices and working responsibly will ensure protection of the environment and personnel safety.

Sabina will implement this TMP and will continue to look for opportunities to minimize or eliminate potential impacts to the environment as a result of its activities, products and services at Sabina's projects.

The TMP is dynamic and will be updated at least annually to address any significant changes in operating plans, should they occur.

A copy of the TMP will be available at the exploration camps and headquarter offices.

1.2. Sabina Social and Environmental Policy

Sabina is committed to environmentally responsible and socially acceptable exploration and mining practices. We are dedicated to creating and maintaining a safe environment for both the land we occupy and the people that drive its success. The company's philosophy is to conduct its operations to protect not only the environment, but the health and safety of its employees and the public as well.

Sabina also subscribes to the principles of sustainable development in mining. While exploration and mining cannot occur without an impact on the surrounding natural environment and communities, our responsibility is to limit negative environmental and social effects and to enhance positive effects.

To achieve these goals, Sabina is committed to:

- Seeking to be environmental leaders in the mining community by integrating responsible environmental management as an essential component of all business decisions;
- Comply with all applicable laws, regulations and standards; uphold the spirit of the law and where laws do not adequately protect the environment, apply standards that minimize any adverse environmental effects resulting from its operations;

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- Communicate openly with employees, the regulatory community and the public on environmental issues and address concerns pertaining to potential hazards and impacts;
 - Assess the potential effects of operations and integrate protective measures into the planning process to prevent or reduce impacts to the environment and on public health and safety;
 - Take appropriate corrective actions should unexpected environmental impacts occur. This will also include taking appropriate action to prevent reoccurrence of these impacts;
 - Provide adequate resources, personnel and training so that all employees are aware of and able to support implementation of the environmental and social policy;
 - Conduct and support research and programs that improve understanding of the local environment, conserve resources, minimize waste, improve processes, and protect the environment;
 - Working with the appropriate local regulators and agencies, maximize benefits to the affected communities and residents; and
 - Balance all decisions with best management practices, scientific principles and traditional knowledge.

2. ONGOING AND PROPOSED SITE PREPARATION ACTIVITIES

Activities planned for 2015 are divided into two groups, ongoing activities and proposed activities. The following sections describe each group.

Ongoing activities include:

- Goose Camp operations;
- Exploration and support activities; and
- Ice-based airstrip.

Proposed site preparation activities include:

- Ice road and associated water use;
- All-weather airstrip extension;
- Rascal Lake outflow stream realignment;
- Construction and use of a 6km all –weather road and associated crossings; and
- Quarry development and operation; and
- Staging of a Temporary Laydown Area (TLA) at the site of the proposed MLA.

2.1. Description of Ongoing Activities

Goose Exploration Camp

During site preparation activities for the Back River Property, it is anticipated that the existing Goose Exploration Camp (Goose Camp) will be used for ongoing exploration, engineering and baseline studies, and other site preparation activities.

Operation of Goose Camp

The Goose Camp will be utilized as a base for the aforementioned activities. No changes to the current camp accommodations are proposed.

Resupply of Goose Camp

The resupply of the Goose Camp and associated activities will take place utilizing all-weather and/or ice-based airstrips. No changes to the current resupply methodology are proposed.

Diesel Fuel Resupply and Storage

Additional fuel may be required for the proposed site preparation activities; this fuel will be supplied via aircraft and stored in the existing Goose Camp fuel storage area.

Arctic-grade diesel fuel will be used by motor vehicles and mining equipment on the site. Limited quantities of propane and gasoline will be used in maintenance facilities for smaller motorized equipment and machinery. All fuel to be used during the 2015 site preparation activities will be stored

within the existing 75,000 L tanks, within secondary containment. The Goose Camp fuel storage currently includes six 75,000 L tanks in tertiary containment and seven 75,000 L tanks that will require installation of a lined containment area, if used in 2015.

Explosives and Ammonium Nitrate Storage

Prepackaged explosives will continue to be delivered by air transport, sited and stored in accordance with legislative requirements and best management practices. Two magazines are currently located at Goose Camp; it is anticipated that additional magazines may be required.

Exploration and Study Support

Ongoing exploration and scientific studies to support the permitting and engineering phases will continue onsite. These may include geological mapping, drilling, geophysics, environmental baseline studies, and engineering studies. These activities, although based out of Goose Camp, may occur over the entire Project area.

Ice-based Airstrip

An ice-based airstrip on Goose Lake will be required for the delivery of equipment and materials necessary for site preparation activities. The ice-strip, which has been constructed in previous seasons on Goose Lake, will be built to Transportation Canada regulations and standards. No additional water use is currently anticipated for this activity.

2.2. Description of Proposed Site Preparation Activities

2.2.1 Goose Property

Ice Roads and Water Use

Ice roads, totalling approximately 6 km in length, will be required to connect and access the proposed quarries and explosives storage locations at the Goose Property. To support this work, water for construction will be necessary. It is estimated that 120 m³/day of water will be required to build and maintain this access during ice road operations. In the open water season, an estimated 70 m³/day of this total volume will be used for dust suppression and compaction of placed construction materials.

Quarries

A total estimated volume of 550,000 m³ of quarried material will be required to complete the outlined site preparation activities. Two quarries have been identified for use: the existing quarry next to the airstrip and a new quarry located within the footprint of the future Umwelt open pit. Up to 550,000 m³ of rock will be required to support site preparation activities, and this material will be extracted from one or both of these quarries. As such, Sabina is seeking approval to extract up to 550,000 m³ of rock from each of the existing quarry and the proposed Umwelt quarry. The total volume of rock extracted from one or both quarries, however, will not exceed 550,000 m³.

Only geochemically and physically suitable material will be developed, and handled per current quarry management plans.

All-weather Airstrip Extension

The current airstrip will be extended to allow for servicing passenger and cargo aircraft. This airstrip will serve as the main air access to the Goose Property throughout the life of the Project. The all-weather airstrip will be designed to Transport Canada standard TP 312 Aerodrome Standards and Recommended Practices (2005). The airstrip will be approximately 1,524 m long and 45 m wide.

Rascal Lake Outflow Stream Realignment

One of the Rascal Lake outflows currently intersects the extended airstrip footprint. A realignment of the natural watercourse will be required to divert the water currently flowing from Rascal Lake directly to Goose Lake, to flow via Gander Pond to Goose Lake. This realignment will require the construction of two berms to divert 100% of the flow from Rascal Lake through Gander Pond to discharge into a nearby area of Goose Lake. Berm construction material will be sourced from an approved quarry source.

All-weather Road and Associated Water Crossings

The proposed road alignment at the Goose Property will be constructed as an all-weather road. This road alignment, totaling approximately 5 km in length, is required to access the existing rock quarry, the new Umwelt quarry, and the extended all-weather airstrip.

The all-weather road will be constructed with run-of-quarry rock placed directly onto the tundra to preserve the permafrost. A layer of graded surfacing material will be placed to provide a protective trafficking layer. Construction materials will consist of geochemically suitable rock sourced from the existing quarry and/or Umwelt quarry.

Stream flow through the road alignment will be conveyed using appropriately sized culverts.

2.2.2 Temporary Laydown Area

A TLA will be staged at the site of the future MLA location. Activities will include the offloading of two barges containing materials, equipment, and fuel for future use; these materials will be stored at the TLA. Explosives magazines will also be offloaded to the TLA and stored empty for 2015.

Arrival and offloading of the barges and staging of the TLA will occur in the open-water season of 2015 over a period of approximately 25 days. The barges will come from a western route, either from the Lower Mainland or from Hay River.

No over-land transport routes will be developed to access the MLA during the 2015 site preparation activities.

2.3. Site Preparation Construction Schedule

The proposed site preparation works which, subject to securing necessary permits and approvals, will be undertaken at the Goose Property and MLA over a period of approximately 180 days, from February to August, 2015.

The following construction order is proposed for site preparation activities at the Goose Property. The majority of steps will be completed pre-thaw, however construction of the all-weather airstrip extension and secondary all-weather road construction can be completed post-thaw.

- After mobilizing site preparation personnel to site, the first activity to be undertaken will be construction of the ice-based airstrip on Goose Lake;
- The ice-road will then be constructed from the existing airstrip to the Goose and Umwelt quarries, as well as to the two explosives magazines;
- Once accessible by ice-road, the quarries will be developed using a drill-blast-crush-haul methodology;
- Berm material, sourced from either the existing stockpile or 2015 quarry operations, will be placed at the proposed Rascal Lake outflow realignment;
- Sediment and erosions controls will be established for site preparation activities, as required;
- Initial construction of the all-weather road:
 - If Goose quarry is selected as the primary source of material initial construction will connect the Goose quarry to the existing all-weather airstrip;
 - Alternatively, if the Umwelt quarry is selected as the primary source of material initial construction will focus on connecting the Umwelt quarry to the all-weather airstrip;
- Concurrent with initial all-weather road construction, the main Rascal Lake outflow realignment will be constructed;
- Construction of the all-weather airstrip extension will then commence; and
- If Goose quarry is selected as the primary source of material for initial all-weather road construction, secondary construction will extend the all-weather road to Umwelt quarry. Concurrent to secondary all-weather road construction, the ephemeral crossings will be built as the road reaches each crossing location.

The following activities will be completed over a period of approximately 25 days during the open-water season at the MLA:

- Two barges will arrive from a western route, either from the Lower Mainland or from Hay River and will land at the MLA;
- Swamp mats will be laid out along the access trail from the barge landing area to the TLA;
- Temporary structures, such as tents, will be erected at the TLA;
- Swamp mats will be placed as a foundation to the TLA;
- Tertiary containment for the TLA fuel storage area will be erected;
- Barges will then be offloaded with seacans, bulk materials and equipment placed at the TLA first;

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- Fuel storage tanks will then be offloaded and placed at the TLA within the tertiary containment;
 - Fuel storage tanks will then be filled from the barge; and
 - Once all fuel, materials, and equipment have been placed at the TLA, the swamp mats along the access trail will be removed and loaded back onto the barges, which will then depart.