



**ENVIRONMENTAL IMPACT STATEMENT GUIDELINES**

**for the**

**Big Triangle Pond Mineral Exploration and Access Road Project**

Prepared by:

The Newfoundland and Labrador Department of Environment and Climate Change

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## **1.0 INTRODUCTION**

On 17 September 2013, Eagleridge International Ltd. (the Proponent) submitted a proposal (registration document) to construct an 11 km access road south of the TCH and east of the Salmonier Line, near Big Triangle Pond in the municipal planning area for the Town of Holyrood. The purpose of the road is to allow mineral exploration in the area. The road will be built to a class C2 specification (with a right of way clearing of 20 metres wide and a road surface of 6 metres wide). Exploration activities include: line cutting, soil sampling, trenching, and diamond drilling.

The Minister required the Proponent to submit an Environmental Preview Report (EPR). An Environmental Assessment Committee (EAC) was appointed and EPR guidelines were issued in January 2014. The EPR was submitted in February 2014. The Project was released from further assessment on 10 October 2014.

On 7 January 2015, the Minister's decision was appealed under s.107 of the *Environmental Protection Act*. The Minister announced the start of a 35-day public comment period of the appeal documents on 17 February 2016.

Pursuant to Section 107 of the Environmental Protection Act, the minister has reconsidered the Project and considered the appeal documents and input received regarding the appeal. As a result, the original decision has been revised and the minister is requiring an Environmental Impact Statement (EIS) for the proposed Big Triangle Pond Mineral Exploration and Access Road (the Project). The requirements for the EIS are discussed in further detail in Section 2.2.

### **1.1 Purpose of the Environmental Impact Statement Guidelines**

These guidelines have been prepared by the Government of Newfoundland and Labrador (NL) to identify for the Proponent the nature, scope and minimum information and analysis required in preparing its EIS. The EIS is intended to address the legislative requirements of the province.

These guidelines shall not be regarded as either restrictive or exhaustive. Concerns other than those identified herein may arise during the investigations associated with the EIS. The provincial government is prepared to provide advice and assistance throughout the preparation of

the EIS with regard to the identification of environmental concerns and appropriate assessment methodology.

"Environment" means the components of the Earth, and includes:

- a) air, land and water, including all layers of the atmosphere;
- b) plant and animal life, including human life;
- c) the social, economic, recreational, cultural and aesthetic conditions and factors that influence the life of humans or a community;
- d) a building, structure, machine or other device or thing made by humans;
- e) a solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from the activities of humans; or
- f) a part or a combination of those things referred to in subparagraphs (a) to (f) and the interrelationships between 2 or more of them.

"Environmental effect" means a change in the present or future environment that would result from an undertaking.

"Follow-up Program" means a program for:

- (a) verifying the accuracy of the EA of the Project/Undertaking; and,
- (b) determining the effectiveness of any measures taken to mitigate the adverse environmental effects of the Project/Undertaking;

"Minister" means the provincial Minister of the Department of Environment and Climate Change.

## **1.2 Guiding Principles**

### ***1.2.1 Environmental Assessment as a Planning Tool***

Environmental assessment is a planning tool used to ensure that projects are considered in a careful and precautionary manner in order to avoid or mitigate the possible adverse effects of development on the environment. EA also encourages decision makers to take actions that

promote sustainable development and thereby achieve or maintain a healthy environment and a healthy economy.

The EA of the Project shall, in a manner consistent with the purposes above:

- consider and evaluate alternatives to the Project, or its components, and alternative means of carrying out the Project, or its components, that are technically and economically feasible;
- document public consultation activities in a manner that is transparent and accessible;
- propose measures to avoid or mitigate adverse environmental effects;
- propose measures to enhance or prolong beneficial environmental effects;
- describe residual (post-mitigation) environmental effects that are beneficial or harmful that are likely to be caused by the undertaking regardless of the proper application of all control, mitigation, enhancement and remedial measures to be proposed in the EIS;
- predict whether or not the is likely to cause significant adverse environmental effects after mitigation measures are implemented;
- specifically list and cite all sources of information in the EIS;
- outline the design of studies necessary to provide additional information for the preparation of the EIS;
- address concerns identified during the public information sessions by including within the EIS specific responses to those concerns and, where appropriate, specific proposals for measures to deal with them; and
- as soon as they have been completed, provide copies of all reports or studies undertaken in order to satisfy these guidelines.

### ***1.2.2 Local Knowledge***

Local knowledge refers to the broad base of knowledge held by individuals and collectively by communities that may be based on spiritual teachings, personal observation and experience or passed on from one generation to another through oral and/or written traditions.

Local knowledge, in combination with other information sources, can help in achieving a better understanding of potential effects of projects. Local knowledge may, for example, contribute to



the description of the existing physical, biological and human environments, natural cycles, resource distribution and abundance, long and short-term trends, and the use of lands and water resources. It may also contribute to the Project site selection and design, identification of issues, the evaluation of potential effects and their significance, the effectiveness of proposed mitigation and the consideration of follow-up and monitoring programs.

The EA will promote and facilitate the contribution of local knowledge to the review process, and recognize that approaches to local knowledge, customs and protocols may differ among communities and persons with respect to the use, management and protection of this knowledge.

The Proponent shall incorporate into the EIS the local knowledge to which it has access or that it may reasonably be expected to acquire through appropriate due diligence, in keeping with appropriate ethical standards and without breaching obligations of confidentiality.

### ***1.2.3 Sustainable Development***

Sustainable development means development that meets the needs of the present, without compromising the ability of future generations to meet their own needs. The EIS shall consider the extent to which the Project would meet this objective.

EA provides a systematic approach for identifying, predicting and evaluating the potential environmental effects of projects before decisions are made. In addition, EA provides the means to identify mitigation measures for adverse effects. EA enables the integration of environmental factors into the planning and decision-making process in a manner that promotes sustainable development and contributes to decision making that can ultimately provide net ecological, economic and social benefits to society. Moreover, a project that is supportive of sustainable development strives to incorporate citizen participation into decision-making.

The EA of the Project, including its analysis of alternatives, shall take into account the relationships and interactions among the various components of the ecosystems, including the extent to which biological diversity may be affected by the Project, and how the Project meets the needs of the present as well as future populations.

#### ***1.2.4 Precautionary Approach***

One of the purposes of EA is to ensure that proponents consider the Precautionary Principle. If a project has the potential to cause a threat of serious or irreversible damage to the environment, the Proponent must take all reasonable environmental protection measures to protect the environment, even if full scientific knowledge is lacking.

The Proponent shall indicate how the Precautionary Principle was considered in the design of the Project in at least the following ways:

- demonstrate that all aspects of the Project have been examined and planned in a careful and precautionary manner in order to ensure that they would not cause serious or irreversible damage to the environment, especially with respect to environmental functions and integrity, considering system tolerance and resilience, and/or the human health of current or future generations;
- outline and justify the assumptions made about the effects of all aspects of the Project and the approaches to minimize these effects;
- evaluate alternative means of carrying out the Project and compare them in light of risk avoidance and adaptive management capacity;
- in designing and conducting operations, demonstrate that priority has been given to strategies that avoid the creation of adverse effects;
- develop contingency plans that explicitly address accidents and malfunctions, e.g., environmental emergency plans or environmental protection plans;
- identify any proposed follow-up and monitoring activities, particularly in areas where scientific uncertainty exists, in the prediction of effects or effectiveness of proposed mitigation measures e.g. environmental effects and monitoring plans; and
- present public views on the acceptability of all of the above.

## **2.0 THE ENVIRONMENTAL ASSESSMENT PROCESS**

### **2.1 Contact for the Environmental Assessment**

Brent Keeping (Chair)

Environmental Scientist

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Department of Environment and Climate Change  
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## **2.2 Environmental Assessment Requirements**

### ***2.2.1 Newfoundland and Labrador Environmental Protection Act***

The Project is subject to EA under the *NLEPA* and *Environmental Assessment Regulations, 2003*. The Environmental Assessment Division of the Newfoundland and Labrador Department of Environment and Climate Change (ENCC) administers the process including:

- consulting at every stage with interested government departments and the public;
- evaluating submissions by Proponents and reviewers;
- advising the Minister on potential environmental effects prior to decisions; and
- monitoring released projects to ensure compliance and effectiveness of mitigation.

### ***2.2.2 Delegated EIS Preparation***

Pursuant to the requirements of Section 51(1)(b) of the *NLEPA*, the Proponent has been delegated the task of preparing the EIS. The EIS should be prepared according to these guidelines and, once completed, the Proponent shall submit at least 15 printed and one electronic copy (on portable media) of the EIS. In addition, the Proponent shall make printed copies of the EIS available at public viewing centers (to be designated) in the Project vicinity.

## **2.3 Public Consultation**

The public will have several opportunities to participate in the EA and provide their views on the potential environmental effects of the Project. These are outlined in Table 2.

***Table 2: Public Participation Opportunities***

<b>Opportunity</b>	<b>Duration</b>
Comment on Draft EIS Guidelines	40 days
Comment on Proponent's EIS	50 days
Comment on any additional EIS requirements, i.e., Addendum (if required by the Minister)	50 days

Electronic and hard copy versions of documents will be provided to ENCC and these will be made available for public review. Key documents will be available on the ENCC Environmental Assessment webpage.

[http://www.env.gov.nl.ca/env/env\\_assessment/projects/Y2013/1725/index.html](http://www.env.gov.nl.ca/env/env_assessment/projects/Y2013/1725/index.html)

Public comment periods will be announced on the ENCC Environmental Assessment webpage mentioned above. Interested parties may contact the EA Committee Chair identified in Section 2.1 for further information regarding comment periods.

The Proponent is required to provide current information about the Project to the public and especially to the communities likely to be most affected by the Project as early as possible in the review process. This will ensure that all parties have an opportunity to gain an understanding of the proposed Project and may facilitate their continued involvement in the EA process. During the preparation of the EIS, the Proponent must hold two public information sessions, one in St. John's and one in the Town of Holyrood, to provide information concerning the Project to the people whose environment may be affected by the undertaking. The Proponent must record and respond to the concerns of the local communities regarding the potential environmental effects of the Project. Appendix A provides additional information on the notification requirements for the information sessions.

### ***2.3.2 Record of Public Consultation***

The EIS must describe all public consultation activities undertaken by the Proponent prior to, during, or planned after the EA. It should describe key stakeholder groups, summarize comments heard, identify key issues of concern raised by the public and the Proponent's responses.

### **3.0 SCOPE OF PROJECT, FACTORS TO BE CONSIDERED AND SCOPE OF THE FACTORS**

#### **3.1 Scope of Project**

The EIS will examine all activities and physical works associated with the construction, operation, rehabilitation of the proposed Project, as described in the Proponent's Project description February 2014 including, but not limited to, the components/activities listed below:

- an 11 km Class C-2 resource road
- line cutting
- soil sampling
- ground geophysics
- trenching
- diamond drilling

#### **3.2 Factors to be Considered**

The EIS shall consider:

- the purpose of the Project;
- alternatives to the Project;
- the need for the Project;
- alternative means of carrying out the Project or components of the Project that are technically and economically feasible and the environmental effects of any such alternative means;
- the environmental effects of the Project, including the effects of malfunctions or accidents that may occur in connection with the Project;
- the significance of the environmental effects;
- measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the Project;
- comments from the public that are received in accordance with *NLEPA* regulations or practice;
- local knowledge;

- the capacity of renewable resources that are likely to be significantly affected by the Project to meet the needs of the present and those of the future; and
- the requirements of a follow-up program for the Project.

### **3.3 Scope of the Factors to be Considered**

In addition to the factors listed above, the EIS shall document any additional issues or concerns that may be identified through regulatory, stakeholder and public consultation.

The assessment of environmental effects shall focus on valued ecosystem components (VECs). A VEC is a component or attribute that is important for its ecological, legal, scientific, cultural, economic or aesthetic values. VECs for the Project should be selected based on defined criteria and their selection justified. The assessment shall consider potential environmental effects that the Project may have on each VEC.

In considering VECs, the Proponent will recognize that:

- the value of a component not only relates to its role in the ecosystem, but also to the value placed on it by humans;
- culture and way of life of those using the area affected by the Project may also be considered as VECs; and
- functional relationships within the environment may also be considered as VECs.

The EIS will define the study areas and time frames, or spatial and temporal boundaries used in the analysis of environmental effects. It is expected that the spatial and temporal boundaries shall vary between VECs to reflect the nature of both the VEC and the predicted effects. Temporal and spatial boundaries must reflect:

- the geographic range over which the Project's environmental effects may occur, recognizing that some effects shall extend beyond the Project area;
- timing/scheduling of Project activities;
- natural variations of each VEC; and
- the time required for recovery from an effect.

The VECs to be considered must include:

- Woodland Caribou and Other Wildlife and their Habitats;
- Aquatics Environment and Aquatic Species and their Habitats;
- Species at Risk and Species of Conservation Concern;
- Recreational Land Use;
- Protected Areas (Wilderness and Ecological Reserves, Wildlife Park)
- Residential Water Supply

The Proponent may add other VECs. In addition, the EIS shall include a consideration of key organisms that live off or rely on bio-physical VECs during their life cycle. Rationale for the selection of the above VECs, as well as a proposed study approach, is provided in Section 4 of these guidelines and is to be presented in the EIS for all VECs. The EIS shall describe, in detail, study methods and analytic methods, including incorporation of information gathered through consultation.

#### **4.0 PREPARATION OF THE EIS**

The EIS is a statement of the Proponent's environmental conclusions and commitments related to the Project; it must be explicitly endorsed by the Proponent.

The EIS shall employ the clearest language possible. However, where the complexity of the issues addressed requires the use of technical language, a glossary defining technical words and acronyms shall be included.

The EIS shall be a stand-alone document upon which a critical review can be undertaken. Where external sources of information or data are used, they shall be referenced within the body of the EIS and listed completely at the end. Where conclusions that are critical to the assessment of environmental effects are cited from other reports, the EIS shall provide sufficient detail of the originating data and analysis to enable a critical review of that material and submit reference material as an appendix to the EIS.

It is recommended that the EIS be presented in the sequence outlined in these Guidelines. If a different sequence is used, the EIS shall include a Table of Concordance to these Guidelines, so that information requirements identified herein can be easily located in the EIS. The EIS shall

refer to, rather than repeat, information previously presented in other sections of the document. However, it is important that underlying limitations, uncertainties and assumptions of all environmental predictions, especially those that support major statements or conclusions, be described in the body of the EIS rather than simply referencing supporting studies. A key subject index is to be provided giving locations in the text by volume, section and sub-section.

The EIS shall provide charts, diagrams and maps wherever useful to clarify the text, including a depiction of how the developed Project will appear from both an aerial and terrestrial perspective. Where possible, maps shall use common scales to allow for comparison and overlay of mapped features and shall indicate common and accepted local place names. The EIS and all associated reports and studies shall use System International (SI) units of measure and terminology and provide geographic information in standard Geographic Information System (GIS) mapping (digital) format.

The following sections describe the different topics to be addressed in the EIS. The EIS must provide sufficient information to allow readers to understand the potential environmental effects of the Project, focusing on the most significant potential effects as identified by the Proponent and through these guidelines. The EIS must provide an acceptable rationale for not fully addressing any issue identified in the guidelines and must highlight key effects that require more intensive investigation.

Section 4 is organized into two parts:

- PART I: CONTENT OF THE EIS describes the layout and required content of the EIS; and
- PART II: DETAILED GUIDANCE ON SELECT ENVIRONMENTAL COMPONENTS provides an overview of the recommended studies and approach for each VEC.

The information included in this document is not intended to be exhaustive and additional detail, studies, or examination of additional components may be required.



## ***PART I: CONTENT OF THE EIS***

### **4.1 Executive Summary**

The EIS should begin with an Executive Summary, including a concordance table that describes where each information requirement of the EIS Guidelines has been addressed in the EIS.

### **4.2 Project Information**

#### ***4.2.1 The Proponent***

The EIS shall:

- identify the Proponent and the name of the legal entity that would develop, manage and operate the Project;
- provide an estimated capital cost of the undertaking.
- provide contact information for the Proponent (e.g., name, address, telephone, facsimile, e-mail);
- explain corporate and management structures, as well as insurance and liability management related to the Project;
- explain corporate environmental and community relations policies;
- specify how the Proponent would ensure that corporate policies are implemented and respected for the Project;
- summarize key elements of its environmental management system and how it would be integrated into the Project; and
- identify key personnel, contractors and/or sub-contractors responsible for preparing the EIS and their qualifications.

#### ***4.2.2 Project Overview***

The EIS shall briefly summarize the development proposal. The Project location should be described in the context of surrounding land uses and infrastructure. The intent of this overview is to provide the key components and the location of the Project, rather than a detailed description, which shall follow as described in Section 4.4.4 of this document.

### ***4.2.3 Regulatory Framework and the Role of Government***

The EIS should identify the EA process and the government bodies involved in the assessment. In addition, the EIS shall:

- identify the environmental regulatory approvals and legislation that are applicable to the Project at provincial and municipal levels, including:
  - activities requiring regulatory approval;
  - names of permits or regulatory approvals;
  - names of legislation applicable in each case; and
  - names of the regulatory agencies responsible for each permit or approval;
- identify environmental government policies, resource management, planning or study initiatives pertinent to the Project and discuss their implications;
- identify any relevant Land Use Plans, Land Zoning and/or Community Plans;
- describe land tenure in the vicinity of the Project;
- identify and delineate major components of the Project and identify those being applied for and constructed within the jurisdiction of these approvals processes under provincial legislation; and
- provide a summary of the regional, provincial and/or national objectives, standards or guidelines that have been used by the Proponent to assist in the evaluation of any predicted environmental effects.

### ***4.2.4 Non-Government Participants in the Environmental Assessment***

The EIS shall identify the main participants in the EA including community groups and environmental organizations.

## **4.3 Project Description**

### ***4.3.1 Purpose of and Need for the Project***

The EIS shall state the purpose of the Project, from the Proponent's perspective and clearly describe the need for the Project (i.e., the problem or opportunity the Project is intended to solve or satisfy). This is the fundamental rationale for the Project and provides the context for the consideration of alternatives to the Project.

The EPR describes the exploration project as “the culmination of focused grassroots exploration work that has been responsibly conducted in the area for the last 25 years”. However, the exploration activities described include prospecting, line cutting, till/soil sampling and ground geophysics. The proponent is advised that Department of Natural Resources (DNR) considers all of these activities as grassroots or greenfield exploration methods that can normally be carried out without the construction of a resource road.

In Section 3 of the EPR it is stated that “The potential of the project has currently grown to a point where more advanced exploration activities are needed in order to further assess the economic mineral potential of the area”. The proposed advanced exploration activities include trenching, and an RC overburden drilling program along with a diamond drill program. However the EPR notes that the scope of the diamond drilling program (numbers, locations and drill hole density) has yet to be determined, and is to be based on current and future data to be collected. As such, the proposed diamond drilling will be early stage target testing. DNR advises that the environmental effects of exploration activities that require the use of heavy equipment such as trenching or drilling is mitigated in part by the measured pace and critical evaluation of data from earlier phases of exploration to define the areas with the highest potential to host bedrock mineralization and to target those areas specifically. Typical industry practice is to construct roads only as far as is needed to reach the target area, which from the data presented in the EPR has yet to be defined. To date, some diamond drilling has been completed to test prospective mineralization in the southern portion of the property in the Conn’s Pond area, approximately 2-3km east of Route 90 (Salmonier Line). It is important to note that diamond drilling was conducted by various owners of the property between 1993 and 2000 without the construction of a road.

The EIS must describe how mineral exploration activities on the Big Triangle Pond property have reached a level where a resource road is required. Specifically, it shall demonstrate how information obtained on the property during previous exploration has been sufficient in progressing the property to the point where grassroots activities not requiring the construction of a road are no longer required. This may be achieved by providing a summary of promising

exploration results from previous exploration programs accompanied by maps outlining the locations of prospective areas on the property in relation to the proposed road.

The statement of the Project's justification shall be presented in economic terms, shall provide a clear description of methods, assumptions and conclusions used in the analysis and shall include an evaluation of the following:

- mode of accessing the site (i.e. the access road and any access trails to RC drill sites, trenches, etc.);
- modes of mineral exploration;
- opportunities and expected evolution;
- risks to the Project, including costs and schedule delays, interest rates, markets, and other risk factors relevant to the decision to proceed with the Project; and
- projected financial benefits at the regional and provincial levels.

#### ***4.3.2 Project Location***

The EIS shall provide a concise description of the geographical setting in which the Project shall take place. The description shall focus on aspects of the environment that are important for understanding the potential environmental effects of the Project, including:

- any existing designated or planned environmentally sensitive or significant areas; cultural heritage sites; conservation agreement lands and habitat enhancement projects; provincial and regional parks; protected natural areas and watersheds; wilderness and ecological reserves; wetlands; riverine and lacustrine fish habitats; mature and interior forest habitat for migratory birds; and habitats of designated species at risk, including critical habitat for the designated species; areas of concentration of other wildlife; and other sensitive areas and habitat including recreational areas used for Nordic skiing, canoeing, snowmobiling, fishing, mountain biking, hiking and hunting;
- the current land use in the area, including ATV and hiking trails, and the relationship of the Project components with any existing or future land use including private and crown lands;

- landscapes, including river and pond/lake aesthetics; and
- a description of the nearest potentially sensitive human receptors such as residences, cabins, traditional trails and of local communities that may be affected by Project activities.

The location of the access road and mineral exploration activities shall be described and clearly indicated on maps of appropriate scale. The location map should include the boundaries of the proposed site and transportation corridors, major existing infrastructure, current and proposed future municipal drinking water supply areas if applicable, adjacent land uses and important environmental features. In addition, site plans/sketches and photographs showing Project location, site features and the intended locations of Project components should be included.

### ***4.3.3 Project Description***

#### **4.3.3.1 Project Components**

The EIS shall describe all of the Project's components in detail, focusing on those with the most potential for environmental interactions and risk. The EIS shall present descriptions, locations, plans, figures and/or drawings for each component, as appropriate, to convey information on potential environmental interactions, including:

- noise sources and expected noise levels;
- water crossings that may be required to facilitate the Project.
- construction and operation of the access road, including the spurs and any trails;
- fuel storage systems, including secondary containment (dykes) and a list of fuels; and
- viewsapes that could be affected by the Project.

#### **4.3.3.2 Activities**

The EIS shall include descriptions of the construction and operation phases, maintenance activities, foreseeable modifications, including the expansion of activities. Detailed descriptions of activities to be carried out during each phase of the Project should include the location, magnitude and scale of each activity. A schedule must be provided, showing time of year, frequency and duration of Project activities.

The description of the construction and operation activities shall include:

- solid waste, hazardous waste and waste reduction strategies;
- spill potentials and prevention strategies (e.g., hydraulic hose ruptures, fuelling mishaps, tank failure);
- rehabilitation strategy i.e. Road Decommission and Rehabilitation Plan;
- Delineation of RC drilling access trails, and other access trails required off the main road; and
- Method of preparation for access trails to drill and trench sites, e.g stripping of vegetation, cutting and filling/ditching/borrow pits, timing and method used to remediate/rehabilitate/decommission.

The EIS should describe any regular inspection and maintenance that may be required for the Project. Activities involving periods of increased environmental disturbance or the release of materials into the environment are to be highlighted.

The level of detail in the description of the Project infrastructure and activities shall be sufficient to enable prediction of environmental effects.

#### ***4.3.4 Alternative Means of Carrying out the Project***

The EIS must identify and analyze alternative means of carrying out the Project, or components of the Project, that are technically and economically feasible. The analysis shall:

- describe the alternative means considered, whether they are technically and economically feasible and the rationale for rejecting alternatives (e.g. other means of access, modes of exploration, equipment types);
- a description of the conditions or circumstances that could affect or alter these choices;
- consider the environmental effects of the technically and economically feasible alternatives, in sufficient detail to allow comparison with the effects of the Project; and
- identify the preferred means of carrying out the Project or its components based on the relative consideration of environmental effects including the criteria and rationale for their selection.

The EIS shall analyze and compare the design alternatives for the Project in relation to their environmental and social costs and benefits, including those alternative means that cost more to build and/or operate but which result in reduced adverse environmental effects or more durable social and economic benefits.

At a minimum, the discussion of alternative means of carrying out the Project shall include:

- modes of accessing the exploration areas (e.g. helicopter, trails and winter travel);
- alternate routes;
- exploration methods and equipment; and
- timing (e.g. seasonal or time of year).

The level of detail for this analysis must be sufficient to allow the reader to understand the alternatives and how they compare to the Project. The analysis is to provide clearly described methods and criteria for comparing alternatives and sufficient information for the reader to understand the reasons for selecting the preferred alternative and for rejecting others. This analysis shall include a description of the conditions or circumstances that could affect or alter these choices, such as regulatory changes and other factors, either prior to construction or during the life of the Project.

The EIS shall include a comparative analysis of the environmental effects and technical and economic feasibility of alternatives that led to the choice of the selected Project alternative. The EIS shall demonstrate how the preferred alternative contributes to sustainable development.

For example, the EIS shall address the feasibility of the following:

- Conducting line cutting and ground geophysics during the winter months utilizing snowmobiles and frozen bogs/ponds for ease of use.
- Prospecting and soil sampling using existing ATV trails and the proposed cut grid.
- Conducting trenching using existing trails. Trenching has already been conducted on areas of the property utilizing existing trails.

- Conducting RC overburden and/or diamond drilling in the winter months with the construction of a winter/ice road, utilizing frozen bogs and ponds to minimize cutting/clearing of timber. Diamond drilling conducted on the property to date has been done in the winter months.
- Conducting a helicopter-supported drilling program. Availability of local or regional helicopters should be determined. Scheduling to best suit seasonal weather conditions should be considered, e.g. the avoiding the foggiest months of the year.

#### **4.4 Description of the Existing Environment**

The EIS shall provide a description of the biophysical and socio-economic environments that could be affected by the Project, both in the immediate vicinity and beyond. This shall include the components of the existing environment and environmental processes, their interrelations and interactions, as well as their variability over time scales appropriate to the effects analysis. The level of detail shall be sufficient to:

- identify, assess and determine the significance of adverse environmental effects that may be caused by the Project including a discussion of how the Project is expected to co-exist with the existing land users.
- identify and characterize the beneficial effects of the Project; and
- provide the data necessary to enable effective follow-up.

The baseline description shall characterize environmental conditions resulting from historic and present activities in the Project area. The physical and biological environments shall be described based on an ecosystem approach that considers both scientific and local knowledge and perspectives regarding ecosystem health. The EIS must identify and justify the selected indicators and measures of ecosystem health (i.e., measurable parameters). These indicators must be transferable to future Project monitoring and other follow-up.

In assessing effects to the ecology of the Project area, the EIS shall consider the resilience of relevant species, populations, communities and their habitats. It shall summarize all pertinent



historical information on the size and geographic extent of relevant animal or floral populations as well as density, based on best available information. Where little or no information is available, and when appropriate, specific studies shall be designed to gather information on species populations and densities that could be adversely affected by the Project. Habitat at regional and local scales must be defined when mapping aquatic and terrestrial vegetation types and/or communities.

The EIS must provide a description of the rural and urban communities likely to be affected by the Project. If the information available from government or other agencies is insufficient or no longer representative, the Proponent shall complete the description of the environment with current surveys and studies.

The EIS shall indicate the Project's proximity to ATV trails, sensitive features such as residences, cabins, public drinking water supplies and locations of hunting and gathering activities (i.e., berry picking). Depending on the type of potential effects the Project may have on these receptors, appropriate baseline evaluation should be undertaken.

The EIS must explain any extrapolation, interpolation or other manipulation applied to the baseline data used to describe environmental conditions in the study area. Any information gaps from a lack of previous research or practice shall be described indicating information that is not available or existing data that cannot accurately represent environmental conditions in the study area. If data gaps remain, the Proponent shall describe its efforts to resolve the data gaps, including any direct consultation with groups, individuals and others.

#### **4.5 Effects Assessment**

The EIS shall contain a comprehensive analysis of the Project's predicted effects on the environment. The assessment shall include, but not be limited to, the effect of any environmental change on socio-economic conditions and heritage values. Potential effects from all components of the Project area and within the Project's zone of influence shall be discussed. The EIS shall predict the Project's effects during all Project phases (e.g., construction, operation,

maintenance, foreseeable modifications, decommissioning and reclamation) and describe them using appropriate criteria.

The environmental effects assessment in the EIS shall be based on best available information and methods. The methods employed shall be clearly explained. All conclusions must be substantiated and the supporting logic clearly traceable. The Proponent is encouraged to make use of existing information relevant to the Project. When relying on existing information to meet the requirements of various sections of the EIS Guidelines, the Proponent must include the information directly in the EIS or clearly direct (e.g., through cross-referencing) the reader to where they may obtain the information. With respect to pre-existing baseline studies, the Proponent will append these to the EIS as distinct appendices. When relying on existing information, the Proponent must also comment on how the data have been applied to the Project, clearly separate factual lines of evidence from inference and state any limitations on the inferences or conclusions that can be drawn from them according to the criteria for information quality set out in the EIS Guidelines. For instance:

- assumptions should be clearly identified and justified;
- all data, models and studies must be documented such that the analyses are transparent and reproducible;
- the uncertainty, reliability and sensitivity of any models used to reach conclusions must be indicated;
- conclusions should be substantiated; and,
- the studies should be prepared using best available information and methods.

Any modeling methods and equations presented must include information on margins of error and other relevant statistical information (e.g., confidence intervals, possible sources of error).

The Proponent shall prepare a table describing the proposed Project's anticipated effects, which shall enable the reader to review and consider those effects.

Views of the public relative to the EA, including any perceived changes in the environment from the Project, must be acknowledged and considered. In considering the local social and economic

effects of the Project, the Proponent shall have due regard for the attitudes, beliefs and perceptions of local residents and how these are grounded in their culture, social organizations and historical experience. The EIS shall clearly articulate how relevant issues raised by the public have been considered, including any changes to the Project, or mitigation or follow-up measures arising from such consideration.

#### ***4.5.1 Accidents and Malfunctions***

The EIS shall identify and describe accidents and malfunctions that may occur as a result of Project activities, including an explanation of how those events were identified, potential consequences (including potential environmental effects), worst case scenarios and the effects of these scenarios and assess the significance of associated environmental effects. The EIS should identify potential accidents, malfunctions, unplanned events, or emergency situations that could be associated with all phases of the Project, including product spills, fuel transportation and storage, resource road conflicts with wildlife and other users as well as the probabilities and hazards associated with them; the safeguards that have been established to protect against such occurrences and the contingency/emergency response procedures in place in the event that an accident/malfunction occurs. Factors which contribute to the uncertainty of detecting and mitigating effects associated with accidents and malfunctions must be assessed.

#### ***4.5.2 Capacity of Renewable Resources***

The EIS shall consider the capacity of renewable resources that are likely to be significantly affected by the Project to meet the needs of the present and those of the future. The EIS shall identify any VECs predicted to experience significant adverse residual environmental effects, describe how the Project could affect their sustainable use and describe the criteria used in the analysis.

#### **4.6 Avoidance and Mitigation Measures**

Mitigation is the elimination, reduction or control of the adverse environmental effects of the Project. It includes restitution for any damage to the environment caused by such effects through replacement, restoration, compensation or any other means. The EIS must consider measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the Project. The approach to mitigation shall be premised on a

preference for avoidance and reduction of effects at their source, including modifying the Project design or its components as well as relocation of certain components, where technically and economically feasible.

The EIS shall describe the standard mitigation practices, policies and commitments that constitute technically and economically feasible mitigation measures and that will be applied. The Proponent, where possible, should refer to similar situations where the proposed mitigation has proven to be successful. Mitigation failure should be discussed with respect to risk and severity of consequence.

The EIS shall describe the Proponent's Environmental Protection Plan (EPP). The EPP shall provide an overall perspective on how potentially adverse effects would be minimized and managed over time. The Proponent shall describe its commitments, policies and arrangements directed at promoting beneficial or mitigating adverse socioeconomic effects and explain how it will ensure compliance among its contractors and sub-contractors and how compliance will be audited and enforced.

The EIS shall specify the actions, works, minimal disturbance footprint techniques, best available technology, corrective measures or additions planned during the Project's phases (construction, operation, modification, decommissioning, abandonment or other undertaking related to the Project) to eliminate or reduce the significance of adverse effects. The EIS shall also present an assessment of the effectiveness of the proposed technically and economically feasible mitigation measures.

If there are technically and economically feasible mitigation measures that were considered and rejected, the EIS must discuss these and explain why they were rejected. Trade-offs between cost savings and effectiveness of the various forms of mitigation must be justified.

Should the Project be released, the Proponent must ensure that measures are taken to avoid or lessen any potential adverse effects, regardless of their significance, on listed or designated species, their critical habitat or the residences of individuals of those species. Potential effects

must be monitored and mitigation must be consistent with any applicable recovery strategy and action plans. The EIS must include information that will allow the Province to meet this requirement.

In addition, the EIS will identify the extent to which technology innovations will help mitigate environmental effects. Where possible, it will provide detailed information on the nature of these measures, their implementation and management, as well as whether follow-up will be required.

#### **4.7 Effects of the Environment on the Project**

In addition to describing environmental effects on the environment as a result of the undertaking, the EIS should also describe the climatic conditions at the Project site and in local and regional study areas and provide a description of seasonal variations and trends in climatic conditions, to allow the assessment of effects on the Project. Any use of off-site data must be described and an analysis of its degree of representativeness for Project conditions must be included. The use of the data should be qualified with an understanding of local and regional variability and the geographic locations of any onsite and offsite meteorological stations. The geographic locations of any onsite and offsite meteorological stations must be provided. Climate data should also be provided and taken into account when evaluating effects of the Project on air quality, hydrology and water management. The influence of local and regional topography, geology or other features that could affect conditions in the study area should also be considered, as appropriate. Specifically, the EIS shall include a description of the following components:

- Physiography: topography, geology, drainage network; and
- Climate: historical records of total precipitation (rain and snow), mean, maximum and minimum temperatures.

The EIS must predict how local conditions and natural hazards, such as severe and/or extreme weather conditions and external events could adversely affect the Project and how this in turn could affect the environment (e.g., environmental emergencies due to extreme environmental conditions). The EIS should describe measures that will be implemented to prevent and respond to such events. The EIS should discuss the sensitivity of the Project to changes in specific

climate and related environmental parameters, such as total annual rainfall, frequency and/or severity of precipitation extremes, watercourse levels and stream flow.

The EIS must provide measures and strategies to mitigate the potential effects of the environment on the Project.

## **4.8 Environmental Management**

### ***4.8.1 Planning***

The EIS shall describe the proposed Environmental Management Plans (EMPs) for all stages of the Project and include a commitment by the Proponent to implement the EMPs, should the Project proceed. EMPs must be developed in consultation with government agencies, the public and other stakeholders. This may occur after the EA, but must be consistent with the information presented in the EIS. Pertinent legislation, regulations, industry standards, documents and legislative guides shall be used when developing EMPs.

The EIS shall present a decommissioning and reclamation plan for the Project. The plan must address ownership, transfer and control of the different Project components, as well as the responsibility for monitoring and maintaining structures. The EIS shall include a conceptual discussion of how decommissioning may occur.

### ***4.8.2 Follow-Up Program***

The EIS must include a framework upon which follow-up, including effects monitoring, would be based throughout the life of the Project, including the decommissioned and rehabilitation phase. A follow-up program must be designed to verify the accuracy of the effects predictions and to determine the effectiveness of the measures implemented to mitigate the adverse environmental effects of the Project.

The follow-up program must be designed to incorporate pre-project baseline information as well as compliance data (e.g., established benchmarks, regulatory documents, standards or guidelines) and real-time data if applicable (e.g., observed data gathered in the field). Effects predictions, assumptions and mitigation actions that will be tested as part of the follow-up program must be

framed as field-testable monitoring objectives. The monitoring design should include an evaluation of the adequacy of existing baseline data, to provide a benchmark against which to test for Project effects and the need for any additional pre-construction or pre-operational monitoring to augment baseline data.

The description of the follow-up program should include;

- the requirements and objectives of the follow-up program;
- a description of the main components of the program, each monitoring activity under that and the objectives of each monitoring activity (i.e., confirmation of mitigation, confirmation of assumptions and verification of predicted effects);
- a schedule for the finalization and implementation of the follow-up program;
- a description of the roles and responsibilities for the program and its review process, by government and the public;
- a discussion of possible involvement of independent researchers;
- any contingency procedures/plans or other adaptive management provisions for dealing with unforeseen effects, or situations where benchmarks, regulatory standards or guidelines are exceeded; and
- a description of how results will be managed and reported.

Sufficient detail shall be provided to allow independent judgment as to the likelihood that the follow-up program will provide the quantity and quality of information required to achieve its objectives.

The proponent is encouraged to modify as needed, existing plans developed during the EPR.

The NL *Endangered Species Act* and the federal *Species at Risk Act* (SARA) contain provisions requiring that measures be taken to monitor adverse effects of the Project on listed wildlife species (e.g. lichens) or their habitat. If potential adverse effects on a listed wildlife species or its critical habitat are identified, a monitoring plan must be developed to identify the circumstances under which corrective measures may be needed to address any issue or problem identified through the monitoring (i.e., if unanticipated effects occur or the importance of effects is greater

than anticipated). The monitoring plan should clearly describe how government departments responsible for the species in question would be engaged in reviewing proposed adaptive management measures, in the event that mitigation measures are not effective.

#### **4.9 Significance of Residual Adverse Environmental Effects**

The EIS must describe any expected residual effects of the Project on the biophysical and socio-economic environments, after technically and economically feasible mitigation measures have been applied. The residual effects, even if deemed not significant, should be described. The EIS shall provide sufficient detail so that the environmental effects of the Project and the degree to which they can be mitigated, can be clearly understood.

The criteria for evaluating the significance of the residual effects shall be described, including pre-defined significance thresholds for each VEC (e.g., existing government regulatory and industry standards and guidelines). The criteria may include: magnitude; duration and frequency; ecological or socio-economic context; geographic extent; and degree of reversibility. Professional expertise and judgment may also be applied. The EIS must contain enough detail to enable readers to follow the reasoning and process by which the Proponent assessed the significance of effects.

The EIS must state the Proponent's conclusion, for each VEC, as to whether the Project is likely to cause significant adverse effects. Residual effects significance criteria shall be presented for each VEC in the EIS along with the analysis to support the conclusion of significance.

#### **4.10 Economic and Social Benefits of the Project**

Information on the predicted economic and social benefits of the Project should be presented. This information shall be considered by the Government in assessing the justifiability of any significant adverse environmental effects, if necessary.

The Proponent must demonstrate environmental requirements of mineral exploration, Section 5(4) of the *Mineral Act* and Sections 41 to 45 of the *Mineral Regulations*.



#### **4.11 Benefits of the EA to Newfoundland and Labrador**

The EIS must describe how the EA process for the Project benefits the residents of Newfoundland and Labrador, focusing on aspects such as:

- maximized environmental benefits: What expected environmental benefits will be created as a result of the Project being assessed?;
- public participation: How is public participation in the EA expected to influence the Project design and the environmental effects analysis?;
- technological innovations: Are new technologies expected to be developed to address environmental effects that could be used for other projects?;
- increases in scientific knowledge: Is any new scientific information expected to be collected through the EA or follow-up that could benefit the assessment of other projects?; and
- community and social benefits: Describe any expected changes in the Project design that would result in indirect benefits to communities and/or social benefits.

#### **4.12 Assessment Summary and Conclusions**

The EIS must summarize the overall findings of the EA, with emphasis on the main environmental issues identified. It must predict the likely significance of adverse environmental effects, including accidents and malfunctions, caused by the Project.

For all VECs, the EIS must include a table that summarizes:

- the Project's potential adverse environmental effects;
- proposed mitigation and compensation measures;
- proposed follow-up;
- potential residual effects;
- potential effects of accidents and malfunctions on the VEC;
- applicable standards or guidelines;
- comments from the public and responses; and
- commitments made by the Proponent, including the timing and responsibility of each.

## ***PART II: DETAILED GUIDANCE ON SELECT ENVIRONMENTAL VECs***

The following section provides an overview of the proposed studies and approach to be undertaken in the EIS for each VEC. Detailed study approaches and analytic methods and assumptions shall be provided in the EIS.

### **4.13 Baseline Studies**

Due to the complexity of some VECs likely to be affected by the Project, standalone baseline studies may be required to support the evaluation of environmental effects, the development of mitigation measures and monitoring and follow up programs. ENCC acknowledges that a number of studies have already been undertaken for the Project area. Any baseline studies that have been undertaken to date are to be included in the EIS document. Where new information becomes available and as specific areas for mineral exploration are identified (including spur roads), additional baseline surveys may be required.

Baseline studies should generally have the following format:

- **Rationale/Objectives:** In general, the baseline studies should be conducted to obtain all required data for use in determining the potential for significant effects on a the VEC as well as for monitoring and follow-up programs.
- **Study Area:** The boundaries of the study area shall be defined depending on the characteristics of the VEC being investigated.
- **Methods:** Methods shall be proposed by the Proponent, in consultation with resource agencies, as appropriate. The methods used in each baseline study shall be described in the EIS.
- **Study Outputs** shall be proposed by the Proponent. Information and data generated shall be sufficient to adequately predict the effects on the VEC and to determine monitoring and follow-up requirements. Information sources must be identified and an appendix of raw data in electronic tabular form for the bio-physical baseline studies must also be included.

The baseline studies, in their entirety, should be incorporated into the EIS document as appendices.

#### **4.14 Woodland Caribou and Other Wildlife and their Habitats**

The effects of the Project on caribou, other wildlife and their habitats will be assessed within the Project footprint (i.e., cleared areas) and areas that could reasonably be affected by the Project activities..

##### ***4.14.1 VEC Definition and Rationale for Selection***

Caribou, other wildlife and their habitat refers to caribou, and other wildlife that are potentially feeding, breeding, moving and/or migrating through the Project area. These species and other ecosystem components are important to local residents, regional stakeholders, and regulatory authorities (i.e., municipal, provincial and federal) for recreation, economic and/or management considerations.

##### ***4.14.2 Potential Project-VEC Interactions***

Potential Project-VEC interactions include:

- habitat loss or degradation due to road construction and operation and mineral exploration;
- effects on the physical condition of individuals due to emissions/discharges from the Project;
- mortality and loss of productivity due to construction, operation and/or decommissioning and/or accidents and malfunctions during these Project phases; and
- disruption of feeding, breeding, movement and/or migratory patterns due to noise, lights and/or presence of Project facilities.
- The effects of the Project on wetlands must be assessed within the Project footprint and for areas that could be reasonably expected to be affected by the Project.

#### ***4.14.3 Existing Environment***

The EIS must describe caribou, other wildlife and their habitat within the project area. The results of any baseline surveys must be included.

Other wildlife includes:

- Avifauna, both migratory and non-migratory;
- Furbearers, small and large terrestrial mammal species such as moose, black bear, red fox, beaver etc.

The EIS must include information on:

- Relative abundance of species/systems of sufficient detail to allow assessment of potential impacts (looking both inside and outside of affected area).
- Composition, abundance, distribution, population dynamics and habitat utilization of terrestrial fauna.
- Composition, distribution and abundance of terrestrial flora, including forest inventories.
- Existing patterns of habitat and ecotype alteration, disruption and destruction i.e. document existing land uses with the objective of determining existing and projected footprint.
- Composition, distribution and abundance of wetlands as classified using the Canada Wetland Classification System.

Other wildlife and their habitat that could be affected by Project activities must be characterized using existing data, supplemented by surveys as appropriate. The Proponent should contact ENCC for further detail on the information requirements.

The EIS should give particular consideration to areas of concentration of migratory animals/migratory patterns, breeding, denning and/or wintering areas.

Migratory birds are protected under the *Migratory Birds Convention Act* (MBCA) and associated regulations. Birds protected under the MBCA are specifically named in the Environment Canada publication, "*Birds Protected in Canada under the Migratory Birds Convention Act, Canadian*

*Wildlife Service Occasional Paper No. 1.*” Preliminary data from existing sources should be gathered on year-round migratory bird use of the area (e.g., winter, spring migration, breeding season, fall migration). In addition to information obtained from the Atlantic Canada Conservation Data Centre (ACCDC) and naturalists, other relevant datasets should be consulted, such as those available from:

- Bird Studies Canada’s “Nature Counts” web portal (<http://www.birdscanada.org/birdmon/default/datasets.jsp>);
- the *Quebec Breeding Bird Atlas 1984-89 (Les oiseaux nicheurs du Québec: atlas des oiseaux nicheurs du Québec méridional)*. A copy of this atlas is available at: [http://www.atlas-oiseaux.qc.ca/1eratlas\\_en.jsp](http://www.atlas-oiseaux.qc.ca/1eratlas_en.jsp); and
- other data and projects, based on consultation with government and other agencies.

#### ***4.14.4 Effects Assessment and Mitigation***

The adverse environmental effects of the Project on caribou and other wildlife and their habitats should be assessed for all phases of the Project, and for malfunctions and accidental events. The EIS shall present an analysis of the Project’s effects on habitats, giving consideration to, and demonstrating linkages to predicted physical and biological changes resulting from the Project. Management tools (i.e., federal and provincial laws and policies, guidance, and provincial or regional strategies and plans) applicable to the protection of wildlife and/or wildlife habitat must be considered in the EIS. The EIS must:

- quantify and describe overall temporary and permanent loss or alteration of terrestrial habitat that could result from the Project and its effect on key species. Where possible, rank habitat quality for each VEC species so that the loss of high-quality habitat can be assessed in the context of its regional availability. Regional boundaries for assessment of relative habitat loss should be based on major watershed boundaries and eco-sections;
- assess the Project’s potential effects on wildlife behaviour, such as feeding, breeding, migration and movement, with respect to:
  - physical hazards and attractants for wildlife (e.g., roads, pits, and other structural features),

- chemical hazards and attractants for wildlife (e.g., identified contaminants of potential concern), and
- sensory disturbance causing wildlife attraction or deterrence (e.g., noise, light, and human presence);

The EIS must describe technically and economically feasible measures to mitigate effects on caribou and other wildlife, and their habitats and predict adverse residual effects and their significance. This includes plans and predictions for rehabilitation of the Project area, taking into account growth rates of local vegetation.

#### ***4.15 Aquatics Environment and Aquatic Species and Their Habitats***

The upstream and downstream effects of the Project on fish, fish habitat and fisheries will be assessed for all potentially-affected water bodies.

##### ***4.15.1 VEC Definition and Rationale for Selection***

Aquatic Species and Their Habitats means freshwater fish species and the habitat upon which they depend. In accordance with Section 34 (1) of the *Fisheries Act*, fish habitat is defined as “spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes”. The quantity and quality of available freshwater fish and fish habitat is an indicator of aquatic ecosystem health, and has socio-economic implications.

##### ***4.15.2 Potential Project-VEC Interactions***

Potential Project-VEC interactions include: impacts to fish habitat and/or fish mortality and fisheries associated with:

- the construction of the road, spur roads, seismic lines and any other project activities and related infrastructure

##### ***4.15.3 Existing Environment***

The EIS must describe the limnology, hydrology, freshwater biota, presence of fish and other freshwater species, associated habitats and habitat distribution and fisheries in potentially

affected surface waters, based on available published information, information resulting from community consultation, and/or results of on-site baseline surveys.

#### ***4.15.4 Effects Assessment and Mitigation***

The adverse environmental effects of the Project on fish and fish habitat must be assessed for all phases of the Project, as well as for accidents and malfunctions. The EIS must describe technically and economically feasible measures to mitigate effects to fish and fish habitat and predict residual adverse effects and their significance, including:

- Biological diversity, composition, abundance, distribution, population dynamics, sensitivity to disturbance and habitat utilization (including identification of sensitive/critical habitats) of aquatic species
- Details regarding fish habitat classification and quantification
- Fish mortality from construction and operation
- Human-environment interactions

#### ***4.16 Species at Risk and Species of Conservation Concern***

The effects of the Project on animal and plant Species at Risk (SARs), including lichen species, and species of special conservation concern will be assessed within the Project footprint (i.e., cleared areas) and areas that could reasonably be affected by the Project activities.

##### **4.16.1 VEC Definition and Rationale for Selection**

SARs include:

- species that are listed under the federal *Species at Risk Act* (SARA) and relevant provincial legislation such as the NL *Endangered Species Act* (ESA).
- species recommended for legal listing by COSEWIC and the NL Species Status Advisory Committee (SSAC) and ranked by the Atlantic Canada Conservation Data Centre (ACCDC) as S1, S2, or S3 or general status (NL Department of Environment and Climate Change – Wildlife Division General Status of Wildlife Ranks ) as may be at risk or undetermined.

Preservation of SARs is important for maintaining ecological integrity and species biodiversity. There are also legislative and policy requirements to protect SARs and their habitats. Any

measures undertaken to mitigate and monitor effects must be consistent with applicable federal recovery strategies, federal action plans, or provincial recovery plans.

#### **4.16.2 Potential Project-VEC Interactions**

Potential Project-VEC interactions for SARs include:

- mortality and loss of productivity, habitat loss or degradation due to the construction of the road and mineral exploration activities;
- disruption of feeding, breeding, movement and/or migratory patterns due to noise, lights and/or presence of Project equipment.

Project activities that will result in clearing of or disturbance to natural vegetation, or ground disturbance (e.g., grubbing, grading, and excavation) may affect rare plant species by:

- altering or destroying individual rare plants, or habitat capable of supporting rare plant species;
- altering preferred habitat due to changes in surface water hydrology (e.g., ponding, surface water runoff patterns);
- destroying plants, or reducing health conditions of individuals and /or their habitat due to soil erosion, structural soil changes, or soil contamination; or
- displacing rare plants due to non-native and invasive species introduction.

#### **4.16.3 Existing Environment**

As background for the analysis of the Project's effects on SARs, the EIS must:

- identify all SARs that may be affected by the Project, using existing data and literature as well as surveys to provide current field data, as appropriate;
- provide assessments of regional importance, abundance and distribution that optimize the ability to detect all species at risk and sufficient survey effort to obtain comprehensive coverage; and
- identify residences, seasonal movements, movement corridors, habitat requirements, key habitat areas, identified critical habitat and/or recovery habitat (where applicable) and general life history of SARs that may occur in the Project area, or be affected by the Project.



The following information sources on species at risk and Species of Conservation Concern should be consulted:

- *Species at Risk Act (SARA)* ([www.sararegistry.gc.ca](http://www.sararegistry.gc.ca));
- Newfoundland and Labrador *Endangered Species Act (NLESA)*;
- Committee on the Status of Endangered Wildlife in Canada (COSEWIC);
- Species Status Advisory Committee (SSAC);
- Department of Environment & Climate Change (ENCC) – Wildlife Division General Status of Wildlife Ranks;
- Atlantic Canada Conservation Data Centre (ACCDC);
- Relevant Government agencies; and
- Local naturalist and interest groups.

#### **4.16.4 Effects Assessment and Mitigation**

The EIS should identify the adverse effects of the Project on SARs, including individuals, critical habitat, recovery habitat, important habitat, and residences of species listed under SARA and the NLESA, species recommended for legal listing by COSEWIC and the SSAC, as well as adverse effects on species of conservation concern ranked by the ACCDC as S1, S2, or S3.

The EIS should describe specific measures that will be taken to avoid or reduce adverse effects and to monitor them (consistent with any applicable federal recovery strategy, federal action plans, and/or provincial recovery/management plan). The effects analysis must include project-specific effects on SARs and their critical habitat, recovery habitat, important habitat, and/or residences. The likely significance of the Project's potential adverse environmental effects on SARs and Species of Conservation Concern must be predicted.

Analysis must take into account pertinent acts, policies, guidelines and directives relating to species at risk, such as:

- *Addressing Species at Risk Act Considerations Under the Canadian Environmental Assessment Act for Species Under the Responsibility of the Minister responsible for Environment Canada and Parks Canada (SARA-CEAA 2010);*
- *The Species at Risk Act Environmental Assessment Checklists for Species Under the Responsibility of the Minister Responsible for Environment Canada and Parks Canada;*
- *Environmental Assessment Best Practice Guide for Wildlife at Risk in Canada (Environment Canada 2004); and*
- *Newfoundland and Labrador: A Provincial Policy Regarding the Conservation of Species at Risk.*

#### **4.17 Recreational Land Use**

The effects of the Project on recreational land users will be assessed within the Project area.

##### ***4.17.1 VEC Definition and Rationale for Selection***

Recreational Land Use was selected as a VEC due to its socio-economic importance. If there are potential resource conflicts relative to access and use of recreational resources, the proponent must address these in the EIS.

##### ***4.17.2 Potential Project-VEC Interactions***

Potential Project-VEC interactions will result from construction and operation activities that may alter or destroy wildlife and fish habitat or modify the existing use of the Project area as a result of diminished air quality, changes to viewscapes, noise and other disturbances. Road access could also potentially devalue investment from recreational cottage owners in the area. Declining hunting and angling success rates due to this development activity and/or increased angler crowding due to new road access may be a concern and lessen the utility of this area for tourism purposes.

##### ***4.17.3 Existing Environment***

The EIS must describe land use at the Project site and within the regional area. It should identify past, current and any known planned land use(s) of the Project area that may be affected by the

Project. Local recreational users should be consulted to help characterize existing land use patterns. The aspects listed below are to be considered to the extent that they are applicable to the site:

- **Residential and Recreational Property:** The EIS must identify any property whose value may be adversely affected by any change in the environment caused by the Project. The occurrence of houses and cabins in the vicinity of the Project must be described. The discussion must include any effects of the Project to local residents or cottage owners. (e.g., Noise, dust in areas of cottages, increased access, loss of remote settings, aesthetic changes).
- **Fishing:** The EIS must identify and quantify the users in the Project area participating in recreational angling. This should include salmon rivers in the proximity of the Project site (i.e. Salmonier River) The following document may assist in quantifying users : <http://www.nfl.dfo-mpo.gc.ca/folios/01019/docs/anglersguide-guidedepecheur-2016-17-eng.pdf>
- **Hunting:** The Project must identify and quantify the number of recreational hunters in the Project area and describe the effects of development in the Project area on recreational hunting and trapping, including effects on success rates and increased access.
- **Viewscapes Aesthetics:** The EIS should include a plan to mitigate the negative effects of the Project including; prevention of water crossing by ATVs; replanting access areas; and a full plan for road decommissioning and rehabilitation.

#### ***4.17.4 Effects Assessment and Mitigation***

The EIS shall assess the potential effects of any change in the environment as a result of the Project on Recreational Land Use. Potential effects on Recreational Land Use that impede the visitor experience must be identified and quantified. The use of survey's should be used to determine the number of users in the Project area that participate in adventure tourism activities (including hiking, hunting, canoeing and salmon angling). This assessment shall include indirect and direct impacts.

The EIS shall assess the effects of any change to Recreational Land Use resulting from the Project. The EIS will consider the environmental effects that will restrict the ability of people to use and enjoy adjacent lands currently or in the future (e.g., exclusion or disruption of recreation activities, loss of areas of special community or social value, and changes to the local visual aesthetics).

The potential for Project-related emissions, noise, and vibration to adversely affect current Recreational Land Use shall be assessed and the degree or extent of impact shall be described. The EA Report shall describe measures to mitigate any adverse effects to Recreational Land Use and will identify any potential residual effects and their significance. Decommissioning and Rehabilitation of the area post Project activities is the preferred mitigation post Project. Mitigations during Project construction and operation may include controls on dust, noise, lighting and other potential disturbances and an information program to notify recreational land users of upcoming Project activities and requirements.

#### **4.18 Protected Areas (Wilderness and Ecological Reserves, Wildlife Park)**

The effects of the Project on protected areas will be assessed within the region possibly impacted by the project.

##### ***4.18.1 VEC Definition and Rationale for Selection***

Protected Areas include those areas identified as reserves or parks under the *Wilderness and Ecological Reserves Act* or *Wild Life Act* that may be affected either directly or indirectly by the project. They were selected as a VEC due to their natural and socio-economic importance. Protected areas form a key component of the provincial strategy to protect and preserve biodiversity. Management of the adjacent landscape is critical to the ability of protected areas to fulfill conservation requirements. Protected areas adjacent to the Project Area are also important to the public for recreational purposes for such activities as hunting, fishing, hiking, photography as well as appreciation of and education about provincial wildlife and landscapes.

#### ***4.18.2 Potential Project-VEC Interactions***

Potential Project-VEC interactions may result from construction, operation and post-operation activities and may be direct or indirect effects. Noise or visual stimulus may affect species within the reserves or that have part of their range within the adjacent parks and reserves. There is the potential to alter water flow into the adjacent reserves/parks. The increased access that is created as a result of project activities may change patterns of travel by recreation vehicle users that lead to impacts on protected areas that would not otherwise occur.

#### ***4.18.3 Existing Environment***

The EIS must describe protected areas (wilderness and ecological reserves, and wildlife park) within the regional area. The EIS must note the size of protected areas, the ecological region(s) they represent, and any important biotic or abiotic feature(s) which may be affected by the Project (e.g., as a result of noise, dust, visual stimulus, increased access). In addition, the EIS shall address the value of the protected areas, relating both to their intrinsic value, environmental attributes, and the value placed on them by humans (e.g., cultural and social values, aesthetics).

#### ***4.18.4 Effects Assessment and Mitigation***

The EIS must evaluate the potential environmental effects (direct and indirect) of the Project on the environmental, cultural, social, and aesthetic values of protected areas that could be affected by the Project. The analysis should include consideration of:

- effects on protected areas and their abiotic and biotic features, including effects on waterbodies in and flowing in/out of protected areas;
- the potential for isolation of flora and fauna within protected areas, due to habitat alteration and loss; and
- the potential effects of the project that may impede the visitor experience of adjacent protected areas.

The EIS must include measures to mitigate the effects of the Project on the environmental, cultural, and social benefits of adjacent protected areas. There must be a detailed plan for managing access to the Project area as well as decommissioning and rehabilitation of the area

following conclusion of Project activities. Mitigations during Project construction and operation may include controls on dust, noise, lighting and other potential disturbances, consideration of water flow, as well as a program to implement and notify the public of access restrictions both during and post-construction and operation.

#### **4.19 Residential Water Supply**

The Project is partially or wholly within a potential future water supply area for the Town of Holyrood. Additionally, Big Triangle Pond has been identified as a potential water supply for regional water supply for the Northeast Avalon (see the report, *St. John's Regional Drinking Water Study*).

##### ***4.19.1 VEC Definition and Rationale for Selection***

Residential water supply was selected as a VEC due to its socio-economic importance to the Town of Holyrood and surrounding areas.

##### ***4.19.2 Potential Project-VEC Interactions***

Elevated arsenic has been identified in both glacial till samples and lake sediment samples in the project area. This indicates that there may be elevated arsenic in groundwater that would be encountered during proposed diamond-hole drilling.

Lake sediment and glacial till samples in the Project area have elevated levels of arsenic and so the potential exists for groundwater encountered during proposed drilling to also contain elevated levels of the element (source: Department of Natural Resources on-line Geoscience Atlas <http://gis.geosurv.gov.nl.ca/>). The use of heavy equipment for road construction and mineral exploration introduces a potential pathway for sediments and chemical contaminants to enter the water shed.

The EIS must provide information regarding how potentially elevated levels of arsenic in groundwater, sediments, fuels, oils and other chemicals used in Project activities will be managed to avoid contaminating the watershed and in particular, the potential future water supply for the Town of Holyrood.

#### ***4.19.3 Existing Environment***

The EIS must delineate the overlap of the Project area with the potential future water supply area and watersheds and identify the location of proposed activities within them. Baseline water chemistry and quality data must be provided for representative waterbodies throughout the Project area.

The EIS must quantify the expected levels of arsenic in the groundwater and un-weathered glacial deposits in the Project Area.

#### ***4.19.4 Effects Assessment and Mitigation***

The potential adverse environmental effects of the Project on the watersheds must be assessed for all phases of the Project and for malfunctions and accidental events. The assessment must include:

- An analysis of potential changes in arsenic levels in lakes and streams if significant areas of arsenic bearing glacial deposits are exposed by Project activities (e.g. road and trail building, trenching and exploration drilling).
- Potential effects of increased arsenic levels on water quality in the watershed over time in comparison to existing conditions.
- Potential effects of chemical spills (e.g. fuels, hydraulic fluids) on water quality within the watershed(s).

The EIS must commit the proponent to providing the results of water chemistry tests for representative sites that include but is not limited to groundwater derived from exploration drilling of bedrock.

The EIS must commit the proponent to establish a water quality monitoring program appropriate for the location and type of Project activities.

#### **4.20 Commitments made in the EIS**

The EIS must provide a list of all commitments made regarding environmental mitigation, monitoring and follow-up. Each commitment must be cross-referenced to the section of the EIS where it has been made.



## Appendix A: Public Notices

Under the provisions of the *Environmental Assessment Regulations 2003*, Section 10 and where the approved Guidelines require public information session(s), the following specified public notification requirements must be met by the Proponent prior to each meeting:

<p style="text-align: center;">Public Notice</p> <p style="text-align: center;">Public Information Session on the Proposed</p> <p style="text-align: center;"><i>Name of undertaking</i></p> <p style="text-align: center;"><i>Location of undertaking</i></p> <p style="text-align: center;">Shall be held at</p> <p style="text-align: center;"><i>Date and Time</i></p> <p style="text-align: center;"><i>Location</i></p> <p style="text-align: center;">This session shall be conducted by the Proponent,</p> <p style="text-align: center;"><i>Proponent name and contact phone number,</i></p> <p style="text-align: center;">as part of the environmental assessment for this Project,</p> <p style="text-align: center;">to describe the activities associated with and to provide an opportunity for all interested persons to request information or state their concerns.</p> <p style="text-align: center;"><b>ALL ARE WELCOME</b></p>
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Minimum information content of public advertisement - (Proponent to substitute appropriate information for italicized items).

Minimum newspaper ad size: 2 column widths.

Minimum posted ad size: 7" x 5"

Minimum newspaper ad coverage: Weekend preceding meeting and 3 consecutive days prior to meeting date; to be run in newspaper locally distributed within meeting area or newspaper with closest local distribution area.

Minimum posted ad coverage: Local Town or City Hall or Office and local Post Office, within town or city where meeting is held, to be posted continually for 1 full week prior to meeting date.

Any deviation from these requirements for any reason must receive prior written approval of the Minister of Environment and Climate Change.