

Appendix C

Tables of Concordance (Cross-Referenced Index with
Final Guidelines, and Terms of Reference)

Table C.1 General Table of Concordance with the Final Guidelines (NBENV 2009)

Requirement of New Brunswick Final Guidelines (NBENV 2009)	Location Where Requirement is Addressed in EIA Report ¹
2.0 METHODOLOGICAL APPROACH TO EIA	
2.1 GENERAL	
The EIA process results in a detailed study of potential environmental impacts and identification of procedures that may be used to avoid, mitigate and/or compensate for identified effects. The EIA study must also identify methods of optimizing positive impacts as well as minimizing negative impacts resulting from the proposed project. Additional options identified during the environmental assessment process may be considered as appropriate.	Not applicable. Context only.
To provide a focus for the EIA, environmental components of principal concern, commonly referred to as Valued Environmental Components (VECs), must be identified early in the assessment process. The method for determining VECs must be clearly stated by the proponent.	Section 4.4.
The proponent will seek public, stakeholder and Aboriginal community knowledge, as appropriate, during the identification of appropriate VECs.	Section 4.3.
The proposed VECs must be publically reviewed prior to acceptance by the TRC in the early phases of the EIA. The EIA must clearly indicate the provisions for compliance with relevant regulatory requirements, guidelines and best management practices.	Carried out as part of the Terms of Reference.
Presented in Section 4.0 of these Guidelines are a number of specific issues related to the project for study, based in part on input received during the public comment period of the Draft EIA Guidelines. However, this framework does not limit the proposed EIA study. Should additional issues arise from discussion with members of the TRC, or consultation with regulatory agencies, members of the public, stakeholders or the Aboriginal community, the proponent must incorporate these issues into the assessment of the project's potential impacts.	Not applicable. Context only.
2.2 STUDY BOUNDARIES AND SCOPE OF FACTORS	
The review must consider the potential environmental effects of the proposed project and all associated infrastructure. The Proponent must clearly describe the boundaries of the study in time (temporal) and space (spatial) used in the evaluation of environmental effects for each of the VEC's.	Chapter 8.
The temporal boundaries of the study (the length of time over which project environmental effects are anticipated to occur) must reflect the construction period, the operating life of the project, and the extent of any potentially significant environmental effects that may remain beyond the operating period, including decommissioning/reclamation, and any potential accidents or malfunctions.	Sections 8.x.1.3 for each VEC.

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Spatial boundaries should reflect: <ul style="list-style-type: none"> the extent to which project activities are anticipated to occur in the existing environment; the extent of anticipated environmental effects, including cumulative environmental effects on the VEC's; and the extent of atmospheric, aquatic, and terrestrial ecosystems potentially affected by the project. 	Sections 8.x.1.4 for each VEC, and 8.16.3.1.
Boundaries such as administrative, technical, biophysical, socio-economic and project area should be defined and related to the impact assessment process as appropriate. In determining appropriate spatial boundaries, consideration should be given to environmental effects from the proposal on a local, regional and national scale as appropriate.	Sections 8.x.1.2 to 8.x.1.5 for each VEC, and 8.16.3.3.
2.3 PREDICTION OF ENVIRONMENTAL EFFECTS	
The main focus of the EIA is to predict environmental effects (<i>i.e.</i> , both positive and negative) that may result from the proposed project and associated infrastructure, and their potential significance. Predictions must consider all aspects and phases (<i>e.g.</i> , construction, operation, and decommissioning) of the proposed project, and any indirect environmental effects, cumulative effects, and any effects that may result from accidents or malfunctions. In addition, potential effects of the environment on the proposed project must be predicted, such as climate change effects, acid rock drainage, or effects that may be caused by extreme weather events (<i>e.g.</i> , intense precipitation events, flooding), etc.	Chapter 8.
EIA predictions are generally based on a combination of objective and subjective evaluation. The use of objective (measurable) analysis is strongly preferred where it is technically feasible and reasonable to do so. However, in recognition of any factor that may limit the ability to predict or measure environmental responses, predictions may be based on subjective evaluation using professional judgment and experience. Community knowledge and Aboriginal traditional knowledge should also be utilized, as applicable. In consideration of this, predictive statements must be accompanied by a discussion of the limitations of the analysis, references to supporting documentation and the qualifying credentials of those making the predictions.	Not applicable. Context only. Measurable parameters are discussed in Sections 8.x.1.2 of each VEC. Limitations (<i>i.e.</i> , technical boundaries) are outlined in Sections 8.x.1.5 for each VEC.
Predictions must be made regarding the nature (adverse or positive), magnitude, duration, frequency, geographic extent and reversibility of the proposed project's potential environmental effects. The significance of these effects must also be determined. These predictions must: <ul style="list-style-type: none"> facilitate decision-making with respect to the proposed project; 	Chapter 8.

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<ul style="list-style-type: none"> clearly specify any degree of uncertainty inherent in the projections; clearly identify positive and negative environmental effects (both biophysical and socio- economic) of the proposed project; and be amenable to testing and verification where possible through ongoing monitoring initiatives. 	
<p>To clearly distinguish potentially significant environmental effects from those likely to be insignificant, the proponent must first define "significant." The definition must be based on scientific determinations, social values, public concerns, and economic judgments, and will be submitted to the TRC for review and approval along with the proposed VECs. In particular, the significance of proposed project-induced changes on VECs must be clearly stated in the EIA Report. The thresholds for significant effects on VECs (<i>i.e.</i>, both positive and negative) must be related in terms of applicable criteria. Quantifiable reference to the magnitude, geographical extent, duration, frequency, reversibility and ecological context of the potential environmental effects is required. Significance must be determined in the context of project-specific and cumulative environmental effects and after taking into account the implementation of appropriate mitigation/optimization measures.</p>	<p>Section 8.x.1.6 of each VEC, and 8.16.4.</p>
<p>Significant effects on species (<i>i.e.</i>, tolerance levels related to organisms in the environment), must take into account effects at the population-level. For species designated as endangered, effects on an individual constitute a population-level effect.</p>	<p>Section 8.x.1.6 of each VEC, and 8.16.4.</p>
<p>2.4 CUMULATIVE ENVIRONMENTAL EFFECTS</p>	
<p>The term cumulative environmental effects refers to those effects, over a defined period of time and distance, resulting or likely to result from the proposed project and associated infrastructure, in combination with other past, present, or likely (imminent) future projects or activities. An assessment of cumulative environmental effects must be conducted as part of the EIA study, in consideration of identified VECs and future projects that may be developed.</p>	<p>Section 8.x.5 for each VEC.</p>
<p>The goal of the cumulative effects assessment will be to place project-related impacts, their significance, and approaches to their management in the context of the "bigger picture," and must include (but is not limited to):</p> <ul style="list-style-type: none"> identification of regional issues of concern; a comprehensive description of how VECs were selected; a clear justification for the spatial and temporal boundaries used to address cumulative effects; a clear description of the analysis undertaken to assess the cumulative effects on the selected VECs (<i>i.e.</i>, both positive and negative), and presentation of the results; a clear description of how mitigation measures address the cumulative environmental impacts; and the rationale for determining whether residual cumulative effects on VECs are significant. 	<p>Section 8.x.5 for each VEC.</p>

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2.5 MITIGATION, CONTINGENCY AND COMPENSATION	
<p>The EIA study must describe general and specific measures that are technically and economically feasible for the proponent to implement, to optimize any positive environmental effects and mitigate any negative effects resulting or potentially resulting from the proposed project and any associated infrastructure (<i>i.e.</i>, maximize positive effects, and eliminate, prevent, avoid or minimize adverse effects).</p> <p>This must include a description of contingency measures (including emergency response plans) that have been designed to address potential accidents and malfunctions that could result in spills or unplanned releases of contaminants or products to the environment. Contingency plans must address worst-case scenarios and reflect a consideration of local conditions and sensitivities.</p> <p>Specific circumstances under which mitigative measures will be implemented must be clearly defined by the proponent including how scenarios would be reported, acted upon, and monitored. Mitigation options must be considered in a hierarchical manner with a clear priority placed on proactive measures for impact avoidance and pollution prevention opportunities. Opportunities to contribute to a regional approach to management of cumulative environmental effects must also be identified (refer to Section 2.4 above).</p>	<p>Section 8.x.4.2 for each VEC, Chapter 10.</p> <p>Chapter 2, Section 8.17, Appendix D, and Appendix G.</p> <p>Section 8.x.4.2 for each VEC, Chapter 10.</p>
<p>At a minimum, mitigative measures for the following for all phases of the project must be addressed:</p> <ul style="list-style-type: none"> • air quality from all sources, including dust control; • water quantity and quality; • blasting operations; • processing effluents and sewage; • wetlands; • archaeological and heritage resources; • flora and fauna; • fish and fish habitat; • emergency releases and events; and • waste rock management and acid rock drainage. 	<p>Section 8.x.4.2 for each VEC, Chapter 10.</p>

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<p>An outline for contingency plans must also be provided:</p> <ul style="list-style-type: none"> • for use in the event of an environmental emergency attributable to the project and associated infrastructure, within the spatial boundaries of the study; and • for use in the event of significant impacts, attributable to the project and associated infrastructure, which are detected through monitoring (this plan must be designed to be implemented should impacts be detected through monitoring). 	Section 2.6.2.
<p>The study must also consider compensation mechanisms to be used in the event that any unforeseen, accidental, or residual environmental effects occur. These compensation mechanisms/plans must be developed through consultation with federal and provincial agencies and other stakeholders, as appropriate.</p>	Section 3.4.1.5.
<p>In addition, the Proponent must include in the study an outline for closure plans to identify site-specific objectives for mine closure and the intended post-closure land-use for the site. Closure plans must detail the processes that will be used to decommission and reclaim all aspects of the mining facility including:</p> <ul style="list-style-type: none"> • mining and ore processing facilities; • site infrastructure; and • water and waste management facilities, including waste rock piles and tailings management facilities. 	Section 3.4.3.
<p>Further, in addition to the requirements under the <i>Mining Act</i>, the study must evaluate the requirement for a financial security deposit to address the implementation of the decommissioning/ abandonment plan (<i>i.e.</i>, to cover any required costs associated with on-going environmental protection measures beyond the operational phase).</p>	Sections 2.6.3 and 3.4.3.6.
2.6 COMMITMENT TO MONITORING AND FOLLOW-UP	
<p>A well-defined program of monitoring and follow-up initiatives regarding environmental effects resulting or potentially resulting from the proposed project must be outlined in the EIA Report. The Proponent must describe all of their proposed monitoring and follow-up programs, including their objectives, content, and implementation and reporting schedules. Monitoring programs will be required to:</p> <ul style="list-style-type: none"> • establish baseline conditions; • determine regulatory compliance (compliance monitoring); • test the predictions of the EIA (environmental effects monitoring, EEM); and • evaluate the effectiveness of measures used to mitigate environmental effects (EEM). 	Section 8.x.7 of each VEC section, and Chapter 9.
<p>Monitoring programs should include protocols that would guide interpretation of monitoring results and timely</p>	

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<p>implementation of appropriate corrective actions. Monitoring initiatives must be based upon accurate baseline information for the existing physical, biological and socio-economic environments. The proponent is expected to collect the necessary information through existing data sources (“data mining”) and through primary research such as fieldwork and laboratory testing, as required.</p> <p>Where the EIA predictions are not based on objective information, monitoring programs must be designed, where possible, to collect relevant data not previously available.</p> <p>Monitoring and follow-up programs must allow for testing of the accuracy of effects predictions and effectiveness of mitigation measures. Programs must support an adaptive management approach and include provisions for changing impact mitigation in response to follow-up and monitoring results. Important components of monitoring programs will include:</p> <ul style="list-style-type: none"> • elements of the environment that will be monitored; • where the monitoring will occur; • frequency and duration of monitoring; • detailed statement of objectives; • submission of results; • protocols for the interpretation of results and subsequent actions to be taken based on findings. 	
2.7 PUBLIC, STAKEHOLDER AND ABORIGINAL COMMUNITY CONSULTATION	
<p>Public consultation is an essential component of the EIA. The Proponent must consult with persons and organizations potentially affected by the proposed project and associated infrastructure, and must inform and engage any interested individuals, groups, stakeholders, local hunters and trappers, recreational users, affected communities, and Aboriginal communities in this assessment. This will include local governments and specific groups with mandates/initiatives in this area. The stakeholder consultation program is to be reviewed and accepted in the early stages of the study (e.g., at the TOR stage). Potential stakeholders identified to date, include:</p> <ul style="list-style-type: none"> • Canadian Rivers Institute; • Nashwaak Watershed Association Inc.; • Maliseet Nation Conservation Council; • New Brunswick Trappers Federation; and 	Section 4.3.

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<ul style="list-style-type: none"> Interested members of the public. 	
<p>This list is to be supplemented as additional stakeholders are identified during the EIA study. The Proponent will be expected to hold appropriate public consultation events and to use various media to engage the public (e.g., bulletins, website, e-mails, study updates, workshops, open-houses, etc). All interested parties will be provided with an opportunity to participate in consultation initiatives in order to provide input in the assessment and/or make their views known. Various stakeholders will be consulted throughout the environmental assessment process, including interested parties from the Aboriginal community; neighbouring residents; general public; non-government organizations and interest groups. The objectives of this consultation must be:</p> <ul style="list-style-type: none"> to ensure that the potentially affected public, stakeholders and Aboriginal community are engaged in meaningful discussion and are well informed prior to the government's decision, as to the nature and extent of environmental effects attributable to the proposed project (<i>i.e.</i>, both positive and negative effects); to ensure that the values and concerns of the public, stakeholders and Aboriginal community are incorporated and adequately addressed in the study; and to obtain expertise (where applicable) from various members of the public, stakeholders and the Aboriginal community. 	Section 4.3.
<p>Stakeholders, including the public and the Aboriginal community must be informed of the status of the study at regular intervals/at key milestones during the study. Consultation must continue through the construction and operation phases of the project (if approved), through specific consultation mechanisms (e.g., Community Liaison Committee, etc.).</p>	Section 4.3.1.
<p>The EIA must document the dates and formats for public and other stakeholder consultation initiatives undertaken, the material presented, the opportunity for receiving input, a summary review of any concerns expressed, and how these concerns were addressed. It must be clear how the input from consultations was used in the assessment and what changes to the process or project were made as a result of comments provided.</p>	Section 4.3.
<p>2.8 TERMS OF REFERENCE (TOR)</p>	
<p>The proponent must submit detailed TOR in response to the Final EIA Guidelines. The TOR must clearly describe the methods proposed for carrying out the EIA, and the means by which the Proponent will consult with the public, stakeholders and Aboriginal community during the course of the EIA process.</p>	Not applicable to EIA Report – see Terms of Reference (Stantec 2012a).

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The Proponent is required to provide, as part of the TOR, a cross-referenced index (Concordance or Disposition Table) showing where the content and issues of the Final EIA Guidelines have been addressed. The TRC will examine the TOR and comments/deficiencies may be provided to the proponent to address prior to finalization. In addition, the TOR must outline the components of any proposed field programs, any anticipated challenges/obstacles to be encountered, proposed modelling approaches, identify key members of the study team, and fully describe all specific tasks to be completed as part of the study.	Not applicable to EIA Report – see Terms of Reference (Stantec 2012a).
The TRC will examine the TOR and comments may be provided to the Proponent for inclusion. In addition, public and stakeholder consultation must be undertaken by the proponent to allow interested parties, the public, stakeholders, and Aboriginal community to provide input to the TOR prior to finalization. The final TOR must be approved by the TRC.	Not applicable to EIA Report – see Terms of Reference (Stantec 2012a).
3.0 CONDUCT OF THE STUDY AND CONTENT OF REPORT	
The EIA Report must be written in the clearest language possible. Where the complexity of the issues addressed requires the use of technical language, a glossary defining technical words and acronyms must be included. The International System of Units (SI) must be used throughout the report and all supporting documents.	Appendix A and Appendix B.
The EIA Report must provide a complete and accurate description of the project from planning through construction, operation, maintenance and decommissioning, supported with appropriate maps and diagrams. Emphasis will be placed on describing those aspects of the project, including accidents and malfunctions that have a reasonable probability of occurrence and that could be expected to affect the environment. An identification of how potential environmental and man-made hazards have influenced the design and operation of the project must also be included.	Chapter 3 and Section 8.17.2.
The following titles may be used as a tentative framework for the development of the EIA Report: <ul style="list-style-type: none"> • Executive Summary; • Definitions/Glossary; • Introduction; • Regulatory Framework; • Scope of the Project; • Public, Stakeholder, and Aboriginal Consultation; • Scope of the Environmental Assessment; • Purpose and Description of the Project; 	See Table of Contents. Suggested headings have been used where they were consistent with Stantec's EIA methodological framework.

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<ul style="list-style-type: none"> • Alternative Means of Carrying Out the Project and their Environmental Effects; • Description of the Existing Environment; • Environmental Effects, including Effects of Malfunctions and Accidents & Cumulative Environmental Effects; • Effects of the Environment on the Project; • The Capacity of Renewable Resources that are Likely to be Significantly Affected by the Project (<i>i.e.</i>, the sustainability of the project); • Mitigation Measures; • Environmental Management Planning, Monitoring, and Follow-up; • Closure, Decommissioning and Reclamation; • Significance of Residual Effects; • Conclusion/Recommendation; and • References. 	
3.1 PROJECT DESCRIPTION – SCOPE OF PROJECT	
<p>The scope of the project will include the construction, operation, and decommissioning of an open pit mine and all associated infrastructure supported with appropriate maps and diagrams. Emphasis will be placed on describing those aspects of the project (including accidents and malfunctions) with a reasonable probability of occurrence that could be expected to affect the environment.</p>	Chapter 3 and Section 8.17.
<p>The project to be assessed and its description in the EIA Report must include:</p>	
<ul style="list-style-type: none"> • description of site preparation; 	Section 3.4.1.1.
<ul style="list-style-type: none"> • project schedule; 	Section 3.1.4.
<ul style="list-style-type: none"> • detailed description of the project area and boundaries; 	Section 3.1.2.
<ul style="list-style-type: none"> • the location, size, layout, capacity, boundaries of the open pit mine and all associated facilities and infrastructure (<i>e.g.</i>, ancillary facilities including tailings management and treatment, waste rock pile, water control structures, office buildings and assay lab, freshwater systems, wastewater systems, etc. Rights of Way (ROWs) for electrical distribution lines, rail spur, and access roads); 	Section 3.2.
<ul style="list-style-type: none"> • description of the ores to be mined; 	Section 3.1.3.
<ul style="list-style-type: none"> • hours of operation and blasting schedule; 	Section 3.2.2.2.

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<ul style="list-style-type: none"> freshwater requirements and proposed systems; 	Sections 3.2.4.2 and 3.2.5.4.
<ul style="list-style-type: none"> wastewater systems and discharge locations, volume, flow, quality, recycling, re-use; 	Section 3.2.4.
<ul style="list-style-type: none"> the regulatory standards to which the components of this project will be built and operated; 	Section 2.6.1 and Section 4.1.
<ul style="list-style-type: none"> the construction methodology and design description for the open pit, waste rock pile and tailings management etc; 	Sections 3.2 and 3.4.1.
<ul style="list-style-type: none"> storage and handling facilities; 	Section 3.2.3.
<ul style="list-style-type: none"> secondary containment systems; 	Section 3.2.
<ul style="list-style-type: none"> a detailed description of emissions and wastes for all phases of the project; 	Sections 3.4.1.6, 3.4.2.5, and 3.4.3.3.
<ul style="list-style-type: none"> upsets of environmental control equipment which may change the nature of emissions and/or effluent; 	Section 8.17.2.2.
<ul style="list-style-type: none"> hazardous materials management (e.g., transportation, handling and storage systems of any hazardous materials, additives and by-products used/generated in the project; 	Section 3.4.
<ul style="list-style-type: none"> chemical storage facilities including estimated concentrations, quantities, list and MSDS of chemicals to be stored on site; 	Section 3.2.
<ul style="list-style-type: none"> quantities, handling and storage of explosives, etc.); 	Section 3.4.2.1.
<ul style="list-style-type: none"> site access and security; 	Sections 3.2.5.3, 3.4.2.1, and 3.4.3.7.
<ul style="list-style-type: none"> transportation of ore – road and/or rail; 	Section 3.4.2.6.
<ul style="list-style-type: none"> handling and storage of ore; 	Sections 3.2.2, 3.2.3, and 3.4.2.2.
<ul style="list-style-type: none"> waste rock and tailings chemistry and toxicity; 	Sections 3.2.4.2 and 3.4.2.3.
<ul style="list-style-type: none"> mineral/ore processing details; 	Sections 3.2.3 and 3.4.2.2.
<ul style="list-style-type: none"> watercourse alterations including bridges, culverts, stream diversions, and dewatering; 	Section 3.4.1.2.
<ul style="list-style-type: none"> the impact of project related traffic on road infrastructure and the transportation network; 	Section 3.4.2.6.
<ul style="list-style-type: none"> road networks used for transportation on-site and off-site for all phases of the project; 	Section 3.2.5.3.

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<ul style="list-style-type: none"> increase in traffic; 	Sections 3.4.2.6, 3.4.3.4, and 3.4.1.7.
<ul style="list-style-type: none"> effluent treatment systems including process tailings and water, storm water, sewage, seepage and surface runoff; 	Section 3.2.4.
<ul style="list-style-type: none"> detailed descriptions of all health and safety, and environmental protection measures including contingency plans and emergency response plans -fire prevention and control equipment; and 	Appendix D.
<ul style="list-style-type: none"> reclamation plan for the site, including site rehabilitation measures to be taken post operations. 	Section 3.4.3.
3.2 PROJECT RATIONALE	
The purpose and need of the project must be clearly identified. The report must provide clear justification for the project in order to allow for an evaluation of the relative environmental effects of the proposed development.	Sections 2.3 and 2.4.
3.3 IDENTIFICATION AND ANALYSIS OF ALTERNATIVES	
Using the approach indicated below, the study should evaluate alternatives to the project as proposed that are technically and economically feasible and alternative means of carrying out the project. This analysis will contribute to a further understanding of the project rationale and will facilitate decision-making with respect to its acceptability. <ol style="list-style-type: none"> The null or "do nothing" alternative (not constructing and operating the mine) must be discussed. The study must examine the implications of not proceeding with the project with reference to environmental (both biophysical and socio-economic) factors/effects. The analysis must include alternative means of construction, operation, and decommissioning of the project that are technically and economically feasible, the selection criteria, and the environmental effects of such alternative means. For example, alternate means of tailings management must be discussed (e.g., both wet and dry management methods). Additional information on alternatives which may have been considered and rejected should be provided. 	Section 3.3.
3.4 DESCRIPTION OF THE EXISTING ENVIRONMENT	
The EIA Report must describe the existing environment focusing on identified VECs within the study boundaries. This description must reflect the dynamics of environmental components (biophysical, social, and economic), and identify trends in the context of predicted changes over time.	Chapter 6 and Section 8.x.2 of each VEC.
A description of the existing environment in the study area should consider, but not be limited to, the following:	
<ul style="list-style-type: none"> atmospheric environmental components, including climatic and ambient air quality data; 	Sections 6.3.2 and 8.2.2.

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Table C.1 General Table of Concordance with the Final Guidelines (NBENV 2009)

Requirement of New Brunswick Final Guidelines (NBENV 2009)	Location Where Requirement is Addressed in EIA Report ¹
<ul style="list-style-type: none"> terrestrial environmental components, including topography, watershed hydrology and hydrogeology, surface and groundwater resources; 	Sections 6.3.1, 6.3.3, 6.3.5, 8.4.2, 8.6.2, and 8.7.2.
<ul style="list-style-type: none"> the local geology and mineralogy; depth to water table and groundwater flow direction(s) for the site; recharge and discharge zones; aquifer characteristics, such as hydraulic conductivity, transmissivity, storativity, boundary conditions, location of bedrock fractures (especially in area of open pit); 	Sections 3.1.3.2, 6.3.1, 6.3.3, and 8.4.2.
<ul style="list-style-type: none"> average groundwater flow rates; type, thickness and continuity of surficial overburden and any confining or impervious layers in the area; 	Sections 6.3.3.3 and 8.4.2.
<ul style="list-style-type: none"> potential for Acid Rock Drainage (ARD), metal leaching, and mobilization of other contaminants should be discussed in relation to the geology and mineralogy of the site; 	Section 7.5.
<ul style="list-style-type: none"> terrestrial biological environmental components, including species at risk and their habitats (flora and fauna), ecologically sensitive or significant areas, and protected areas/critical habitat features. Migratory bird descriptions must include when each species is likely to be present in the study area and areas typically used for nesting, foraging, and/or staging; 	Sections 6.3.5, 8.6.2, and 8.7.2.
<ul style="list-style-type: none"> wetlands – identification of wetland resources including location, size and functional assessment; 	Sections 6.3.5.3 and 8.8.2.
<ul style="list-style-type: none"> migratory routes for both birds and mammals; 	Sections 6.3.5.4 and 8.6.2.
<ul style="list-style-type: none"> aquatic biological environmental components including fish, fish habitat, fishery resources, benthic environment and species, species at risk and their habitats, species migratory patterns; 	Sections 6.3.4.3 and 8.5.2.
<ul style="list-style-type: none"> ecologically sensitive or significant areas, and protected areas/critical habitat features; 	Sections 6.3.5.5 and 8.8.2.
<ul style="list-style-type: none"> any commercial, recreational, or Aboriginal fisheries; 	Sections 6.3.4.4, 8.5.2, and 8.12.2
<ul style="list-style-type: none"> aquatic physical environmental components including bathymetric/geomorphologic, hydrodynamic, water quality, sediment and ice regime; 	Sections 6.3.3.1, 6.3.3.2, 6.3.4.1, and 8.5.2.
<ul style="list-style-type: none"> the Provisional Classification of the Nashwaak watershed; 	Sections 6.3.3.1 and 8.5.2.
<ul style="list-style-type: none"> Navigable waters; 	Section 6.3.3.
<ul style="list-style-type: none"> ambient surface and ground water quality/quantity conditions (baseline assessment) prior to construction; 	Sections 6.3.3.2, 6.3.3.3, and 8.4.2.

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<ul style="list-style-type: none"> socio-economic environmental components, including demographic data (e.g., population and labour force), local economy, local services, past, current and foreseeable land use (including agriculture), zoning restrictions, the seasonal variations of fishing activities, archaeological and heritage resources, transportation and associated infrastructure. 	Sections 6.4, 8.10.2, 8.12.2, 8.14.2, and 8.15.2.
<ul style="list-style-type: none"> with specific reference to fisheries, the description must include a socio-economic profile of each identified fishery; 	Sections 6.4.1.3, 6.4.4.4 and 8.5.2.
<ul style="list-style-type: none"> the potential for encountering contaminated soils/materials (including mobilization of naturally occurring contaminants), with attention paid to metals known to be elevated such as arsenic and lead that may be mobilized as the pit is accessed; 	Section 6.3.1.2.
<ul style="list-style-type: none"> localized seismic activity; 	Section 6.3.1.3.
<ul style="list-style-type: none"> local road networks; 	Sections 6.4.7.1 and 8.15.2.
<ul style="list-style-type: none"> existing public health and safety concerns; 	Section 8.9.2.
<ul style="list-style-type: none"> ambient noise levels; 	Sections 6.3.2.3 and 8.3.2.
<ul style="list-style-type: none"> transportation (traffic volumes and types of vehicles); and 	Sections 3.4.1.7, 3.4.2.6, 3.4.3.4, 6.4.7.1, and 8.15.2.
<ul style="list-style-type: none"> current use of land and resources for traditional purposes by Aboriginal persons. 	Section 8.13.2.
In developing the description of the existing environmental setting, field investigations will be required to address information deficiencies and facilitate the assessment.	Throughout Chapters 6, 7, and 8.
The above must also be characterized for all corridors related to infrastructure associated with this proposal including wastewater treatment, freshwater sources, railway spur, electrical, etc.	Throughout Chapters 6, 7, and 8.
3.5 CROSS-REFERENCED INDEX	
To assist the readers, a cross-referenced index (<i>i.e.</i> , Concordance or Disposition Table), which shows where the content and issues outlined in the Final EIA Guidelines are addressed in the report, is required. This index must be submitted with the Draft EIA Report.	Appendix C (<i>i.e.</i> , this table).

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Table C.1 General Table of Concordance with the Final Guidelines (NBENV 2009)

Requirement of New Brunswick Final Guidelines (NBENV 2009)	Location Where Requirement is Addressed in EIA Report ¹
4.0 POTENTIAL ENVIRONMENTAL EFFECTS	
Presented here are a number of specific issues for study. However, this framework does not limit the assessment. Should additional relevant issues, concerns, or potentially significant environmental effects be identified through discussion with members of the TRC, regulatory agencies, the public, stakeholders or the Aboriginal community, The Proponent must incorporate these issues into the assessment. The assessment must include consideration of, but not be limited to, the appropriate regulations and guidelines.	Chapter 4.
The capacity of renewable resources that are likely to be significantly affected by the project (either positively or negatively) to meet the needs of the present and those of the future should also be considered.	Not applicable, as no significant residual adverse environmental effects that are likely to occur have been predicted in the EIA.
Baseline conditions for each VEC must be established and proposed assessment methods described. All potential project-related environmental effects (<i>i.e.</i> , both positive and negative) resulting from the proposed construction and operation of the mine and all associated infrastructure (including potential effects resulting from accidents or malfunctions), must be included in the assessment. Cumulative environmental effects are to be considered individually for each identified VEC. The nature, spatial extent, frequency, duration, magnitude (qualitative and quantitative), and significance of each, should be described. Mitigation measures, monitoring and follow-up must be proposed.	Chapters 5, 6 and 8 in their entirety.
4.1 EFFECTS ON ATMOSPHERIC ENVIRONMENT	
Assess the environmental effects of the construction, operational/maintenance and decommissioning phases of the project on the atmospheric environment, including air quality, sound quality, odour and climate. Any substantive emissions will first need to be quantified. This will be done on a local and regional basis. This will include an analysis of routine air emissions including sources from ore crushing, screening, stockpiles, vehicles, road surfaces, and upset conditions, including accidents and malfunctions. The effects of transportation-related emissions will be considered, including impacts on air quality and human health (<i>e.g.</i> , emissions resulting from any change in traffic patterns, etc.). Transportation related emissions would include emissions from construction equipment, additional traffic associated with the facility, etc.	Section 8.2.
Potential impacts to climate change must be included.	Section 8.2.4.
An assessment of noise impact on humans and wildlife must be included.	Sections 8.3, 8.6.3, and 8.6.5.
Provide details on how emissions will be controlled and mitigated at each emissions source and briefly discuss why the proposed technology was selected over other potential methods of control.	Section 8.2.4.3.

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Requirement of New Brunswick Final Guidelines (NBENV 2009)	Location Where Requirement is Addressed in EIA Report ¹
A discussion of the climatology of the area will be provided including both micro and macro climatological effects.	Sections 6.3.2 and 8.2.2.1.
4.2 EFFECTS ON FRESHWATER RESOURCES (GROUNDWATER AND SURFACE WATER)	
Assess the potential environmental effects of the construction, operational/maintenance and decommissioning phases on groundwater and surface water resources. Water conservation through innovative technologies including recycling and using treated wastewater will need to be fully explored and evaluated as part of this assessment.	Section 8.4.4.
A detailed water budget for the project that incorporates quantity and quality of water required for all components for each phase of the project (including domestic needs and fire protection) under a range of climatic conditions must be provided.	Section 7.6.
A Water Supply Source Assessment must be undertaken if the volume of water to be used is greater than 50 m ³ per day, including water for fire protection. The potential for interference with domestic wells and surface water supplies must be examined and assessed.	Section 8.4.4.
Potential project-related changes to groundwater flow regime, water balance and alterations to groundwater recharge and discharge areas must also be included. Potential changes to aquifer characteristics, such as hydraulic conductivity and storage, through blasting and open pit mining must also be evaluated.	Section 8.4.4.
In addition, any potential impacts to local groundwater users (water quantity and quality issues) due to construction and operation of the mine and associated infrastructure will need to be discussed.	Section 8.4.4.
The study will include characterization of the disposal area for tailings, and the hydraulic conductivity at the base of the pit and the potential to impact groundwater and surrounding watersheds.	Section 8.4.4.
A discussion of the environmental effects on freshwater quantity and quality is required for all watercourses within the project footprint and within the zone of influence of the project.	Section 8.4.4.
4.3 EFFECTS ON THE FRESHWATER/AQUATIC ENVIRONMENT	
Assess the environmental effects of the proposed project on the freshwater environment, including (but not limited to) water quality, fish and fish habitat, and benthic environment within the environmental assessment boundaries (including the corridors required for any associated infrastructure). A number of watercourses will potentially be impacted by this project (mine and associated infrastructure) and will need to be assessed. Predict the environmental effect of any potential deterioration/improvement in water quality and quantity on the freshwater environment.	Section 8.5.

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Table C.1 General Table of Concordance with the Final Guidelines (NBENV 2009)

Requirement of New Brunswick Final Guidelines (NBENV 2009)	Location Where Requirement is Addressed in EIA Report ¹
Discuss in detail the mineralogy of the deposit, tailings and waste rock and potential changes in the composition of the deposit, tailings and waste rock as different areas are mined over time. Include a discussion of the processing of the ore and the chemicals used and the potential degradation or persistence of the chemicals in the environment and any chemical by-products that may be produced. Evaluate the geochemical reactivity of the tailings and waste rock and any potential changes in reactivity over time, in different conditions and with different seasons (temperatures, precipitation). The impacts of blasting and waste rock storage to water quality should be discussed.	Sections 3.1.3.2 and 7.5.
Characterization of the tailings management area must also include details on the specific infrastructure required, collection and treatment of seepage water, discussion on the effects of climate and time on stability of tailings infrastructure and the maintenance and monitoring required.	Sections 3.2.4, 8.16.6, and 8.5.7.
Discuss the chemistry and reactivity of the pit water, along with storage, treatment and disposal of the pit water.	Sections 3.2.4 and 7.5.
Discuss in detail all wastewater treatment and disposal options (domestic waste, pit water, tailings and waste rock water, surface runoff, etc.), as well as any chemicals of concern that cannot be removed by water treatment, treatment by-products and effluent quality.	Sections 3.2.4, 7.5, 7.6, 8.4.4, and 8.5.4.
Describe the procedures for the development and the anticipated components of an environmental protection/emergency response plan as they relate to the freshwater environment, including spill prevention and spill response contingency planning.	Section 8.5.7.
In addition, the following will need to be discussed: <ul style="list-style-type: none"> • potential for accidental releases of chemicals and petroleum products that could impact surface water/groundwater environment; • production of mine water and tailings; treatment and release and impacts to surface water/groundwater; and • expected loadings on the environment. 	Sections 8.17.3, 8.4.4, and 8.5.4.
4.4 EFFECTS ON THE TERRESTRIAL ENVIRONMENT	
Assess the potential environmental effects of construction, operation/maintenance and decommissioning of the project and associated infrastructure on terrestrial environments, including all plant and animal species and their habitat. Key issues that will need to be evaluated as part of this assessment are existing vegetation, terrestrial country foods, terrestrial wildlife (e.g., the pine marten and Canada lynx), and wildlife habitat. Since this project could affect a large area, this will require extensive field surveys and review.	Sections 8.6.4, and 8.7.4.

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Requirement of New Brunswick Final Guidelines (NBENV 2009)	Location Where Requirement is Addressed in EIA Report ¹
The effects of the project (direct and indirect) and associated infrastructure on migratory birds and migratory bird habitat will also need to be evaluated. This would include any works that are likely to impact avian movement and/or migration routes, or any structure or infrastructure that may impact migratory species.	Section 8.6.4.
Assess the environmental effects of the project and associated infrastructure on species (flora and fauna) considered to be at risk under national, provincial and regional classification systems (<i>i.e.</i> , endangered, threatened, species of special conservation status, and rare species) including species listed under the NB <i>Endangered Species Act</i> as well as the federal <i>Species at Risk Act (SARA)</i> . Include consideration of any species at risk known to occur within the zones of influence of the proposed project and for which there are potential project-VEC interactions anticipated that could result in significant environmental effects.	Sections 8.6.4 and 8.7.4.
The following information sources on species at risk in the general project area (and corridors for any associated infrastructure) must be consulted: <ul style="list-style-type: none"> • Atlantic Canada Conservation Data Centre (AC CDC); • SARA Species List (SARA Public Registry); • COSEWIC List (latest version on the website); • New Brunswick Museum; • NB <i>Endangered Species Act</i>; • Canadian Wildlife Service (CWS); and • Local naturalist and interest groups such as the Fredericton Nature Club, the NB Nature Federation, the NB Botany Club, the Canadian Rivers Institute, etc. 	Section 8.6.2 and 8.7.2.
Site-specific information must be obtained from field investigations carried out by the appropriate specialists.	Section 8.6.2 and 8.7.2.
4.5 EFFECTS ON THE WETLAND ENVIRONMENT	
An assessment of all wetlands within the study area, including any impacts associated with infrastructure related to the project, must be undertaken. The approach described in the Federal Policy on Wetland Conservation (EC, 1991) and the New Brunswick Wetlands Conservation Policy (2002) and draft NBDNR Wetland Mitigation Guidelines for New Brunswick (2003) must be followed.	Section 8.8.
4.6 EFFECTS ON LABOUR AND ECONOMY (AND OTHER SOCIO-ECONOMIC EFFECTS)	
Predict the benefits of the project on labour and economy within the area surrounding the mine and the Province of New Brunswick. Assess the direct and indirect creation of employment in the area associated with the construction and operation of this facility. The availability and potential use of skilled and unskilled workers in the local area to	Section 8.10.

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Requirement of New Brunswick Final Guidelines (NBENV 2009)	Location Where Requirement is Addressed in EIA Report ¹
meet the job requirements should be outlined, along with predictions for the increase in the population of the surrounding area as vacant jobs are filled.	
The effect on existing tourism and recreational activities must be included.	Section 8.12.4.
The effect on local property values must be considered.	Section 8.12.4.
The effect on industries, including the recreational, commercial and Aboriginal fishing industries must be included.	Section 8.12.4.
Discuss any aesthetic/potential visual impacts of the proposed project and how these could impact the local or regional economy.	Section 8.12.4.
The estimated total reserves and value in present day Canadian dollars and the planned annual extraction rates must be reported.	Sections 3.1, and 3.4.2.1.
A study on socioeconomic impacts of the life cycle of the mine on surrounding communities must be carried out by a qualified individual, including the impacts of mine closure, unexpected or otherwise, citing examples of other mining projects where appropriate. The possible impacts on stakeholders including Aboriginal communities, residents within the project area, neighbouring communities, along haul roads, recreational businesses and recreational groups, hunters, trappers, guides, outfitters, etc. must also be included.	Sections 8.10, 8.11, 8.12, and 8.13.
4.7 EFFECTS ON COMMUNITY SERVICES AND INFRASTRUCTURE	
An assessment of the community services and infrastructure will be required in order to evaluate the potential impacts from the large number of workers associated with the construction and operation of this facility both on a temporary and permanent basis. Community services and infrastructure includes: local emergency response, ongoing support services (health and social services), accommodation, food services, and entertainment.	Section 8.11.4.
Any additional demand on local emergency response services and ongoing support services will need to be assessed. These services may be affected by the occurrence of an accidental event, or by the routine presence of workers associated with either construction or operation. There may also be impacts to local accommodations as a result of temporary and permanent workers required for this project.	Section 8.11.4.
Any increased demands on the above community services and infrastructure, (as large numbers of temporary workers in an area could create unique concerns during the construction phase) will need to be assessed. Such a situation may result in increased need for policing and social services in certain areas.	Section 8.11.4.

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4.8 EFFECTS ON PRIVATE/PUBLIC LAND AND RESOURCE USE	
Assess the effects of the project and associated infrastructure on the current use of lands (including Crown land) and resources by the public and private sectors.	Section 8.12.4.
Describe the impacts the project would have on access to the lands surrounding or within the project site.	Section 8.12.4.
Evaluate the environmental and socio-economic effects of the project on land use in the immediate vicinity of the project (<i>i.e.</i> , within the defined environmental assessment boundaries of the project).	Section 8.12.4.
Assess any potential impacts of the project on other areas that could be affected by the project and associated infrastructure.	Section 8.12.4.
4.9 EFFECTS ON THE CURRENT USE OF LAND AND RESOURCES FOR TRADITIONAL PURPOSES BY ABORIGINAL PERSONS	
Assess the effects of all aspects of the project (including any associated infrastructure) on the current use of lands and resources for traditional purposes by Aboriginal persons. This includes traditional hunting, fishing, snowshoeing, and gathering of food or medicine by Aboriginal communities.	Section 8.13.4.
4.10 EFFECTS ON HERITAGE AND ARCHAEOLOGICAL RESOURCES	
An assessment of heritage and archaeological resources will be required for the mine site as well as for any required infrastructure.	Section 8.14.4.
The effect of the proposed project on physical and cultural heritage, and any structure, site or thing that is of historical, archaeological, paleontological or architectural significance must also be included.	Sections 8.13.4 and 8.14.4.
4.11 EFFECTS ON LAND-BASED TRANSPORTATION/ROAD INFRASTRUCTURE	
Assess the environmental effects of the proposed project on traffic patterns/flows, including a prediction with respect to current/future road infrastructure and use with reference to safety and the integrity of infrastructure on traffic flows, level of service, and accident rates. Predict the impacts of increased ground transportation in the region and specifically traffic to and from the proposed mine site with reference to noise, safety, risks of spills and air quality. The study should consider localized impacts that may occur from fossil fuel combustion as a result of increased traffic.	Section 8.15.4.
During the construction phase of the project there would be substantial land-based activity that will require the movement of equipment, material and personnel to and from the project site. There may be concern regarding the condition, allowable weights and dimensions of the existing road infrastructure. These potential effects will need to be evaluated.	Section 8.15.4.

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Any effects associated with project-related traffic during the operation phase will also need to be assessed, as project related traffic will continue in the form of personnel transportation and truck traffic carrying supplies, materials and products.	Section 8.15.4.
A transportation plan outlining site access routes, description of loads and frequency of trips must be provided.	Sections 3.2.5.3, 3.4.1.7, 3.4.2.6, and 3.4.3.4.
It is anticipated that some processed products may be shipped via rail. A new rail spur would be needed to allow for this. If a rail spur is to be constructed, an assessment of the routing will need to be undertaken. An additional concern is the potential environmental effects on road traffic, either resulting in greater congestion or higher collision rates, associated with any at grade crossings. In addition, an assessment of the emergency routes that may be impacted as a result of the rail spur will need to be undertaken.	Section 8.15, as applicable (no new rail spur).
4.12 EFFECTS OF THE ENVIRONMENT ON THE PROJECT	
Sensitivity of the proposed project to variations in meteorological conditions, including extreme events, must be investigated. Among the parameters to be considered are the effect of extreme precipitation events on site water management and the influence of wind and ice on mine operations (including any associated infrastructure). In addition, the sensitivity of the proposed project to climate variability and climate change must be identified and discussed. Not only will the assessment look at the current climatic setting in the area, but must also include a consideration of the potential future climatic conditions due to climate changes in the foreseeable and long-term future (e.g., global warming over a 50 and 100 year period).	Sections 6.3.2.1 and 8.16.6.
The assessment must take into account how the existing environment/natural and man-made hazards could adversely affect the project (e.g., acid rock drainage, severe meteorological conditions, seismic events, etc.).	Sections 6.3.1.4 and 8.16.6.
4.13 EFFECTS ON PUBLIC HEALTH AND SAFETY	
Public health will need to be assessed both in light of long term (chronic) conditions as well as short term (acute) conditions. Public health can be affected by effluents and emissions and environmental effects on air quality, drinking water quality and food, among other factors.	Sections 7.7 and 8.9.
An assessment of the potential for environmental effects on public health must be carried out by conducting a Human Health and Ecological Risk Assessment (HHERA). The HHERA will consider the potential risks of adverse environmental effects of all project-related effluents, emissions and waste products during all phases of the project. Cumulative environmental effects will need to be considered as part of the HHERA.	Section 7.7.

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¹ "VEC sections" are sections 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 8.10, 8.11, 8.12, 8.13, 8.14, and 8.15. Where a section is identified as "Section 8.x.1.2", for example, the "x" is replaced by the sub-section numbers 2 through 15 for each VEC (e.g., 8.2.1.2 for Atmospheric Environment, 8.3.1.2 for Acoustic Environment, etc.).

Table C.1 General Table of Concordance with the Final Guidelines (NBENV 2009)

Requirement of New Brunswick Final Guidelines (NBENV 2009)	Location Where Requirement is Addressed in EIA Report ¹
The potential effects of the project on the health and safety of employees, their families, local communities, Aboriginal communities and wildlife must be assessed and identified. Mitigation measures for any possible impacts must be described.	Section 8.9.4.
Provide a description of the source, quantity, mechanism, rate, form and characteristics of contaminants and other sources likely to be released to the environment (<i>i.e.</i> , in the context of worker exposure during normal operation, a postulated malfunction and accident event).	Sections 3.4 and 7.7.
Potential effects to public safety will be considered as they relate to accidents, spills, collisions, vehicle accidents, etc. Identify sources and characteristics of any potential risks to workers during construction and subsequent operation.	Section 8.17.
Describe the specific, important malfunction/accidental events that have a reasonable probability of occurring during the operational life of the project.	Section 8.17.2.
Describe the procedures for the development and the anticipated components of an environmental protection/emergency response plan for construction, commissioning, operation and decommissioning, including spill prevention, and spill response contingency planning.	Section 2.6.
Describe the key components relevant to safety during the construction activity and details regarding security considerations with respect to the site and associated infrastructure.	Sections 3.2.5, and 8.9.
Potential impacts from metal contamination resulting from dust or airborne particulate matter (including metals such as lead and arsenic) must be investigated for significant on and off site impacts using dispersion modelling if necessary. Impacts to humans and wildlife must be considered.	Sections 7.1, 7.7, 8.5.4.3.2.2, 8.6.4, and 8.9.4.

Notes:

Although the NBENV Final Guidelines were written with Geodex as the Proponent, Sisson Mines Ltd. is now carrying out the Project.

¹ "VEC sections" are sections 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 8.10, 8.11, 8.12, 8.13, 8.14, and 8.15. Where a section is identified as "Section 8.x.1.2", for example, the "x" is replaced by the sub-section numbers 2 through 15 for each VEC (e.g., 8.2.1.2 for Atmospheric Environment, 8.3.1.2 for Acoustic Environment, etc.).

Notes:

Although the NBENV Final Guidelines were written with Geodex as the Proponent, Sisson Mines Ltd. is now carrying out the Project.

¹ "VEC sections" are sections 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 8.10, 8.11, 8.12, 8.13, 8.14, and 8.15. Where a section is identified as "Section 8.x.1.2", for example, the "x" is replaced by the sub-section numbers 2 through 15 for each VEC (e.g., 8.2.1.2 for Atmospheric Environment, 8.3.1.2 for Acoustic Environment, etc.).

Table C.2 contains only those portions of the Terms of Reference that specifically describe requirements for the EIA. Portions of the Terms of Reference that do not specifically address EIA requirements have not been included in Table C.2.

Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
2.0 SCOPE OF THE ENVIRONMENTAL ASSESSMENT, AND ENVIRONMENTAL ASSESSMENT METHODS	
The scope of the EIA as determined by the NBENV Final Guidelines, and the scope of assessment for the EA under CEAA, are described in this section. In addition, the methods that will be used to conduct the EIA of the Project are described. The EIA Report will include a Table of Concordance that cross-references the information presented in the EIA Report (including appendices and reference material) with the information requirements identified in the Terms of Reference. A second Table of Concordance, which cross-references the information presented in the EIA Report with the NBENV Final Guidelines, will also be included.	Appendix C.
2.2.1 SCOPE OF THE PROJECT	
The EIA Report will include a description of the explosives manufacturing facility and explosives magazines, as appropriate. The specified location of the various components of the facilities, with distances to vulnerable features including but not limited to dwellings, roads, camps, railways, and bodies of water, will be identified. It will be demonstrated that safety distances required by the Explosives Regulatory Division of Natural Resources Canada (NRCan) have been considered and met. Infrastructures for manufacturing or storing explosives will be identified, including but not limited to: explosives and magazines; fuel storage; ammonium nitrate storage; maintenance / wash area; process vehicles and their parking area; offices; warehouses; and buildings. Additional information provided will include: explosives at each facility, and fuel and ammonium nitrate storage plans. Storage of ammonium nitrate is to be in conformance with Explosives Regulatory Division guidelines. Liquid effluent disposal plans, evaluation of worst case scenario (<i>i.e.</i> , accidental explosion), spill contingency plans, and details on any temporary explosive facilities to be used during the Project start-up will be provided, giving the same information requirements above.	Sections 3.2.2.2, 3.2.5.1, 3.4.2.1, and 8.17.2.
2.2.1.1 ENVIRONMENTAL MANAGEMENT SYSTEM	
The EIA Report will describe a proposed Environmental Management System (EMS), and suite of Environmental Management Plans (EMPs), for the Project during all applicable phases. The EIA Report will include a commitment by the Proponent to implement the EMS and EMPs should the Project proceed. The EMPs will take into consideration input from Aboriginal groups, the public and other stakeholders and their finalization will occur through consultation with federal and provincial government agencies.	Section 2.6 and Appendix D.

Notes:

Although the NBENV Final Guidelines were written with Geodex as the Proponent, Sisson Mines Ltd. is now carrying out the Project.

¹ "VEC sections" are sections 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 8.10, 8.11, 8.12, 8.13, 8.14, and 8.15. Where a section is identified as "Section 8.x.1.2", for example, the "x" is replaced by the sub-section numbers 2 through 15 for each VEC (e.g., 8.2.1.2 for Atmospheric Environment, 8.3.1.2 for Acoustic Environment, etc.).

Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
2.2.1.2 DECOMMISSIONING AND RECLAMATION PLAN	
The EIA will provide a preliminary outline of a draft decommissioning, reclamation and closure plan for the Project. This will include ownership, transfer and control of the different Project components as well as the responsibility for monitoring and maintaining the integrity of any remaining structures or components of the Project that could result in future environmental effects. For permanent facilities, a conceptual discussion of how decommissioning might be carried out will be provided.	Section 3.4.3.
2.2.2.1 PROVINCIAL ENVIRONMENTAL IMPACT ASSESSMENT	
The factors to be considered in the EIA, as detailed in the NBENV Final Guidelines, include potential environmental effects of the Project on several VECs during all phases of the Project, including potential accidents, malfunctions, and unplanned events. These VECs are encompassed in the scope of factors to be considered in the EIA described in Chapter 4 of this TOR. General and specific mitigation, contingency and compensation measures that are technically and economically feasible will be described, as applicable and appropriate to avoid or minimize potentially significant adverse environmental effects. A follow-up program will be described in the EIA Report to verify the predictions of the EIA and/or the effectiveness of mitigation.	Chapters 8, 9, and 10.
The EIA Report will describe existing conditions for each applicable VEC in detail. This will assist in the assessment of Project-related environmental effects as well as the assessment of cumulative environmental effects of the Project.	Chapter 6 and Section 8.x.2 for each VEC.
The selection of other past, present and future projects that have been or will be carried out will be conducted in conjunction with the provincial TRC and the federal RAs.	Section 4.5.
An essential component of the EIA will be the implementation of an extensive consultation and engagement program to meet the requirements of the NBENV Final Guidelines. The planned program to be implemented as part of the EIA to meet the requirements of the NBENV Final Guidelines is described in Chapter 3 of this TOR.	Chapter 4.
2.2.2.2 FEDERAL ENVIRONMENTAL ASSESSMENT	
All environmental assessments conducted under CEAA require specific factors to be considered. Sections 16(1)(a) to 16(1)(d) of CEAA detail the mandatory factors to be considered within the scope of an EA conducted under CEAA, as follows: <ul style="list-style-type: none"> (a) <i>“the environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out;</i> (b) <i>the significance of the effects referred to in paragraph (a);</i> 	Chapter 8 in its entirety.

Notes:

Although the NBENV Final Guidelines were written with Geodex as the Proponent, Sisson Mines Ltd. is now carrying out the Project.

¹ “VEC sections” are sections 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 8.10, 8.11, 8.12, 8.13, 8.14, and 8.15. Where a section is identified as “Section 8.x.1.2”, for example, the “x” is replaced by the sub-section numbers 2 through 15 for each VEC (e.g., 8.2.1.2 for Atmospheric Environment, 8.3.1.2 for Acoustic Environment, etc.).

Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
<p>(c) <i>comments from the public that are received in accordance with this Act and the regulations;</i> (d) <i>measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project.</i>"</p>	<p>Section 8.x.6 of each VEC. Section 4.3. Chapter 10 and Section 8.x.4.2 for each VEC.</p>
<p>In addition, Section 16(1)(e) of <i>CEAA</i> establishes that additional factors can be considered if determined to be relevant by the federal RAs: (e) <i>"any other matter relevant to the screening, comprehensive study, mediation or assessment by a review panel, such as the need for the project and alternatives to the project, that the responsible authority or, except in the case of a screening, the Minister after consulting with the responsible authority, may require to be considered."</i></p>	<p>Context only.</p>
<p>As an additional factor to be considered under Section 16(1)(e) of <i>CEAA</i>, the EIA will consider the need for and alternatives to the Project, in accordance with the CEA Agency's Operational Policy Statement entitled "Addressing "Need for", "Purpose of", "Alternatives to" and "Alternative Means" under the <i>Canadian Environmental Assessment Act</i>" (CEA Agency 2007a).</p>	<p>Sections 2.3, 2.4 and 2.5.</p>
<p>It is noted that in addressing the NBENV Final Guidelines, the TOR includes several additional factors involving changes in the socio-economic environment that may arise as a result of a change in the environment as outlined in the definition of environmental effect provided in Section 2.1. The environmental effects of the Project on these VECs, particularly Labour and Economy, Community Services and Infrastructure, Land and Resource Use, and Transportation, and their related overlapping cumulative environmental effects, though described in this TOR to meet the requirements of the NBENV Final Guidelines, are additional to the requirements of an EA under <i>CEAA</i>.</p>	<p>Not applicable. Context only.</p>
<p>Section 16(2) of <i>CEAA</i> requires consideration of the following additional mandatory factors as part of the EA of the scoped Project for a comprehensive study: (a) <i>"the purpose of the project;</i> (b) <i>alternative means of carrying out the project that are technically and economically feasible and the environmental effects of any such alternative means;</i> (c) <i>the need for, and the requirements of, any follow-up program in respect of the project; and</i> (d) <i>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."</i></p>	<p>Section 2.4. Section 3.3. Section 8.x.7 of each VEC and Chapter 9. Capacity of renewable resources is not applicable, as no significant adverse residual environmental</p>

Notes:

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
	effects that are likely to occur were predicted.
2.2.2.3 ASSESSMENT OF PROJECT AND CUMULATIVE ENVIRONMENTAL EFFECTS	
In accordance with the requirements of Section 16(1)(a) to (d) of <i>CEAA</i> and the NBENV Final Guidelines, the EIA Report will assess the environmental effects of the Project, including cumulative environmental effects, for each VEC for all phases of the Project, including the construction, operation, and decommissioning, reclamation and closure phases of the Project. The potential environmental effects of credible accidents, malfunctions, and unplanned events will also be assessed.	Chapter 8 in its entirety.
The significance of the residual Project environmental effects and residual cumulative environmental effects within defined boundaries for the assessment will be determined, in consideration of planned mitigation.	Sections 8.x.6 for each VEC.
Comments from the public, stakeholders, and Aboriginal persons obtained through engagement activities described in Chapter 3 will be considered and addressed, where appropriate, in the assessment.	Sections 4.3.2 and 4.3.3, and Chapter 8.
Section 16(1)(d) of <i>CEAA</i> requires that the EIA must consider “measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project”. In this light, general and specific mitigation, contingency and compensation measures that are technically and economically feasible will be described, as applicable and appropriate, to minimize the potential for significant adverse environmental effects. The precautionary principle as described in Section 4(2) of <i>CEAA</i> will be applied when developing mitigation, as applicable and appropriate, to avoid significant adverse environmental effects from the Project. Where applicable, a program of monitoring and follow-up initiatives regarding the environmental effects potentially resulting from the Project will be outlined in the EIA Report as applicable, to verify the predictions of the EIA and/or the effectiveness of mitigation.	Section 8.x.4.2 of each VEC, and Chapter 10.
2.2.2.5 NEED FOR THE PROJECT	
In accordance with the CEA Agency’s Operational Policy Statement entitled “Addressing “Need for”, “Purpose of”, “Alternatives to” and “Alternative Means” under the <i>Canadian Environmental Assessment Act</i> ” (CEA Agency 2007a), the EIA shall clearly describe the rationale or need for the Project. This description shall define the problem or opportunity the Project is intending to solve or satisfy. The EIA shall identify the main function of the Project. In this context, the EIA shall present the fundamental rationale for proceeding with the development at this time within the context of regional, provincial and national economies, as well as global implications of supply and demand on metal prices and markets. The “need for” the Project shall be established from the perspective of the Proponent and provide the context for the consideration of alternatives.	Sections 2.3 and 2.4.

Notes:

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
2.2.2.6 ALTERNATIVES TO THE PROJECT	
In accordance with the CEA Agency's Operational Policy Statement entitled "Addressing "Need for", "Purpose of", "Alternatives to" and "Alternative Means" under the <i>Canadian Environmental Assessment Act</i> " (CEA Agency 2007a), the EIA must include an analysis of alternatives to the Project; describing functionally different ways to achieve the Project's purpose.	Sections 2.5 and 3.3.
The EIA will:	
<ul style="list-style-type: none"> • identify the alternatives to the project that were considered; 	Section 2.5.1.
<ul style="list-style-type: none"> • develop criteria to identify the major environmental, economic and technical costs and benefits of the alternatives; and 	Section 2.5.1.
<ul style="list-style-type: none"> • identify the preferred alternatives to the project based on the relative consideration of the environmental, economic and technical costs and benefits. 	Section 2.5.1.
2.2.2.7 ALTERNATIVE MEANS OF CARRYING OUT THE PROJECT	
Alternative means of carrying out the Project, as required under Section 16(2)(b) of <i>CEAA</i> and in Section 3.3 of the NBENV Final Guidelines, were identified in the Project Description (Stantec 2011). In accordance with the CEA Agency's Operational Policy Statement entitled "Addressing "Need for", "Purpose of", "Alternatives to" and "Alternative Means" under the <i>Canadian Environmental Assessment Act</i> " (CEA Agency 2007a), the EIA Report will describe those alternative means of carrying out the Project that are technically and economically feasible, and will assess the environmental effects of those feasible alternatives. At a minimum, the discussion of alternative means of carrying out the Project shall include a consideration of the following:	Sections 2.5.2 and 3.3.
<ul style="list-style-type: none"> • alternative locations for low grade ore stockpiling and waste rock storage; 	Section 3.3.6.
<ul style="list-style-type: none"> • alternative locations for the tailings storage facility (TSF); 	Section 3.3.3.
<ul style="list-style-type: none"> • alternative tailings management technologies that are proven and could be technically and economically implemented; 	Section 3.3.4.
<ul style="list-style-type: none"> • alternative means and routes for transporting equipment, supplies and materials to the Project site, and for transporting mineral products to market; 	Section 3.3.7.

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
<ul style="list-style-type: none"> alternative routes for the electrical transmission line for the Project; and 	Section 3.3.8.
<ul style="list-style-type: none"> alternative options for reclamation and closure. 	Section 3.3.9.
2.2.2.8 FOLLOW-UP PROGRAMS	
<p>Section 16(2)(c) of <i>CEAA</i> requires that a comprehensive study consider “<i>the need for, and the requirements of, any follow-up program in respect of the Project</i>”, and Section 38 of <i>CEAA</i> provides further direction and authority to RAs in the development and implementation of follow-up programs. Similarly, Section 2.6 of the NBENV Final Guidelines requires that the EIA Report outline “<i>a well-defined program of monitoring and follow-up initiatives regarding environmental effects resulting or potentially resulting from the proposed project</i>”. It is noted that “follow-up program” is defined in <i>CEAA</i> as “<i>a program for (a) verifying the accuracy of the environmental assessment of a project, or (b) determining the effectiveness of any measures taken to mitigate the adverse environmental effects of the project</i>”. Though additional requirements may apply through the life of the Project to verify compliance with environmental legislation (e.g., compliance monitoring) or achieve other goals, these measures are not considered to be part of a formal follow-up program as defined <i>CEAA</i> and as required to be implemented by Section 38 of <i>CEAA</i>.</p>	Section 8.x.7 for each VEC, and Chapter 9 in its entirety.
<p>Irrespective of any compliance monitoring or operational requirements that are likely to arise as a result of federal or provincial regulatory requirements (e.g., <i>MMER</i>, provincial approval to operate), pursuant to Section 16(3), a follow-up program to meet Section 38 of <i>CEAA</i>, and Section 79 of the <i>Species at Risk Act</i>, as applicable, will be developed in the EIA report for each applicable VEC to verify the accuracy of the environmental effects predictions or to verify the effectiveness of mitigation. The follow-up program will follow the CEA Agency’s Operational Policy Statement entitled “Follow-Up Programs under the <i>Canadian Environmental Assessment Act</i>” (CEA Agency 2007c). The follow-up program will be described in sufficient detail to allow independent judgment as to the likelihood that it will deliver the type, quantity and quality of information required to reliably verify predicted environmental effects (or absence of them), and to confirm both the EIA predictions and/or the effectiveness of mitigation. In addition, various other monitoring programs (e.g., EEM, compliance monitoring) will be developed by Northcliff to monitor environmental performance of the Project and to demonstrate compliance with legislation or authorizations/approvals/permits/licences issued thereunder. The follow-up program will be designed to incorporate baseline data, compliance data (such as established benchmarks, regulatory documents, standards or guidelines), and real time data (such as observed data gathered in the field). The reporting methods to be used, including reporting frequency, methods and format, will be described as they are applicable to achieve the objectives of follow-up as defined in <i>CEAA</i>.</p>	Section 8.x.7 for each VEC, and Chapter 9 in its entirety.

Notes:

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
<p>The EIA Report will describe the basic elements and requirements for a follow-up and monitoring program during applicable phases of the Project, including post-closure, as well as for potential accidents, malfunctions, or unplanned events. The EIA Report will not necessarily provide a detailed design of these follow-up programs, but rather will describe Northcliff’s proposed approach to the management of follow-up programs, basic principles, and the process that it will employ for developing the specific details of the programs following EIA approval, to the greatest level of detail that is reasonable at the time of preparing the EIA Report. Where specific details are not known at the time of preparing the EIA Report, the process for developing, those details progressively in parallel to or following the EIA will be described. This will include how the program will be implemented during the pre-construction, construction, operation, and decommissioning, reclamation and closure phases of the Project, and in consultation with the CEA Agency, the federal RAs, and NBENV.</p>	<p>Section 8.x.7 for each VEC, and Chapter 9 in its entirety.</p>
<p>The need for and objectives of the follow-up program, the specific components of the program and each activity under that component, and the spatial boundaries and temporal boundaries of the follow-up measures including the monitoring schedule, will be described to an appropriate level of detail for the EIA Report and with the specific details to be developed progressively in parallel to the various phases of the Project. The follow-up schedule, including duration and frequency, will be developed in consideration of the length of time needed to detect environmental effects given estimated baseline variability, likely magnitude of environmental effect, and desired level of confidence in the results. Follow-up measures will build upon existing conditions information prior to Project development (e.g., baseline conditions) and will be tailored in extent, duration, and frequency to monitor the environmental effects of the Project, including how they may change existing conditions over time and space. Statistical variation and evaluation of the follow-up program results will be considered as appropriate in the design of follow-up measures.</p>	<p>Section 8.x.7 of each VEC, and Chapter 9 in its entirety.</p>
<p>2.2.2.9 CAPACITY OF RENEWABLE RESOURCES THAT ARE LIKELY TO BE SIGNIFICANTLY AFFECTED BY THE PROJECT</p>	
<p>If the environmental effects assessment determines that the Project will result in significant residual environmental effects that are likely to occur, the EIA Report will assess 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. In such a case, the EIA Report will identify those resources likely to be significantly affected by the Project, and describe how the Project could affect their sustainable use. The EIA Report will also identify any criteria used in considering sustainable use.</p>	<p>Not applicable. No significant adverse residual environmental effects that are likely to occur were predicted.</p>

Notes:

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
For the purpose of the EIA and pursuant to Section 16(3) of <i>CEAA</i> , sustainable use will be defined as the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of populations in the Central Uplands Ecoregion and the Valley Lowlands Ecoregion, thereby maintaining its potential to meet the needs of present and future generations. Renewable resources will be defined as those resources that are replenished through biogeochemical and physical cycles. Examples include organic renewable resources like plant and animal species, or inorganic renewable resources like water and certain gases like oxygen.	Not applicable. Context only.
2.2.2.10 BENEFITS TO CANADIANS	
The Proponent should describe how Canadians benefit from the project planning and information gathering process undertaken by the Proponent as part of the environmental assessment. Factors to be considered may include the following. <ul style="list-style-type: none"> • Maximized environmental benefits: Describe the environmental benefits created as a result of the project going through the EA process. • Contribution of the EA to support sustainable development: Describe how the EA process for the Project contributed to the concept of sustainable development for a healthy environment and economy. • Public Participation: Describe how public participation in the EA influenced the Project design and the environmental effects analysis. • Technological innovations: Identify any new technologies that were developed to address environmental effects that could be used for other projects. • Increases in scientific knowledge: Describe any new scientific information collected through the EA that could benefit the assessment of other projects. • Community and social benefits: Describe any changes in Project design that resulted in indirect benefits to communities and/or social benefits (e.g., enhanced access to wilderness areas for recreation). 	Section 1.3.6.
3.0 PUBLIC, STAKEHOLDER, AND ABORIGINAL ENGAGEMENT	
The NBENV Final Guidelines for the EIA of the Project specifically require that Geodex, now Northcliff:	
<i>“...must consult with persons and organizations potentially affected by the proposed project and associated infrastructure, and must inform and engage any interested individuals, groups, stakeholders, local hunters and trappers, recreational users, affected communities, and Aboriginal communities in this assessment. This will include local governments and specific groups with mandates/initiatives in this area. The stakeholder consultation program is to be reviewed and accepted in the early stages of the study (e.g., at the TOR stage).”</i>	Section 4.3.
Additionally, Section 16(1)(c) <i>CEAA</i> requires that the EA must consider comments from the public received in	Section 4.3 and Chapter 8.

Notes:

Although the NBENV Final Guidelines were written with Geodex as the Proponent, Sisson Mines Ltd. is now carrying out the Project.

¹ “VEC sections” are sections 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 8.10, 8.11, 8.12, 8.13, 8.14, and 8.15. Where a section is identified as “Section 8.x.1.2”, for example, the “x” is replaced by the sub-section numbers 2 through 15 for each VEC (e.g., 8.2.1.2 for Atmospheric Environment, 8.3.1.2 for Acoustic Environment, etc.).

Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
relation to EA, and Section 21.2 of <i>CEAA</i> requires that the public is provided with an opportunity to participate in the comprehensive study. The Program described here outlines how the public, stakeholders and Aboriginal peoples will be consulted and engaged. The scope of the assessment pursuant to Section 16(3) respecting consultation and engagement is as described in this section. Northcliff will consider the input of the public, stakeholders and Aboriginal peoples in the EA, and evidence of how such input was considered will be provided in the EIA Report.	
4.0 SCOPE OF FACTORS TO BE CONSIDERED IN THE EIA	
4.1 ATMOSPHERIC ENVIRONMENT	
4.1.5 CHARACTERIZATION OF EXISTING CONDITIONS	
4.1.5.1 AIR QUALITY	
Baseline conditions for air quality will be established by conducting ambient air quality monitoring, analysis of available air quality data from the provincial network of monitoring stations, and analysis of available weather and climate data at the nearest Environment Canada weather station (<i>i.e.</i> , the Fredericton Airport). Further, a meteorological station has been at the Project site since 2008 and is equipped with sensors used to measure temperature and relative humidity, atmospheric pressure, wind speed and direction, precipitation intensity, snow depth, and solar radiation. Information at the meteorological station will continue to be collected at this station to determine reliable baseline meteorological conditions.	Sections 6.3.2 and 8.2.2.
Ambient dustfall sampling was conducted at five locations in and around the Project site over 2008 and 2009. Total dustfall mass per unit area was determined, and the dustfall was analyzed for various metals including lead and arsenic, and for other inorganic compounds such as nitrate and sulfate. Dustfall and/or deposition sampling is not required by NBENV. This sampling will help to inform the determination of overall baseline conditions at the Project site; however, no further dustfall sampling is planned.	Not Applicable. Context only.
Baseline ambient air quality monitoring will be conducted at the location of the meteorological station (or at an alternative location with sufficient power and infrastructure to operate the monitors, to be determined) to measure ambient concentrations of:	Section 8.2.2.
<ul style="list-style-type: none"> • total suspended particulate matter (TSP); 	Section 8.2.2.
<ul style="list-style-type: none"> • particulate matter having an aerodynamic diameter less than 2.5 microns (PM_{2.5}); 	Section 8.2.2.

Notes:

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
<ul style="list-style-type: none"> nitrogen oxides (NO_x); 	Section 8.2.2.
<ul style="list-style-type: none"> sulphur dioxide (SO₂); and 	Section 8.2.2.
<ul style="list-style-type: none"> selected trace metals. 	Section 8.2.2.
Monitoring will be conducted for a period of up to six months to cover two seasons in 2011 (spring-summer and summer-fall). The TSP and PM _{2.5} samples will be collected using mini high-volume samplers. The dust on the TSP filters will be analyzed for standard trace metals (including as a minimum, lead, arsenic, tungsten, molybdenum, zinc, copper, antimony, and aluminum). Ambient concentrations of NO _x and SO ₂ will be measured using diffusion tubes. The samples will be collected on a weekly basis (6 day cycle) over the monitoring period.	Section 8.2.2.
Emissions of organic compounds (e.g., VOC, PAH) or reduced sulphur compounds (e.g., H ₂ S, TRS) from the mine and processing facility are not expected to be substantive. Similarly, there are no substantive sources of odour associated with the Project. As such, monitoring of these emissions or for odour is not required.	N/A.
4.1.5.2 CLIMATE	
A review of available climate data (climate normals) from the nearest Environment Canada meteorological stations will be conducted to establish baseline climate information. The nearest Environment Canada weather station that monitors a complete suite of meteorological parameters is at the Fredericton airport, though other nearby stations (e.g., Juniper, Woodstock) measure a partial suite of parameters. The Fredericton airport data will be the focus of the analysis due to the completeness of the data set and the long history of climate data availability at this location, and these data will be compared to the meteorological data collected at the Project site. Annual and seasonal wind rose plots will be generated for each station and compared. The measured on-site temperature and precipitation data would also be compared with the climate normals data for the Fredericton airport station.	Sections 6.3.2.1 and 8.2.2.
4.1.6 ENVIRONMENTAL EFFECTS ANALYSES	
In the context of this EIA, Project environmental effects on the Atmospheric Environment will be assessed through the analysis of chemical and physical attributes of the Atmospheric Environment resulting from Project-related releases of exhaust gases, and particulate matter.	Section 8.2.4.

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
4.1.6.1 CHANGE IN AIR QUALITY	
Emissions from substantive emission sources associated with the Project during the construction and operation phases will be quantified using standard emissions estimation techniques (e.g., USEPA AP-42 emission factors, USEPA MOBILE emission factors), and an inventory of Project-related emissions of criteria air contaminants (particulate matter, PM ₁₀ , PM _{2.5} , combustion gases, and greenhouse gases) will be developed. The expected emissions of PM ₁₀ along with any associated monitoring or analysis will take into account guidelines published for this parameter by the Canadian Council of Ministers of Environment (CCME) along with criteria developed in other provincial jurisdictions (e.g., Newfoundland and Labrador, Ontario).	Sections 3.4.1.6, 3.4.2.5, 3.4.3.3, and 8.2.4.
Dispersion modeling will be conducted to predict the maximum ground-level concentrations resulting from Project emissions during the construction and operation phases of the Project, though emissions during the construction phase are not expected to be substantive and will be short-term and transient. The air contaminant emissions associated with the Project as described above will serve as inputs to the model. The baseline ambient concentrations will be incorporated with the model predictions to serve as background. The assessment of air quality will be in consideration of existing conditions, standard good practice and procedures (SGPP) and planned mitigation.	Sections 7.1 and 8.2.4.
4.1.6.2 CHANGE IN CLIMATE (GREENHOUSE GAS EMISSIONS)	
The assessment of climate environmental effects will be based on guidance provided by the Canadian Environmental Assessment Agency (CEA Agency 2003) and will be in consideration of existing conditions, SGPP, and planned mitigation.	Section 8.2.4.
Estimates of GHG emissions during the construction, operation, and decommissioning, reclamation and closure phases of the Project will be developed, as will an industry profile as required by guidance of the CEA Agency. The greenhouse gases to be considered are CO ₂ , CH ₄ and N ₂ O. Substantive emission sources will be identified and quantified.	Sections 3.4.1.6, 3.4.2.5, 3.4.3.3, 7.2, and 8.2.4.
For any electrical installations associated with the Project containing sulphur hexafluoride (SF ₆), the Proponent is expected to operate in a manner consistent with the Memorandum of Understanding on SF ₆ emissions signed by representatives of Environment Canada and the Canadian Electricity Association in 2007 and any subsequent amendments and Annexes.	Context only. SF ₆ not used by the Project.
The Project's annual contribution to total provincial and national GHG emissions for various Project phases, and the intensity of GHG emission per unit of ore processed, will be determined and compared, where data are available, to other similar projects.	Sections 3.4.1.6, 3.4.2.5, 3.4.3.3, 7.2, and 8.2.4.

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
4.2 ACOUSTIC ENVIRONMENT	
4.2.5 CHARACTERIZATION OF EXISTING CONDITIONS	
Baseline sound monitoring will be conducted at three locations over a period of one week at each location. The sound monitoring will be conducted at locations that are representative of the area and of local receptors; monitoring will be conducted near the location of the meteorological station and at two additional locations to be defined, to characterize ambient baseline sound pressure levels in the area of the Project and near recreational cabins. Any important sources of baseline noise that can be identified during the monitoring (e.g., drilling activity, forest resource harvesting) will be incidentally noted by the study team.	Section 8.3.2.
4.2.6 ENVIRONMENTAL EFFECTS ANALYSES	
An inventory of Project-related sources of sound emissions will be developed for the construction and operation phases of the Project. This will be based on an expected inventory of vehicles and equipment that will be used during each phase, on expected blasting intensities and frequencies, and referring to literature sources for obtaining typical sound pressure levels and vibration levels from each type of source to complete the inventory.	Section 8.3.4.
The baseline sound quality information collected for the Project will be input to an accepted noise model along with expected sound pressure levels from the Project. The Roadway Noise Construction Model (RCNM) of the US Department of Transportation (or equivalent) will be used to model sound pressure levels during the construction phase, whereas Cadnaa will be used to model sound pressure during the operation phase. Noise sensitive receptor locations will be identified in the EIA Report. Predicted sound levels at noise sensitive receptors (after mitigation) will be presented in the EIA report. The modeling will be carried out in a manner to enable comparison of the model results with both the significance criteria as well as the Health Canada guidance. The assessment of sound quality will be in consideration of existing conditions, SGPP, and planned mitigation.	Sections 7.3 and 8.3.4.
4.3 WATER RESOURCES	
4.3.5 CHARACTERIZATION OF EXISTING CONDITIONS	
An understanding of groundwater and surface water existing conditions will be determined through hydrogeology and hydrology studies.	Section 8.4.
Hydrogeological properties of bedrock and overburden units will be determined to identify hydrogeological units and primary groundwater flow paths within the assessment area. Estimated hydrogeological properties will include hydraulic conductivity, transmissivity and storage parameters. Groundwater flow components, such as local flow or regional flow, aquitards, faults, fractures, and other geological features, will be analyzed using the hydrogeological properties and horizontal and vertical hydraulic gradients to provide a description of groundwater flow paths from	Section 8.4.2.

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
mine facilities to potential receptors such as springs, streams, lakes, and wells.	
Geochemical conditions of the assessment area will be determined using existing information from the Preliminary Economic Assessment (Geodex 2009) and the Technical Report on December 2009 Mineral Resource Estimate (Mercator 2009) collected during the earlier exploration phase of the Project, as well as using new information gathered as part of current site studies (e.g., ML/ARD studies as described in Section 4.4.5.2). Groundwater chemistry data will be collected from monitoring wells and analyzed using piper plots to portray trends and to compare to appropriate existing Canadian Water Quality Guidelines.	Sections 7.5 and 8.4.2.
In addition, prior to the construction phase, water samples will be collected according to appropriate sampling protocols (e.g., ISO Standard 5667 or equivalent) from the network of groundwater monitoring wells and from accessible residential groundwater wells located within 1 km of the Project. The samples will be used to establish potable water quality baseline levels of turbidity, coliform, <i>Escherichia coli</i> , nitrates, trace metals, and general chemistry. The analyses will be conducted by an independent accredited laboratory and quality assurance and quality control samples will be taken and analyzed to support the reliability of the results. Residential well owners will be notified of the results.	Section 8.4.2.
If any residential wells (including camps) are determined to be located within the zone of influence of the Project, a water survey will be conducted for the accessible wells prior to any blasting activities to provide a baseline condition so that mitigation or compensation can be implemented in the event of an unforeseen environmental effect during the operation phase.	Section 8.4.2.
Prior to the construction phase, baseline conditions will be determined for streams, lakes and groundwater resources within the assessment area. Since 2008, several hydrometric and water quality stations have been operated at and around the Project site, and data from these stations have been collected since that time. These stations are being maintained or redeployed to suit the current Project configuration, and approximately six stations at key locations will allow continuous measurement of stream stage or water level. These measurements, together with manual flow measurements, will be used to develop a continuous record of stream flows at the sites. As well, a meteorological station has been operating near the open pit site since 2008 that measures and records climate parameters such as temperature, wind direction and precipitation. Stream water quality will continue to be monitored to provide information on surface water quality over time. The sampling methods, location of sampling stations, sampling frequency, and chemical elements/parameters analyzed will be selected in accordance with good practice to capture natural and seasonal variation over several years, and will be described in the EIA Report. Water quality sampling will be carried out in accordance with ISO Standard 5667, and samples will be analyzed for general chemistry and trace metals by an accredited analytical laboratory. Sampling locations will be shown graphically in the EIA Report. Groundwater and surface water chemistries will be analyzed to provide insight on	Section 8.4.2.

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
potential groundwater / surface water interaction along streams and lakes. The data collected will:	
<ul style="list-style-type: none"> characterize the range and measure of water and sediment quality and aquatic ecology characteristics; 	Section 8.4.2.
<ul style="list-style-type: none"> provide the basis for the prediction, modeling and assessment of potential environmental effects prior to the potential Project proceeding; 	Section 8.4.2.
<ul style="list-style-type: none"> form the basis for monitoring and assessing change during construction, operation, and decommissioning, reclamation and closure; 	Section 8.4.2.
<ul style="list-style-type: none"> provide the basis for the formulation of site-specific water quality objectives (if any) for the aquatic environment; 	Section 8.4.2.
<ul style="list-style-type: none"> provide the basis for the determination of allowable maximum waste water discharge and seepage rates based on specific water quality objectives; 	Section 8.4.2.
<ul style="list-style-type: none"> provide information on key variables and stream flows over time for key sites to illustrate patterns and variability; and 	Section 8.4.2.
<ul style="list-style-type: none"> provide power and confidence calculations, where applicable, for key variables at key sites once the environmental effects have been predicted, to guide and support future monitoring. 	Section 8.4.2.
The EIA Report will include a description of sampling protocols and analytical methods used, as well as one or more figures showing the sampling locations relative to Project components and environmental features, to an appropriate level of detail.	Section 8.4.2.
Hydrogeological information and hydrological information will be computer modeled to understand the physical aspects of water resources (groundwater and surface water) within the assessment area. The model will be used to simulate various possible future conditions with the mine in its various phases of construction, operation, and decommissioning, reclamation, and closure. The model will assist in producing a water balance within the assessment area and in forecasting migration of fugitive contaminants from tailings or rock storage areas, of from an accidental event.	Sections 7.6 and 8.4.4.

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Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
4.3.6 ENVIRONMENTAL EFFECTS ANALYSES	
To predict the potential environmental effects of the Project on Water Resources, a water balance study will be conducted using the developed computer model. The water balance study will include changes to groundwater recharge and discharge quantities, and potential changes to groundwater base flow to streams, as a result of the Project. Baseline data of conditions collected for the Project will be inputted to the water balance. Preliminary forecasting of environmental effects will include model simulations of:	Section 7.6.
<ul style="list-style-type: none"> • flow exchange between the TSF and the natural environment; 	Section 7.6.
<ul style="list-style-type: none"> • the hydrological effects of the development of the open pit, ore and rock storages, and mine infrastructure; 	Section 7.6.
<ul style="list-style-type: none"> • anticipated changes to water quality (e.g., from ARD/ML or explosives residues); and 	Section 7.6.
<ul style="list-style-type: none"> • the hydrology of potentially affected watercourses. 	Section 7.6.
The water balance study will estimate the extent to which the Project will alter flows in local surface water bodies and in groundwater aquifers. The water balance will aid in the identification of potential environmental effects of the Project on water resources, in the development of mitigation measures, and in Project design (e.g., when and where surplus water would be discharged). If flow levels are predicted to alter substantively (either increased or decreased), such that maintenance flow, fish habitat, or bank or bed stability are adversely affected despite mitigation, additional corrective action will be implemented.	Section 7.6.
The water balance for the Project will include water conservation or recycling measures that are technically and economically feasible for implementation as part of the Project. It is expected that groundwater will be used as a potable water supply for the Project. The water supply wells will be located and used such that the wells are sustainable. Pumping tests will be completed on any water installed supply wells to estimate safe yields. A <i>Water Supply Source Assessment</i> will be undertaken if the capacity of the water supply required for the Project is greater than 50 m ³ per day. A groundwater monitoring and management plan would be developed as applicable and appropriate.	Section 7.6.
The EIA report will include estimates of the quantity of:	Section 7.6.
<ul style="list-style-type: none"> • potable water used by the Project; 	Sections 7.6 and 8.4.4.
<ul style="list-style-type: none"> • groundwater pumped from the open pit; and 	Sections 7.6 and 8.4.4.
<ul style="list-style-type: none"> • water needed for process purposes. 	Sections 7.6 and 8.4.4.
Characterization of groundwater resources will include estimation of the recharge rates, assessment of conceptual	Sections 7.6 and 8.4.4.

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
groundwater flow paths and identification of groundwater discharge areas. Groundwater recharge and discharge will be assessed using a water balance approach, which generates simulated stream flows that can be calibrated to measured stream flows at key locations on and near the Project site. Potential environmental effects to groundwater resources will be assessed using the water balance approach and analytical and/or numerical modelling, where appropriate.	
The EIA Report will include piezometric maps, showing the location of existing wells and boreholes; recharge and discharge maps; and a surficial (deposit) isopach map.	Sections 7.6 and 8.4.4.
The potential environmental effects of the Project on Water Resources will be assessed in consideration of existing conditions, SGPP and planned mitigation measures.	Sections 7.6 and 8.4.4.
4.4 AQUATIC ENVIRONMENT	
4.4.5 CHARACTERIZATION OF EXISTING CONDITIONS	
As part of the preparation for evaluating the Aquatic Environment VEC, public, stakeholder and Aboriginal community knowledge will be sought from various stakeholders, including but not limited to:	Section 8.5.2.
<ul style="list-style-type: none"> • Canadian Rivers Institute; 	Section 8.5.2.
<ul style="list-style-type: none"> • Nashwaak Watershed Association Inc.; 	Section 8.5.2.
<ul style="list-style-type: none"> • Atlantic Salmon Federation; and 	Section 8.5.2.
<ul style="list-style-type: none"> • Interested members of the public. 	Section 8.5.2.
Additionally, knowledge and input will be sought from members of Aboriginal communities (e.g., Assembly of First Nations Chiefs in New Brunswick, Maliseet Nation Conservation Council, individual First Nations communities).	Sections 4.3 and 8.5.2.
4.4.5.1 FISH AND FISH HABITAT	
Fish and fish habitat assessments for directly affected watercourses in the assessment area have been or will be conducted in order to effectively assess the potential environmental effects to the aquatic environment by the Project, including the characterization of fish habitat quality and the identification of any freshwater species at risk and species of conservation concern that may be present. Data for each of these categories, described below, have been or will be collected for the Project.	Sections 7.4 and 8.5.2.

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Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
<p>A review of existing information combined with field surveys of the watercourse reaches that may be directly affected by the Project will be undertaken to determine the quality and quantity of fish habitat potentially affected by the Project, with particular focus on those watercourses that will be directly affected by the construction and presence of Project facilities. Specifically, this work will be carried out according to the following plan.</p>	<p>Section 8.5.2.</p>
<ul style="list-style-type: none"> A review of species of conservation concern databases (e.g., AC CDC) will be undertaken to determine the potential for aquatic species of conservation concern to be present in the assessment area. These could include rare aquatic plants, aquatic invertebrates, and/or fish species. It is important to identify rare species that could potentially be present within the assessment area, in order that their habitat requirements can be documented. This will enable the efficient identification of areas where rare species are known or likely to be present, as well as to provide strong justification for areas where rare species are not likely to be present. 	<p>Section 8.5.2.</p>
<ul style="list-style-type: none"> Existing watercourses in the assessment area will be identified using Service New Brunswick (SNB) and New Brunswick Department of Natural Resources (NBDNR) map databases. These data are not reliable at the level of first-order streams that are important nursery areas of salmonid fish in New Brunswick. Therefore, a digital elevation model (DEM) to a resolution of 15 cm was developed from LiDAR surveys of the assessment area conducted for Northcliff in January 2011, and will be used to accurately locate mapped stream channels and to identify additional unmapped watercourses likely to be affected by the Project. The DEM also provides accurate elevation and grade information to aid in the desktop modeling of habitat type. Preliminary survey locations for fish and fish habitat surveys, and <i>in-situ</i> water quality sampling, will be identified using this information. 	<p>Sections 7.4 and 8.5.2.</p>
<ul style="list-style-type: none"> Following the review of existing information and LiDAR data, each watercourse that may be directly affected by the Project will be surveyed by aquatic biologists (subject to access) to verify watercourse locations, and collect quantitative habitat data. The aquatic biologists will also identify and map any unmapped or previously unidentified watercourses they encounter. Survey locations will also be confirmed and adjusted as necessary in an effort to adequately and appropriately characterize fish habitat within these streams. 	<p>Section 8.5.2.</p>

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<ul style="list-style-type: none"> Aquatic biologists will visit the confirmed survey locations once to perform qualitative electrofishing and fish habitat surveys based on 100 m reaches. Habitat surveys will be performed using the modified NBDNR/DFO habitat survey form. In-situ water quality measurements (<i>i.e.</i>, pH, dissolved oxygen, conductivity, and temperature) will be collected at these survey locations along with photos and GPS coordinates. Water and sediment samples will be collected and will be submitted for chemical analysis. Benthic invertebrate samples will be collected for taxonomic analysis. Field surveys will also include site-specific evaluation of the potential presence of rare species. 	Section 8.5.2.
<ul style="list-style-type: none"> Subsequent to the initial field survey, selected survey locations will be identified for quantitative electrofishing to provide more precise information on the abundance and biomass of fish species present. Subject to possible licensing restrictions (to be determined through consultation with DFO), the quantitative electrofishing will result in the collection of information on length, weight, and external appearance of each fish species present at each site, with more invasive or lethal sampling being recommended for brook trout (as a surrogate for Atlantic salmon), and slimy sculpin, both of which would be candidate species for long-term and environmental effects monitoring (EEM). Lethal sampling of brook trout will provide an opportunity to examine the gonads and livers (as per the national EEM technical guidance). Lethal sampling will also support the establishment of baseline metal concentrations in fish tissues subjected to laboratory analysis. 	Sections 8.5.2, 9.4.3.3.1, and 9.4.4.3.5.
<p>Thus, the abundance of fish will be determined in two stages. Qualitative electrofishing will be undertaken during the fish habitat survey such that the relative abundance of each fish species will be determined in relation to the electrofishing effort as a function of time. These fish will all be released unharmed. The second stage will involve quantitative electrofishing (with barrier nets and a Zippin estimate of abundance) at a more limited set of stations selected for EEM work. Therefore, all fishing will be catch and release, with the exception of some brook trout (as a surrogate for salmonid species) that will be retained (killed) as part of the EEM work following the Environment Canada EEM protocol. This protocol requires the lethal sampling of 20 male and 20 female adult fish at each EEM sampling area. For slimy sculpin, a non-lethal sampling protocol involving 100 young of year fish per site will be followed. The lethal sampling data will also inform the HHERA.</p>	Section 8.5.2.

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Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
Some invasive/lethal sampling of fish is required in order to provide baseline information on fish health and to support the HHERA. This will facilitate the collection of information for the EIA that is consistent with information that will be required in the future to meet federal EEM requirements. The collection of this information as part of an enhanced baseline data collection goes beyond the basic <i>MMER</i> requirements, but will substantially strengthen the future EEM program. All fish that are lethally sampled will serve to inform both EEM and the baseline for the HHERA.	Section 8.5.2.
Existing conditions of watercourses that will not likely be directly affected by the Project but that may be indirectly affected (<i>i.e.</i> , watercourses upstream and downstream of Project components), will also be established. Mine activities (<i>e.g.</i> , mine effluent discharge) may affect downstream water quality, and fish will navigate through directly affected watercourses or reaches thereof to reach other habitat. The data will be used to establish a baseline for these areas that will support future follow-up and EEM requirements for the Project. Survey locations will be established at points along the Napadogan Brook, McBean Brook and the Nashwaak River. Surveys will be comprised of:	Sections 7.4 and 8.5.2.
<ul style="list-style-type: none"> • fish habitat surveys (100 m reaches) and qualitative electrofishing; 	Section 8.5.2.
<ul style="list-style-type: none"> • water quality sampling (<i>i.e.</i>, pH, dissolved oxygen, conductivity, and temperature); 	Section 8.5.2.
<ul style="list-style-type: none"> • sediment quality sampling (chemical analysis); and 	Section 8.5.2.
<ul style="list-style-type: none"> • benthic invertebrate sampling. 	Section 8.5.2.
As with directly affected watercourses, information related to fish community health will be important for indirectly affected watercourses. Therefore, data will be collected to enable the calculation of fish condition factor and may also include lethal sampling of some fish species for tissue sampling. Species for lethal sampling will be brook trout and slimy sculpin.	Section 8.5.2.
In addition to survey sites established downstream of the Project, reference sites will established in the Nashwaak River watershed upstream of the Project. These sites will be surveyed for the same parameters listed above.	Section 8.5.2.
Field surveys to characterize existing conditions along existing roads, on-site roads, and the transmission line route to be determined will be comprised of:	
<ul style="list-style-type: none"> • an assessment of fish species present at the crossing, typically via qualitative electro-fishing; 	Section 8.5.2.

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
<ul style="list-style-type: none"> a fish habitat survey; and 	Section 8.5.2.
<ul style="list-style-type: none"> <i>in-situ</i> water quality monitoring (<i>i.e.</i>, pH, dissolved oxygen, conductivity, and temperature). 	Section 8.5.2.
4.4.5.2 ACID ROCK DRAINAGE / METAL LEACHING	
Mine site development, extraction of ore from an open pit, and metallurgical processing will result in waste facilities and structures that may affect water quality and aquatic habitats. Waste rock, pit walls, borrow sources, ore stockpiles and tailings (metallurgical waste) all interact with precipitation under atmospheric conditions. Understanding the outcome of these interactions and the measures that can be used to minimize potential environmental effects is performed by characterizing the metal leaching and acid rock drainage (ML/ARD) potential of geological materials and wastes.	Section 7.5.
The EIA Report will include predictions of the ML/ARD potential of all materials (bedrock and surficial) to be disturbed or created during all phases (construction, operation, decommissioning, reclamation, closure, and post-closure) of the Project. This will include a discussion of the estimation of risk for the onset of ARD for each lithological/alteration/waste management unit and mine component, metal leaching, and the predicted drainage chemistry for each mine component, including the types and concentrations of major trace elements.	Section 7.5.
Characterizing ML/ARD potential is accomplished through laboratory and field based testing that is directed by years of experience. The procedures that will be used have been documented in several manuals which include internationally-recognized Canadian Mine Environment Neutral Drainage (MEND) reports (MEND 1991; MEND 2009) and the Guide for Acid Rock Drainage (GARD) produced by the International Network for Acid Prevention (INAP 2010, http://www.inap.com.au/). These manuals describe two general categories of characterization tests: static laboratory tests and kinetic laboratory and field tests.	Section 7.5.
Metals can leach in both the presence and absence of ARD, and thus the potential for metal leaching at neutral pH will also be assessed. Assessment of ML potential is performed by comparing concentrations of elements present in the test sample (<i>i.e.</i> , waste rock, tailings, pit wall) to typical global concentrations indicated by Price (1997). Elements present at ten times typical concentrations are considered to have the potential to leach under neutral pH conditions. Rates of metal leaching are then determined from laboratory and field based kinetic tests.	Section 7.5.

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
<p>Under acid generating conditions, metal mobility will typically increase regardless of metal concentrations in the rock. Potential for ARD is initially determined from static tests by comparing the amount of neutralization potential (NP) versus acid potential (AP), where a neutralization potential ratio (NP/AP = NPR) greater than 3 indicates that the rock has low potential for ARD, ratios between 1 and 3 indicate uncertainty, and ratios below 1 indicate that the rock is potentially acid generating (PAG). Timing to onset of ARD (if at all) is estimated from the kinetic tests where the rate of NP depletion can be estimated to assess whether or not active management of mine facility leachate will be required and on what time scale. The NP/AP ratios are used as an initial screening tool. Kinetic tests and mineralogy will refine this classification when more rigorous testing of the deposit is completed.</p>	<p>Section 7.5.</p>
<p>Static tests will be used to determine the elemental and mineralogical composition of selected samples and for calculating NPRs. Numerous variations on the test to determine NP exist as described by MEND (1991, 2009). The rationale for the choice of static test methods will be provided in the EIA Report. As part of the program, site-specific mineralogical-based approaches will be developed to interpret NP (see below). Acid-potential is usually more straightforward. It will be calculated from either the amount of total sulphur or sulphide sulphur described in the MEND manual. Factors, including mineralogy, will determine the final analytical procedures for calculating acid-potential.</p>	<p>Section 7.5.</p>
<p>The specific static tests that will be performed include:</p> <ul style="list-style-type: none"> • total sulphur (Leco); • sulphate sulphur determined by hydrochloric acid and sodium carbonate methods; • sulphide sulphur by difference; • modified neutralization potential; • paste pH and conductivity; • total carbonate analysis; • low level mercury; • fluoride (fusion, ISE); • total barium; and • ICP-MS element scan following <i>aqua regia</i> digestion. 	<p>Section 7.5.</p>

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
Samples will be selected from across the deposit to encompass spatial distribution (both horizontally and vertically), lithology and ore grade. Approximately 185 drill core samples (1.5 m intervals) will be used to represent waste rock, pit walls, borrow sources and low grade ore stockpiles. This additional sampling will complement the 85 samples already tested by the previous owner of the project. For tailings characterization, metallurgical process waste from each stage of testing will be used.	Section 7.5.
Following interpretation of static testing results, a subset of composited samples will be selected for mineralogical and kinetic testing (including tailings samples). The selected samples will number about 12 and will cover the range of ML/ARD potential indicated from static testing.	Section 7.5.
Mineralogical testing is required to refine the form of NP and AP. Carbonates provide the majority of acid neutralizing capacity, although not all carbonates consume acid. Heavy metal carbonates (e.g., siderite) are not consumers of acid due to the oxidation of ferrous iron and subsequent hydrolysis of ferric iron, and determining which carbonates are present is required to determine actual NP. Differentiating sulphide mineralogy is used for refinement of predicted oxidation rates (e.g., pyrite versus pyrrhotite) and acid production as not all sulphide minerals produce acid (e.g., pyrite versus sphalerite). Microprobe testing of NP and AP minerals will also help determine the potential for metal leaching as both carbonates and sulphides can contain toxic elements (e.g., cadmium and selenium). The specific mineralogical tests to determine the above information will include: <ul style="list-style-type: none"> • optical mineralogy; • microprobe testing of carbonate and sulphide grains; and • rietveld XRD. 	Section 7.5.
Kinetic tests will include laboratory humidity cells and field “barrel” tests. The goal of these tests is to assess mineral weathering rates, including oxidation, acid neutralization and metal release through analyses of leachates. A field based test is used so that the effects of laboratory conditions versus actual site conditions (i.e., temperature, precipitation, particle size) can be compared. This facilitates the development of factors that can be used to predict weathering rates from the eventual mine facility. For example, weathering rates indicated by laboratory tests are typically one to two orders of magnitude greater than barrel tests, and rates from barrel tests are typically one to two orders of magnitude greater than the actual mine facility (e.g., a full scale waste rock dump).	Section 7.5.

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
<p>As indicated above, the sample source for kinetic testing will be drill core for all materials except tailings. Sample preparation for the humidity cells for all samples will follow the guidelines of MEND (1991) whereby 1 kg of -0.6 cm (-1/4") diameter rock is placed into a cylindrical cell. For the field barrels, drill core is also used, except that approximately 300 kg of rock is crushed to -3 cm diameter and placed into barrels on site. It is impractical to source 300 kg of tailings from metallurgical testing, however, scaling factors determined from all other samples will be applied to the results of laboratory humidity cell testing for prediction of water quality from tailings facilities.</p>	<p>Section 7.5.</p>
<p>For the humidity cells, weekly leachate analyses of the following will be performed:</p> <ul style="list-style-type: none"> • volume; • pH; and • conductivity. 	<p>Section 7.5.</p>
<p>All of the following parameters will be measured weekly for the first two weeks of the program and then every two to four weeks thereafter:</p> <ul style="list-style-type: none"> • acidity; • alkalinity; • pH; • sulphate; • chloride; • fluoride; • dissolved organic carbon; • metal scan by ICP; and • low level mercury. 	<p>Section 7.5.</p>
<p>For the barrel tests, monitoring of pH, conductivity, and temperature will be performed weekly, and all other parameters and volume estimates will be performed monthly. It is expected that kinetic tests will run for the duration of the permitting process and communication between regulatory agencies, Northcliff and SRK will determine when they can be stopped.</p>	<p>Section 7.5.</p>
<p>Quality assurance and quality control will be a component of all testing. Approximately 10% of all samples collected will have both duplicates and blanks, which will be in addition to routine QA/QC performed by the laboratories used for this work.</p>	<p>Section 7.5.</p>

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
At the conclusion of static and kinetic testing, the ML/ARD characteristics and water quality sources terms of waste rock, pit walls, borrow sources, ore grade stockpiles and tailings will be provided in the EIA Report to inform the environmental effects assessment and potential environmental effects on surface water and groundwater quality.	Section 7.5.
The discussion of ML/ARD should demonstrate that Northcliff has the necessary understanding, site capacity, technical capability and intent to identify, avoid, mitigate and/or manage ML/ARD in a manner which protects the environment through the life of the mine and after closure of the mine.	Section 7.5.
4.4.6 ENVIRONMENTAL EFFECTS ANALYSES	
The environmental effects analysis for the Aquatic Environment VEC will address the potential residual environmental effects of the Project on all aspects of the Aquatic Environment. Key aspects of the aquatic environment to be considered are: <ul style="list-style-type: none"> • surface water quantity and quality; • sediment quality; • fish habitat quantity and quality; • fish populations; • usability of the fisheries resource; and • aquatic species of conservation concern. 	Section 8.5.4.
The potential residual environmental effects of the Project on the Aquatic Environment will be assessed in the EIA Report. Project design and mitigation plans will focus on avoiding environmental effects, and otherwise minimizing them to the fullest extent possible. The assessment will include the potential residual environmental effects of the Project on fish, fish habitat, surface water quality (including ARD/ML considerations that may affect surface water and groundwater quality) and quantity, sediment quality, potential bioaccumulation of metals in fish, direct mortality, local and regional hydrology, river bank and bed stability, and other considerations during the construction and operation phases of the Project, as well as potential rehabilitation considerations during the decommissioning, reclamation and closure phases. The potential for metals uptake in fish will be determined through the ERA. The ERA is generally described along with the human health risk assessment (HHRA) in Section 4.8 of the TOR. The ERA will examine the potential Project-Environment interactions and the different ways in which ecosystems can be affected from exposure to chemicals of potential concern (COPCs). The scope of and approach to the ERA will be confirmed with regulators. Contingency and emergency response plans that will be implemented to mitigate potential environmental effects will be considered and described in the EIA Report.	Section 8.5.4.

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
<p>The Project will likely result in the alteration, disruption and/or destruction of fish habitat (HADD), and as a result, an acceptable compensation agreement will likely be required to be agreed with DFO before authorization for the HADD can be granted under the <i>Fisheries Act</i>. Typical compensation agreements generally require replacement or enhancement of like habitat for like, within the same watershed or management unit as the affected habitat. The EIA Report will provide the conceptual approach to fish habitat compensation, with the details of the compensation program developed in parallel to the EIA. The final compensation program will be agreed with DFO prior to HADD authorization.</p>	<p>Sections 3.4.1.5 and 7.4.</p>
<p>Environmental management measures to be developed and implemented as part of the Project, including environmental protection, contingency and emergency response plans, will be generally described in the EIA Report and further details will be developed as the Project matures through its various phases. These plans will necessarily be updated as necessary over the lifetime of the mine and mill to respond to emerging issues and address regulatory requirements, among others, and to strengthen environmental protection measures arising from the operation of the Project. Contingency plans, including emergency response plans, will provide guidance on how to respond to and mitigate any environmental effects as a result of accidents, malfunctions or unplanned events, such as spills. These plans will include measures for spill prevention and response. Effective environmental emergency response does not solely involve actions to mitigate adverse environmental effects; it should address prevention, preparedness, response, mitigation, and restoration of the affected environment.</p>	<p>Section 2.6 and Appendix D.</p>
<p>It is likely that an extensive follow-up and monitoring program will need to be developed for the Aquatic Environment to verify the predictions of the EIA, and to assess the effectiveness of mitigation measures. Additionally, extensive monitoring will be carried out to verify compliance with permit conditions. This will be described in the EIA Report. Key considerations will include process and compliance monitoring, environmental effects monitoring, upstream and downstream monitoring for cumulative environmental effects, and other aspects. For example, the <i>Metal Mining Effluent Regulations (MMER)</i> under the <i>Fisheries Act</i> specify the EEM requirements for operating metal mines in Canada. These requirements include daily, weekly, monthly and annual monitoring of liquid effluents discharged by mines, in addition to regular rounds of biological monitoring. In addition to EEM requirements as specified by <i>MMER</i>, monitoring and follow-up requirements may arise from the EIA process (to test the predictions of the EIA and/or to evaluate the effectiveness of mitigation). Monitoring may also be required as a result of provincial approvals to operate.</p>	<p>Sections 8.5.7 and 9.4.</p>
<p>Aquatic monitoring programs for mining facilities typically include process monitoring (<i>i.e.</i>, monitoring that is internal to the facility, and is intended to provide assurance that the facility is operating normally); end of pipe monitoring (<i>i.e.</i>, monitoring of liquid effluent at the point of discharge to the environment, where regulatory requirements such as non-lethality and authorized limits on total suspended solids, metals and pH must be maintained); and</p>	<p>Sections 8.5.7 and 9.4.</p>

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
environmental monitoring in the receiving environment. The environmental monitoring typically includes regular (e.g., weekly or monthly) sampling of water quality at reference locations as well as points downstream of the effluent discharge location, in addition to the regular rounds of biological studies required under <i>MMER</i> .	
The planned aquatic environment monitoring program for the Project will be detailed in the EIA Report in terms of the monitoring objectives, components of the environment that will be monitored, where, how often and for how long monitoring will occur, and how the results will be reported. Baseline data will be collected as part of the EIA, and prior to construction and operation of the Project. Contingency plans will be developed to respond to or mitigate any environmental effects from accidents, malfunctions or unplanned events. The aquatic environment monitoring program will provide opportunity for adaptive management of the mine operations in the event that mining activities are found to be having adverse environmental effects on the aquatic environment that were not anticipated during the EIA.	Sections 8.5.7 and 9.4.
4.5 TERRESTRIAL ENVIRONMENT	
4.5.5 CHARACTERIZATION OF EXISTING CONDITIONS	
To date, the following work has been conducted or is in progress to characterize the existing conditions of the assessment area: <ul style="list-style-type: none"> • terrestrial surveys were conducted in June of 2008 in the assessment area and included incidental amphibian, mammal, and bird observations; • breeding bird, raptor, and waterfowl surveys/counts were completed in June 2008; and • waterfowl surveys/counts were also completed in September 2008. 	Not applicable. Context only.
A variety of surveys will be conducted within the assessment area in order to characterize existing conditions. These studies are: <ul style="list-style-type: none"> • surveys of potential bird nesting and other wildlife habitat within the PDA; • additional breeding bird surveys determined in consultation with the Canadian Wildlife Service (CWS) of Environment Canada; • targeted surveys for bird species at risk that may potentially be present in the PDA, including Canada Warbler, Olive-sided Flycatcher, Common Nighthawk; and for wood turtle; • targeted surveys including wildlife transects through representative habitats, to identify the presence of wildlife, wildlife corridors, and wintering areas; and • incidental observations of other wildlife, including ungulates (e.g., moose and deer) and small fur-bearing mammals. 	Section 8.6.2.

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
<p>In addition to the surveys listed above, planned work will be comprised of:</p> <ul style="list-style-type: none"> • review of existing databases to determine the potential for presence of species at risk or species of conservation concern, such as those maintained by the Atlantic Canada Conservation Data Centre (AC CDC 2010) and Bird Studies Canada (<i>i.e.</i>, www.naturecounts.ca); • consultation with regulatory agencies (including NBDNR and CWS) to determine the adequacy of existing information and potential requirements for further surveys; • desktop research to confirm the presence or absence of important ungulate habitat within the PDA, including the presence or absence of wintering areas; and • consultation with hunting and trapping associations known to be active in the general vicinity of the Project; and • the results of a Traditional Use Study, if available. 	Section 8.6.2.
<p>Reputable sources of information and data, including but not limited to those listed in Section 4.4 of the NBENV Final Guidelines, will be consulted to supplement the field data gathered from field reconnaissance and planned future work in order to document existing conditions.</p>	Section 8.6.2.
<p>The EIA Report will contain several figures and/or maps displaying existing conditions in the assessment area, including topography, surficial and bedrock geology and the results of field reconnaissance and surveys, as applicable.</p>	Sections 6.3, 8.4.2, 8.5.2, 8.6.2, 8.7.2, and 8.8.2.
4.5.6 ENVIRONMENTAL EFFECTS ANALYSES	
<p>To predict the environmental effects of the Project on the Terrestrial Environment, ground clearing activities to be conducted during the construction phase that eliminate wildlife habitat will be quantified and located.</p>	Section 8.6.4.
<p>Potential environmental effects of the Project on the Terrestrial Environment will be documented graphically, where possible, on appropriately scaled figures showing habitats or other relevant information, such as interior forest and habitat fragmentation. The potential environmental effects of the Project on the Terrestrial Environment will be assessed in consideration of existing conditions, SGPP and planned mitigation measures, including closure plans.</p>	Section 8.6.4.
4.6 VEGETATED ENVIRONMENT	
4.6.1 CHARACTERIZATION OF EXISTING CONDITIONS	
<p>Prior to vascular plant field surveys, habitat modeling using available data will be conducted to determine high potential areas for plant species of conservation concern. Available information on the known occurrence of rare and uncommon plant species will be reviewed from public and private sources including the SARA Registry, the</p>	Section 8.7.2.

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
Nature Trust of New Brunswick environmentally sensitive areas database, the AC CDC database (AC CDC 2010), NBDNR, and Hinds (2000).	
Vascular plant surveys will be conducted in all areas of the PDA with focus on high potential areas, and the locations of any plants of conservation concern will be mapped.	Section 8.7.2.
4.6.2 ENVIRONMENTAL EFFECTS ANALYSES	
The location of plants of conservation concern within the assessment area will be compared to the footprint of Project facilities and activities. The potential environmental effects of the Project on the Vegetated Environment will be assessed in consideration of existing conditions, SGPP and planned mitigation measures.	Section 8.7.4.
4.7 WETLAND ENVIRONMENT	
4.7.1 CHARACTERIZATION OF EXISTING CONDITIONS	
Some preliminary reconnaissance-level wetland surveys were conducted in the assessment area in July 2008. These data will assist in planning further field efforts to be conducted in the summer of 2011.	Section 8.8.2.
The location of all wetlands in the RAA and LAA will first be mapped using the NBDNR mapping layer to identify the location of all known wetlands in the RAA, with particular emphasis on those in the LAA. This will assist in the preparation of plans for field investigations, the assessment of environmental effects, and preparation of response plans should an accident, malfunction, or unplanned event occur that has environmental effects outside of the PDA (as necessary).	Section 8.8.2.
Within the PDA, a review of desktop information including NBDNR wetlands layers, aerial photography, depth-to-water-table mapping layers, and other GIS data will be combined with digital elevation model (DEM) data collected using light detection and ranging (LiDAR) surveys to focus the field efforts within the PDA. Field surveys will be conducted only in the PDA. Field work in the PDA will be conducted in 2011 to collect the required information to support the EIA, including full delineation and evaluation of wetland function within the PDA. Regulatory guidance will be sought from NBENV and/or Canadian Wildlife Service on the approach to delineation and the evaluation of wetland function. Wetland boundaries will be determined through field delineation using global positioning systems (GPS), and the collected wetland boundary data will be mapped using GIS.	Section 8.8.2.
All wetlands outside of the PDA (<i>i.e.</i> , within the LAA or RAA) will be mapped using the existing NBDNR mapping layer only. The assessment of potential indirect environmental effects that might result from alteration of surface water flows will be carried out using such mapping.	Section 8.8.2.

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4.7.2 ENVIRONMENTAL EFFECTS ANALYSES	
The location of all wetlands within the PDA will be delineated and mapped. Wetlands that are within the potential zone of influence of the Project during the construction or operation phases will be identified, delineated, and assessed for function by wetland specialists. A description of representative wetlands in each watershed will be provided in the EIA Report.	Sections 8.8.2 and 8.8.4.
The potential residual environmental effects of the Project on the Wetland Environment (after avoidance, mitigation and compensation, as applicable, has been applied) will be assessed in consideration of existing conditions, SGPP and planned mitigation measures, including closure plans.	Section 8.8.4.
4.8 PUBLIC HEALTH AND SAFETY	
4.8.1 CHARACTERIZATION OF EXISTING CONDITIONS	
<p>The HHERA will be based primarily on the baseline data with regard to air quality, water quality, fish tissue quality, soil quality, vegetation (edible plants), and wildlife. These data will be collected as part of the baseline studies for other VECs or from literature sources and will comprise characterization of:</p> <ul style="list-style-type: none"> • background levels of metals substances in soils; • background levels of metals in surface water; • metal concentrations in fish tissue; • metal concentrations in vegetation; • metal concentrations in small mammals; and • existing air quality conditions in the Project area. 	Section 7.7.
Existing provincial data will be consulted with respect to the existing health status of New Brunswick people generally and in the closest communities to the Project, where data are available.	Sections 7.7 and 8.9.2.
Information from Aboriginal peoples about their use of the area, as conveyed during the EIA process, will be used in evaluating potential exposure for the HHERA. In addition, information from Aboriginal peoples, conveyed during the EIA process, with respect to the types and quantities of country foods collected that may be affected by Project activities will also be used in developing the baseline program.	Sections 7.7 and 8.13.
4.8.1.1 BASELINE SAMPLING TO SUPPORT THE HHERA	
A baseline sampling program will be carried out in the PDA to provide information on existing conditions to support the HHERA. Based on the current land use in the area, country foods that are expected to be consumed from the area include fish, game, and berries. Baseline sampling of fish tissue for standard trace metal concentrations	Section 7.7.

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
(including lead, arsenic, tungsten, molybdenum, zinc, copper, antimony, and aluminum) is currently included as part of the Aquatic Environment program described previously. Small mammal samples will be collected from up to 10 sites in the PDA and tissues will be analyzed for standard trace metal concentrations. These will be collected during the summer sampling program, coinciding with up to 50 proposed soil sampling locations. The small mammal tissues are considered a conservative representation of potential metal concentrations in larger game. Based on previous field programs in New Brunswick that included trapping small mammals, meadow voles and/or shrews are the most likely species to be collected, as available.	
Blueberries are expected to occur in the general area, and field crews will identify blueberry patches during the course of completing the other baseline programs. Sampling of the distinct blueberry patches will then be completed when the blueberries are in season. While the actual number of blueberry patches cannot be confirmed at this time, ideally five to ten blueberry samples would be collected and analyzed for standard trace metal concentrations.	Section 7.7.
Recommendations for subsequent sampling programs following Project construction and operation (e.g., frequency of sampling, sampling locations, specific analytical parameters, etc.) will be based on the findings of the baseline sampling program and HHERA, and will be incorporated into the EIA report.	Section 7.7 and Chapter 9.
4.8.2 ENVIRONMENTAL EFFECTS ANALYSES	
4.8.2.1 CHANGE IN PUBLIC HEALTH	
The potential environmental effects of the Project on Public Health will be characterized by conducting a Human Health and Ecological Risk Assessment (HHERA) that assesses the potential environmental effects of the Project on Public Health and on various biophysical VECs such as the Terrestrial Environment, Vegetated Environment, Wetland Environment, and the Aquatic Environment (discussed in Sections 4.4 to 4.7 of this TOR).	Section 7.7.
The assessment of environmental effects for the Project involves predicting and evaluating changes (effects) to Valued Environmental Components (VECs) arising directly from four assessment scenarios: Baseline, Project, Application, and Future Cases. Potential project-specific environmental effects will be assessed by comparing calculated exposures to objectives established by recognized health organizations. The characterization of the potential human health risks will take into account the magnitude, geographic extent, duration/frequency, reversibility and the ecological/socio-economic context of the environmental effect. The HHERA will focus only on potential environmental effects related to chemical changes in the environment in soil, air, biota and water as a result of Project activities. Activities such as grading, blasting, extraction, heavy machine operation, and processing have the potential to release chemicals and metals into the environment.	Sections 7.7 and 8.9.4.

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The HHERA will follow established methods published or endorsed by Health Canada, Environment Canada, the Canadian Council of Ministers of the Environment, and the United States Environmental Protection Agency. The scope of the HHERA will be confirmed with regulatory agencies.	Section 7.7.
The components of the risk assessment will relate to potential health effects associated with exposure to chemicals and metals in environmental media, including air, soil, surface water, sediment, vegetation and fish tissue. Predicted chemical and metal levels as a result of the Project will be added to baseline data collected for air quality, soils, and water quality in order to assess potential health effects arising from the total levels. If concentrations of contaminants in air, soils, and water are below regulatory guidelines in place for the protection of human and ecological health, then a qualitative assessment of potential effects on human and ecological health will be made and a quantitative evaluation of potential risk/effects is not required.	Section 7.7.
The HHERA for the Project will determine what, if any, environmental effect chemical releases from the Project would have on human and ecological receptors in the area. The nearest permanent residence appears to be approximately 9 km from the Project at Napadogan; however, the Project lies within territory that may be used by the public and Aboriginal persons, and there are recreational campsites approximately 1.5 km from the Project. The area surrounding the Project is likely used for recreation and for subsistence hunting, fishing and trapping. As such, particular attention will be paid to potential risks posed to traditional, subsistence and recreational visitors.	Sections 7.7 and 8.9.4.
The risk assessment framework that will be used in the HHERA follows the standard paradigm presented in Figure 4.1, based on Health Canada, USEPA, and CCME guidance (Health Canada 2004; Health Canada 2009; USEPA 1989; CCME 1996). It is a staged approach to estimating the potential risk to receptors and involves public consultation and communication with regulatory authorities and scientific experts in the field.	Section 7.7.
4.8.2.2 CHANGE IN PUBLIC SAFETY	
As discussed above, Public Safety, including worker safety, will be assessed by determining credible accident, malfunction, and unplanned event scenarios that may result during the construction, operation, and decommissioning, reclamation and closure phases of the Project, and will be described in the accidents, malfunctions and unplanned events chapter of the EIA Report. Potential environmental effects will be assessed qualitatively through the application of professional judgment and planned mitigation.	Sections 8.9.4 and 8.17.

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
4.9 LABOUR AND ECONOMY	
4.9.1 CHARACTERIZATION OF EXISTING CONDITIONS	
The existing conditions in central New Brunswick will be established to support the assessment of environmental effects of the Project on Labour and Economy. The description of existing conditions will include profiles of population and labour force; training and education; employment, income and economic production; and business and industry. Publicly-available sources of information will be used, from sources such as Statistics Canada and the New Brunswick Department of Finance.	Sections 6.4 and 8.10.2.
The profile of the population of the assessment area will include information on: total numbers of individuals; population change over time; population by gender; and highest level of schooling. The labour force description will include information on experienced labour force by industry and occupation. Employment and income data will be collected related to: income levels, sources of income, unemployment rates; and labour force participation rates. Most of these data will be compiled from Census and other Statistics Canada information.	Sections 6.4 and 8.10.2.
A profile of the existing employment and income for the assessment area will be developed, as well as GDP for the Province. Information will include: income levels; sources of income; unemployment rates; labour force participation rates; and provincial GDP. Data will be compiled from Statistics Canada based on the 2006 Census and information from other government agency information.	Sections 6.4 and 8.10.2.
A profile of business, industry, and the economy, including information on provincial taxation and GDP, will be developed from data obtained from Statistics Canada and the Government of New Brunswick. The profile will include any available information on the current and future labour market and other planned major projects.	Sections 6.4 and 8.10.2.
4.9.2 ENVIRONMENTAL EFFECTS ANALYSES	
The feasibility study will provide information on expected employment and expenditures for all phases of the Project which will, in turn, allow for estimates of labour, supply and service requirements, as well as direct, indirect and induced employment, income, and provincial GDP environmental effects.	Section 8.10.4.
Using specific information on the design of the Project, predictions of the economic impacts of all phases of the Project will be developed to support the Labour and Economy effects analysis. Multipliers will be used to quantify the economic impacts of the Project on the provincial economy in terms of direct, indirect and induced impacts on employment, labour, income, business income, GDP and taxation. The potential environmental effects of the Project on Labour and Economy will then be assessed in consideration of existing conditions, SGPP and planned mitigation and management measures. Post-closure environmental effects on Labour and Economy will also be assessed as appropriate.	Section 8.10.4.

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
4.10 COMMUNITY SERVICES AND INFRASTRUCTURE	
4.10.1 CHARACTERIZATION OF EXISTING CONDITIONS	
The existing conditions for Community Services and Infrastructure will be determined by reviewing information from the Government of New Brunswick, and other relevant agencies and organizations. Where information is not readily available, interviews may be conducted with key individuals in order to develop a profile of existing community services and infrastructure. The detailed profile will facilitate the subsequent evaluation of the potential environmental effects of the Project-related activities on Community Services and Infrastructure.	Sections 6.4 and 8.11.2.
The infrastructure, major equipment, staffing and level of service currently provided by fire protection, police and emergency medical services (<i>i.e.</i> , ambulance, first aid and hospital emergency services) and other local emergency response services will be described for the local service area.	Section 8.11.2.
Similarly, infrastructure, major equipment, staffing and level of service provided within the local service area with respect to ongoing health and social services will be described. Health services will include primary, secondary and tertiary care. Social services will include those provided by government agencies, as well as those provided by NGOs locally and through community networks.	Section 8.11.2.
Local accommodations will be described. This will include both temporary and long-term accommodations by type (<i>e.g.</i> , guest houses, hotels, motels, bed and breakfasts (B&Bs), apartments, and single family homes), and accommodation vacancies or occupancy rates (including current levels and trends over time). The profile will also identify and describe planned accommodation developments, including a possible on-site construction camp. A description of the current housing market in the central New Brunswick area will be developed. This will include key indicators such as available housing infrastructure (<i>e.g.</i> , types of units and ages), prices, sale volumes, housing starts and completions, absorption rates and unsold inventory.	Section 8.11.2.
The characteristics, range and capacity of recreation and entertainment facilities will be described for the assessment area. The focus will be on infrastructure, such as parks, fitness centres, community halls, playgrounds and recreational clubs. The profile will also identify and describe planned developments. Outdoor recreation, which requires no or minimal infrastructure (<i>e.g.</i> , ATV use and snowmobiling) will be addressed as part of Land Use.	Section 8.11.2.

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
4.10.2 ENVIRONMENTAL EFFECTS ANALYSES	
Using specific information on the design of the Project, the potential environmental effects of the Project on Community Services and Infrastructure of the Project will be assessed. To complete the environmental effects evaluation, a comparison of the projected Project demands with known baseline conditions, gap analysis, and professional opinion will be the primary methods employed.	Section 8.11.4.
The environmental effects of the Project with respect to increased demand for health services (including acute care), emergency services (fire, policing), ongoing support services, housing, food, accommodation, and recreational services will be assessed based on projections of labour requirements for the Project in comparison to existing capacity in the assessment area. Potential environmental effects of the Project on housing and planned mitigation will also be considered. The housing needs for the Project will be determined and considered in light of the market information to estimate the environmental effects of the Project on housing.	Section 8.11.4.
The potential environmental effects of the Project on Community Services and Infrastructure will be assessed in consideration of existing conditions, SGPP and planned mitigation and management measures.	Section 8.11.4.
4.11 LAND AND RESOURCE USE	
4.11.1 CHARACTERIZATION OF EXISTING CONDITIONS	
Existing conditions in the area will be compiled from a variety of sources, including existing maps, aerial photography, consultation with location recreations groups (<i>i.e.</i> , hunting and fishing clubs, snowmobile associations, forestry businesses, <i>etc.</i>), and consultation with members of the public. Site visits and personal observations will also be conducted to assist in the characterization of existing conditions. The visual aesthetics of the area, focusing on views from a number of different key vantage points surrounding the Project will be described in the EIA Report. Current and historical residential property values in communities surrounding the Project will be described based on data and information available from the Canada Mortgage and Housing Corporation (CMHC).	Sections 6.4 and 8.12.2.
Current general land use will be described and mapped for the assessment area. Using existing sources of data and information, a profile of Land and Resource Use for the Project area will be developed, including forest resource harvesting activities, focusing on the structures and activities associated with residential, commercial and resource uses adjacent to the Project and potentially within the Project's zone of influence. Current outdoor recreational use of the lands and ecotourism activities will be described and mapped, including hiking, cross-country skiing, ATV riding, snowmobiling, and hunting, trapping, and fishing (both for recreational and commercial purposes, as applicable), on Project lands and adjacent lands. Environmentally significant areas, as designated or formally recognized by government agencies, will also be described and mapped,	Sections 6.4 and 8.12.2.

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Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
4.11.2 ENVIRONMENTAL EFFECTS ANALYSES	
To complete the environmental effects evaluation, a comparison of the predicted Project-related environmental effects with known existing conditions will be conducted. The compatibility of the Project with any existing planning strategies that may exist for the area will be considered. The environmental effects on property values will be assessed based on a comparison to current and historical data. The potential for Project-related emissions, noise, and vibration to adversely affect current Land and Resource Use will be assessed.	Section 8.12.4, as supplemented by Sections 8.2 (emissions) and 8.3 (noise).
The potential environmental effects of the Project on Land and Resource Use will then be assessed in consideration of existing conditions, SGPP and planned effects mitigation and management.	Section 8.12.4.
4.12 CURRENT USE OF LAND AND RESOURCES FOR TRADITIONAL PURPOSES BY ABORIGINAL PERSONS	
4.12.1 CHARACTERIZATION OF EXISTING CONDITIONS	
Information sharing, discussion and dialogue with Aboriginal peoples will be conducted throughout the EIA to characterize conditions with respect to Aboriginal land and resource use, consistent with the Major Projects Management Office guidance for Aboriginal engagement (MPMO 2008). These discussions will be intended to obtain information on use of land and resources for traditional purposes by Aboriginal persons. These discussions will also support the federal and provincial governments with respect to any duty to consult with Aboriginal peoples regarding the Project.	Sections 4.3 and 8.13.2.
A Traditional Use Study (TUS) is contemplated as a useful tool to understanding Aboriginal current and past use of the Project area. The form of the discussion with First Nations about past and current uses of land or resources in the Project area, and the approach to conducting a Traditional Use Study (TUS), will be established in consultation with the Assembly of First Nations Chiefs in New Brunswick (AFNCNB), as directed by Chiefs and Councils, and with individual Chiefs and Councils of individual Maliseet communities in New Brunswick. Community and Aboriginal leadership engagement activities will be conducted to ensure that Aboriginal peoples are informed of the Project, to hear concerns that will need to be considered, to obtain knowledge of the current use of land and resources for traditional purposes, and to identify opportunities for First Nations' participation in the Project. These activities will also be conducted to support any federal and provincial duty to consult with First Nations.	Section 8.13.2.3.

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4.12.2 ENVIRONMENTAL EFFECTS ANALYSES	
A key consideration in the assessment of environmental effects of the Project on this VEC is whether or not the land and resources affected by the Project are currently used by Aboriginal peoples for traditional purposes (including hunting, fishing, trapping, gathering, cultural, spiritual or ceremonial purposes).	Section 8.13.4, as supplemented by Sections 8.5 (Aquatic), 8.6 (Terrestrial), 8.7 (Vegetation), and Appendix F (resource availability).
The Current Use of Land and Resources for Traditional Purposes by Aboriginal Persons will be assessed by liaising with potentially affected First Nations as well as federal and provincial government authorities to determine their existing knowledge of these activities. Direct discussions with the AFNCNB, First Nation Chiefs and Councils, and umbrella organizations to obtain their feedback will be ongoing. Information will be obtained through these direct discussions and by completing a TUS. Information from the TUS, if available for the EIA, will be used to determine if any use of the land or resources for traditional hunting, fishing, trapping, gathering, and ceremonial activities may be affected or interrupted by the Project. It will also inform an analysis of the potential environmental effects on land and resources that may be used for traditional purposes by Aboriginal persons.	Sections 4.3, 8.13.2.3, and 8.13.4.
The assessment of potential environmental effects of each of the applicable Project phases and activities will be conducted based on the collected information from interviews, discussions, and the Traditional Use Study, if available.	Section 8.13.4.
4.13 HERITAGE RESOURCES	
4.13.1 CHARACTERIZATION OF EXISTING CONDITIONS	
Archaeological potential modeling, for example for pre-Contact era sites, is based largely on the identification of landscape features which are either known to have attracted past habitation or land use, or which appear to have potential for attracting human use. These features include: rivers and lakes; confluences of watercourses; smaller sources of potable water; ridges or knolls that overlook areas of resource potential; outcrops of high-quality stone for tool making; and, most importantly, combinations of these features (AS 2009).	Not applicable. Context only.
Initial work to determine the potential for archaeological resources in the assessment area was conducted in 2008. However, this work was conducted under the 2004 Guidelines (Ferguson 2004). As new Guidelines were released in 2009, this work will be revisited and where it is not complete or consistent with the 2009 Guidelines, supplemental work will be conducted.	Sections 6.4.6 and 8.14.2.

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An assessment of the potential for the assessment area to contain heritage or archaeological sites will be undertaken. Known Heritage and Archaeological Resources within the assessment area will be reviewed and documented.	Sections 6.4.6.3 and 8.14.2.
There are typically two methods for determining the existing conditions with regard to Heritage Resources:	Section 8.14.2.
<ul style="list-style-type: none"> to determine known resources through a review of the provincial archives, provincial heritage records, documented archaeological sites, and provincial and local museum records, and by gathering information from local historical societies, community historians, and Aboriginal people; and 	Section 8.14.2.
<ul style="list-style-type: none"> to undertake a search for those resources that exist, but of which we currently have no knowledge (e.g., undiscovered archaeological resources). 	Section 8.14.2.
Baseline information may include data from: the Maritime Archaeological Resource Inventory (MARI) files located at AS in Fredericton; the Canadian Register of Historic Places; the list of Provincially Designated Historic Sites; research at the Public Archives of New Brunswick and National Archives of Canada; local historical records; documented local histories; previous archaeological and heritage resource studies completed in close proximity to the assessment area; local informants; and information obtained during any field investigations. This information, while focused largely on potential archaeological resources, will also assist in the identification of potential presence of built heritage resources as well as issues of historical or architectural significance, as required by CEAA. It is expected that this background research will eliminate the need to further consider the issue of built heritage resources in the EIA, which given the relatively remote location of the Project is not anticipated to be a concern as built heritage sites are unlikely to be present in the assessment area. First Nations input will also be sought regarding special places, burial grounds, areas of spiritual importance, and other potential heritage areas.	Sections 6.4.6.3 and 8.14.2.
Baseline information on paleontological resources will be obtained from the literature and through interviews with paleontologists and geologists with knowledge of the assessment area, including NBDNR and the New Brunswick Museum. These interviews and research will be aimed at determining if there is a potential for encountering such resources as part of the Project, to plan further research and field characterization (as necessary) to confirm the elevated paleontological potential of the site (if applicable), and to recommend mitigation should the area contain fossiliferous rock that would indicate an elevated potential for encountering paleontological resources. If there is low potential for encountering such resources as determined by interviews and research, paleontological resources will be addressed in the EIA Report through environmental effects predictions based on the low likelihood of encountering such resources in the PDA.	Sections 6.4.6.3 and 8.14.2.

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Field investigations will be conducted as necessary to discover those resources that may exist within the PDA. Planning of archaeological field work in the PDA will be informed by the background research of archaeological potential described above, as well as mapping of these areas using DEM data collected through LiDAR surveys of the PDA. This is expected to assist in focussing the field efforts to areas of high archaeological potential by eliminating areas of steep topography, clear cuts, areas where water is near the ground surface, areas of generally poor terrain, or wetlands that would cause archaeological potential to be lowered, and thus not necessitating a walkover survey as walkover of all areas adjacent to watercourses would be onerous. The purpose of the walkover survey will be to locate any visible archaeological sites, to determine if there are any additional (<i>i.e.</i> , additional to the watercourse perimeters) areas of elevated potential that may require test pitting, and to define areas of unsuitable terrain (<i>e.g.</i> , wetland and/or where the ground water is near the surface, and areas of steep slope) where test pitting is not warranted. Consultation with Archaeological Services (AS) will be carried out to confirm the field data collection approach and to focus the field work on areas of high archaeological potential only, as determined by research and mapping.	Sections 6.4.6.3 and 8.14.2.
Because of the large areal extent of the Project, the field surveys will consist of a walkover of high potential areas within the PDA that will likely be directly disturbed by the Project. Walkover of areas of low or medium potential as determined from examination of DEM data and other background research will not be conducted, subject to confirmation by AS.	Sections 6.4.6.3 and 8.14.2.
Complete test pitting of high potential archaeological areas in accordance with the 2009 Guidelines will be conducted as a follow-up and monitoring measure to confirm the predictions of the EIA, but prior to construction activities being initiated. The test pitting strategy would be developed in consultation with AS, based on the results of the walkover field investigations of the PDA conducted in 2011.	Sections 6.4.6.3, 8.14.2, and 8.14.4.
4.13.2 ENVIRONMENTAL EFFECTS ANALYSES	
The assessment of potential environmental effects of the Project on Heritage Resources will consider both pre-Contact and historic period resources, and will include consideration of resources of archaeological, paleontological or architectural significance.	Section 8.14.4.
The potential environmental effects of the Project on Heritage Resources will be assessed based on the findings of the review of available information, the field reconnaissance work, the areas to be developed for the Project, the significance of the findings, and the mitigation (including avoidance) to be employed.	Section 8.14.4.

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4.14 TRANSPORTATION	
4.14.1 CHARACTERIZATION OF EXISTING CONDITIONS	
The existing infrastructure of the road and rail networks within the spatial boundary will be established using data obtained from, and consultation with, the New Brunswick Department of Transportation (NBDOT) and rail service providers (e.g., CN Rail, NB Southern Railway). Traffic count surveys and other traffic observations may be conducted within the assessment area to supplement available information if and as determined necessary. Average annual daily traffic (AADT) and average annual daily truck traffic (AADTT) volumes and vehicle collision rate data for the assessment area will be compiled, as well as information on allowable truck weights and road dimensions. Preferred truck routes to and from the Project will also be determined, and the environmental effects evaluated on that basis.	Sections 3.4.1.7, 3.4.2.6, 3.4.3.4, 6.4.7 and 8.15.2.
The existing road network infrastructure condition, usage, LOS, and collision rates of the roads within the Transportation spatial boundaries will be established using available data from the NBDOT. This information will be supplemented by the results of consultation with transportation engineers from NBDOT and field observations, where available.	Sections 6.4.7 and 8.15.2.
4.14.2 ENVIRONMENTAL EFFECTS ANALYSES	
The historical traffic information will be used to predict existing traffic volumes to future years corresponding with the construction and operation phases through a traffic study. Predictions of the future level of service and potential environmental effects to road infrastructure condition will serve as the basis of the environmental effects assessment of the Project on Transportation during the construction, operation, and decommissioning, reclamation, and closure phases of the Project.	Section 8.15.4.
Potential effects on traffic safety resulting from the potential increased rates of vehicle accidents will be addressed in the accidents, malfunctions, and unplanned events chapter of the EIA Report.	Sections 8.15.4 and 8.17.3.7.
4.15 EFFECTS OF THE ENVIRONMENT ON THE PROJECT	
4.15.1 EFFECTS ANALYSIS	
Numerous planning, design, construction, and operation mitigation strategies will be implemented to minimize the potential effects of the environment on the Project. These strategies are intended to reduce the risk of serious damage to the facilities or to the environment, or interruption of mining activities, to acceptable levels. These strategies include strategic design decisions, designing Project components and facilities to or above relevant codes to account for local threats and a changing climate, including quick access to remediation equipment, and scheduling of activities and storage capacities to allow for weather disruptions. In the EIA Report, the Effects of the	Sections 2.6.1, 8.16, and Appendix D.

Notes:

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¹ "VEC sections" are sections 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 8.10, 8.11, 8.12, 8.13, 8.14, and 8.15. Where a section is identified as "Section 8.x.1.2", for example, the "x" is replaced by the sub-section numbers 2 through 15 for each VEC (e.g., 8.2.1.2 for Atmospheric Environment, 8.3.1.2 for Acoustic Environment, etc.).

Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
Environment on the Project chapter will present the potential environmental effects that could affect the Project.	
Information, analysis and data required to support complete the analysis of the effects of the environment on the Project will be collected from reliable and identified sources. They will include, but not be limited to the following:	
<ul style="list-style-type: none"> building and safety codes that may be relevant to the Project, including those of the Government of Canada, Province of New Brunswick, Canadian Standards Association, Canadian Dam Association, and others; 	Sections 2.6.1, 4.1, and 8.16.
<ul style="list-style-type: none"> climate normals for the area for the most recent 30-year period, including weather extremes for the period of record; 	Sections 6.3.2.1, 8.2.2, and 8.16.5.
<ul style="list-style-type: none"> the most recent predictions of Environment Canada on the potential climate changes in Atlantic Canada and their effects on the environment and environmental phenomena; 	Section 8.16.6.1.
<ul style="list-style-type: none"> historical information from the Geological Survey of Canada on seismic events in central New Brunswick; and 	Sections 6.3.1.4 and 8.16.5.
<ul style="list-style-type: none"> any other relevant information that may assist in establishing existing conditions or potential effects of the environment of the Project. 	Section 8.16.5.
The EIA Report will present an assessment of the effects of Climate on the Project, following 2003 guidance from the CEA Agency (CEA Agency 2003). Studies and other assessments will be cited as necessary to support those findings.	Section 8.16.6.1.
Data on Climate will be obtained from the Environment Canada database on weather parameters including temperatures, precipitation, humidity, maximums, minimums, and extremes. Other reference sources and experts will also be consulted, including publications by Environment Canada, and others. A table of baseline data will be prepared to illustrate the state of the climate in the central New Brunswick based on the most recent 30-year data set.	Sections 6.3.2.1 and 8.16.5.

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Table C.2 General Table of Concordance for the Terms of Reference

Requirement of the Terms of Reference	Location Where Requirement is Addressed in EIA Report ¹
<p>The changes to climate of most concern to the Project will be analyzed to determine which require more detailed consideration. The analysis will include examination of external sources such as climate modelling reports prepared by Environment Canada, the International Panel on Climate Change (IPCC) and others. Those climate phenomena that would pose a risk to the public, the environment or to the economic viability of the Project will be the ones examined in more detail. Local and regional trends will be considered. The predictions by climate modelers using regional climatological models will be considered in determining the likelihood and consequences of a changing climatic effect. These regional models are sensitive to the parameters that are of most consequence to environmental, economic and public safety issues of Atlantic Canada.</p>	<p>Section 8.16.6.1.</p>
<p>Based on these data, the potential effects of the environment on the Project will be assessed in consideration of existing conditions and planned design and mitigation.</p>	<p>Section 8.16.6.</p>

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