HORIZON MINE COAL PROJECT

PEACE RIVER COAL INC.

Terms of Reference

Application for an Environmental Assessment Certificate pursuant to the *Environmental Assessment Act*

January, 2007

HORIZON MINE COAL PROJECT

TERMS OF REFERENCE

CONTENT REQUIREMENTS FOR THE PEACE RIVER COAL INC. APPLICATION FOR AN ENVIRONMENTAL ASSESSMENT CERTIFICATE

The information outlined in the following pages identifies the information that must be included in Peace River Coal Inc.'s Application for an Environmental Assessment Certificate for the Horizon Mine Coal Project.

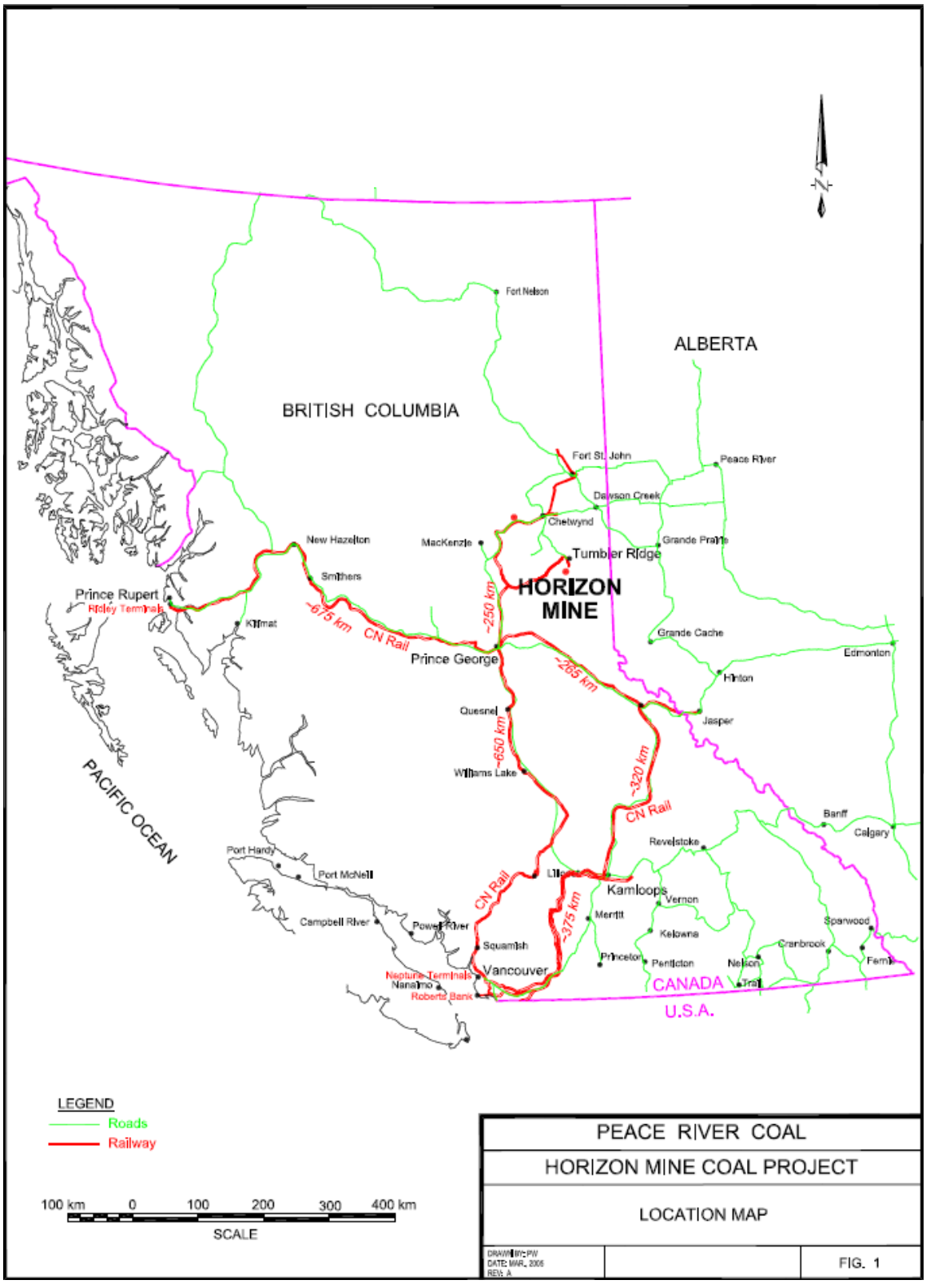
BACKGROUND TO TERMS OF REFERENCE

In September 2005, Hillsborough Resources Limited submitted a Project Description to the Environmental Assessment Office (EAO) for the Five Cabin Coal Project. On September 20, 2005 an order was issued to Hillsborough Resources Limited, pursuant to section 10 of the British Columbia *Environmental Assessment Act* (the Act), S.B.C. 2002, c. 43, that an Environmental Assessment Certificate is required for the Five Cabin Coal Project. On March 31, 2006 Hillsborough Resources Limited advised the EAO that the project name had been changed to Horizon Mine Coal (Project). On April 10, 2006 EAO issued a second section 10 order to amend the original Section 10 order to reflect this name change. On June 29, 2006, EAO issued an order pursuant to section 11 of the Act to Hillsborough Resources Limited stipulating the scope of the Project, the scope of the assessment and the procedures and methods for assessing the Project.

On December 11, 2006 Peace River Coal Inc. notified the EAO that NEMI Northern Energy and Mining Inc. (NEMI) had entered into a transaction with Anglo Coal Canada and Hillsborough Resources Limited to create the Peace River Coal Partnership. As a result of this transaction all the north eastern British Columbia Coal assets of these three parties (except for those related to the Wapiti Project) were transferred into the partnership. These assets include the Project and are held by Peace River Coal Inc. (Proponent).

The proposed project is located in the Hart Foothills of the Central Rocky Mountains in north-eastern British Columbia, approximately 600 kilometres by existing roads north-east of Vancouver and approximately 25 kilometres by existing roads south-west of Tumbler Ridge (Figure 1). The project is located within the Peace River Regional District and the Municipal District of Tumbler Ridge. The project is located on provincial Crown land within the Dawson Creek Land and Resource Management Plan area and the traditional territories of Treaty 8 First Nations (McLeod Lake Indian Band, Saulteau First Nation and West Moberly First Nation) and the Kelly Lake Communities (Kelly Lake Cree, Kelly Lake First Nations, and Kelly Lake Metis Settlement Society).

The Proponent proposes to produce up to 1.6 million tonnes per annum (Mtpa) of metallurgical (coking) coal products using conventional underground and open pit mining techniques. Construction is scheduled to begin in 2007 and the Project will potentially employ over 200 people on a sustained basis for over 15 years. Mine-related activities and infrastructure will include: existing access road upgrades; mine haul roads; portal sites; several open pits; top soil and waste storage areas; wash plant, tailings area and coal handling facility; mine camp; and, a 15 - kilometre 25 kV power line from the existing 230 kV line at the Murray River Crossing.


ALBERTA
BRITISH COLUMBIA
Fort Nelson
Fort St. John
Peace River
Dawson Creek
Chetwynd
Grande Prairie
Tumbler Ridge
HORIZON MINE
MacKenzie
New Hazelton
Smithers
Prince Rupert
Ridley Terminals
Kitimat
~675 km CN Rail
~250 km
Prince George
~265 km
Grande Cache
Edmonton
Hinton
Jasper
Quesnel
~650 km
Williams Lake
~320 km CN Rail
Banff
Calgary
Revelstoke
PACIFIC OCEAN
Port Hardy
Port McNeill
Campbell River
Powell River
Squamish
Vancouver
Nanaimo
Roberts Bank
Neptune Terminals
CN Rail
~375 km
Kamloops
Vernon
Merritt
Kelowna
Princeton
Penticton
Sparwood
Cranbrook
Fernie
Nelson
Trail
CANADA
U.S.A.
LEGEND
Roads
Railway
100 km 0 100 200 300 400 km
SCALE
PEACE RIVER COAL
HORIZON MINE COAL PROJECT
LOCATION MAP
DRAWN BY: PW
DATE: MAR. 2006
REV: A
FIG. 1

The federal government has not yet determined whether the project is also subject to a review under the *Canadian Environmental Assessment* Act, S.C. 1992, c.37 (CEAA). The Canada/British Columbia Agreement on Environmental Assessment Cooperation, signed in March 2004, provides for harmonized reviews when environmental assessments are required under both Acts. The Agreement also provides for the BC Environmental Assessment Office (EAO) to lead harmonized reviews of proposed projects. This TOR has been prepared as if the Project is subject to a Canadian environmental assessment.

In the event that a joint review is required under both the Act and CEAA, the EAO and the Canadian Environmental Assessment Agency will develop an agreement covering aspects of the environmental assessment (EA) such as timelines, First Nations, Kelly Lake Communities and Public Consultation and agency roles and responsibilities.

As outlined in the section 11 order the scope of the Project is as follows:

- the mine, including underground workings and portals, an open pit or pits, waste rock dumps, borrow pits, overburden and topsoil storage piles, and coal processing and wash plant facilities and ancillary infrastructure;
- any existing coal haul route between the Horizon Mine and an existing load-out facility;
- any new haul route;
- any new load-out facility;
- explosives manufacturing and storage facilities;
- ground and surface water management facilities;
- sediment control and and/or settling ponds;
- temporary operations for construction;
- fuel storage and handling; and;
- electrical facilities including back-up diesel power generation and a 15 km, 25 kV power line.

The Project does not include any activity or approval required for exploration and site investigation and testing, collection of data and information required to prepare the Application, or the operation, modification, dismantling or abandonment of existing facilities independent of the Project.

TERMS OF REFERENCE

The contents of this document constitute the TOR for the Proponent's Environmental Assessment Certificate Application (Application). The TOR identifies the issues to be addressed and the information that must be provided by the Proponent in its Application. The TOR incorporates comments on draft TOR, received from federal, provincial and local government agencies, First

Nations and the Kelly Lake Communities. A draft TOR was made available for public review, but no comments were received from the public.

The TOR is organized to parallel the structure of the Application and to define information requirements for each section of the Application.

PREPARATION AND REVIEW OF THE APPLICATION

While the TOR will provide a framework for preparing and completing the Application, it is the Proponent's responsibility to provide sufficient data and analysis in its Application to allow an evaluation of the potential adverse effects of the Project by First Nations, the Kelly Lake Communities, government agencies, including local governments, stakeholders and the public.

The Proponent must prepare an Application that addresses the requirements of the TOR. The Proponent will submit the Application to EAO and make it available to First Nations, Kelly Lake Communities, government agencies and the public. EAO will initiate a public comment period on the Application as set out in the section 11 order.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

This section will identify all of the consultants involved in preparing the Application.

PREFACE

This section of the Application will indicate why the document is being prepared and how it has been developed. It will indicate that the project is subject to review pursuant to an Order issued under section 10 of the *BC Environmental Assessment Act* (Act), and state that the project is/is not subject to a federal screening or comprehensive study under the *Canadian Environmental Assessment Act* (CEAA) and the relevant triggers. This section will also confirm that the Application has been developed pursuant to the TOR approved by the EAO, and complies with any other relevant instructions provided by the EAO in the section 11 order. It will identify the parties involved in developing the Application, including First Nations and Kelly Lake Communities.

EXECUTIVE SUMMARY

The Application executive summary will provide:

- an overview understanding of the project, including a brief description of the major project components (facilities and activities) and phases of the project;
- a succinct description of information distribution activities and consultation measures undertaken with the public, First Nations, Kelly Lake Communities and government agencies, including a summary of issues raised, and solutions suggested, during these consultations;
- an overview of key issues related to project development and a description of proposed effect management measures; and,
- conclusions with respect to the environmental assessment as discussed in the Application.

TABLE OF CONTENTS

The Table of Contents provides the intended organization of information to be presented in the TOR and the Application. If the Proponent later identifies a need for a change in the Table of Contents, this will be discussed with the EAO. The Table of Contents will provide an outline of all document components, including volumes, sections, sub-sections, lists of references, figures, tables and photographs, all accompanied by numbers of the pages where they are found in the Application.

GLOSSARY

A list of all Project specific terms, definitions, abbreviations and acronyms will be provided in the Application. The list provided below refers to terms and abbreviations used in this TOR.

BC	British Columbia
BMP	best management practices
CEA Agency	Canadian Environmental Assessment Agency
CEAA	Canadian Environmental Assessment Act
EA	environmental assessment
EAO	Environmental Assessment Office
EMS	Environmental Management System
FSR	Forest Service Road
LRMP	Land and Resource Management Plan
LSA	local study area
ML/ARD	metal leaching/acid rock drainage
Mtpa	million tonnes per annum
RSA	regional study area
SEPSCP	Surface Erosion Prevention and Sediment Control Plan
TFL	Tree Farm License
TUS	traditional use studies
TOR	Terms of Reference
VEC	valued ecological component

1.0 INTRODUCTION AND OVERVIEW

1.1 Background to the Application

This section of the Application will describe the structural components of the Application and summarize Project planning and review history to date, and any legal orders or agreements applicable to the project review.

1.2 Project Overview and Setting

The Application will describe:

- the Project and its purpose;
- location, including site-specific setting (with maps), regional and Treaty 8 context, and proximity to any environmentally sensitive areas or cultural sites (excluding any confidential information);
- existing site access;
- project elements included in the project scope;
- whether the Project components require the use of Crown Land or are located on private land; and
- describe the socio-economic benefits of the Project, including the direct labour force requirements during construction and operation, and the estimated capital cost.

1.3 Proponent and Consultant Identification

This section of the Application will provide information about the Proponent, including company name, history, incorporation, structure, address, and phone/fax/email. It will also include the names of the primary project consultants and their role in preparation of the Application.

1.4 Regulatory Framework

The Application will:

- summarize relevant government policies, regulations and land use plans (e.g. Dawson Creek LRMP) as well as any local government official community plans and zoning bylaws that have a bearing on the Project;
- outline permits, licences and approvals and authorizations required for project construction and operation; and,
- Indicate whether any concurrent certification or permitting is being requested under the Act.

1.5 Application Format and Table of Concordance

The Application will generally be presented in an order similar to the approved TOR. Consistent geodetic datum systems of coordinates and elevations will be used. The Proponent will also provide a Table of Concordance that cross-references information presented in the Application (including appendices and technical reports) with the information presented in the approved TOR.

2.0 INFORMATION DISTRIBUTION AND CONSULTATION

2.1 Pre-Application Consultation

The Application will describe consultations undertaken during the pre-application stage. This description will identify the objectives of the consultation, outline the methods used, and summarize the issues raised, and the ways in which the Proponent has addressed these issues. This includes:

- all consultations with First Nations and Kelly Lake Communities potentially affected by development of the Project;
- government (Canada, British Columbia, and local);
- public and stakeholders (e.g. guide outfitters, trappers, forestry, mining and outdoor recreational interests, environmental organizations, and other tenure holders);
- any agreements with First Nations and Kelly Lake Communities (excluding any confidential information);
- list and summarize any significant events or measures;
- present a summary of responses regarding issues raised during pre-application consultations; and,
- indicate the degree to which issues raised during the pre-application consultations are considered or addressed by the Proponent and other parties.

2.2 Consultation Planned During the Application Review

This section of the Application will:

- describe the programs proposed for consultation with the public, First Nations, Kelly Lake Communities, stakeholders, and government agencies during the Application review stage, following acceptance of the Application for formal, detailed review; and,
- document the proposed process for attempting to resolve outstanding issues during the review.

3.0 PROJECT DESCRIPTION AND MINE PLAN

The Application will describe all Project components, on-site support and any off-site facilities for all phases of the Project, including construction, operation and closure (decommissioning) in sufficient detail to allow the Proponent to meaningfully predict potential adverse effects and address concerns of interested parties.

3.1 Project Background and Rationale

The application will provide:

- details of the Project history from exploration to initial design;
- the rationale for the Project along with its objectives;
- any sustainability principles that have guided the Project planning; and,
- a summary of site-selection studies and alternative locations assessments for the mine site, powerline and load-out (existing or newly constructed).

3.2 Mine

3.2.1 Geology and Coal Resources

The Application will describe the regional geology, Horizon Mine geology and coal resources.

3.2.2 Mine Plan Overview

This section will provide an overview of portal, underground workings, pit design, waste rock dump operations and sequencing, and coal processing.

3.2.3 Detailed Mine Plan

The Application will provide a detailed mine plan, including:

- underground and open pit development plan including layout, design and production scheduling (coal extraction and release);
- location of the portals, pits, and sequence of mining;
- borrow pits;
- tailings pond;
- coarse coal reject pile;
- explosives use and storage facilities;
- preliminary waste dump and tailings storage facility plans, including tailings dam, including the location;
- preliminary geotechnical evaluations, including programs to evaluate foundation conditions;

- laboratory and field testing to characterize foundation soils and rock conditions;
- design criteria and considerations for waste dumps, pit walls and sediment control impoundment stability, including development sequences;
- water management infrastructure;
- borrow sources for dam construction;
- type of equipment that will be used; and,
- proposed locations for topsoil and overburden storage.

Conceptual waste dump and impoundment designs will be developed with reference to the "BC Mine Waste Rock Pile Research Committee, Interim Guidelines, May, 1991". Conceptual Impoundment Dam designs will be developed with reference to the "Canadian Dam Association, Dam Safety Guidelines, January, 1999".

All geotechnical components will include a risk assessment covering the most likely mode to the most severe impact from failure. The location and design of major structures will be based on geotechnical investigation and evaluation of foundation structures. Preliminary geotechnical evaluations will include programs to evaluate foundation conditions, laboratory and field testing to characterize foundation soils and rock conditions, and design criteria and conditions for waste dumps, pit walls and sediment control pond dam stability.

3.2.4 Plant site and Ancillary Infrastructure

This section of the Application will describe the coal processing plant and facilities, process plant waste management, clean coal handling and truck load-out, and ancillary and support infrastructure.

3.3 Mine Services during Operations

The Application will describe mine services during operations, including:

- utilities supply and distribution (power, fuels and water);
- first aid and security;
- sewage;
- fire protection system;
- explosives storage;
- any camp facility requirements; and,
- any mine site traffic control plans.

3.4 Haul Route(s)

The Application will describe any haul road construction or upgrading, initial operation and interim reclamation and current plans for post-closure reclamation and decommissioning. This will include where access and haul roads will be built (or upgraded) and maintained, haul routes, frequency of use and runoff control.

3.5 Load-out

If there is to be a load-out facility on-site, the Application will describe construction, early operation, interim reclamation, soil salvage, handling and storage plan, and conceptual final reclamation and decommissioning plan for this facility.

3.6 Access

The Application will describe how materials will be moved to and from the site. It will include a description of any segments of existing road and stream crossings to be upgraded or modified as well as stream crossings, if required, for new roads, and associated activities. The Application will describe plans for:

- long-term road access;
- rail access, if the load-out is to be on-site;
- The route to the load-out, if off site, and any additional information if the access is different from the above; and,
- Access control following decommissioning.

3.7 Power Supply

The Application will describe the power line design, detailed alignment selection and descriptions of the alignment segments, including stream crossings and ground access requirements. This section will also include any plans for a backup power supply, such as diesel generators.

3.8 Project Development Schedule

The Application will provide a description of major activities and scheduling that will take place during construction and operations; and, decommissioning and reclamation of each major project component (mine, load-out, haul route and powerline).

4.0 ENVIRONMENTAL ASSESSMENT METHODS

4.1 Introduction

The Application will describe the methods used to conduct the assessment of project effects on the existing biophysical environment, including a description of spatial and temporal boundaries for the assessment, Valued Ecosystem Components (VECs), and socio-community, socio-economic and health settings of the Project. The Application will provide an assessment of project effects, mitigation measures, the significance of each residual and cumulative project effect, and monitoring requirements, within each of several sections, arranged according to the following topics:

- surficial geology, terrain, soils and natural hazards;
- surface and ground water quantity and quality;
- navigable waters;
- aquatic organisms and habitat;
- wildlife and vegetation;
- climate and air quality;
- noise;
- archaeological and heritage resources;
- traditional and contemporary uses;
- socio-community, socio-economic and health conditions; and,
- land and resource use.

4.2 Valued Ecosystem Components (VECs)

The Application will describe the general criteria used to identify any VECs that may be affected by the Project, including federal legislative requirements and consider factors of importance to First Nations and Kelly Lake Communities, fish and wildlife species of cultural, spiritual, and traditional use and any other VEC's that might be identified in the Proponent's site-specific field studies. The Application will include sufficient detail to address the relevant impact issues on VECs through all phases of the project and distinguish between biological, physical, social, cultural and economic parameters.

4.3 Baseline characterization of the Existing Environment

The Application will describe baseline conditions in sufficient detail to permit the identification, assessment, and determination of the significance of potentially adverse effects that may be caused by the project. Information included will be:

- description of data, collection methods;
- norms, trends and extremes used for predictive purposes, and methodologies used to derive them;
- quality, limitations, applicability and reliability of data;
- gaps, insufficiencies and uncertainties;
- new approaches for monitoring purposes;
- assumptions, models and information sources;
- all information sources will be appropriately referenced; and,
- maps and figures will be of good quality and appropriately geo-referenced.

Where relevant, the Application will also describe why, where and how the proponent has used:

- professional judgement; and,
- Traditional Ecological Knowledge.

4.4 Assessment of Project Effects

The Application will describe the overall approach and methods used in determining the potential environmental, social, economic, heritage and health effects of the project. The Application will describe these potential effects, including residual and cumulative environmental effects, significance, the potential for accidents and malfunctions which could affect the natural environment, and the effects of the environment on the Project (which are considered as environmental effects for the purpose of CEAA).

For each biophysical assessment, including those related to VEC's, the Application will include a methodology to assess Project effects, including significance, describe the assessment and provide a rationale supporting mitigation measures and commitments. The Application will also explain the criteria used to assign significance ratings to any predicted adverse effects.

The assessment of significance will include:

- magnitude;
- geographic extent;
- timing;
- duration;
- frequency;
- irreversibility of impacts;
- ecological resilience and anticipated resiliency timeframe; and
- probability of occurrence and confidence level.

4.5 Mitigation and Residual/Cumulative Effects

The Application will identify measures to mitigate potentially adverse effects of the Project and to enhance the beneficial effects. The Application will identify equipment needs and procedures and policies associated with the proposed measures. The Application will evaluate the effectiveness of the proposed measures and assess the risk of mitigation failure and the potential severity of the consequences. The Application will propose compensation measures, where effects cannot be mitigated on-site. Where there is significant uncertainty or a residual risk, the Application will outline contingency planning.

This section of the Application will also describe the overall approach and methods to be used for the environmental cumulative effects assessments. A residual cumulative effects (RCE) assessment will only be carried out where it is determined that one or more biophysical/environmental residual project effects are likely to incrementally combine with other known projects or activities that have been, or will likely be, carried out within the foreseeable future within the specified cumulative effects study area boundary and specified timeframe. Study area boundaries are specific to the biophysical/environmental component and effect. As with the Project effects assessments, cumulative effects assessments will assume that the proposed technically and economically feasible mitigation measures have been implemented and effective, as described, and will be considered before determining the significance of residual cumulative effects.

The Application will assess residual effects which include beneficial effects and those adverse environmental effects which cannot be avoided or mitigated through the application of environmental control technologies or other acceptable means, including emergency response and contingency plans.

Each biophysical/environmental assessment in the Application for which a cumulative effects assessment is completed will describe the methodology to assess significance of residual cumulative effects. Relevant stakeholders will be consulted during the assessment and, where possible, their concerns or inputs to any cumulative affects assessment will be documented.

The Application will provide conclusions on the significance of residual effects. It will clearly describe the means by which the criteria mentioned in section 4.4 are used to rate or determine the overall significance of the residual effects as either significant or not significant. Ecological parameters and social-cultural parameters will be distinguished from each other.

For further guidance see “Reference Guide: Determining Whether a Project is Likely to Cause Significant Adverse Environmental Effects” (CEA Agency 1994).

4.6 Monitoring

The Application will identify monitoring programs, including those related to assessment of mitigation effectiveness, during both the operational and post-closure periods for all environmental components included in this section. The Application will contain all pertinent data and assessment methodologies. Any information gaps will be identified along with reasonable suggestions on how to remedy them.

5.0 EFFECTS ASSESSMENT AND MITIGATION

5.1 SURFICIAL GEOLOGY, TERRAIN, SOILS, AND NATURAL HAZARDS

5.1.1 Baseline Conditions

The Application will describe terrain, soils (including particle size analysis), sediments, surficial geology, bedrock and structural geology, seismicity, glaciation, geological hazards such as slope stability, regional seismic risk, landslides, and natural hazards such as avalanches. This will include the ground conditions at the mine site, ancillary facilities and access road, including a description of surface soils and geology. It will include a description of mineralogy and geochemistry of the principal units of the deposit which will be disturbed or mined, results of analyses, and static and kinetic geochemical testing[1]. This section of the Application will also include the identification of Metal Leaching/ Acid Rock Drainage (ML/ARD) rock.

5.1.2 Impact Assessment

This section will describe the potential impacts that may occur to terrain and soils and the hazards posed by all phases of the project, including identified residual and cumulative effects and their significance. The Application will provide a natural hazard assessment, including terrain stability, including the potential for erosion and subsidence for major structures (waste dumps, stockpiles, impoundments). The location and conceptual designs for proposed portals, open pits, waste dumps, impoundments and plant site will be supported by adequate investigation and assessment of foundation conditions. As well, an investigation of suitable construction materials (e.g. for dam construction) will be conducted.

The Application will also consider the potential effects of:

- ground freezing occurrences and effects on containment structures;
- water content of waste rock dumps and the potential for failure;
- borrow pits and aggregate use with resulting terrain disturbance;
- rock types, including geochemistry and ML/ARD potential;
- seismicity and natural erosion potential, landslides and slope instabilities;
- remedial actions at the mine site (waste dumps, tailings); and
- volume and characteristics of material stockpiled for reclamation and changes to stockpiled material over time.

[1] For guidance see "Policy for Metal Leaching and Acid Rock Drainage at Mine Sites in British Columbia" and "Guidelines for Metal Leaching and Acid Rock Drainage at Mine Sites in British Columbia".

Where the waste dumps could be used to dispose of a variety of materials, including solid inert waste, sewage sludge, mine rock and mill clean-up residue, the Application will identify the potential effects on the environment of the interaction of these materials, including long term monitoring and management plans for ensuring the stability of the material.

5.1.3 Mitigation and Residual/Cumulative Effects

This section will identify the potential effects of the Project, mitigation measures and residual or cumulative effects. Waste dump designs will be developed with reference to the "BC Mine Waste Rock Pile Research Committee, Interim Guidelines". Conceptual impoundment designs will be developed with reference to the "Canadian Dam Association, Dam Safety Guidelines".

5.1.4 Monitoring

This section will describe any monitoring recommended based on the terrain, geology, soils and natural hazards assessment and chosen mitigation methods.

5.2 SURFACE WATER AND GROUNDWATER QUANTITY AND QUALITY

5.2.1 Baseline Conditions

Based on consultations with MOE on sampling protocols and data requirements for this review, the Application will describe the following surface water and groundwater quantity characteristics that have the potential to be changed during all Project phases and affect Project design, including information from hydrogeological studies of groundwater regimes in the Project area:

Surface Water:

- hydrology of affected watersheds and sub-basin streams;
- temporal variation in stream base flows;
- site water balance, including estimates of evapotranspiration (recognizing influences from the pine beetle infestation);
- surface water quality and flow quantity based on consultations with MOE regarding sampling protocols and data requirements;
- physical characteristics for all potentially affected waters in the Project area;
- potential reference areas for environmental effects monitoring;
- baseline surface water quality and quantity conditions on a seasonal basis and with respect to low flows and storm flows;
- comparison of water quality in Barbour Creek to provincial water quality guidelines or criteria (for prediction and modeling of ambient water quality impacts;

- records of any water rights in the Project area, as well as locations for recreational use of water (e.g. wilderness camping sites, the Barbour Creek waterfall) and,
- comparison of potential parameters of concern (e.g., selenium, sulphate, suspended solids) to nearby watersheds that have data records;

Groundwater:

- identification of recharge and discharge areas;
- aquifers and aquitards;
- groundwater levels and flow characterisation;
- hydraulic gradients and properties of the surficial and bedrock geologic units;
- temporal evaluation of ground water quality;
- physical characteristics for all potentially affected waters in the Project area;
- potential reference areas for environmental effects monitoring; and,
- comparison of potential parameters of concern (e.g., selenium, sulphate, suspended solids) to nearby watersheds that have data records;

Surface – Groundwater Interaction:

- surface and groundwater interaction and water balance.

This section of the Application will be based on a data set linked to a consistent geodetic datum so that the surface and groundwater assessment will have the same vertical control benchmark for all elevations.

5.2.2 Impact Assessment

The Application will reference the source of information and also any measurement standards or collection protocols used for all parameters reported (whether estimates or empirical measurements). The Application will also describe assumptions made and include ranges and confidence estimates for parameters used in the analysis.

The Application will provide an analysis of Project effects, including identified residual and cumulative effects and their significance, on quantity and quality of surface water, ground water and the interaction between the two. Impact conclusions concerning water quality and catchment areas will be based on the effects of all aspects of the project, including waste streams on:

- the hydrology of the area, including potential changes in timing, volume and deviation of peak and minimum flows resulting from the Project. This includes dewatering of underground workings and open pits and resulting impacts on the sedimentation pond water balance, water level, outflow rates, etc;

- changes in hydrogeology, including groundwater levels, predicted mine inflows, water balance and flow characterization;
- receiving environment surface water and groundwater quality;
- surface water – groundwater interactions, including stream base flows and water balance;
- water quality from open pits, other mine workings (including underground), collection and settling ponds, sewage treatment facility and process plant;
- water balances for waste water containment facilities including contingencies and excess holding capacities;
- water handling procedures and contingencies for potentially higher than expected inflows;
- ML/ARD and seepage quality associated with movement of material and use for foundations, dikes, dams, and mine site and any new haul roads.

The above will include a detailed characterization of geochemical influence on surface and groundwater from all potential sources, including mine rock exposed on pit walls, materials temporarily stored (coal and waste rock); and water released or leached from tailings impoundments and other structures particularly with respect to coal, nutrients and major significant ions.

The Application will provide a detailed description of predicted mixing zones in any aquatic receiving environment for effluents discharged from the Project. This will include an assessment of water quality (metals, nutrients, major ions, and physical characteristics) within and at the boundaries of the mixing zone and criteria used to establish the mixing zone. A description will be given of the predicted impacts of releases of any effluents, surface runoff and seepages overland and to streams (including consideration of surface ponding), with particular attention to potential effects of:

- blasting and its associated residues, in particular, nitrogen (nitrate, nitrite and ammonia);
- potential metal leaching and acid rock drainage on baseline receiving water quality;
- chemical and toxic substances (e.g. flocculants).
- sewage flows to downstream waters;
- siltation effects (e.g., runoff along mine site roadways, proposed access routes, and drainage ditches);
- effects of nutrients on fish and non-fish bearing waters, including possible trophic status changes in the receiving environment and, if necessary, ways to reduce or eliminate nutrient input;
- impact of the use of berms for water containment, including impacts of berm materials and seepage through the berm;
- water chemistry impacts on surface runoff;
- water chemistry impacts on sediment pond water overflow on the receiving environment; and,

- effects of waste rock chemistry and toxicity on water quality, fish and wildlife in receiving waters.

All parameter estimates reported in the Application will include sources of information (either estimates or empirical), assumptions built into the data, and data reporting that includes ranges and confidence estimates for parameters. It is noted that impacts may differ, and will be assessed, throughout the various stages of the project lifecycle.

5.2.3 Mitigation and Residual/Cumulative Effects

This section will include proposed mitigation measures, and define identified residual or cumulative effects. The assessment will include use of regional data sets, where available, along with available information regarding impacts from other projects in the region. Climate and hydrology data will be used to develop site water and sediment management approaches, particularly the sizing of sediment ponds. Topics discussed will include:

- drainage control (storm water, groundwater, sediment);
- control and management of materials with potential for ML/ARD;
- treatment of waste water and runoff;
- chemical and toxic substances, including blasting agent handling and storage;
- location and design of stream crossings; and,
- reclamation of disturbed sites.

Other projects within the Horizon project area will be identified and considered in the development of the application.

5.2.4 Monitoring

This section will describe any monitoring recommended based on the surface water and ground water quantity and quality assessment and chosen mitigation methods.

5.3 NAVIGABLE WATERS

5.3.1 Baseline Conditions

The Application will describe navigable waters, if any, including data on location (latitude and longitude), depth, width and any navigation uses.

5.3.2 Impact Assessment

The Application will identify potential effects on navigability of water bodies that may be affected by the Project, the nature of the effect. For each water body, the

Application will provide data on location (latitude and longitude), width, depth, and any navigation use or issues. The Application will also describe potential effects on navigation with respect to the identified waste rock and tailings disposal areas, and access corridor.

5.3.3 Mitigation and Residual/Cumulative Effects

This section will include proposed mitigation measures, and define identified residual or cumulative effects.

5.3.4 Monitoring

This section will describe any monitoring recommended based on the navigation assessment and chosen mitigation methods.

5.4 AQUATIC ORGANISMS AND HABITAT

The Application will identify potential effects of water quality alterations on aquatic life, fish, fish habitat and fisheries during all phases of the Project by adhering to the habitat section (35(2)) of the *Fisheries* Act and the planned mitigative strategies for avoiding Habitat Alteration, Disturbance or Destruction (HADDs) for the following:

- footprint of development;
- infrastructure development;
- dewatering activities;
- flow changes from water management and diversions; and
- impacts from compensation activities.

5.4.1 Baseline Conditions

Based on a data consultations with MOE regarding sampling protocols and data requirements, the Application will describe VEC's including aquatic organisms, fish, habitat, any COSEWIC-listed species at risk, provincially red/blue-listed species and their habitats, species listed in schedules of SARA, and commercial, recreational and subsistence fisheries. The Application will describe aquatic invertebrates and stream periphyton (attached algae) in the project area, including baseline levels of chemicals, metals and ions, such as selenium and others, in aquatic biota tissues for all streams potentially affected by the project, including mine, load out facility, haul roads and power line .

The Application will characterize abundance, habitat and fishery values on the basis of biophysical stream conditions; reach boundaries; identification of fish movement barriers (falls, chutes); spawning and rearing areas; and, fish sampling.

It will also:

- compare levels of fish tissue selenium and other metals to other drainages being studied in the region, and to south-eastern BC (where there is a longer and more detailed history of fish tissue sampling for selenium);
- summarize fish barriers, habitat characteristics and sampling results on large scale (detailed) maps, in accordance with standard (RISC) methodology;
- establish a baseline of presence, diversity and relative abundance of benthic invertebrates at upstream and downstream stations on streams on potentially affected streams in the project area; and,
- establish a baseline for selenium and other metals levels as required, in invertebrate tissue.
- establish a baseline for periphyton presence and diversity at upstream and downstream stations on potentially affected streams in the project area;
- establish a baseline for selenium and metals levels in lentic algae; and,
- establish a baseline for chlorophyll levels in lotic periphyton.

5.4.2 Impact Assessment

This section of the Application will use the baseline information along with modeling of potential effects on water quality characteristics in potentially affected project area streams to describe potential effects of the project on:

- productive capacity of aquatic systems during all Project phases;
- fisheries resources[2] (including streams associated with any new haul and mine site roads, power line and off-loading facility, if on-site);
- habitat and critical habitat, including aquatic vegetation and sensitive areas, such as spawning grounds, nursery areas, winter refuges and migration corridors, (to include determination of habitat loss, disturbance or alteration);
- ecosystem connectivity;
- access to resource uses;
- any rare and/or sensitive species (including fish and amphibians) and habitat and COSEWIC/SARA-listed species;
- species of cultural, spiritual, or traditional use of importance to First Nations and Kelly Lake Communities;
- changes to the thermal regime of the aquatic environment;

[2] Note that impacts should be assessed on all water bodies likely to be impacted by the Project, not just lakes and water bodies with fishery resources. It is important to note that the *Fisheries Act* applies to all waters of Canada where fish or fish habitat are present, the latter which is defined as "*spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes*".

- mortality (includes fishing);
- all creeks and rivers and associated food webs and water use potential that may be impacted by changes in water chemistry (suspended solids, nutrients, major ions, metals) due to runoff or discharges from the Project;
- physical and chemical changes to sediment quality; and
- potential effects on aquatic biota (invertebrates and algae) from mine and mine related infrastructure development from potential pollutant sources (toxic substances, suspended and total sediment, metals leaching).

5.4.3 Mitigation and Residual/Cumulative Effects

The Application will identify proposed measures to adaptively mitigate potentially adverse effects of the Project on fish, fish habitat and fisheries, and to enhance beneficial effects. This will include:

- providing input to project design and development to avoid or minimize impacts to sensitive species and their habitats;
- additional monitoring and assessment where indicated;
- advising on scheduling of construction and development activities to avoid or minimize potential for impact to sensitive species or their key life cycle activities;
- developing land use objectives for habitat restoration during progressive and final reclamation;
- additional impact assessment and water treatment measures, if selenium values are predicted to significantly exceed baseline concentration in the receiving environment;
- mitigation and/or compensation requirements (based on DFO's policy for the Management of Fish Habitat and the related principle of no net loss of the productive capacity of fish habitat); and,
- development of compensation plans.

5.4.4 Monitoring

This section will describe any monitoring recommended based on the aquatic organisms and habitat assessment and chosen mitigation methods.

5.5 WILDLIFE AND VEGETATION

5.5.1 Baseline Conditions

The Application will provide a picture of the environment by identifying and describing VEC's and focal species as well as providing a rationale for their selection as VECs. The information in this section, which will include a

description of field methods sufficient to assess their adequacy, will provide an adequate baseline for assessing impacts of the Project. This will include:

- Occurrence, distribution, status and population health of important and key wildlife in the project area, on a seasonal basis;
- key wildlife habitat types and areas, such as nesting habitats, ungulate winter ranges, rutting grounds, bear denning sites, important wetland and riparian habitat for aquatic birds;
- maps of key plant communities that have high value for wildlife, are of scientific interest, or have high value for Aboriginal groups;
- migratory and non-migratory birds and their habitat, including wetlands (according to "Interim Canadian Wildlife Service (PYR) Guidance for Addressing Migratory Birds and Species at Risk in Project Environmental Assessment");
- amphibians, reptiles and wildlife populations, migration patterns and routes, wintering grounds, breeding areas and travel corridors of terrestrial wildlife, particularly ungulates and bears and wildlife habitat;
- COSEWIC-listed wildlife and plant species at risk, provincially listed (red-listed and blue-listed) and federally listed (Species at Risk Act) species and their habitats that are known to or could potentially occur in the project area;
- rare species, or any species of cultural, spiritual, traditional use or importance to First Nations and Kelly Lake Communities;
- vegetation, including climax vegetation, and plant communities;
- local plant communities (classified as vegetation cover types) including plant species of importance to First Nations (either directly as food, or indirectly as food for important harvest wildlife species);
- species of interest to Aboriginal groups;
- Terrestrial predictive Ecosystem maps of biogeoclimatic zones, rare or unusual ecosystems, rare plants and species of potential concern;
- wetlands, their classification and distribution; and,
- timber or other economic forest values.

The baseline data collection program will be based on consultations with MOE regarding sampling protocols (e.g. RISC standards) and data requirements.

5.5.2 Impact Assessment

The assessment will be based on the project footprint and development activities, relative to wildlife and habitat values at the regional, population and landscape level, including the construction and operation phases. The Application will provide an assessment of potentially adverse impacts, both direct and indirect on wildlife and vegetation, and identify residual and cumulative effects as well as their significance. The Application will provide an assessment of any

"ecologically representative areas" in the eco-region as defined in the Dawson Creek LRMP.

With respect to wildlife, the Application will define potential impacts such as:

- Loss of terrestrial habitat and the quality of lost habitat for relevant species identified in the baseline as described above (including landscape and regional effects on wide-ranging wildlife species);
- direct and indirect mortality of wildlife;
- access and disturbance impacts on terrestrial animals (productivity, nesting, denning, migration patterns and routes or breeding habitats) ;
- wetland alteration or loss;
- wildlife movement corridors and potential migration barriers;
- ecosystem connectivity and critical habitat.
- focal and listed species.

The prediction of impacts may involve consideration regional data sets along with project baseline data to assess effects of the Project on an area greater than the project footprint. This will include any cumulative access and disturbance effects from this and other projects in the area on wide-ranging species in terms of wildlife movement corridors, ecosystem connectivity, as well as critical habitat for wildlife.

The evaluation will include an assessment of the risk associated with water or air borne contamination of forage plants important for wildlife.

With respect to plants, the Application will identify potential effects such as:

- long-term, direct and indirect, habitat loss or alteration;
- loss of vegetation productivity and ethnobotany;
- contamination; and,
- potential for invasive, noxious plants, as defined in British Columbia's *Weed Control Act*.

5.5.3 Mitigation Measures and Residual/Cumulative Effects

The Application will describe how potential for impacts can be mitigated, and which methods and measures, including management plans, can be most effective in avoiding or lessening the potential for impact; this will include:

- Providing input to project design and development to avoid or minimize impacts to sensitive species and their habitats, including impacts on wildlife movement corridors, ecosystem connectivity and critical habitat;

- Advising on scheduling of construction and development activities to avoid or minimize potential for impact to sensitive species or their key life cycle activities;
- Developing land use objectives for habitat restoration during progressive and final reclamation;
- Developing wildlife management plans to deal with specific issues that have been identified, such as a bear awareness and safety plan; and,
- Development of compensation plans.

5.5.4 Monitoring

This section will describe any monitoring recommended based on the wildlife and vegetation assessment and chosen mitigation methods.

5.6 CLIMATE AND AIR QUALITY

5.6.1 Baseline Conditions

The Application will describe the Horizon Mine climate based on the baseline climate monitoring program, and applicable regional climatic information, including the results of any modeling and emissions inventories. Details of the baseline monitoring program will include:

- air temperature, relative humidity, precipitation, wind speed and direction, solar radiation, and extreme weather events; and,
- local and regional wind and ambient air quality conditions in the vicinity of the Project with emphasis on substances that may be emitted due to the Project. This will include available relevant dust fall monitoring information associated with other projects (including proposed expansions) in the area. Data would also include such parameters as predicted dustfall, PM10 and PM 2.5 levels.

5.6.2 Impact Assessment

The Application will provide an assessment of potential mine effects from the mine, along the proposed haul route and from any new load-out site constructed for this mine, or shared load-out site, on air quality. The Application will discuss the effect from coal dust on surrounding land and water. The assessment for any shared load-out site will include a determination of how the cumulative effect of joint load-out use can be carried out in order to prevent further degradation of ambient dustfall and PM10 and PM2.5 levels. Any improvements required including improved air quality management initiatives at these sites may be recommended because of increased production resulting from the Horizon operation. This will include potential mine effects of coal and crustal fugitive dust emissions and criteria air contaminant emissions on air quality during all phases

of the Project development. The Application will describe the method used to determine air quality changes, including constraints on the findings.

5.6.3 Mitigation and Residual/Cumulative Effects

The Application will consider the cumulative effect of this project along with effect of the proposed NEMI Trend Mine expansion project on local air quality. Mitigation measures, including the dust management plan, proposed in the Application will address any cumulative effect from the project along with the proposed NEMI expansion. The Application will provide mitigation measures and an evaluation of residual project effects and their significance from all phases of the Project.

5.6.4 Monitoring

This section will describe any recommended monitoring based on the climate, air quality and meteorology assessment and chosen mitigation methods including load-out or shared load-out monitoring.

5.7 NOISE AND VISUALS

5.7.1 Baseline Conditions

The Application will describe ambient noise levels in the Project area as well as the relative scenic value of project area as a basis for the assessment of the potential noise and visual impacts from the project.

5.7.2 Impact Assessment

The Application will provide an assessment of potential noise and visual impacts from the project, including identified residual and cumulative effects. This will include and the significance of any noise impacts on people and wildlife and visual impacts within the view shed on people, based on the project footprint and development schedule over all phases of the Project. This will include point and mobile sources of noise, and tonal and impulsive noise. The Application may also consider how the mountain pine infestation is likely to affect visual impacts in the area relative to the project. Monitoring data from previous mining and oil and gas activity nearby, and from other operations, may also be used in formulating predictions on noise and visual impacts.

5.7.3 Mitigation and Residual/Cumulative Effects

The Application will provide mitigation measures that deal with potential noise impacts from site development, construction and operation and an evaluation of residual project effects and their significance from all phases of the Project.

5.7.4 Monitoring

This section will describe any monitoring recommended based on the noise assessment and chosen mitigation methods.

5.8 ARCHAEOLOGICAL AND HERITAGE RESOURCES

5.8.1 Baseline Conditions

This section of the Application will describe the potential for archaeological or heritage resources within the potentially disturbed area (based on AOA or AIA work), including those related to First Nations and Kelly Lake Communities. The Application will include a map indicating areas assessed.

The baseline data collection program will be based on concurrent archaeological Overview Assessment, Archaeological Impact Assessment and Traditional Use Studies. The Proponent will provide the preliminary results of these studies to the Archaeology Branch of the Ministry of Tourism, Sports and the Arts in Victoria, to refine the scope of the assessment, in order to ensure that an adequate assessment is presented in the Application.

5.8.2 Impact Assessment

The Application will include the results of Archaeological Overview Assessment (AOA) and Archaeological Impact Assessment (AIA) work, which will be carried out by a registered Professional Consulting Archaeologist under a Heritage Inspection Permit. The objective of the work will be to search for and document unrecorded archaeological sites in the development area.

If archaeological sites are found during the AIA, their significance will be assessed and the degree of potential project effect, including identified residual and cumulative effects and their significance, will be evaluated to assist in the development of appropriate mitigation strategies. The impact assessment process will be consistent with existing provincial guidelines.

5.8.3 Mitigation and Residual/Cumulative Effects

If archaeological sites are identified as a result of the AIA, the Application will outline mechanisms for avoidance or appropriate mitigation of adverse effects from all phases of the Project and an evaluation of residual project effects and their significance from all phases of the Project. This section of the Application will also provide procedures to be followed in the event that archaeological materials are unexpectedly encountered during construction or operation of the Project. Permitting requirements for mitigation or site alteration (if any) will be outlined in the Application.

5.8.4 Monitoring

This section will describe any monitoring recommended based on the cultural effects assessment and chosen mitigation methods.

5.9 TRADITIONAL AND CONTEMPORARY USES

The Application will include an assessment of the potential for the Project to affect traditional or contemporary land and resource uses by First Nations or Kelly Lake Communities.

5.9.1 Baseline Conditions

The Proponent will undertake planning-level Traditional Use Studies (TUS) with interested First Nations and Kelly Lake Communities. The Application will describe how the studies were done and provide study results. This section of the Application will describe past and contemporary traditional use by First Nations and Kelly Lake Communities in the Project area and vicinity, based on consultations and information and data gathered. In drafting the Application, the Proponent will respect any confidentiality requirements regarding traditional use information. The traditional use information may be useful for identifying VEC's.

The Application will describe:

- location of First Nations and Kelly Lake Communities;
- the ecological landscape and ethno-history of the study area;
- any land use planning objectives identified by First Nations and Kelly Lake Communities; and,
- traditional and contemporary land uses by First Nations and Kelly Lake Communities, subsistence food harvesting activities, resource development and tenures, fishing, logging, recreational use, and registered hunting, trapping and guiding.

5.9.2 Impact Assessment

The Application will identify and discuss potential Project effects, including identified residual effects and their significance on traditional and contemporary uses. The assessment will include First Nations Treaty rights; interests, identified by First Nations; and, interests identified by Kelly Lake Communities, based on information provided by the consultation and review process and traditional use studies. Uses will include:

- traditional habitation sites;
- cultural sites;
- sacred sites;
- trails;

- seasonal camp areas;
- land tenures;
- permanent and maintenance camp areas; and,
- uses such as hunting, trapping, outfitting, logging, recreation, tourism, subsistence food harvesting, commercial and sport fishing areas;

5.9.3 Mitigation and Residual/Cumulative Effects

The Application will outline mechanisms for avoidance or appropriate mitigation of adverse effects from development on First Nations Treaty rights; interests, identified by First Nations and interests identified by Kelly Lake Communities. These measures will be developed in consultation with First Nations and Kelly Lake Communities. The Application will also determine potential for residual project effects and their significance from all phases of the Project. The Responsible Government Authorities are responsible for looking at the current use of lands and resources for traditional purposes by aboriginal persons as stated under the definition of environmental effect within CEAA.

5.9.4 Monitoring

This section will describe any monitoring recommended based on the traditional and contemporary use assessment and chosen mitigation methods.

5.10 SOCIO-COMMUNITY, SOCIO-ECONOMIC AND PUBLIC HEALTH CONDITIONS

This section of the Application will provide an assessment of socio-community, socio- economic and health effects over the life of the Project from construction to closure/decommissioning. This will include identification of valued social components for detailed assessment, study area and an overview of the influence of consultation on issues, scoping and the assessment.

5.10.1 Baseline

In this section of the Application, the approach and methods used to profile the current socio-community, socio- economic and public health conditions in the area that might be affected by the project will be described. The socio-community profile and population demographics for the region, as well as Tumbler Ridge, Chetwynd, First Nations and Kelly Lake Communities and other centers (as relevant) will be presented. Baseline conditions described will include:

- communities in the region most likely to be measurably affected by the Project;
- housing supply relative to the project;

- transportation and traffic patterns;
- public health setting, issues and programs;
- services, including those for utility, and emergencies;
- local, regional and mixed economies, including
    - overview of industries in the region;
    - description of current economic conditions in Tumbler Ridge, Chetwynd and other centers (as relevant);
    - description of key economic trends projected in the area without the project; and,
- labour market information, including unemployment, labour supply, skills/training needs, etc) for the region that might be affected by the project;

5.10.2 Impact Assessment

The Application will present an assessment of potential positive and negative Project effects, including identified residual and cumulative effects and their significance, during all phases of the project on the socio-community, socio-economic and public health conditions during all phases of project development. This section will also describe the approach and methods used in determining these potential effects as well as criteria for characterizing effects and determination of significance.

This section of the Application will make specific reference to potential impacts on:

- local population changes due to workers relocating to the area;
- local cost and availability of housing;
- local participation in direct operations employment;
- Project capital expenditures with associated effects on local and regional economies and employment;
- contract and business opportunities;
- workforce and attendant effects on local employment, housing, infrastructure and social services ; and ,
- community health.

Project effects will be described in the context of regional and town initiatives related to planning and resource development impacts.

5.10.3 Mitigation and Residual/Cumulative Effects

The Application will propose mitigation measures that deal with potential impacts from all phases of the project on communities potentially affected by the project,

in terms of social socio-community, socio- economic and public health conditions, including cumulative and residual effects.

5.10.4 Monitoring

This section will describe any monitoring recommended based on the socio-community, socio-economic and health effects assessment and chosen mitigation methods.

5.11 LAND AND RESOURCE USE

This section of the Application will describe Project effects on land and resource use.

5.11.1 Base Line

This section of the Application will provide a description of baseline land use, including compatibility of the Project with the Dawson Creek Land and Resource Management Plan (LRMP), include a map of Treaty 8 Territory and, where possible, a map of areas of interest identified by Kelly Lake Communities. The Application will provide an inventory of tenures on and in the vicinity of the proposed mine, including the areas potentially affected by the haul roads power line and any new load out facility.

The Application will describe:

- location of settlement areas;
- the current land use context;
- land uses in the Project area including resource development and tenures, fishing, logging, recreational use, and registered hunting, trapping and guiding; and,
- local government, applicable official community plans and communities potentially affected by the Project.

5.11.2 Impact Assessment

The Application will describe the Project's potential effects on land and resource uses, taking into account the overall management objectives and strategies of the Dawson Creek LRMP. Maps and/or descriptions of existing and past land and resources uses in relation to the proposed development will be included. The Application will include an assessment of any losses of land and resource uses during all phases of the project, including post-closure prior to reclamation of the land to a natural state. Uses assessed will include:

- resource development and land tenures;

- how proposed Project activities will interact with the objectives of the Dawson Creek LRMP as well as any Official Community Plans and zoning bylaws;
- permanent and maintenance camp areas; and,
- hunting, trapping, outfitting, logging, recreation, tourism, subsistence food harvesting, commercial and sport fishing areas.

5.11.3 Mitigation and Residual/Cumulative Effects

The Application will identify proposed measures to mitigate potentially adverse effects of all aspects of the Project, including haul routes, load out facility and power line, on land use and to enhance the beneficial effects. This will include an assessment of identified residual and cumulative effects and their significance, on land use and tenure during all phases of the project and an evaluation of residual project effects and their significance.

5.11.4 Monitoring

This section will describe any monitoring recommended based on the land and resource use effects assessment and chosen mitigation methods.

6.0 ENVIRONMENTAL MANAGEMENT SYSTEM AND PLANS

The Application will include an Environmental Management System (EMS) for the Project, to be finalized in discussions with relevant permitting agencies before the start of construction, if the Project receives an Environmental Assessment Certificate. The objective of the EMS is to provide a consistent approach to environmental management through resource allocation, the assignment of responsibilities and ongoing evaluation of environmental practices, procedures and processes. The EMS is part of the overall corporate management system which includes organizational structure, planning and training activities, staff responsibilities, practices, procedures and resources for developing, implementing, reviewing and maintaining environmental policies associated with the Project.

Environmental Management Plans (EMPs) comprise an essential component of the EMS. EMPs will identify the Proponent's approach to project planning and the development of protection measures to mitigate potential environmental effects and other impacts during construction and operation phases. EMPs will describe the environmental practices and procedures to be applied during planning, construction and operation of the Project. The Application will describe how the Proponent will ensure that commitments in EMPs will be binding on those acting for the Proponent, including contractors and sub-contractors.

The Application will include outlines and concepts for necessary Environmental Management and Contingency plans for the construction, operation, maintenance and decommissioning phases. These plans are intended to prevent significant environmental impacts. Details of these plans will form part of permit and approval applications.

6.1 Preliminary Surface Erosion Prevention and Sediment Control Plan (SEPSC)

Based on surface hydrology baseline information, this section of the Application will provide a SEPSC applicable to construction and operations of the mine, haul routes, load out, if on site, and the mine and load-out power supply lines. It will describe best management practices (BMPs) applicable to all mining components; site specific SEPSC methods; including consideration of low toxicity flocculants in meeting total suspended solids (TSS) objectives and additional planning and assessments. Although most relevant to construction and initial operations, SEPSC Plan methods will be applicable to all stages of mine development.

6.2 Waste Management Plan

This plan is to address mine and washing plant solid and liquid waste (excluding mine effluents) management in order to support the mining, processing and reclamation plans that will be developed. An essential component of the waste management plan is a geochemical characterization program.

The waste management plan will address:

- the overburden;
- coal seam partings;
- pit floor and pit walls for mining;
- waste rock;
- coarse/fine rock reject and tailings;
- effluent wastes and their characterization;
- tailings pond impoundment operating plan; and,
- sewage treatment and disposal.

The Application will address any potential for leaching of metals and other constituents (ML/ARD), and the need to maintain long-term water quality. If a requirement for mitigation is identified, based on the results of the ML/ARD assessment program, then mitigation plans will be included in the Application. The level of detail provided for any mitigation plans for operations and/or reclamation will be sufficient to demonstrate that the strategy is a viable management concept.

That Application will discuss a solid waste management plan that will include:

- waste segregation;
- recycling;
- reduction; recovery and reuse (3R's); and
- disposal (on-site, off-site and incineration).

6.3 Metal Leaching/Acid Rock Drainage (ML/ARD) Prevention, Management and Monitoring Plan (including Selenium Management Plan)

The ML/ARD Prevention, Management and Monitoring Plan will developed and reported in the Application in accordance with the following provincial policy and guidelines:

- Policy for Metal leaching and Acid Rock Drainage at Mine sites in British Columbia, Ministry of Energy Mines and Ministry of Environment, Lands and Parks, July 1998; and,
- Guidelines for Metal leaching and Acid Rock Drainage at Mine sites in British Columbia, Ministry of Energy Mines, August, 1998;

The MOE "Draft sediment and biological sampling protocols for Omineca - Peace NE coal mines, with emphasis on selenium baseline monitoring methods" will be

considered and discussed with MOE as part of the baseline data collection program for metal leaching.

The program will include descriptions of the following:

- coal interburden, unconsolidated overburden, and significant road cut characterization for their potential for ML/ARD.
- geochemical characterization program approach, methods and results;
- mineralogy, static testing, laboratory and field kinetic testing, and geochemical testing to characterize the coal horizon, footwall material, overburden and coal seam partings, and washing plant wastes (coarse rock and tailings);
- estimated metal leaching rates, including problem elements such as selenium, as a basis for the mine and plant waste management plan and the reclamation plan;
- water quality predictions for major mine components (to be used for conducting the assessment);
- mine waste characterization and water quality predictions, with assessments for pit walls and various mine waste types;
- selenium management measures, including relevant aspects of waste handling and placement, water management, and reclamation, as well as contingency planning. A related monitoring program based on consultations with MOE regarding sampling protocols and data requirements will also be presented;
- proposed ML/ARD Prediction, Management and Prevention Plan, including a monitoring program and contingency planning; and,
- Materials handling including location of any potentially acid generating waste material, construction of waste rock dumps, topsoil storage criteria, tailings management, coarse coal rejects management).

6.4 Water Management Plan

This plan is to address site water management, including mine drainage, process effluent, seepage and runoff, erosion and sediment control and settling for both construction (developed prior to construction) and operation phases, as well as recycling and management of discharges. The plan will describe how much water is expected, the likely quality, how the water will be stored and managed, and the controls that will be in place to ensure acceptable releases to the environment. This will include assessments for water management needs, including:

- sediment pond locations and operation;
- water quality management;
- water quality/quantity monitoring plan;
- ditching flood control berms;
- requirements for flocculation, as applicable to each site;

- predictions of development effects on surface water and groundwater flow regimes; and
- water balance for the mine site and load out facility, if on-site.

6.5 Closure, Decommissioning and Reclamation Plans

This section of the application will describe the process that will be employed to develop closure, decommissioning and reclamation plans for the Project. This will include what progressive reclamation will be undertaken during the project life and its approximate schedule. The objectives for reclamation will be discussed, such as landforms, land use and re-vegetation, as well as procedures to prepare for reclamation, such as depositing topsoil in stable stockpiles and locations. The Plan objectives will include desired end-use and land capability.

The reclamation plan will include concepts and commitment to a reclamation monitoring program.

The Application will describe the regulatory framework and requirements, industry standards, best management practices and government agreements that are needed with respect to the closure phase of the proposed development, including plans for mitigating the social and economic impacts of mine closure. Where regulatory requirements, industry standards or government agreements exist, their minimum standards or criteria will be reported.

The Application will provide a clear visual and textual description of the proposed development site at closure, and after reclamation. Closure, decommissioning and reclamation components and activities will be listed. An estimate of decommissioning, closure and reclamation costs will be provided.

The Application will provide an overview of the key site reclamation options considered and explain the rationale for selecting some and rejecting others, e.g., the removal of all material from site versus partial or total burial, including costs and associated environmental effects. The Application will describe methods and location of materials disposed, both on and off-site, including the structural foundations, tailings storage facility, waste dumps and sedimentation ponds.

6.6 Habitat Mitigation and Compensation Plan

The Application will include a conceptual habitat impact mitigation and compensation plan. This will be based on a wildlife and fisheries/aquatic assessment that identifies impacts and prescribes preliminary impact mitigation and compensation measures that may be required to satisfy section 35(2) of the *Fisheries Act*.

6.7 Other Management Plans

The Application will describe other environmental management plans that may be required for the Project. These may include:

- forest management and fire hazard abatement;
- noxious weed prevention and control (developed in consultation with First Nations and Kelly Lake Communities);
- hazardous industrial, domestic and construction waste management;
- air quality and dust mitigation and control management plan; including working with owners of other load out facilities to ensure best available practices are understood and where indicated applied;
- fuel management and spill contingency and emergency response plan;
- hazardous materials and waste handling plan;
- wildlife and vegetation management and monitoring plan;
- geotechnical stability monitoring plan for excavations, waste disposal sites and water management facilities; and,
- construction plan, including provision for environmental supervision.

Based on consultations, the Application will identify any EMPs or other mitigation tools that can be used to minimize potential effects on First Nations and Kelly Lake Communities. These may include such items as:

- Archaeological site management plans;
- Traditional use monitoring plan;
- Economic benefits agreements;
- Training, contracting and employment opportunities;
- Plan to monitor and outline process for handling other issues that arise during project construction (e.g. stop work plans, modification of design).

The Application will describe how archaeological and other Aboriginal issues will be monitored during project construction, and outline a process for handling issues that may arise.

6.8 Risk Assessment and Management Plan

The risk assessment and management section of the Application will include descriptions of the following:

- risk assessment process and methodology;
- identification and assessment of major failure modes for critical Project components and activities and proposed risk mitigation and management plans;
- identification and assessment of potential effects on the environment due to accidents, malfunctions and non-performance, and proposed mitigation and management plans; and,

- natural hazards assessment describing potential effects of the environment on the Project, including seismic events and planning measures specific to these effects.

7.0 CEAA ENVIRONMENTAL REQUIREMENTS

This section will be included if there is a CEAA trigger, thereby making the Project subject to joint review under both the Act and CEAA. In the case of a CEAA trigger, this section will provide a summary of the commitments made by the Proponent in the Application.

Many CEAA requirements are addressed elsewhere in this TOR regardless of a CEAA trigger, including:

Accidents and Malfunctions - This will be included as part of the content of section 6.9 above. The Risk Assessment and Management Plan will include a commitment to having an environmental management plan (EMP) in place in time for the Project start-up that would address potential accidents and malfunctions. Major components of the EMP are included in section 6.0 (Environmental Management System and Plans).

Effects of the Environment on the Project - This will also be included as part of the content of Section 6.9.

Cumulative Environmental Effects – Subsections for cumulative effects are included within the assessment sections.

Summary of Potential Effects and Mitigation measures - Refer to Section 8.0.

Effects on Navigable waters – Addressed in Sub-section 5.3.

Purpose of the Project - Addressed in Sub-section 3.1.

Alternative Means of Carrying out the Project - Addressed in Section 1.0.

Follow-up Program describing the need for and the requirements of a follow-up for the Project - Addressed in part in the monitoring Sub-sections and summarized in Sub-section 8.1.

The CEAA requirement to describe “Capacity of Renewable Resources that are likely significantly affected by the Project” has not been specifically addressed in the TOR and will await a decision regarding a Comprehensive Study.

8.0 COMMITMENTS AND RESIDUAL AND CUMULATIVE ENVIRONMENTAL EFFECTS

8.1 Summary of Commitments

The Application will include a tabular summary of expected negative effects from the project along with impact management commitments to mitigate those effects. The commitments will include a statement of when the mitigation is proposed and what department or party will be responsible for reviewing the effectiveness of the commitments, once implemented. The table will organize the mitigation/management practices and design features by impact topic. It will also include a summary of commitments that the Proponent has made to First Nations and Kelly Lake Communities to mitigate effects of the Project on First Nations Treaty Rights, interests identified by First Nations and interests identified by Kelly Lake Communities.

8.2 Residual and Cumulative Effects

This section of the Application will summarize the magnitude, frequency, duration, extent and reversibility of any residual effects of the project after mitigation measures.

The Application will provide tabular summary of all negative residual and cumulative environmental effects from all phases of the Project, mitigation strategies designed to minimize them and significance of any residual effects following mitigation. Additional details regarding mitigation will be finalized in discussions with the relevant permitting agencies, First Nations and Kelly Lake Communities and, other parties as appropriate, before the start of construction. Tables will be presented listing the assessed residual and consequent cumulative effects from all phases of the project.

8.3 Follow-up Programs during Operations

The Application will outline feedback procedures including proposed monitoring programs. The intent is to ensure that remedial actions are taken if the results of a monitoring program deviate from any established operational standards on environmental performance, or predictions on environmental impacts. Based on the assessment the Application will describe the approach, objectives and proposed methodologies that will be used relative to the following monitoring:

- environmental effects, including sediment quality, ground water and surface water quality, fish, fish habitat, and the use of fish resources, (including metal levels if required), other aquatic life indicators, and effluent and emission quality and acute and chronic toxicity;

- vegetation and metal levels;
- air quality;
- hydrology;
- archaeological;
- wildlife monitoring, including tissue metal levels, if required;
- geotechnical stability of pit walls and waste and water management facilities;
- geochemical stability of waste rock, tailings and pit walls (ML/ARD monitoring);
- overall success in meeting objectives of fish habitat compensation and reclamation programs; and
- post-construction requirements.

Final details of these long-term monitoring programs will be developed during the permitting stage. Follow up programs within the meaning of CEAA are programs for; (a) verifying the accuracy of the environmental assessment of the project, and (b) determining the effectiveness of any measures taken to mitigate adverse environmental effects of the project.

If a CEAA review is undertaken, follow up programs will include:

- verifying the accuracy of the environmental assessment of the project; and,
- determining the effectiveness of any measures taken to mitigate the adverse environmental effects of the project, separate from other monitoring programs.

9.0 OTHER AUTHORIZATIONS REQUIRED

This section will include a list of authorizations required for the construction, operation and abandonment of the Project

10.0 CONCLUSION

The Application will provide a conclusion from the assessment regarding the significance of any residual Project effects or cumulative effects predicted to occur as a result of the Project development. The Application will identify one of the following conclusions, cross referencing the assessment of impacts, mitigation requirements and residual effects sections:

1. "The Project is not likely to cause significant adverse environmental, socio-economic/community, aboriginal peoples or other effects, taking into account the implementation of identified impact mitigation measures, as identified in the EA application's "table of proposed commitments"; or,

2. "The Project is likely to cause significant adverse environmental, socio-economic/community, aboriginal peoples or other effects, even taking into account the implementation of appropriate impact mitigation measures, as identified in the EA application's "table of proposed commitments"; or,

3. "It is uncertain at the time of the review whether or not the Project is likely to cause significant adverse environmental, socio-economic/community, aboriginal peoples or other effects, taking into account the implementation of appropriate impact mitigation/management measures, as identified in the EA application's "table of proposed commitments".