

DRAFT

LOGEPOLE PROJECT  
REVISED DRAFT TERMS OF REFERENCE  
FOR CLINE MINING CORPORATION'S APPLICATION  
FOR AN ENVIRONMENTAL ASSESSMENT CERTIFICATE PURSUANT TO  
THE *BC ENVIRONMENTAL ASSESSMENT ACT*

901-1900002.P024

December 2006

## BACKGROUND TO TERMS OF REFERENCE

Cline Mining Corporation (CMC or the Proponent) proposes to develop the Lodgepole Coal Mine Project (the Project) in southeastern British Columbia. The Project is located in the Crowsnest Coalfield of southeastern British Columbia, approximately 50 kilometres south of the City of Fernie. The Project falls within the area covered by the Southern Rocky Mountain Management Plan and the Ktunaxa Nation traditional lands. A location map is shown in Figure 1.

The Project site has been the subject of exploration activities for the past 30 years. Crowsnest Resources (Shell Canada), and later Fording Coal, did extensive work on Lodgepole between 1975 and 1997. Exploration activities included 36 drill holes totalling 5,327 meters, 875 meters of surface trenching, four adits (for bulk samples), and detailed geographic/geologic mapping. The Proponent augmented this data with an additional 15 drill holes in 2005.

GR Technical of Calgary provided an independent review of the geological database in February 2004. The NI 43-101 report confirmed a total of 133 million tonnes of coal resources at Lodgepole, of which 82.5 million tonnes are considered surface mineable and of immediate interest. A total of 49.6 million tonnes of the surface mineable resource is classified as measured. Feasibility and environmental studies were initiated in 2005.

The project is comprised of nine coal zones containing an aggregate thickness of 32.7 metres of coal seams. The lower two zones have average aggregate thicknesses of 14 metres and 7 metres, respectively. Tests show the coal is of low volatile bituminous rank suitable for Pulverized Coal Injection (PCI) and Coking (both of which are used in the steelmaking process). The Lodgepole coal measures are in a dip slope structure considered favourable for extended low-strip ratio, low-cost mining.

The main elements of the Project Description are described below:

- Mining is expected to be a conventional truck and shovel open pit mine;
- Raw coal will be cleaned using conventional wash plant technology. The wash plant will be located at the mine site;
- Clean coal will be trucked to a rail load-out in Elko;
- Clean coal will be railed to a coal port in the Vancouver, BC area via the CP Rail line. The Roberts Bank Coal terminal in Tsawwassen, BC will be the likely port;
- Two waste rock dumps and one in-pit dump will be constructed;
- Soils will be salvaged for reclamation. Overburden will be stockpiled;
- Clean coal rejects from the wash plant will be stockpiled along Jack Creek near the plant site;
- Tailings will be dewatered to a filter cake and stacked with the Clean Coal Rejects; and
- The road between the mine site and the load-out is an existing Forest Service Road actively used by logging trucks. Potential upgrades to this road will be part of the Project.

At full operation, the mine will produce approximately 2 million tonnes of clean coal per year. The coal product will be sold to the global steel making industry.

The BC Environmental Assessment Office (EAO) issued a Section 10 order pursuant to the *BC Environmental Assessment Act*, S.BC 2002, c43 (the Act) that an Environmental Assessment (EA) Certificate is required for the Project. The EAO made this determination based on the “Lodgepole Mine Project Description” submitted on January 9, 2006. The EAO will issue a Section 11 order to stipulate the scope of the Project, the scope of the assessment and the procedures and methods for assessing the Project. The Section 11 order may confirm the following items as part of the project scope:

- An open pit or pits, waste rock dumps, borrow pits, overburden and topsoil storage piles, and coal processing plant and facilities, and ancillary infrastructure;
- A rail and truck load-out facility in Elko;
- A new power line including any new right of way required; and
- The Forest Service Road between the Lodgepole property and the load-out in Elko and any road modifications and new road construction.

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. The Project does not include any modifications or upgrading by BC Hydro of the existing power lines.

The Section 11 order requires a draft Terms of Reference (TOR) for the Application be developed by the Proponent for approval by the BC EAO.

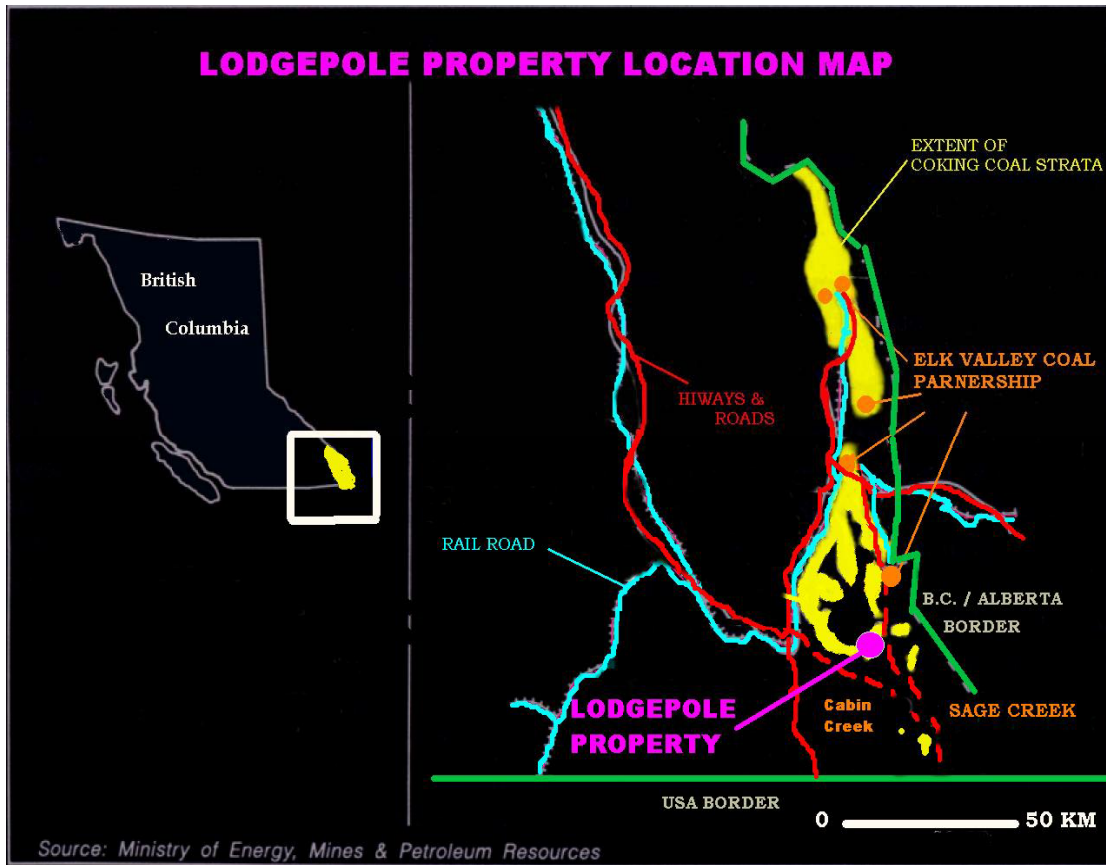
The contents of this document constitute the draft TOR for CMC’s Application for an EA Certificate (the Application). The TOR identifies the issues to be addressed and the information that must be provided by CMC in its Application. It is CMC’s responsibility to provide sufficient data and analysis in the Application to allow the evaluation of potential effects of the Project by First Nations, government agencies, local governments, stakeholders and the public. The approved TOR will incorporate comments from federal, provincial and local government agencies, First Nation representatives and the public based on their review of the Proponent’s draft TOR.

The purpose of the draft TOR is to state what types of data the Proponent will collect and the assessments the Proponent will conduct. Details on CMC’s baseline studies will be discussed with First Nations, government agencies and local governments during the pre-application stage and will be presented in the Application.

The *Canada - British Columbia Agreement on Environmental Assessment Cooperation*, signed in March 2004 provides for harmonized reviews when EAs are required under both the *Canadian Environmental Assessment Act* (CEAA) and the *British Columbia Environmental Assessment Act* (BCEAA). The Agreement also provides for the province’s EAO to lead harmonized reviews of proposed projects. In accordance with the Agreement, the TOR has been developed to address the information requirements under both *BCEAA* and the *CEAA*. It should however be noted that the draft TOR

has been finalized prior to a determination by federal departments as to whether any project components will be subject to review under the CEAA. In the interim, federal information requirements have been identified in the TOR. Nothing in this document should be taken to indicate that a decision has been made on the appropriate process to take to complete a federal environmental assessment. Also, as a result of any required public consultation on the scoping document for a CEAA comprehensive study, additional information requirements may arise that are not addressed in the TOR.

Figure 1: Project Location – Provincial Setting



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**FIGURES**

Figures will be listed as they appear in the Application.

**TABLES**

Tables will be listed as they appear in the Application.



## APPENDICES

Note: These are the anticipated Appendices. However, the final Appendices list may change in the Application

Appendix A	Consultation Records
Appendix B	Alternatives Analysis Report
Appendix C	Mine Plan
Appendix D	Waste Rock Dump Design
Appendix E	Tailings and Clean Coal Reject Storage
Appendix F	Haul Route Design
Appendix G	Climate and Hydrology
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Appendix M	Air Quality and Noise
Appendix N	Archaeology
Appendix O	Acid Rock Drainage and Metal Leaching Assessment
Appendix P	Water and Load Balance
Appendix Q	Socio-Economic and Community Data

## PREFACE

This section of the Application will provide information on the purpose of the document and will include:

- A statement that the proposed Lodgepole Mine Project (the Project) is subject to a review under the *Environmental Assessment Act* (the Act), pursuant to an Order issued under Section 10 of the Act;
- A statement that the proposed Project is/is not subject to a federal screening or comprehensive study under the *Canadian Environmental Assessment Act* (CEAA) and the relevant triggers, if the project is reviewable under CEAA;
- Reference that the Application will also be developed to meet the information requirements under *CEAA*.
- Confirmation that the Application has been developed pursuant to Terms of Reference (TOR) approved by the Environmental Assessment Office (EAO), and complies with any other relevant instructions provided by EAO in the Section 11 order; and
- Identification of the agencies, First Nations and other parties who have been involved in the development of the Application.

## EXECUTIVE SUMMARY

The Executive Summary is intended to provide the reader with an overview understanding of the Project and includes the following information:

- A concise description of all major 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, and government agencies, including a summary of the issues raised, and solutions suggested, during these consultations;
- An overview of the key issues related to the Project development and a description of proposed management measures to mitigate any adverse effects; and
- The Proponent's conclusions with respect to the Environmental Assessment (EA) 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 Cline Mining Corporation (CMC) later identifies a need for a change in the Table of Contents for the Application, this will be discussed with EAO. The Table of Contents will provide an outline of all document components, including volumes, sections, sub-sections, lists of references, appendices, figures, tables, and photographs.

**GLOSSARY**

This section will provide a brief explanation of the Project specific terms, acronyms and abbreviations.

**LIST OF ABBREVIATIONS FOR THE TERMS OF REFERENCE**

A list of all Project specific terms, abbreviations and acronyms will be provided in the Application. The following abbreviations and acronyms are used in the Terms of Reference.

Application	Application for an Environmental Assessment Certificate under the British Columbia <i>Environmental Assessment Act</i>
AIA	Archaeological Impact Assessment
BCEAA	British Columbia <i>Environmental Assessment Act</i>
BMP	Best Management Practices
CDC	Conservation Data Centre
CEE	Cumulative Environmental Effects
CEAA	<i>Canadian Environmental Assessment Act</i>
CEA Agency	Canadian Environmental Assessment Agency
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
EA	Environmental Assessment
EAO	British Columbia’s Environmental Assessment Office
EMP	Environmental Management Plan
MEMPR	Ministry of Energy, Mines and Petroleum Resources
ML/ARD	Metal Leaching/Acid Rock Drainage
MOE	Ministry of Environment
Mt/a	Million Tonnes per Year
PCI	Pulverized Coal Injection
Proponent	Cline Mining Corporation
SARA	Canada <i>Species at Risk Act</i>

SEPC	Surface Erosion Prevention and Sediment Control Plan
SRMMP	Southern Rocky Mountain Management Plan
PEM	Predictive Ecosystem Mapping
PM <sub>10</sub>	Criteria air pollutant with a particulate diameter less than or equal to 10 microns
PM <sub>2.5</sub>	Criteria air pollutant with a particulate diameter less than or equal to 2.5 microns
TEM	Terrestrial Ecosystem Mapping
TOR	Terms of Reference
TUS	Traditional Use Studies
VEC	Valued Ecosystem Component
Project	Lodgepole Coal Mine Project
WCB	Worker's Compensation Board

## 1.0 INTRODUCTION AND OVERVIEW

The Application will include an introduction that orients the reader to the Application by briefly introducing the Proponent geographic setting, the Project, the joint federal and provincial review process (if required), and the content and format of the Application.

### 1.1 PROPONENT IDENTIFICATION

This section of the Application will provide information about the Proponent, including company name, history, incorporation, structure, address, and phone/fax/e-mail. This section will also include the name(s) of the primary project managers for the Project and affiliations.

### 1.2 PROJECT SETTING

The Application will describe the geographic setting in which the Project is proposed to take place and include maps at appropriate scales to illustrate the regional setting and clearly indicate the Project within that setting. Site plans, sketches and photographs will be used as necessary to indicate project components, site features and activities.

### 1.3 BACKGROUND TO THE APPLICATION

This section of the Application will:

- Describe the purpose and structural components of the Application;
- Provide a summary of the Project planning and review history to date; and
- Provide a summary of any legal orders or agreements applying to the review of the Project.

### 1.4 PROJECT OVERVIEW

This section of the Application will:

- Provide a description of the Project and its purpose;
- Describe the Project's location and setting, including regional context, site-specific setting, and proximity to environmentally sensitive areas or cultural sites (including maps depicting this);
- Describe existing site access;
- Identify and list the Project elements included in the Project Scope;
- First Nations interests identified;
- Indicate whether the Project components require the use of Crown land or are located on private land; description of Crown and private land zoning and use implications, including how the project is envisioned in the context of the Southern Rocky Mountain Management Plan (SRMMP);



- Provide maps showing both regional context and site-specific setting;
- An estimate of total labour force required (direct jobs only) during mine construction (in person-years) and mine operation (total permanent, temporary, full-time and part-time jobs per year at full-scale operation);
- An estimate of capital costs of the project (total front-end pre-production mine construction costs, in Canadian dollars);
- Estimates of reclamation costs (preliminary estimates based on an assessment of liability and as outlined in MEMPR guidelines); and
- An itemization of predicted Project benefits.

## 1.5 REGULATORY FRAMEWORK

This section of the Application will:

- Provide a summary of the relevant provincial and federal regulatory and policy requirements governing the Project, and any applicable local government official community plan and zoning requirements;
- Outline the permits, licenses, approvals and authorizations required for the Project construction and operation.

The Application will provide a description of the ownership status and development rights held for the coal property, including a listing of existing coal tenures and their status, and other coal tenures, if any, held in the vicinity of the Project.

### 1.5.1 BC Environmental Assessment Process

Concurrent permitting may be requested under the *BC Environmental Assessment Act*.

### 1.5.2 CEAA Environmental Assessment Requirements

### 1.5.3 Extra-Jurisdictional Involvement

Interested and affected parties who are outside provincial and federal groups will be identified. The process by which these extra-jurisdictional parties participated in the assessment process will be described.

## 1.6 LODGEPOLE PROJECT TEAM

This section of the Application will identify the roles and responsibilities of company personnel and consultants involved in preparing the Application.

## 1.7 REPORT ORGANIZATION

This section of the Application will identify how the report is organized and provide guidance to assist in an efficient review of the Application

## 1.8 TABLE OF CONCORDANCE

A Table of Concordance will be provided that cross-references information presented in the Application with the information requirements identified in the TOR.

## 2.0 INFORMATION DISTRIBUTION AND CONSULTATION

### 2.1 PUBLIC CONSULTATION

Project information distribution and First Nations and public participation in the EA are important aspects of project reviews. Public consultation measures must be in compliance with the *Public Consultation Policy Regulation*, BC Reg 373/2002 and with requirements set in the Section 11 order.

#### 2.1.1 Consultation During the Pre-Application Stage

The Application will include:

- An outline of consultation undertaken during the pre-application stage, covering both the preparation of the TOR and the Application with the public and key stakeholders, such as guide outfitters, trappers, and mineral and other tenure holders;
- A description of the open houses or public meetings to be held in the communities of Fernie, Sparwood, and Elko to obtain comments and feedback; Comments and feedback will be submitted to the BC EAO for distribution and inclusion in the Application if required, and
- A list of any significant issues raised and measures proposed to respond to those issues.

#### 2.1.2 Consultation Planned During the Application Stage

The Application will include:

- A description of the proposed consultation program with the public following screening and acceptance of the Application for formal detailed review;
- A description of the open houses or public meetings to be held to obtain comments and feedback; Comments and feedback from in the communities of Fernie, Sparwood, and Elko will be submitted to the BC EAO for distribution if required, and
- The Application will describe consultations undertaken with stakeholders (e.g. guide outfitters, trappers, mineral tenure holders and other tenure holders);
- Indicate the degree to which issues raised during Application consultations will be considered resolved or addressed by CMC and other parties;
- A description of the process proposed for attempting to resolve outstanding issues; and
- A list of any significant issues raised and measures proposed to respond to those issues.

## 2.2 FIRST NATIONS CONSULTATION

The Proponent is committed to providing multiple and timely opportunities for input from the Ktunaxa Nation. The Ktunaxa will be given the opportunity to identify representatives to provide input regarding assessment of project effects and to provide input and advice in the pre-Application and Application stages, including meetings, open houses and a traditional use study (TUS). While these representatives will provide the primary contact, it is understood that under a consensus decision making model it will be important to provide several opportunities for the Ktunaxa Membership to attend meetings and have the opportunity to discuss the project amongst themselves before providing comment on the project. From these information sources, potential effects on First Nation's interests will be documented, and potential strategies for mitigation will be determined. This will be done in consultation with the Ktunaxa Nation.

### 2.2.1 Consultation During the Pre-Application Stage

The Application will include:

- A description of the Proponent's consultation efforts undertaken with the Ktunaxa Nation at the Pre-Application stage, both before and after entering the EA process;
- A description of any consultation agreements reached with the First Nations potentially affected by the Project;
- A list of any significant issues raised and measures proposed to respond to those issues; and
- An "issues tracking table" and an indication of the degree to which the issues are considered to be resolved or otherwise managed or addressed.

### 2.2.2 Consultation Planned During the Application Period

The Application will include:

- A description of the proposed consultation program with the Ktunaxa Nation following screening and acceptance of the Application for formal detailed review;
- The degree to which issues raised during Application consultations will be considered resolved or addressed by CMC and other parties;
- A description of the process proposed for attempting to resolve outstanding issues;
- A plan for post-Application involvement; and
- An "issues tracking table" and an indication of the degree to which the issues are considered to be resolved or otherwise managed or addressed.

## 2.3 GOVERNMENT AGENCY CONSULTATION

### 2.3.1 Consultation During the Pre-Application Stage

The Application will include:

- An outline of consultation undertaken during the Pre-Application stage, covering the preparation of both the Terms of Reference and the Application with government representatives (federal, provincial, local, U.S federal and Montana State agencies);
- A list of significant issues raised and measures proposed to respond to these issues; and
- An “issues tracking table” and an indication of the degree to which the issues are considered to be resolved, or otherwise managed or addressed.

This will include several meetings with the various departments and agencies.

### 2.3.2 Consultation Planned During the Application Stage

The Application will include:

- A description of the proposed consultation program with government representatives following screening and acceptance of the Application for formal detailed review;
- Discussion regarding the degree to which issues raised during Application consultations are considered resolved or addressed by CMC and other parties;
- A description of the process proposed for resolving or managing outstanding issues; and
- An “issues tracking table” and an indication of the degree to which the issues are considered to be resolved, or otherwise managed or addressed.

This will include several meetings with the agencies and department staff and may potentially result in a modified consultation program based on the input from the government representatives.

## 3.0 PROJECT DESCRIPTION

The Project Description will describe the Project’s on-site and off-site facilities and the activities associated with them for all relevant stages of the Project development – construction, operations/maintenance, and decommissioning/reclamation – in sufficient detail to allow a meaningful assessment of the Project effects. All key project components and activities will be clearly identified and explained. The Application will contain sufficient detail to be able to identify major mine components or structures that are likely to have a high failure consequence during operation and closure and where monitoring efforts will be required for the purposes of risk analysis.

### 3.1 PROJECT BACKGROUND AND RATIONALE

This section of the Application will:

- Provide a history of the Project planning and development;
- Identify the need for and purpose of the Project. In this context, the Application will present the rationale for proceeding with this development at this time within the context of regional, provincial, and national economies, as well as global implications of supply and demand for coal mines and markets;
- Describe any sustainability principles that have guided the Project planning; and
- Provide a summary of site selection studies and alternative locations assessments for the minesite, new rail load-out, load-out access, and power lines.

The Application will also include a description and rationale for the main Project alternatives, in particular those associated with the following components:

- Mine production rates
- Mine development scheduling
- Access (trucking vs. rail)
- Mining methods
- Target extraction volumes
- Coal processing
- Waste rock and tailings management
- Mine water management
- Energy production (import of power vs. diesel)
- Decommissioning, closure and reclamation

The analysis of alternatives will include:

- A description of alternatives, how or why they are or are not technically or economically feasible, and the rationale for rejecting some alternatives;
- Identification of the environmental and social effects of the technically or economically feasible alternatives; and
- The rationale for the preferred alternative.

The Application will also include the following information:

- Location of the Project and the longitude and latitude of the site;

- Maps at appropriate scales that indicate both the regional setting and the layout of project components and activities;
- Site plans/sketches/photographs with project location, site features and activities identified on maps;
- A description of the Project's proximity to designated environmentally sensitive areas or cultural sites, such as national/provincial/regional parks, ecological reserves, heritage sites and other sensitive areas; and
- A description and rationale for access, coal processing, waste rock and tailings management and mine water management.

## 3.2 MINE

### 3.2.1 Geology and Coal Resources

This section will describe the regional geology, Lodgepole Mine geology, and coal resources, including:

- Schematics and stratigraphic cross sections;
- Drill hole locations and representative logs; and
- Representative coal characterization tests.

### 3.2.2 Mine Plan

This section will provide a detailed mine plan, including descriptions of the mine pits, coal release schedule, borrow pits, water management infra-structure, haul routes, mining equipment, and explosives storage and use. The descriptions of the mine pits will include geotechnical and other design criteria, arrangements, and development sequences. Preliminary geotechnical evaluations will include programs for laboratory and field-testing to characterize rock conditions and design criteria and considerations for pit wall stability will be included.

### 3.2.3 Plantsite and Ancillary Infrastructure

This section will describe the coal washing plant and facilities, clean coal handling and truck load-out, and ancillary infrastructure. Water treatment facilities, if required, will be described.

### 3.2.4 Waste Rock Disposal

This section will describe dump design and construction sequence. The description will include design criteria and preliminary geotechnical evaluations for foundation conditions.

This section will also describe water management facilities associated with the waste rock dumps, including ditches and sediment ponds. Design criteria for these facilities will be included.

### 3.2.5 Clean Coal Rejects and Tailings Disposal

This section will describe the disposal management of the wash plant rejects. The description will include design criteria and preliminary geotechnical evaluations for foundation conditions.

This section will also include the associated water management facilities, such as ditches and sediment ponds. Design criteria for these facilities will be included.

### 3.2.6 Mine Services During Operations

This section will describe mine services during operations, including:

- Utilities supply and distribution (power, propane, other fuels, and water);
- First aid and security;
- Sewage;
- Fire protection system;
- Explosive storage; and
- Minesite traffic control plans.

### 3.3 EXISTING LOGEPOLE HAUL ROUTE

#### 3.3.1 Overview

This section of the Application will provide a description of the various segments of the existing Lodgepole haul route. This section will also include a description of any segments of the existing road and stream crossings that are to be upgraded or modified. Traffic control and projected road use levels associated with the Lodgepole Mine will be described.

Within this Terms of Reference the existing Lodgepole Route and the existing Forest Service Elko Connector Route are collectively referred to as the access road.

#### 3.3.2 Existing Lodgepole Route

This section will describe the road from the minesite to the existing Forest Service road:

- Construction sequence;
- Document additional pull-outs and/or additional disturbance area;
- Traffic control plan for construction and operation;
- Road design specifications for new or modified roads; and
- Route selection methods for new road segments, including evaluation of terrain and other factors.

#### 3.3.3 Existing Forest Service Elko Connector Route

This section of the Application will describe the following aspects of the Lodgepole Creek connector haul route:

- Road segment descriptions, including segment-specific design considerations and stream crossing structures;
- Document additional pull-outs and/or additional disturbance area;
- Construction sequence; and
- A traffic control plan for construction and operations, which includes consideration of other industrial users of the road.



### 3.4 ELKO LOAD-OUT

A description of the Elko load-out will be provided in this section. The load-out design specifications, including geotechnical, facility equipment, and services during operations will be described. A general site plan will be provided.

### 3.5 POWER SUPPLY

#### 3.5.1 Lodgpole Mine

This section of the Application will describe the power supply required for the mine and wash plant. This section will also include any plans for back up power supply such as diesel generators. The location of any new power lines to the minesite will be indicated on maps. Stream crossings will be identified.

#### 3.5.2 Elko Load-out Power Supply

This section of the Application will describe the power supply required for the load-out facility.

### 3.6 PORT FACILITIES

The Application will evaluate the capacity of the port to accommodate coal from the Project.

### 3.7 PROJECT PHASES AND SCHEDULES

This section of the Application will provide a description of the major activities and scheduling that will take place during construction and preproduction full operations, and decommissioning/reclamation of each major Project component – pit, plant, dumps load-out, and access road.

## 4.0 CURRENT ENVIRONMENTAL CONDITIONS

The Project components to be included in this assessment are the minesite and the load-out. Surface drainage and stream crossings relative to power lines and access roads will be discussed in the Project description (section 3.4 and 3.5). The release of global warming gases will be addressed in sections 4.10 (Air Quality Management Plan) or 11 (Air Quality).

### 4.1 CLIMATE

#### 4.1.1 Introduction

This section of the Application will provide a description of the climate of the project area based on the baseline climate monitoring program, and applicable regional climatic information. Details of the baseline monitoring program will be provided.

#### 4.1.2 Issues Identification

The primary issues will be identified based on the baseline data and the implications of the issues for the Project will be described.

#### 4.1.3 Methods

The study area boundaries and the rationale for selecting those boundaries will be given. The methods used to collect the data will be described.

#### 4.1.4 Baseline Conditions

Baseline data interpretations will be presented. The raw data will be provided in an appendix.

### 4.2 HYDROLOGY

#### 4.2.1 Introduction

This section will describe the:

- Baseline hydrology monitoring program and results;
- Regional and any other data or information used in the hydrologic assessment;
- Minesite surface water hydrologic regime; and
- Hydrologic characteristics of the Foisey and Lodgepole Creek drainages in which the mine, plant, and mine access will be situated.

#### 4.2.2 Issues Identification

The primary issues will be identified based on the baseline data and the implications of the issues for the Project will be described.

#### 4.2.3 Methods

The study area boundaries and the rationale for selecting those boundaries will be given. The methods used to collect the data will be described.

#### 4.2.4 Baseline Conditions

The Application will provide information from the flow monitoring stations.

Data from the Jack Creek and Crabb Creek flow stations will be used to:

- Develop a preliminary hydrograph for Jack and Crabb Creeks;
- Assist in the development of site water and sediment management plans;
- Estimate the water balance and seasonal flows, including summer and winter low flow periods; and
- Estimate storm flows (in conjunction with regional rainfall data).

## 4.3 HYDROGEOLOGY

### 4.3.1 Introduction

This section will provide an overview of the hydrogeological program.

### 4.3.2 Issues Identification

The primary issues will be identified based on the baseline data and the implications of the issues for the Project will be described.

### 4.3.3 Methods

The study area boundaries and the rationale for selecting those boundaries will be given. The methods used to collect the data will be described.

### 4.3.4 Baseline Conditions

The Application will provide an assessment of hydrogeological conditions at the pit, plant site and dump sites based on geological conditions, information from drill holes (including groundwater levels), and water quality data. This section will describe:

- Baseline hydrogeology/groundwater flow program;
- Additional information used to develop the baseline description; and
- Minesite groundwater regime.

## 4.4 WATER QUALITY (SURFACE WATER AND GROUNDWATER QUALITY)

### 4.4.1 Introduction

This section will provide an overview of the water quality program.

### 4.4.2 Issues Identification

The primary issues will be identified based on the baseline data and the implications of the issues for the Project will be described.

### 4.4.3 Methods

The study area boundaries and the rationale for selecting those boundaries will be given. The methods used to collect the data will be described.

### 4.4.4 Baseline Conditions

The Application will provide data from a network of surface water quality sampling stations in the project area (namely Flathead River, Foisey Creek, McLatchie Creek, Crabb Creek, Jack Creek, and North Lodgepole Creek). The surface water stations are being sampled on a regular basis and the results will be assessed and summarized. Available data from operating and historical sampling networks will also be summarized. Water quality data from groundwater wells will be included.

The data will be used to provide:

- Characterization of water quality conditions in the Foisey Creek and Lodgepole Creek drainages, on a seasonal basis and with respect to low flows and storm flows;
- Comparison of potential parameters of concern in Foisey Creek and Lodgepole Creek (e.g., selenium, sulphate, suspended solids) to nearby watersheds that have data records; and
- The Application will identify records of water rights (if any) in the Project area, as well as any locations used by First Nations and recreational use of water (i.e., wilderness camping).

## 4.5 AQUATIC AND FISHERIES RESOURCES

### 4.5.1 Introduction

An overview of the fisheries program will be given.

### 4.5.2 Issues Identification

The primary issues will be identified based on the baseline data and the implications of the issues for the Project will be described.

### 4.5.3 Methods

The study area boundaries and the rationale for selecting those boundaries will be given. The methods used to collect the data will be described.

### 4.5.4 Baseline Conditions

#### *Fisheries*

The Application will provide data from a baseline fisheries program that will identify fish resources in Foisey Creek, Lodgepole Creek, McLatchie Creek, Crabb Creek and the Flathead River and describe biophysical habitat conditions. Historical data from other sources (provincial, forestry, mining, and development) will also be summarized, where available. Information on fish species presence and distribution for the Flathead River is available from other sources.

For fisheries, the assessment will focus on fish presence, fish habitat, water quality, and seasonal flow effects. This section of the Application will describe the fish-bearing status of all streams along the Load-out Connector Haul Route where new crossing structures are required, or where there are significant proposed modifications to existing crossing structures (i.e., that could potentially affect fish and fish habitat). Summary descriptions of the relevant stream crossing structures will also be provided.

The Application will provide data based on fish tissue samples collected from Foisey Creek for analysis of baseline metals levels in tissue.

The fisheries data will be used to:

- Describe fish presence in Foisey and Lodgepole Creeks and upper tributaries, including spawning species and rearing juveniles;
- This section will present baseline descriptions of any aquatic resources, including fisheries, in the vicinity of the proposed load-out site, based on available information;
- Characterize fish habitat on the basis of biophysical stream conditions, within reach boundaries, identification of fish movement barriers (falls, chutes), spawning areas and rearing areas;
- Compare levels of fish tissue selenium to other drainages being studied in the region; and
- Summarize fish barriers, habitat characteristics and sampling results on large-scale maps, in accordance with standard (RIC) methodology.

#### *Benthic Invertebrates and Periphyton*

The Application will provide baseline sampling data for aquatic invertebrates and stream periphyton from representative downstream and upstream water sampling stations established by the Proponent. Sampling methodology followed the draft protocols established by MOE (Cranbrook office) for baseline and monitoring programs, specifically targeted at establishing baseline selenium levels in aquatic biota tissues.

For benthic invertebrates, the data will be used to:

- Establish a baseline of presence and diversity for Foisey and Lodgepole Creeks; and
- Establish a baseline for selenium levels in invertebrate tissue.

For periphyton, the data will be used to:

- Establish a baseline for presence and diversity in Foisey and Lodgepole Creeks;
- Establish a baseline for selenium levels in lentic algae; and
- Establish a baseline for chlorophyll a levels in periphyton.

## 4.6 SURFICIAL GEOLOGY, TERRAIN & SOILS

### 4.6.1 Introduction

An overview of the surficial geology program will be given.

### 4.6.2 Issues Identification

The primary issues will be identified based on the baseline data and the implications of the issues for the Project will be described.

### 4.6.3 Methods

This section will describe the Project components for which terrain and soils have been assessed, and the approach and methods used in the assessment. The latter will include assessment study areas, timeframes, and an overview of the influence of consultation on issues scoping and the assessment. This section will also include mitigation plans to address potential effects on the environment when surficial materials are disturbed.

### 4.6.4 Baseline Conditions

The Proponent will provide terrain and soil maps from 1:20,000 scale mapping for the Foisey Creek Drainage area and 1:10,000 mapping for the immediate coal mine and coal wash plant areas and will summarize the physiographic and topographic features of the Project site and will include particle size analyses and assessment of soil erodibility. The information will include:

- A description of surficial geology and soils types; and
- An interpretation of geology and soils materials, in support of the mine development and reclamation planning.

## 4.7 NATURAL HAZARDS

### 4.7.1 Introduction

An overview of the program will be given.

### 4.7.2 Issues Identification

The primary issues will be identified based on the baseline data and the implications of the issues for the Project will be described.

### 4.7.3 Methods

The study area boundaries and the rationale for selecting those boundaries will be given. The methods used to collect the data will be described.

### 4.7.4 Baseline Conditions

The Proponent will provide a natural hazard assessment, including terrain stability and avalanche potential.

## 4.8 NOISE

### 4.8.1 Introduction

An overview of the noise assessment program will be given.

### 4.8.2 Issues Identification

The primary issues will be identified based on the baseline data and the implications of the issues for the Project will be described.

### 4.8.3 Methods

The study area boundaries and the rationale for selecting those boundaries will be given. The methods used to collect the data will be described.

### 4.8.4 Baseline Conditions

Baseline noise data will be collected at the load-out, Baldy Mountain Outfitters lodge and along the access road. Noise levels at the mine site will be regulated by MEMPR and WCB for the protection of workers.

## 4.9 VEGETATION

### 4.9.1 Introduction

An overview of the vegetation assessment program will be given.

### 4.9.2 Issues Identification

The primary issues will be identified based on the baseline data and the implications of the issues for the Project will be described.

### 4.9.3 Methods

The study area boundaries and the rationale for selecting those boundaries will be given. The methods used to collect the data will be described.

### 4.9.4 Baseline Conditions

The baseline ecosystem units will be described using Terrestrial Ecosystem Mapping (TEM) and Predictive Ecosystem Mapping (PEM) and forest capability units at the Lodgepole Mine, along the access road, at the load-out, and along the power supply line(s) and any new right of way, if new power lines are required. The presence of any Conservation Data Center (CDC) ecological communities of conservation concern will also be documented and any *Species at Risk Act* (SARA) listed plant species that potentially occur in the study area will be identified. Key plant communities that have high value for wildlife, are of scientific interest, or have high value for First Nations will be identified and mapped, so that effects from the project footprint can be identified.

## 4.10 WILDLIFE

### 4.10.1 Introduction

An overview of the wildlife assessment program will be provided.

### 4.10.2 Issues Identification

The primary issues will be identified based on the baseline data and the implications of the issues for the Project will be described.

### 4.10.3 Methods

The study area boundaries and the rationale for selecting those boundaries will be given. The methods used to collect the data will be described.

### 4.10.4 Baseline Conditions

This section will provide a baseline wildlife description and selected wildlife suitability and capability mapping for the Lodgepole Mine, along the Load-out Connector Haul Route, at the Load-out, and any new right of way for power supply line(s). The descriptions will include focal species or Valued Ecosystem Components (VEC's). Descriptions will also be provided for other small mammals, birds, amphibians and reptiles, and any threatened or endangered species with particular reference to any listed in Schedule I of SARA and COSEWIC.

The wildlife component of the application will describe:

- Wildlife occurrence and distribution in the project area, on a seasonal basis;
- Key wildlife habitat types and areas, such as ungulate winter ranges, rutting grounds, bear denning sites, important wetland and riparian habitat for aquatic birds;
- An assessment of provincially listed (red-listed and blue-listed) and federally listed (*Species at Risk Act*) wildlife species that are known to or could potentially occur in the project area; and
- Species of interest to First Nations.

## 4.11 AIR QUALITY

### 4.11.1 Introduction

An overview of the air quality assessment program will be given.

### 4.11.2 Issues Identification

The primary issues will be identified based on the baseline data and the implications of the issues for the Project will be described.

### 4.11.3 Methods

The study area boundaries and the rationale for selecting those boundaries will be given. The methods used to collect the data will be described.

### 4.11.4 Baseline Conditions

This section of the Application will provide a description of available information regarding baseline wind conditions and ambient air quality conditions in the vicinity of the Lodgepole Mine and the area of the load-out, including relevant meteorological data, a description of the surrounding environment, and identification of sensitive receptors and their distance(s) from the mine and load-out facility. Monitoring data from mining, forestry and other



activity nearby and from other operations may also be used in formulating predictions on air quality.

The Proponent will provide a description of local and regional climate conditions from existing data sources including regional weather stations from the Atmospheric Environment Service network, local privately established stations and the meteorological station at the Project site.

## 4.12 ARCHAEOLOGICAL AND HERITAGE RESOURCES

### 4.12.1 Introduction

An overview of the archaeological impact assessment will be given.

### 4.12.2 Issues Identification

The primary issues will be identified based on the baseline data and the implications of the issues for the Project will be described.

### 4.12.3 Methods

The study area boundaries and the rationale for selecting those boundaries will be given. The methods used to collect the data will be described.

### 4.12.4 Baseline Conditions

This section of the Application will describe the potential for archaeological or heritage resources within the project area, based on an Archaeological Impact Assessment (AIA). The Application will include a map indicating areas assessed as having archaeological site potential.

## 4.13 TRADITIONAL AND CONTEMPORARY USES

### 4.13.1 Introduction

The Application will include an assessment of the potential for the Project to affect traditional or contemporary land and resource uses by the Ktunaxa Nation.

The Application will describe where and how traditional knowledge of the Ktunaxa Nation is incorporated into the assessment, including its effects on predicting impacts and determining mitigation measures. Where traditional knowledge is not available or not provided to CMC, the Application will describe efforts taken to obtain this information. Given First Nations concern for the public exposure of their traditional and spiritual areas, alternatives to mapping will be investigated to ensure that the traditional sites are protected while providing the information to CMC for the inclusion of the plan and the consideration of protection/conservation.

The Application will present both the scientific and traditional perspectives on predicted impacts where both types of information are available.

The Application will assess potential effects on the cultural well being of communities and the application to the land, employment, economic opportunities and capacity building.

#### 4.13.2 Issues Identification

Much of the issues identification will be completed through the consultation process with the Ktunaxa representatives, particularly the elders of the Nation. These will be recorded in a mutually agreed upon fashion with the appropriate care given to the confidentiality of the information.

#### 4.13.3 Methods

The methods for collection of the data will primarily be through round table meetings with the appointed Nation Representatives and may include field visits with the Nation representatives to investigate the sites and determine what protection can be afforded or what other mitigation measures can be applied.

#### 4.13.4 Baseline Conditions

This section of the Application will describe traditional and contemporary land and resource use by the Ktunaxa Nation within the Project area. The Application will include a non-confidential summary of traditional and ongoing land uses. The Proponent will undertake a planning-level TUS with the First Nation. These studies will document, in a mutually agreed upon manner, the non-confidential traditional and contemporary land and resource uses for the Ktunaxa Nation. CMC will work with the Nation to determine a method to “red flag” or somehow protect the confidential sites.

### 4.14 LAND USE

#### 4.14.1 Introduction

This section will describe the current land use applications and long range plans prepared by various government agencies, including the Regional District, the local municipalities (particularly the City of Fernie) and provincial departments. This will consider the original assumptions for the future of the land, and the approach and methods used in the assessment. This will include the statutory nature of the planning and land use documents and the implications of changing these land uses.

#### 4.14.2 Issues Identification

Through a comprehensive review of all of the planning documents, CMC will review the comments from the public consultation, identify the issues/concerns/ideas presented and create a list of issues that may be triggered with the application.

#### 4.14.3 Methods

Prior consultation has provided CMC with some of the background information, and the public open house and round table meetings at the Pre-Application stage will provide more details on those issues. It is important for the company to delve into the issues to ensure

that the true issue is revealed and not symptoms. Summary of all of the approved planning documents will be included.

#### 4.14.4 Baseline Conditions

This section of the Application will provide a description of baseline land use, compatibility with the Southern Rocky Mountain Management Plan and tenure(s) on and in the vicinity of the proposed Lodgepole Mine and related infrastructure, haul routes, new power lines and rail load-out. This includes adjacent municipalities and communities that could be impacted by the proposed development.

#### 4.15 GEOCHEMICAL CHARACTERIZATION OF MINE WASTES

The Application will summarize the characterization program and describe the potential for acid rock drainage and metal leaching from the various waste materials. These materials will include the waste rock units expected in the pit, the clean coal rejects from the wash plant and the tailings. Rock cuts for mine related developments will be evaluated and characterization programs developed as appropriate.

Source concentrations for each waste unit will be presented for use in the water quality predictions. Laboratory data and any seep data from historical workings will be used to derive source concentrations. Water quality predictions will be presented in Section 6 of the Application.

The characterization program will include selenium. The selenium characterization will inform the development of the Selenium Management Plan.

The characterization program will be consistent with MEMPR's "Policy for Metal Leaching and Acid Rock Drainage at Mine Sites in BC" and "Guidelines for Metal Leaching and Acid Rock Drainage at Mine Sites in BC."

A detailed description of the characterization program, presentation of data and derivation of calculated values will be provided in an Appendix to the Application.

## 5.0 SOCIO-COMMUNITY, SOCIO-ECONOMIC AND HEALTH

### 5.1 INTRODUCTION

### 5.2 SOCIO-COMMUNITY CONDITIONS

In this section of the Application, the current socio-community conditions in Fernie, Elko and surrounding communities will be described.

#### 5.2.1 Socio-community Profile and Population Demographics

This section will document available information regarding the existing population distribution, demographics, and social profiles of the communities.

## 5.2.2 Housing

This section will describe available information regarding the existing housing and accommodation supply.

## 5.2.3 Transportation

This section will document existing transportation infrastructure and existing information on traffic patterns/volumes, and identify any relevant pedestrian use and safety issues.

## 5.2.4 Services

This section will provide a brief description of existing services, such as education, justice, policing, fire protection, social support, and emergency services.

## 5.2.5 Local & Regional Economy

This section will describe the local and regional economy, including economic profile, and the conditions in communities likely to be affected by the Project. A summary of key economic indicators and trends in the region in the absence of the Project will also be provided.

## 5.2.6 Labour Supply

This section will provide labour market information (unemployment, labour supply, skills/training needs, etc.) for the communities that might be affected by the Project.

## 5.2.7 Businesses

This section will document existing economic undertakings in the area that could be affected by development of the Project.

## 5.3 PUBLIC HEALTH SERVICES

This section will identify existing hospitals, clinics, ambulance stations, and other emergency services available in the communities that might be affected by the Project.

## 6.0 POTENTIAL PROJECT EFFECTS AND MITIGATION MEASURES

### 6.1 INTRODUCTION

An assessment of issues and impact concerns (environmental, social, economic, heritage and health effects) identified during the pre-application issue scoping phase and during the evaluation of baseline data will be provided. The assessment will consider issues raised during consultation with public stakeholders and government agencies, to be held during the public review period for these Terms of Reference. The project effects assessment of Ktunaxa Nation specific issues will be discussed in Section 9.

## 6.2 EFFECTS ASSESSMENT APPROACH

This section will describe the overall approach to be used in determining the project effects for the biophysical and social components being assessed. Potential effects include environmental, economic, social, heritage and health effects. Potential effects on Ktunaxa Nation's interests will be discussed in Section 9. The Application will clearly identify those Project effects that are considered as environmental effects for the purpose of CEAA.

The general approach will involve identifying potential project effects, determining appropriate mitigation measures; and then assessing the significance<sup>1</sup> of residual project effects. Technically and economically feasible mitigation measures will be assumed to be implemented and effective as described, and will be considered before residual project effects are determined. Where there is potential for significant residual risk, the Application will outline contingency plans.

## 6.3 METHODOLOGY

The methodology used to assess project effects, residual project effects and significance will be described. The assessment of significance will include consideration of magnitude, geographic extent, duration, frequency, and reversibility. Geographic extent will include both local and broader scope effects.

A description and/or identification will be provided on maps of appropriate scale for the geographical areas and timeframes used for documenting the baseline setting and assessing potential project impacts, including the potential effects on First Nation's interests.

The Project Application will provide separate biophysical and social component assessment sections. The components that will be assessed are named on the following subsections.

## 6.4 SITE WATER AND LOAD BALANCE

A mass balance model will be developed to model water quality effects and to facilitate the project effects assessment. A model will be developed for the current condition, the construction & preproduction period, the operating period and the post-closure period. The site models will extend to the receiving environment, namely Lodgepole Creek, Foisey Creek, Elk River and Flathead River.

The models will address the following factors:

- Changes to water volume due to catchment & groundwater flow changes;
- Mine water pumping rates;
- Surface water diversions;
- Background chemistry;

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<sup>1</sup> The final determination of whether a residual effect is acceptable will rest with the Environmental Assessment Office and, in the case of a CEA Agency review, the responsible authority will determine whether a residual effect is significant.

- Nitrogen inputs from blasting;
- Metal concentrations in waste rock dump seepage;
- Metal concentrations in runoff from fresh rock cuts; and
- Process water in tailings and clean coal rejects.

A detailed description of the model development, including data sources, methods of data reduction, assumptions and verification of model validity, will be provided in an Appendix to the Application.

## 6.5 CLIMATE

This section will present potential effects of the Project on climate, proposed mitigation measures that may be required and the significance of the residual project effects. Greenhouse gas emissions and dusting effects will be discussed in Section 6.14 Air Quality.

## 6.6 HYDROLOGY

This section will present an assessment of potential minesite and load-out effects on hydrology during all phases of the Project development, proposed mitigation measures and an evaluation of residual project effects and their significance. In particular, the effect of water flow in Crabb Creek resulting from pit development will be examined. In addition, low flow data will be required on the streams that are planned to supply the load-out facility.

## 6.7 HYDROGEOLOGY

This section will present an assessment of potential minesite and load-out effects on groundwater during all phases of the Project development, proposed mitigation measures, and an evaluation of residual project effects and their significance.

## 6.8 WATER QUALITY

This section will present an assessment of potential mine effects on water quality during all phases of the Project development, proposed mitigation measures, and an evaluation of residual project effects and their significance. The assessment will include potential effects of metal leaching/acid rock drainage, erosion and sedimentation. A mass balance approach will be used for water quality predictions to be compared with provincial water quality guidelines for the protection of aquatic life and drinking water. The mass balance model is discussed in Section 6.4 above. Impact conclusions will be based on predicted water quality of all waste streams and containment ponds throughout the Project area including mine water, seepage, surface water runoff, settling ponds, and process plant discharges.

## 6.9 AQUATIC AND FISHERIES RESOURCES

The Application will analyse potential effects on both the physical and human environments.

Prediction of potential impacts will include:

- Fish passage issues and water quality due to sedimentation;
- An assessment of potential load-out site effects on aquatic and fisheries resources, including leaching and run-off from coal stockpiles and site erosion and run-off during all phases of the Project development and proposed mitigation measures;
- Assessment of potential effects on aquatic biota (e.g., fish, invertebrates, algae) from mine and mine related infrastructure development from potential pollutant sources (toxic substances, suspended and total sediment, metals leaching);
- Assessment of potential for affecting fish habitat in Foisey and Lodgepole Creeks and the Elk and Flathead Rivers; and
- Effects of nutrients on fish and non-fish bearing water sources, including possible trophic status changes in the receiving environment and, if necessary, ways to reduce or eliminate nutrient input.

The Application will provide impact mitigation measures developed to deal with identified potential impacts of project development, including the construction, operation and abandonment phases. Surface and groundwater will be managed to mitigate potential environmental impacts. Specific mitigation measures will include:

- Drainage control (storm water, groundwater, sediment);
- Waste rock and overburden management;
- Control of potential for metal leaching;
- Chemical and toxic substances, including blasting agent handling and storage;
- Location and design of stream crossings; and
- Reclamation of disturbed sites, both short-term and long-term.

## 6.10 SURFICIAL GEOLOGY, TERRAIN AND SOILS

This section will present an assessment of potential mine, access road and load-out effects on surficial geology, terrain and soils during all phases of the Project development, proposed mitigation measures and an evaluation of residual project effects and their significance.

## 6.11 NATURAL HAZARDS

This section will present an assessment of potential mine, access road and load-out effects on terrain and soils during all phases of the Project development, proposed mitigation measures, and an evaluation of residual project effects and their significance.

## 6.12 VEGETATION

This section will provide an assessment that describes the potential for adverse impacts on plant communities and listed plant species. This will be based on the project footprint at the mine site and at the load-out. Vegetation impacts in the areas where the access road may be upgraded will also be assessed. Potential impacts during construction and preproduction, operation and closure will also be assessed.

## 6.13 WILDLIFE

The Application will provide an assessment that describes the potential for adverse impacts on wildlife species and habitat. For prediction of impacts on wildlife, this will be based on the project footprint and development activities, including the construction, operation, closure and post-closure phases.

The assessment will include potential effects on habitat availability, disruption to movement patterns and corridors due to habitat fragmentation; and mortality risk, as well as noise and human activity. The analysis will include:

- Impact of loss of terrestrial habitat and assessment of the quality of lost habitat for relevant species;
- Disturbance to feeding, nesting, denning and breeding habitats;
- Wetland habitat alteration or loss;
- Disruption or physical barriers to daily or seasonal wildlife movements (migration or home ranges);
- Rare, vulnerable, endangered, threatened, extirpated species or species of “special concern” as listed under SARA, COSEWIC;
- Direct wildlife mortality;
- Indirect wildlife mortality; and
- Potential for development components to attract wildlife for particular species.

The Application will describe where potential impacts have been identified and where appropriate mitigation and management measures will be developed to avoid or lessen the potential for impact. The following are some of the potential mitigation and management measures:

- Input to project design and development to avoid or minimize impacts to sensitive species and their habitats;
- Advice on scheduling of construction and development activities to avoid or minimize potential for impact to sensitive species or their key life cycle activities;



- Input to developing land use objectives for habitat re-creation during on-going and final reclamation;
- Wildlife management plans to deal with specific issues that have been identified (i.e., bear awareness and safety plans);
- Recommendations for specific wildlife studies to further assess and/or monitor effects of the project; and
- Recommendations for facilitating First Nation's traditional use of the project area, if such uses are clearly identified by the cultural component of the studies.

#### 6.14 AIR QUALITY

This section will present an assessment of potential effects on air quality at the mine site, along the access road and at the load-out. The potential impact of coal dust will be modeled for the mine site and the load-out. An evaluation of the contribution of PM<sub>10</sub> and PM<sub>2.5</sub> coal dust will be included. The extent and impact of coal dust and crustal dust along the access road will be estimated. A dispersion model of coal dust for the region will also be provided.

Emissions from mine related activities will be estimated. The following activities will be considered:

- Coal dryer emissions;
- Mobile equipment at the mine site;
- Idling trucks at the load-out; and
- Idling trains at the load-out.

Mitigation measures will be proposed to minimize project effects.

#### 6.15 NOISE

The Application will provide an assessment of potential impacts of local noise based on the project footprint and development schedule, incorporating the types of development and mining activities that are likely to take place for the Project. The Proponent will conduct a noise assessment for the load-out facility and the neighbouring community. Potential noise impacts on Baldy Mountain Outfitter's Lodge will also be assessed.

The Application will provide mitigation measures that deal with potential impacts from site development, construction and operation, coal crushing and hauling; waste management, and reclamation activities. Noise levels for industrial activities are regulated under the *Mines Act* and WCB. Management of noise levels for workers will be addressed during the design and implementation of the Project.

## 6.16 ARCHAEOLOGICAL AND HERITAGE RESOURCES

The Application will include the results of an AIA, which will be carried out under a Heritage Inspection Permit. The objective of the AIA will be to search for and document currently unrecorded archaeological sites in the project area.

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

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 development.

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.

The Application will evaluate potential impacts to traditional and contemporary land and resource uses based on information provided by the First Nations through consultation, the review process and TUS. Identified potential impacts will be discussed in the Application.

If traditional or contemporary land and resource uses are identified in the Project area, the Application will outline mechanisms for avoidance or appropriate mitigation of adverse effects from development. Mitigation measures will be developed in consultation with the Ktunaxa Nation.

## 6.17 LAND USE

This section will present an assessment of the proposed Lodgepole Mine and related infrastructure, haul routes, new power lines and rail load-out effects on land use and tenure during all phases of the Project development, proposed mitigation measures, and an evaluation of Residual project effects and their significance.

## 6.18 SOCIO-COMMUNITY, SOCIO-ECONOMIC AND HEALTH

This section will present an assessment of expected Project effects on socio-community and socio-economic conditions, public health services, and human health and safety during all phases of the Project development. Both expected benefits and potentially negative effects will be identified. This assessment will address the Project related traffic increases over the life of the mine as it relates to safe and efficient use of the access road connecting the mine and the load-out. It will also include an assessment of the visual impacts of all relevant aspects of the Project development from the perspectives of communities in the vicinity, tourism and stakeholders.

This section will also summarize any potential health effects of the Project. Information considered in other areas of the Application (e.g., air quality, noise, water quality, socio-economic assessments, etc.) will be used to assess the Project's effect on human health and safety.

Proposed mitigation for any identified negative impacts will be described. An evaluation of the residual project effects will also be presented and their significance. The Application will also describe design components that will mitigate any visual impacts and the significance of any residual effects.

## 7.0 CUMULATIVE EFFECTS ASSESSMENT

This section will describe the overall approach and methods to be used for the environmental cumulative effects assessments. A residual cumulative effects assessment will be completed when one or more biophysical/environmental residual project effect has been determined. The cumulative effects assessment will consider the residual project effects in combination with other certain or reasonably foreseeable projects 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 mitigation measures have been implemented and are effective, as described, before determining the significance<sup>2</sup> of the residual cumulative effect. 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. For some components, such as land use, archaeological and heritage resources, and socio-economics, the determination of significance will be primarily through the community, Ktunaxa Nation, public and government views of the cumulative impacts.

This section will be completed utilizing, where possible the Cumulative Effects Assessment Practitioners Guide which was prepared for the Canadian Environmental Assessment Agency.

The following biophysical and environmental components will be included in the cumulative effects assessment:

- Climate
- Hydrology
- Hydrogeology
- Water quality

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<sup>2</sup> The final determination of whether a residual effect is acceptable will rest with the Environmental Assessment Office and, in the case of a CEA Agency review, the responsible authority will determine whether a residual effect is significant.

- Aquatic resources
- Fisheries resources
- Terrain
- Soils
- Vegetation
- Wildlife
- Air quality
- Noise
- Archaeological resources
- Heritage resources
- Land use
- Socio-community conditions
- Socio-economic conditions
- Health
- Renewal Resources

## 8.0 MANAGEMENT PLANS

### 8.1 ENVIRONMENTAL MONITORING AND MANAGEMENT PLAN

This section will describe construction and operational environmental and geotechnical monitoring; and CMC’s Environmental Management System. The plans will address the mine site, the access road and the load-out. An Environmental Management Plan for temporary shutdowns will also be provided.

### 8.2 CONSTRUCTION (PHASE) MANAGEMENT PLAN

Based on currently available mine planning information, Phase 1 of the Project will include construction for full operations of the Lodgepole Mine and simultaneous low production rate mining using existing infrastructure. The Phase 1 Construction Management Plan will describe the schedule, activities, coordination and management, workforce, access and transportation, and services during this phase. Environmental Management Plans relevant to this phase will be cross-referenced.

Phase 1 of the Lodgepole Mine Project will include the construction of the infrastructure for processing coal from the starter pit section of the main Lodgepole Pit. Phase 1 is expected to last approximately one year. Key activities during Phase 1 will include:

1. Pre-production preparation of the Lodgepole Pit;
2. Raw coal operations from the Lodgepole Pit at reduced rates (compared to the full production rate of 2 Mt/a); and
3. Construction of Lodgepole full production infrastructure, including the Processing Plant and associated infrastructure, Elko Load-out and, if required the access road (upgrades to existing roads and construction of some new segments).

Additional phases of the Lodgepole Mine Project will include full operations (Phase 2), decommissioning/reclamation, and post-closure. Phase 2 will involve production of approximately 2 Mt/a clean coal with haulage to the load-out facility. Phase 2 is expected to last approximately 20 years (years 2 through 20 of mine life).

### 8.3 PRELIMINARY SURFACE EROSION PREVENTION AND SEDIMENT CONTROL PLAN

This section will provide a preliminary Surface Erosion Prevention and Sediment Control (SEPSC) Plan applicable to construction and operations of the mine, plant site, access road, load-out and power line. It will describe Best Management Practices (BMPs) applicable to all Lodgepole Mine 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.

### 8.4 WATER MANAGEMENT PLAN

This section will describe water management planning for both the mine, plant site, access road and load-out during construction, operations and post-closure. This will include assessments of water management needs, including process plant make-up water requirements (likely pumped from ground water wells), sediment pond locations, ditching, flood protection, and flocculation requirements. The water management plan will be developed in conjunction with the ARD/ML and selenium management plans to incorporate the objectives of those plans.

### 8.5 ARD/ML PREVENTION, MANAGEMENT AND MONITORING PLAN

The Acid Rock Drainage/Metal Leaching (ML/ARD) Prevention, Management and Monitoring Plan will be developed in conjunction with the water management and mine waste management plans. The ARD/ML Plan will consider the following options:

- Special handling of problematic rock units;
- Water diversions to minimize water/rock interactions; and
- Containment measures for seeps.

A monitoring program and contingency plan will also be provided in the Application.

## 8.6 SELENIUM MANAGEMENT PLAN

This section will summarize selenium management measures, including relevant aspects of waste handling and placement, water management, and reclamation. A monitoring program and contingency plan will also be presented. The selenium management plan will be developed in conjunction with the water management and ARD/ML management plans.

## 8.7 WASTE MANAGEMENT PLAN

This section will describe management plans for handling, management and disposal (or recycling, as applicable) of solid and liquid wastes (excluding mine effluents) during construction and operations.

## 8.8 CHEMICALS AND MATERIALS STORAGE AND HANDLING PLAN

This section will describe chemicals and materials storage, handling, transportation, and final disposal procedures.

## 8.9 FUEL MANAGEMENT PLAN

This section will describe fuel handling, management and spill response procedures for applicable components of the Project, including both construction and operations.

## 8.10 AIR QUALITY MANAGEMENT PLAN

The Air Quality Management Plan will describe types of fugitive dust, criteria air contaminant and greenhouse gas emission sources, and control measures or best management practices for each. Sources of emission at the mine, plant site, load-out and along the access road will be considered. Communities and outfitters potentially affected by dust or contaminants will be considered in this plan.

## 8.11 WILDLIFE PROTECTION PLAN

The Wildlife Protection Plan will include mitigation measures during mine construction and operation, wildlife monitoring programs and recommendations for reclamation of mine facilities so that reclamation programs reflect the needs of wildlife. Mitigation measures will be developed to address potential negative effects upon wildlife, including a traffic management plan to avoid mortalities, Bear Awareness Program, food waste handling proposal, firearms control, and proposed plans for dealing with any problem wildlife. Mitigation will also address wildlife habitat, and, if loss of habitat, address potential compensation measures for loss of habitat

## 8.12 FISHERIES PROTECTION PLAN

The Fisheries Protection Plan will describe proposed mitigation measures for Foisey, Lodgepole and Crabb Creek fish habitat. Where fish habitat cannot be maintained, justification for the habitat loss will be provided and a compensation program will be

proposed. The fisheries protection plan will be developed in conjunction with the water management plan and the reclamation plan.

## 8.13 CONCEPTUAL RECLAMATION AND DECOMMISSIONING PLAN

### 8.13.1 Introduction

This section will describe the approach to reclamation and decommissioning planning and cross-reference applicable baseline information sections.

### 8.13.2 Mine

This section will include descriptions of the following:

- Phase I and interim reclamation;
- Soil handling plan, including soil replacement strategy and soil salvage, handling and storage;
- Conceptual final reclamation and decommissioning plan, including end land use and capability objectives, invasive species, long term stability, and pit, waste dump, plantsite and mine road reclamation; and
- Operational and post-closure monitoring, including geotechnical monitoring for stability assessments of waste dumps and water management facilities.

The reclamation plan will be developed in conjunction with the ARD/ML management plan.

### 8.13.3 Access Road

This section will describe Phase I and interim reclamation, and current plans for post-closure reclamation and decommissioning.

### 8.13.4 Elko Load-out

This section will describe Phase I and interim reclamation, the soil salvage, handling and storage plan, and conceptual final reclamation and decommissioning plan for this facility.

### 8.13.5 Power Supply

This section will describe Phase I and interim reclamation, and decommissioning and final reclamation of the power supply lines to the mine and the Load-out if new power lines are installed.

## 8.14 TRAFFIC MANAGEMENT PLAN

This section describes proposed traffic management along the access road. The plan will address public use of the access road and access to the mine site.

## 8.15 HEALTH AND SAFETY

This section will describe the health and safety regulatory framework; key potential health and safety issues and resolution; and safety measures for public access.

## 9.0 KTUNAXA NATION TRADITIONAL, CONTEMPORARY AND PREFERRED USES

### 9.1 INTRODUCTION

This section will describe the elements of the Ktunaxa Nation, including the people and the land, potentially affected by the Project, the Project components assessed, and the approach and methods used in the assessment.

### 9.2 KTUNAXA NATION SETTING

#### 9.2.1 First Nations Affected by the Project

This section of the Application will identify the Ktunaxa Nation as the First Nation in whose traditional territory the Project resides. The Ktunaxa Nation Council includes the Akisqunk First Nation, Lower Kootenay Band, St. Mary's Indian Band and Tobacco Plains Band. The traditional territory of the Ktunaxa people extends from the Columbia River, south to Missoula, Montana, west to Bonner's Ferry, Idaho, north to the Upper Arrow Lakes area of British Columbia and east to the Rocky Mountains.

The KNC is at Stage 4 of their Treaty Negotiations with Canada and the Province of British Columbia. They have a well thought out strategy for their future. The future direction of the government and nation as a whole will focus on "four pillars" which include; traditional knowledge and language, social investment, lands and resources and economic investment. They are interested in exploring partnerships and working with neighbours while maintaining their aboriginal rights and title for present and future generations.

#### 9.2.2 Consultation with the Ktunaxa Nation

In conjunction with Section 2.2 of this Terms of Reference, this section of the Application will detail the consultations with the Ktunaxa Nation and address all of the elements of the Nation's land and lifestyle that will be potentially affected by development of the Project. This will include consultation conducted in the Pre-Application phase, as well as consultation during the application review. It will describe any consultation agreements reached between CMC and Ktunaxa Nation that could potentially be affected by the Project or that could potentially affect the project. In conjunction with Ktunaxa Nation, issues will be identified and mitigative measures to resolve these issues will be described.

### 9.3 CURRENT AND TRADITIONAL KTUNAXA NATION USES

The Project will collect information on the history and current use of the area affected by the project. Information will include:

- Ktunaxa Nation History of the Area



- Archaeology
- Fishing
- Hunting
- Country Foods
- Medicinal Plants
- Sacred and Spiritual
- Other Cultural Uses
- Recreation

From this information, CMC and the representatives of the Ktunaxa Nation will develop a series of suggestions for both mitigation of impacts and enhancement of opportunities.

#### 9.4 KTUNAXA NATION LAND USE PLAN

A discussion of economic development opportunities that are compatible with Ktunaxa Nation traditional and cultural lifestyles will be presented in this section of the Application. This discussion will be informed by the Ktunaxa Nation Land Use Plan, and by discussion and consultation with Ktunaxa Nation representatives during the Pre-Application phase of the review.

#### 9.5 IMPACT ASSESSMENT ON KTUNAXA NATION USES

An assessment of potential impacts on Ktunaxa Nation land uses and activities important to the Nation will be done in collaboration with Ktunaxa Nation representatives. The general approach will involve identifying potential project effects, determining appropriate mitigation measures, and then assessing the significance<sup>3</sup> of residual project effects. Technically and economically feasible mitigation measures will be assumed to be implemented and effective as described, and will be considered before residual project effects are determined. Where there is potential for significant residual risk, the Application will outline contingency plans.

The following Ktunaxa Nation uses and activities will be included in the assessment:

- Fishing
- Archaeology
- Hunting
- Country Foods

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<sup>3</sup> The final determination of whether a residual effect is acceptable will rest with the Environmental Assessment Office and, in the case of a CEA Agency review, the responsible authority will determine whether a residual effect is significant.

- Medicinal plant gathering
- Spiritual uses
- Socio-economic environment
- Recreation
- Environmental standards and interests

## 9.6 CUMULATIVE EFFECTS ON KTUNAXA NATION INTERESTS

A cumulative effects assessment will be done in collaboration with Ktunaxa Nation representatives if one or more residual project effects have been determined in Section 9.5. The cumulative effects assessment will consider the residual project effects in combination with other certain or reasonably foreseeable projects within the specified cumulative effects study area boundary and specified timeframe. The cumulative effects assessment will assume that the proposed mitigation measures have been implemented and are effective, as described, before determining the significance<sup>4</sup> of residual cumulative effects.

The methodology used to assess cumulative effects and to determine significance of residual cumulative effects will be described for each component.

## 9.7 MANAGEMENT AND MITIGATION OF IMPACTS ON KTUNAXA NATION INTERESTS

Measures to mitigate any potential impacts will be developed in conjunction with designated Ktunaxa Nation representatives. This section will describe the management and mitigation plans agreed to by Cline Mining Corp. and Ktunaxa Nation representatives.

## 10.0 RISK ASSESSMENT AND MANAGEMENT

The Risk Assessment and Management section 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 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, forest fires, and flooding, and planning measures specific to these effects.

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<sup>4</sup> The final determination of whether a residual effect is acceptable will rest with the Environmental Assessment Office and, in the case of a CEA Agency review, the responsible authority will determine whether a residual effect is significant.

**11.0 CEAA ENVIRONMENTAL ASSESSMENT REQUIREMENTS**

This section will be included if there is a CEAA trigger, thereby making the Project subject to joint review under both BCEAA and CEAA. In the case of a CEAA trigger, this section or Section 14 will provide a summary of the commitments made by CMC 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 10 (Risk Assessment and Management). 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 8 (Management Plans);
- Effects of the Environment on the Project – This will also be included as part of the content of Section 10 (Risk Assessment and Management);
- Cumulative Environmental Effects – The approach, methodology and results are presented in Section 7;
- Summary of Project Effects and Mitigation Measures – Refer to Sections 12, 13 and 14;
- Effects on Navigable Waters – Addressed in Section 11.1;
- The Purpose of the Project<sup>5</sup> - Addressed in Section 3.1;
- Alternative Means of Carrying out the Project<sup>3</sup> - Addressed in Section 3.1; and
- Follow-up Program describing the need for and the requirements of a follow up for the Project<sup>3</sup> – Addressed in part in the monitoring subsections and summarized in Section 14,
- Capacity of renewal resources to meet the needs of future generations in Section 7.

**11.1 NAVIGABLE WATERS ISSUES**

This section will summarize the potential for effects on navigable waters, based on information available at the time of assessment submission. Specifically, it will summarize and refer to the information provided in Section 3 on potential crossings of potentially navigable waters by the power line and roads, and describe any effects of these crossings on navigability. This section will summarize the findings of Transport Canada with respect to navigability.

<sup>5</sup> The CEAA requirement to describe Capacity of Renewable Resources that may be affected significantly by the Project has not been addressed specifically in the Application TOR and will await a CEA Agency decision regarding a comprehensive study.

Required for a comprehensive study Section 16 (2) CEAA.

The summary of road and powerline crossings will reference lists of waterways to be affected by the Project, locations of proposed crossing sites (new crossings or modification of existing crossings), water way dimensions at the points of crossing, and identification and relative position of any man-made or natural obstructions that block a waterway. It will reference the design assumptions for new or modified waterway crossings.

## 12.0 SUMMARY OF RESIDUAL PROJECT EFFECTS

This section will provide a tabular summary of Residual project effects identified in the assessments. The summary will include mitigation measures that were considered in identifying the residual effects.

## 13.0 SUMMARY OF RESIDUAL CUMULATIVE EFFECTS

This section will provide a tabular summary of Residual Cumulative Effects identified in the assessments. The summary will include mitigation measures that were considered in identifying the Residual Cumulative Effects.

## 14.0 SUMMARY OF COMMITMENTS

This section will include key commitments in the Application. The Application will include a summary table of proposed commitments, including timing of the action and the responsible department or party for reviewing the outcome of the Proponent's actions. The summary will include all of the impact mitigation/management commitments contained in the Application, as well as any special mitigation/management practices and design features, organized by impact topic.

## 15.0 CONCLUSION

This section will provide concluding statements regarding the significance<sup>6</sup> of any residual Project or cumulative effects predicted to occur as a result of the Project development.

## 16.0 OTHER AUTHORIZATIONS REQUIRED

This section will include a list or table of authorizations required for the construction, operation and abandonment/reclamation of the Project.

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<sup>6</sup> The final determination of whether a residual effect is acceptable will rest with the Environmental Assessment Office and, in the case of a CEA Agency review, the responsible authority will determine whether a residual effect is significant.

## 17.0 LIST OF REFERENCES AND SUPPORTING DOCUMENTS

This section will list the references and supporting documents used in preparing the Application.

## APPENDICES

Appendices will provide technical detail to support the Application.