

# **NWP Coal Canada Ltd**

## **Crown Mountain Coking Coal Project**

Project Description Executive Summary



October 2014



*Submitted to:*

**Canadian Environmental Assessment  
Agency**

Suite 410, 701 West Georgia Street

Vancouver, BC

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*Submitted by:*

**NWP Coal Canada Ltd.**

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## GENERAL INFORMATION

### Project Name

Crown Mountain Coking Coal Project (the Project)

### Proponent and Contact Information

The Project proponent is NWP Coal Canada Ltd. (NWP Coal), a wholly owned subsidiary of Jameson Resources Limited. Contact details for the proponent are provided below:

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Website: <http://www.jamesonresources.com.au>

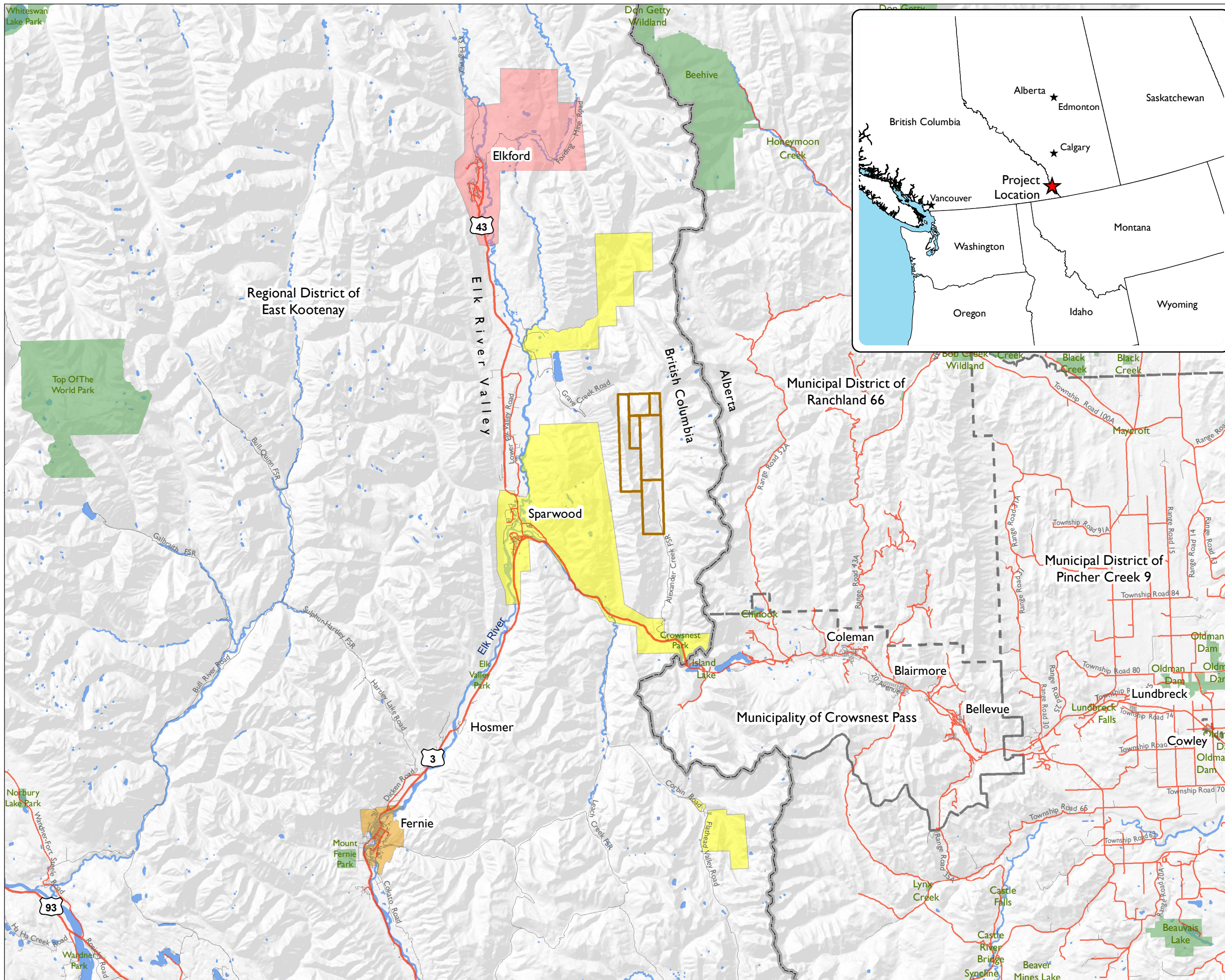
The principal contact person is:

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### Project Location

The Project, located at 114°43.6'W and 49°48.4'N, is a proposed open pit metallurgical coal mine in the Elk Valley coal field in the East Kootenay Region of south eastern British Columbia (**Figure 1**). The site consists of five coal tenure licences covering a total area of 2,588 ha and one license application. The Project occurs between several existing metallurgical coal mines in the Elk Valley and Crowsnest coal fields, the nearest being Teck Corporation's Elkview (8 km southwest) and Line Creek (12 km north) mines.

The Project occurs within the Regional District of East Kootenay (RDEK) and within the boundaries of the Kootenay Boundary Land Use Plan, the Elk Valley Official Community Plan, and the Alexander Creek Access Management Area (**Figure 2**). The Project would also require the movement of clean coal to the west through lands privately held by Teck (**Figure 2**). The nearest communities are Sparwood, BC (12 km), Coleman, AB (24 km), and Elkford, BC (26 km) (**Figure 2**).

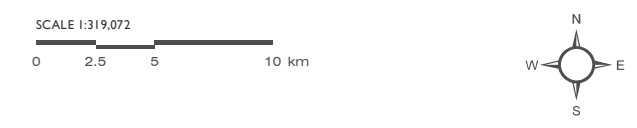


**NWP Coal Canada Ltd**

Crown Mountain Coking Coal Project

**Figure 1**  
General Project Location

- Highways
- Arterial Roads
- Local/Resource Roads
- Regional District/Regional Municipality
- District of Elkford
- City of Fernie
- District of Sparwood
- Rivers/Lakes
- BC/Alberta Parks and Protected Areas
- Coal Tenure Licenses and Application
- BC/Alberta Border

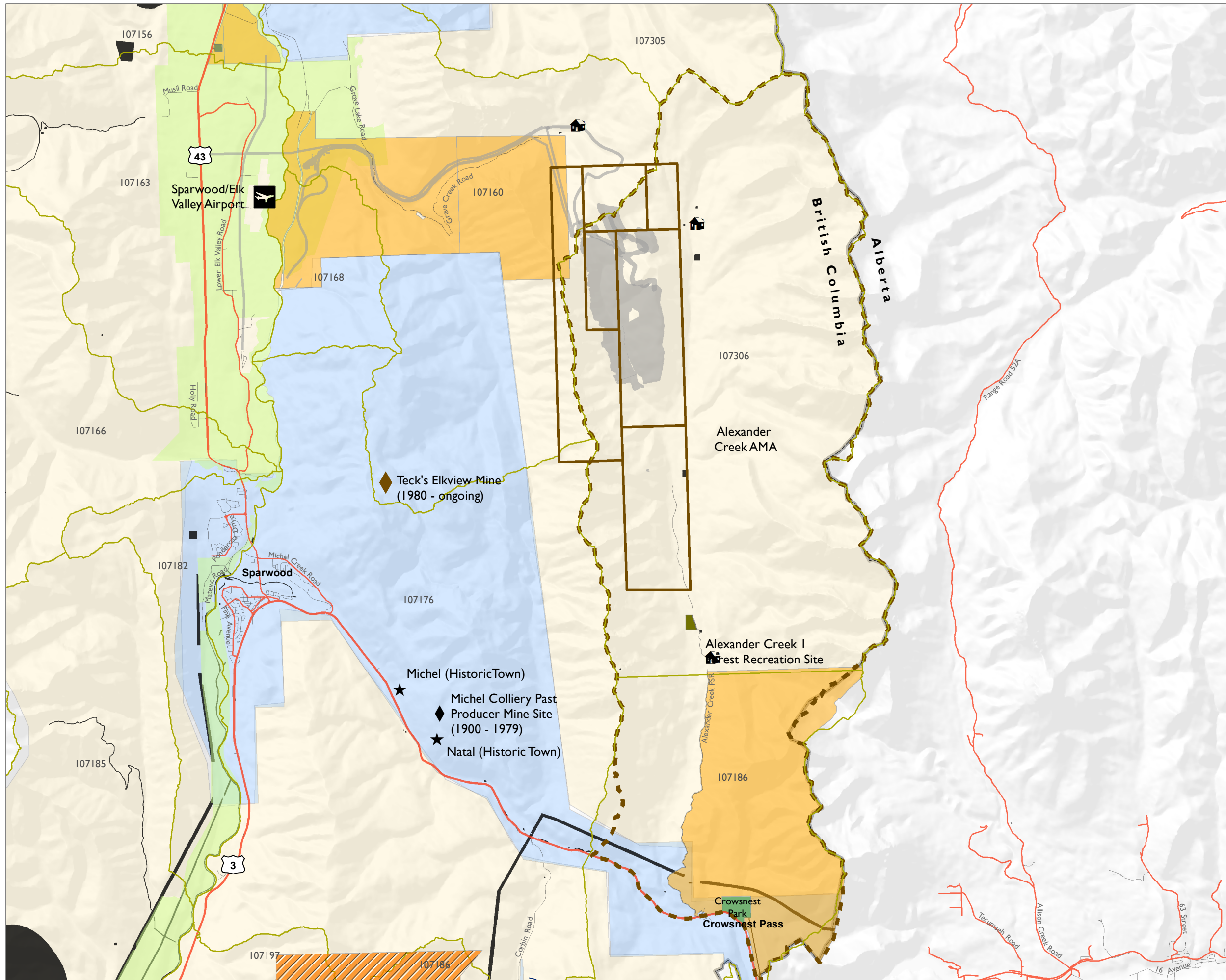


Map Drawing Information: Province of British Columbia, NWP Coal Canada Ltd., Dillon Consulting Limited, ESRI Base Layers, GeoGratics, CanVec. Government of Alberta.

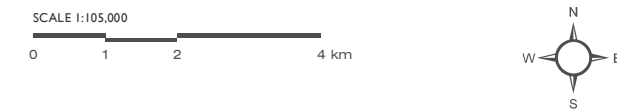
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Map Checked By: LKD  
Map Projection: NAD 1983 UTM Zone 11 N

PROJECT: 12-6231  
STATUS: FINAL  
DATE: 10/22/2014

**Figure 2**  
Existing Land Use



- Sparwood/Elk Valley Airport
- Historic Town
- Active Mine
- Historic Uses
- Highways
- Arterial Roads
- Local/Resource Roads
- Trapline Cabins
- Trapline Areas
- Alexander Creek AMA
- Agricultural Land Reserve Lands
- BC Provincial Parks
- Crown Land Tenures
- Elk Valley Official Community Plan Area
- Forest Recreation Sites
- Sparwood Official Community Plan Area
- Teck Coal Limited Lands
- Parcel 73 of the Dominion Coal Blocks
- Coal Tenure Licenses and Application
- Project Infrastructure Extent
- BC/Alberta Border



Map Drawing Information: Province of British Columbia, Jameson Resources, Dillon Consulting Limited, Regional District of East Kootenay

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The Project is situated in an area of steep topography of the Front Ranges Rocky Mountains of BC and is accessed by several Forest Service Roads, including Grave Creek Road northwest of the northern coal license tenure and Alexander Creek Road from the south. The Project is in the Alexander and Grave Creek watersheds. Alexander Creek flows south from the Project area and subsequently joins Michel Creek. Michel Creek eventually discharges to the Elk River which flows generally southwest and discharges to Lake Kooanuska, a lake which partially occurs in the State of Montana. Grave Creek flows in a westerly direction from the upper extent of the Project area where it joins Harmer Creek flowing from the south. Harmer Creek discharges to the Elk River.

The area in and around the Project is used for various recreation activities including fishing, hunting, ATVs, snowmobiles, camping, and hiking. There are three documented trapping cabins and twelve registered traplines located near the Project (**Figure 2**). There are no permanent residences in close proximity to the Project property.

The proposed Project would be located within the asserted traditional territory of the Ktunaxa Nation. The Ktunaxa Nation is represented by the Ktunaxa Nation Council (KNC), which includes the following four member groups:

- the ʔakisq̓nuk First Nation (formally the Columbia Lake Band - Windermere);
- the ʔaq̓am – St. Mary's First Nation (Cranbrook);
- the yaq̓an nukiy – Lower Kootenay Band (Creston); and
- the Tobacco Plains Indian Band (Grasmere).

The Project would also be located within the asserted traditional territory of the Shuswap Indian Band a member of the Shuswap Nation Tribal Council; however the Project is not expected to potentially impact the Band.

The Project would not be located on, or require the use of, any federal lands, and there are no federal or provincial funding requirements. The nearest federal Crown Land to the Project includes the Bummer's Flat 1 Reserve (approximately 68 km southeast), Peigan Timber Limit 147B (approximately 52 km east in Alberta), and Parcels 73 and 82 of the Dominion Coal Blocks (approximately 20 and 40 km southwest, respectively). The Project occurs on provincial Crown Land and private land. The Project would not be located in an area where regional environmental studies have been completed, although NWP Coal is aware of ongoing activities, programs, and water quality initiatives for the Elk Valley area such as the *Valley-Wide Selenium Management Action Plan for Teck Coal Limited Operations in the Elk Valley* (Teck Coal Limited, 2013). These programs and initiatives, as well as others that may be applicable, will be considered over the course of the Project's environmental assessment (EA).

## PROJECT INFORMATION

### Overview

The anticipated production capacity of the Project is 3.7 million run-of-mine tonnes (M ROMt) per annum (approximately 10,150 tonnes per day [tpd]) for 16 years (not including site decommissioning). Run of mine coal reserves are estimated at 56 million tonnes, of which 50 million tonnes are proven and 6 million tonnes are probable. Exploration activities to date indicate that the coal at the Crown Mountain site is typical of the coking coals produced from existing mines in the Elk Valley. If approved, the proposed Project would create a new coal mine within the Elk Valley contributing significantly to local economies, particularly the communities of Sparwood, Elkford, Crowsnest Pass, and Fernie. The high quality metallurgical coal would be transported via railway to the Port of Vancouver and subsequently shipped overseas for use in steelmaking.

The estimated capital costs of the proposed Project are \$370 million based on the Project's Pre-feasibility Study.

The number of employees during Project operation is estimated to average 240 hourly full-time positions and approximately 58 salaried staff. With an expected 16 year operating life these positions equate to a total of approximately 4,768 person years of employment. The number of employees during construction is estimated to range from 50 to over 200 people, including both hourly and salaried personnel, depending on the season and the amount of work in progress. Final numbers and will be determined as part of further socio-economic analyses.

### Physical Works

Key project components include:

- Surface extraction areas (three pits - north pit, east pit, and south pit);
- Waste rock management areas;
- Plant area (includes raw coal stockpile area, a processing plant, and site support facilities);
- Clean coal transportation route (overland conveyor and haul road);
- Rail load out facility and rail siding (includes various auxiliary facilities such as a guard house; light vehicle wash; drug and alcohol testing/ orientation building; and a small dry)
- Power supply;
- Natural gas supply;
- Explosives storage;
- Fuel storage;
- Sewage treatment; and
- Water supply.

The conceptual layout anticipated at mine closure is illustrated in **Figure 3** and is based on the current preferred site configuration which was chosen to minimize the footprint of the Project as much as possible while maximizing access to the coal resource. Generally, the physical works and features described are planned to be under the care and control of NWP Coal during both construction and operation with the exception of existing infrastructure (e.g., existing access roads, rail lines, and gas and transmission lines). As the Project progresses, it is expected that details on the care of control of Project activities and those components that may involve a third party (e.g., rail, road, and transmission and gas services) will be confirmed and described in the Project EA.

All buildings and site infrastructure will be designed to meet applicable codes and guidelines such as the International Building Code, the British Columbia Building, Fire, and Plumbing Codes, Canadian Electrical Code, and the Health, Safety and Reclamation Code for Mines in BC.

### **Project Activities**

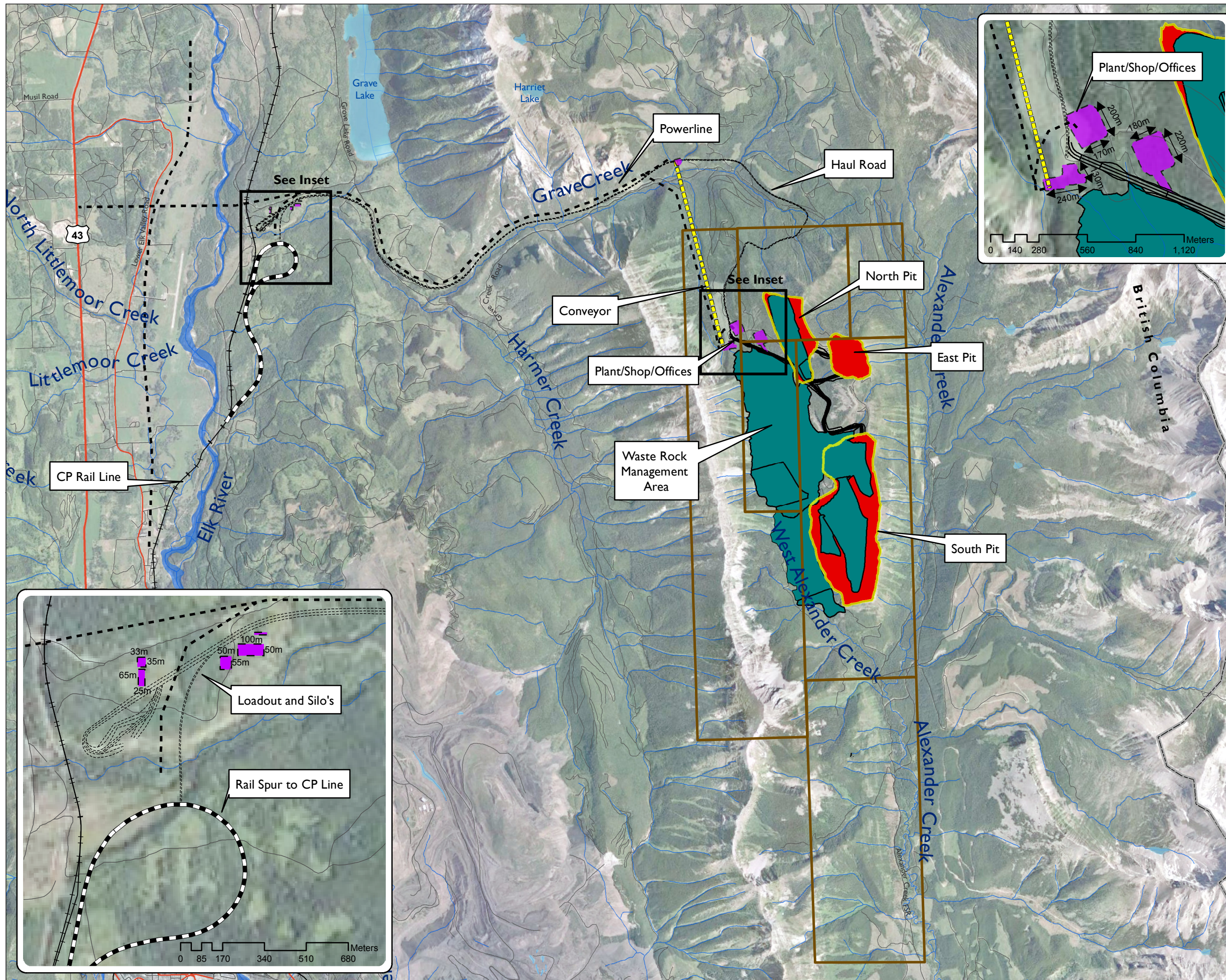
Each of the pits (north pit, east pit, and south pit) would be developed sequentially. The footwall and highwall configurations of each pit will vary depending on bedding plane dip, berm width, and berm frequency. The surface mineable area of Crown Mountain is planned for development using the truck/shovel mining method. Pit development will also require drill and blast operations. Drill and blast operations will be carried out on a continuous basis as part of the normal mining operation.

The Project is expected to have an average strip ratio of 4.84 bank cubic metres (bcm)/ROMt over the life of the Project. This strip ratio is presented as per established coal industry standards. This is considered quite low and is significantly below reported strip ratios for other operating mines in the area. Waste rock from the project will be managed using a combination of both external waste rock management areas and internal waste rock management areas, which backfill mined-out pit areas.

The preferred option to transport coal from the plant site to the coal load-out facility is a combination of overland conveyance and off-highway class haul trucks. The overland conveyor would be approximately 3.2 km in length and will be used to transport the clean coal down to the transfer area and small stockpiling facility located in the upper reaches of Grave Creek (**Figure 3**). The transfer station will discharge coal into large haul trucks with belly-dump trailers, at which point it will be transported the remainder of the way to the rail load-out facility. The haul road would be approximately 8.8 km in length, consist of both dual-lane haul and single-lane haul road sections, and have a maximum grade of 8%.

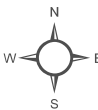
The coal load-out facility would be located alongside the new rail loop located to the southwest of Grave Lake (**Figure 3**). Trucks will dump coal into large concrete silo which has a rapid discharge batch rail loading system that allows rail cars to be quickly and accurately loaded as the train continues running along the rail spur. A new rail siding would be constructed adjacent to the rail that currently services

**Figure 3**  
Year 16 End of Production Project Layout



- Highways
- Arterial Roads
- Local/Resource Roads
- BC Logging/Resource Roads
- Access Road
- Conveyor
- Haul Road
- Powerline
- Rail Spur
- Existing Rail Line
- Watercourses
- Buildings
- Mine Pit
- Waste Rock Management Area
- Pit Crest End of Mine Life
- Coal Tenure Licenses and Application
- Lakes
- Rivers
- BC/Alberta Border

SCALE 1:15,049  
0 0.5 1 2 km



Map Drawing Information: Province of British Columbia, NWP Coal Canada Ltd., Dillon Consulting Limited.

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existing coal mine operations in the area. Once loaded, coal would travel by rail (estimated 1,200 km) to a port terminal in Vancouver for shipment overseas.

Power for the project would be provided by BC Hydro via a new 12.7 km power line extension that will run from existing BC Hydro high voltage lines located along the west side of the Elk River, along the Grave Creek haul road and to the mine site. The newly built power line will provide power as far as the plant and office/shop buildings only. Lighting in the active mining areas will be provided by diesel run generators.

Natural gas will be used for drying coal and heating for buildings and water. Gas would be provided by FortisBC via the existing natural gas transmission pipeline that runs between the District of Sparwood and Elkford. To add the Project to the supply line, a new valve station will need to be installed along Highway 43 and a new pipeline will run east to the Lower Facilities area.

Fresh water will be withdrawn from Grave Creek to support plant water requirements; however the withdrawal of water will be subject to minimum in-stream flow requirements to maintain aquatic health downstream. Preliminary assessments indicate that make-up water would be required through the winter. As a result, a water supply reservoir will be required to maintain adequate supply of water for the plant throughout the year. In addition to plant water requirements, water will be required for various activities including dust suppression, fire suppression, and potable water usage at the plant site. Water for dust suppression will be withdrawn from the reservoir for the first three years of mine operation after which it will be withdrawn from the pit sumps when the pits will hold sufficient volume of water. Water for fire suppression will be stored in a large tank at the plant site. Potable water for the plant site will be withdrawn from wells drilled near the plant site.

Coal extraction activities will require blasting. Appropriate locations for siting the magazines and silos have been identified along the mine access road leading up to the plant site area from Grave Creek. Diesel fuel and gasoline will be stored on site at both the lower and upper mine site facilities. The facilities will meet all applicable environmental standards.

## **Emissions, Discharges and Waste**

### Sewage Treatment

A mobile (portable) sewage treatment system will be used for the mine support buildings. The system will treat up to 100,000 litres per day and discharges will be drained into a leach (septic) field for further dispersion using French drains.

### Air Emissions

Potential air emissions from the Project may include dust and particulate matter and greenhouse gases (GHGs). Sources of dust will include active mining faces; coal and waste haul roads; stockpiles; and the coal processing plant. Sources of GHGs include the burning of fossil fuels. A detailed air quality

management plan will be developed to address potential air quality concerns. Potential management approaches will include the use of water and dust suppression agents to control dust.

#### Site Water Management

An overall site water management plan will be developed for the Project. The plan will be based on detailed baseline studies of groundwater, surface water, and climate. Site water will be managed using a variety of approaches including site grading and surface water diversions to divert clean runoff from undisturbed areas and sedimentation ponds.

#### Waste Rock Management

Waste rock from the Project will be managed using a combination of both external waste rock management areas and internal waste rock management areas, which backfill mined-out pit areas. Similar to other Projects in the area, there are concerns related to the potential mobilization of metals, such as selenium from waste rock, and the potential for introduction into aquatic systems. Preliminary assessment work indicates that waste rock associated within the Crown Mountain has a low potential for acid generation but does have elevated levels of selenium similar to those found elsewhere in the Elk River Valley.

The management of selenium (and other metals of concern) will be integral to overall Project planning. Management approaches that will be evaluated moving forward are expected to include: minimizing / avoiding placement of waste in cross-valley fills; the use of low-selenium rock in rock drains; designing waste rock dumps to limit oxygen and water infiltration; reclaiming waste rock dumps earlier; the use of freshwater diversion ditches; and layering/capping of waste rock management areas.

### **Site Closure and Reclamation**

A detailed site reclamation and closure plan will be developed for the Project. The reclamation plan will consist of a number of phases, with the first phase occurring during site preparation activities and consisting of the clearing and stockpiling of top soil and sub-soils. Other plan components will address the pits (e.g., re-vegetation of benches), the plant and rail load-out sites and associated infrastructure (e.g., removal of buildings and site re-vegetation), and the waste rock management areas (e.g., capping and re-contouring). The final plan will meet BC mine reclamation requirements.

It is expected that the final reclamation process will require a number of years. In addition progressive reclamation activities will also be initiated where possible through the life of the Project.

### **Anticipated Scheduling**

A preliminary high-level development schedule for the Project is shown in **Table 1**. The Project development schedule includes first commercial production in 2018. The anticipated production capacity of the Project is estimated at 3.7 M ROMt per annum with a predicted mine life of approximately 16 years. It is anticipated that Project construction will occur over 1.5 years, with site

preparation beginning in the second quarter of 2016 and finishing in the fourth quarter of 2017. Decommissioning of the Project and associated site reclamation activities will take place progressively, beginning in Year 16 (i.e., 2034). It is estimated that full site reclamation will take two to three years to complete.

**Table 1: Preliminary Project Development Schedule**

ACTIVITY	Year -4				Year -3				Year -2				Year -1				Year 1			
	2014				2015				2016				2017				2018			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Pre-Feasibility Study	█	█	█	█																
Environmental Assessment - Baseline Studies	█	█	█	█	█	█	█	█												
Submit Project Description			█																	
Regulatory Approval Process			█	█	█	█	█	█	█	█	█	█								
Resource Definition																				
Geotechnical Data Collection																				
Feasibility Study																				
Detailed Engineering																				
Owner Approval (Sanction)																				
Access Road & Site Preparation																				
Pre-strip Pit Access Haul Road																				
Construct Plant & Facilities																				
Clean Coal Haulroad & Pre-Stripping																				
Plant Commissioning & Early Production																				
Clean Coal Production																				

## PHYSICAL AND BIOLOGICAL ENVIRONMENT

The EA for the Crown Mountain Project is a complex undertaking that requires the collection, evaluation, and assessment of a wide range of baseline information. Baseline programs have been ongoing since the summer of 2012 when a surface water quality program was initiated, and have continued to expand to include other components such as hydrology, groundwater, geochemistry, climate, fisheries, and terrestrial resources. The final EA is expected to include, but not necessarily limited to, the following baseline components:

### Atmospheric Environment

- Climate
- Air Quality
- Noise

### Aquatic Environment

- Hydrology
- Hydrogeology
- Water Quality
- Fish and Fish Habitat (including species at risk)

### *Terrestrial Environment*

- Physiography and Soils
- Surficial Geology and Geochemistry
- Wildlife and Wildlife Habitat (including mammals, birds, amphibians, reptiles and species at risk)
- Terrestrial Ecosystem Mapping and Vegetation (including rare plants)

### *Socio-Economics*

- Land and Resource Use
- Local Economics
- Human Health

### *Cultural and Heritage Resources*

- Archaeological and Heritage Resources
- Traditional Use / Traditional Knowledge

Baseline programs are often multi-year and/or multi-season and follow established and scientifically defensible methodologies. The extensive baseline information collected will be used to complete a detailed evaluation of the potential impacts and effects of the Project as part of the overall EA. The impact and effect assessments will include, but not necessarily limited to, biophysical, socio-economic, and cultural and heritage components. The final approach and focus will be based on input from regulators, aboriginal groups and other stakeholders. The assessments will include detailed evaluations and discussions of appropriate mitigative measures to prevent or reduce potential impacts.

## **Physical Environment**

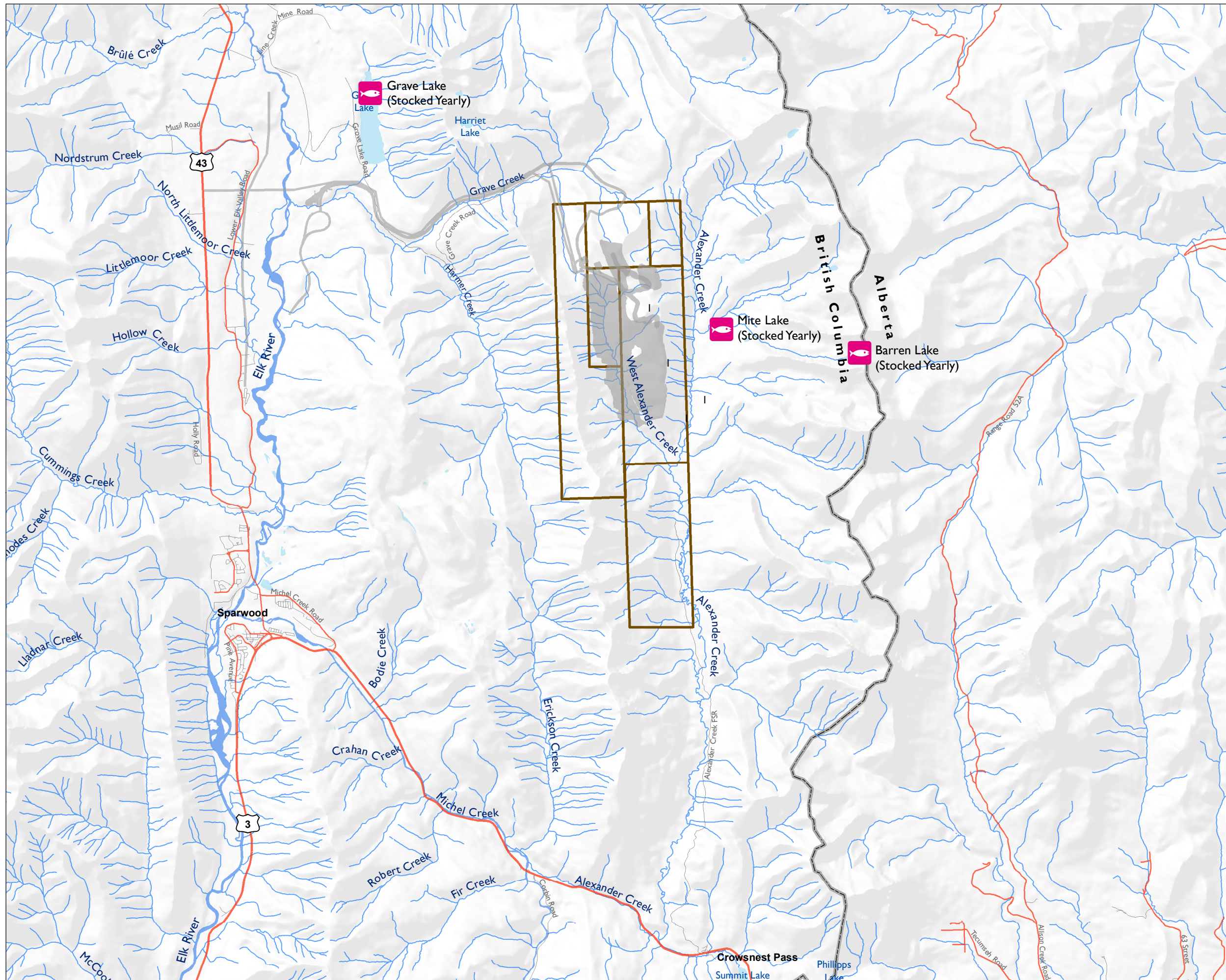
The Project property is situated in an area of steep topography of the Front Ranges Rocky Mountains of BC. The relief on the Project property (i.e., the coal license tenures) generally ranges from 1,850 m to 2,200 m above sea level. The area is characterized by rugged ridges with moderate to steep-sloping sides at higher elevations and gentle slopes at lower elevations. The west side of the Project is characterized by steep sided ridges and subdued mountains, while those on the east are rugged with many cirques and U-shaped valleys. Given the variation in topography across the Project license tenures, a range of biogeoclimatic zones occur, resulting in ranges of soils and vegetation typical of varying elevations.

The climate of the Crown Mountain area is typical of central British Columbia with below freezing temperatures from November to April and periods of hot weather in the summer. Precipitation averages 80 cm a year, with a substantial portion in the form of snow.

## **Aquatic Environment**

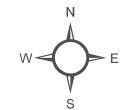
Key watercourses in the area include the Elk River, Michel Creek, Alexander Creek, West Alexander Creek, Harmer Creek, Michel Creek, and Grave Creek (see **Figure 4**). Alexander Creek and West

**Figure 4**  
Watercourses and Waterbodies



- Highways
- Arterial Roads
- Local/Resource Roads
- Watercourses
- Project Infrastructure Extent
- Rivers
- Lakes
- Coal Tenure Licenses and Application
- BC/Alberta Border
- Fish Stocked Lakes

SCALE 1:105,000  
0 1 2 4 km



Map Drawing Information: Province of British Columbia, Jameson Resources, Dillon Consulting Limited, BC Fresh Water Atlas, Freshwater Fisheries Society of BC.

Map Created By: ECH  
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Alexander Creek drain the majority of the Project property, with Grave Creek draining a small portion of the northern portion of the property. Seasonally-high peak flows in watercourses typically occur in the spring months of May and June during snow melt. Low-flow periods typically occur in warm summer months of August and early September.

Watercourses are known to be inhabited by several species of fish including two which are considered sensitive, Westslope cutthroat trout and bull trout.

### **Terrestrial Environment**

The Project is situated within the Elk Valley Ecosection and the Southern Interior Mountains Ecoprovince. Study areas for the Project overlaps four Biogeoclimatic Ecosystem Classification (BEC) units, including: the Engelmann Spruce – Subalpine Fir zone; the Interior Mountain-heather Alpine zone; the Montane Spruce zone; and the Interior Douglas-fir zone. The Project property is predominately forested with predominant species being lodgepole pine, Engelmann spruce, alpine fir, and limber and jack pine. Species of interest in the area include whitebark pine, listed both provincially and under the federal *Species at Risk Act* (SARA).

The area supports a variety of wildlife. Winter wildlife and aerial surveys conducted in 2013 confirmed the presence of American marten, weasel species, wolverine, Canada lynx, coyote, wolf, river otter, cougar, red squirrel, snowshoe hare, elk, bighorn sheep, mountain goats, and moose within the Project area. American badger, a provincially and federally listed species may also occur in the Project area. Ungulate Winter Range occurs across valley bottoms in the area including lower elevations of the Elk River, Alexander Creek, and Grave Creek. Other species of interest include bats such as little brown bat, northern myotis, and the eastern red bat; and amphibians such as the western toad and the Rocky Mountain tailed frog. The mountainous ecosystems of the Elk Valley also provide high elevation grasslands and ridgetops on which a variety of migrating birds may rest and stage. A number of bird species also use the area to breed and nest.

### **Archaeology and Heritage Resources**

Archaeological sites and heritage resources are known to occur within the vicinity of the Project. To determine the locations of potential archaeological resources in the Project footprint, a program will be developed in consultation with local Aboriginal groups and is expected to include an initial Archaeological Overview Assessment (AOA) followed by a site-specific Archaeological Impact Assessment (AIA). Initial archaeological work was completed as part of site exploration programs.

### **Potential Effects**

A preliminary list of potential effects includes:

- **Geology and Terrain** – Loss of local terrain features in areas of site preparation, construction, and operation (e.g., open pits, access roads, and waste rock piles). Some

aspects of the Project, in particular the open pit mining, will change the existing terrain and may impact terrain integrity.

- **Air Quality** – The Project may result in the generation of emissions and dust, specifically through operation of equipment, the use of gravel access roads, and open pit mining (e.g., blasting). Coal mining can result in the generation of fugitive coal dust which can impact ambient particulate matter (PM) concentrations. Operation of equipment over the course of the Project can result in fugitive road dust and also generate greenhouse gas emissions (GHGs).
- **Noise** – In the localized area, Project construction and operation may result in increased noise levels. Increased levels of noise from equipment and mining activities can result in potential sensory disturbance to wildlife.
- **Hydrology and Hydrogeology** – Local hydrology and groundwater may be directly and indirectly impacted due to potential mine dewatering activities and the location of proposed mining areas, waste rock management areas, and other mine infrastructure (e.g., haul roads, rail load-out). Watercourses could experience stream flow reductions or changes in peak flow events due to the Project footprint and activities. Potentially impacted watercourses may include West Alexander Creek, Alexander Creek, and Grave Creek as well as the small tributaries feeding these watercourses.
- **Surface Water Quality** – Water quality may be influenced due to the proposed mine development activities, resulting in impacts to aquatic life such as fish and benthic communities. For example, surface water resources and aquatic life may be impacted by the release of sediment laden water to watercourses and exposure of watercourses to increased levels of metals (such as selenium).
- **Fish and Fish Habitat** – The Project may result in direct and/or indirect effects on fish and fish habitat, as well as sensitive fish species (e.g., Westslope cutthroat trout, a species listed as Special Concern under the SARA). Watercourses, such as West Alexander Creek, may experience impacts as a result of the placement of waste rock. It is proposed that freshwater be withdrawn from Grave Creek to support processing plant water requirements, which could result in changes to in-stream flows impacting aquatic health downstream. Other watercourses may be impacted through the construction of watercourse crossings and Project infrastructure (e.g., construction and/or locations of conveyors and site buildings). Impacts to watercourses may result in a reduction of fish habitat quality and quantity, reducing the productive capacity of watercourses for fish. Specific changes to fish and fish habitat may include loss of habitat, changes in water quality and flows, and exposure to potentially deleterious substances.
- **Sensitive Vegetation** – There is a potential for rare plant species (e.g., whitebark pine) to exist within the Project footprint, and as such, sensitive plant species may be directly impacted. Impacts to sensitive vegetation may occur through changes in the structure and function of plant communities as a result of vegetation removal, changes in localized drainage patterns, dust accumulation, and the introduction of invasive plant species.

Management plans will be developed as part of the Project to reduce the potential for impacts to sensitive plant species.

- **Wildlife Habitat and Sensitive Wildlife** – Wildlife habitat within the Project property and LSA may be directly impacted as a result of the Project infrastructure and activities, and have impacts on local wildlife and sensitive wildlife species. Changes in wildlife habitat may include a reduction in available habitat due to Project infrastructure and activities, sensory disturbances to wildlife during construction and operation, wildlife mortalities during site preparation (e.g., vegetation removal) and access road traffic, wildlife health impacts associated with habitat changes, and changes in wildlife use of the area and predation associated with alteration in habitat structure and availability.
- **Migratory Birds** – The Project has the potential to impact migratory birds. Potential impacts may include mortality as a result of construction activities and vehicle collisions, modification of behaviour (e.g., movement) as a result of habitat loss and sensory disturbance, and increased predation due to habitat alteration.
- **Traditional Knowledge and Use** – The Project occurs within the asserted traditional territory of the Ktunaxa Nation and as such, the Project may impact the natural environment and result in changes to the current use of lands and resources for traditional purposes. This may include traditional lands used for hunting, fishing, and collection of plants used for food and medicine (e.g., berry collection). Project-related impacts that may affect the current use of lands and resources for traditional purposes include changes in wildlife behaviour and wildlife habitat, impacts to the quantity and quality of fish habitat, water quality impacts in local watercourses used for fishing and downstream changes, and removal of vegetation used for traditional use. Impacts to fish and fish habitat may result in changes to fishing areas used by Aboriginal Groups.
- **Heritage and Archaeological Resources** – Heritage and/or archaeological resources may be uncovered or disturbed during the Project as a result of ground disturbance during construction. An Archaeological Overview Assessment (AOA) and an Archaeological Impact Assessment (AIA) will be completed for the Project to determine potential heritage resources within the Project footprint and the LSA. These studies will be conducted in consultation with the Ktunaxa Nation.
- **Human Health Conditions** – Over the operation of the Project, there is a potential for changes in regional and ambient air quality due to the use of machinery and the generation of dust. The Project will result in GHG emissions due to the operation of the mine and associated machinery and transportation. Human health also has the potential to be impacted through contaminated local water sources associated with the Project, such as seepage from waste rock management areas or discharges to local watercourses that are used for recreational purposes (e.g., recreational fisheries), as well as through the accumulation of dust on plants which are consumed by people.
- **Visual** – The Project is located in an area that is used for recreational purposes and thus may result in localized changes to the visual landscape.



## **CONSULTATION**

### **Aboriginal Consultation**

The proposed Project would be located within the asserted traditional territory of the Ktunaxa Nation, which includes four member groups: the ʔakisq̓nuk First Nation (Windemere); the ʔaq̓am – St. Mary's First Nation (Cranbrook); the yaq̓an nukiy – Lower Kootenay Band (Creston); and the Tobacco Plains Indian Band (Grasmere). The Project would also be located within and asserted traditional territory of the Shuswap Indian Band a member of the Shuswap Nation Tribal Council. NWP does not currently anticipate the Project will have potential effects to the Metis Nation of British Columbia and there are no Metis settlements within proximity to the proposed Project. First Nations communities located within a 100 km radius of the Project are illustrated in **Figure 5**.

It is expected that some lands locally within the Project area may be used for traditional purposes such as fishing, hunting, and collection of plants for food and medicine (e.g., berry collection). As part of the EA a detailed TU/TK study will be completed in consultation with the Ktunaxa.

Preliminary engagement and consultation with Aboriginal Groups has included in-person meetings, telephone calls, letter, and email correspondence. NWP Coal has had introductory meetings with the Ktunaxa Nation and correspondence regarding Notice of Work releases for exploration. In addition to NWP Coal has also corresponded with the Shuswap Nation through phone meetings and email. Initial concerns include potential impacts to water quality, fisheries, wildlife corridors, wildlife values, and vegetation. Concerns have also been expressed by the Ktunaxa regarding potential cumulative effects of development in the Elk Valley.

NWP Coal is committed to building and continuing relationships with interested Aboriginal Groups to ensure effective and open communication of Project activities. As part of the EA, a detailed consultation program will be developed.





### **Public and Stakeholder Consultation**

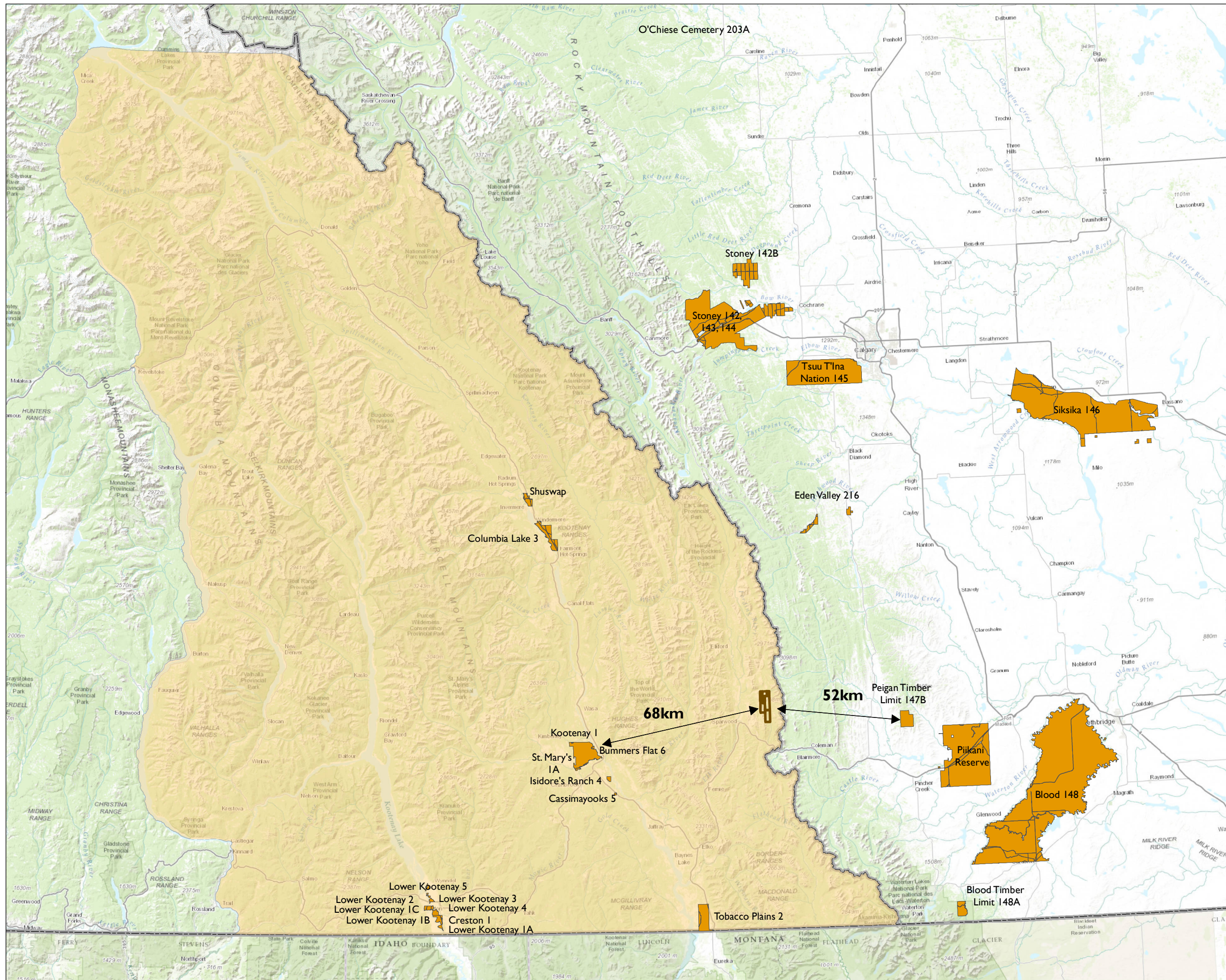
The Elk River Valley is intensively used for recreation including fishing, hunting, and other recreational activities. It is expected that a range of non-Aboriginal stakeholder groups may have an interest in the Project, including local communities, community groups, public interest groups, and recreational organizations. As the Project progresses NWP Coal and its team will actively engage with potentially interested stakeholders.

### **Regulatory Consultation**

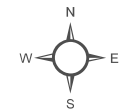
Through the EA process NWP Coal will work closely with provincial and federal regulatory agencies. Preliminary engagement with regulators has included telephone meetings and discussions, in-person meetings, and email correspondence regarding the proposed Project. To date consultation has included: the BC Environmental Assessment Office; the BC Ministry of the Environment; the BC Ministry

**Figure 5**  
Aboriginal Groups

-  Ktunaxa Kinbasket Treaty Council SOI Area
-  First Nation Reserve Land
-  Coal Tenure Licenses and Application
-  BC/Alberta/United States Border



SCALE 1:1,460,195  
0 15 30 60 km



Map Drawing Information: Province of British Columbia, Jameson Resources, Dillon Consulting Limited, ESRI Base Layers, GeoBase.

Map Created By: ECH  
Map Checked By: LKD  
Map Projection: NAD 1983 UTM Zone 11 N

PROJECT: 12-6231  
STATUS: FINAL  
DATE: 11/4/2014

of Forests, Lands and Natural Resource Operations; the BC Ministry of Energy and Mines; and the Canadian Environmental Assessment Agency. Initial concerns identified include: water quality (e.g., selenium); fish and fish habitat; wildlife habitat and corridors; and access for recreation.

### **Consultation with Other Jurisdictions**

The provincial border between British Columbia and Alberta occurs approximately 5 km east of the Project. The federal border between BC and Montana is located approximately 90 km south of the Project. At this time, there has been no interaction with jurisdictions outside of the Province of BC and Canada. Potential transboundary effects will be investigated as part of the detailed impact and effects assessments to be completed for the Project.

## **FEDERAL REGULATORY CONTEXT**

### **Canadian Environmental Assessment Act (2012)**

The anticipated production capacity of the Project is 3.7 million run-of-mine tonnes (M ROMt) per annum (approximately 10,150 tonnes per day [tpd]). A preliminary estimate of surface disturbance associated with the Project is up to 1,100 ha, which includes the pits, waste rock management areas, buildings, and transportation infrastructure (e.g., haul road and rail load out). The daily production rate for the Project will exceed the 3,000 tpd production capacity level presented in Section 16 (a) of the federal *Regulations Designating Physical Activities* and as such the proposed Project will be subject to an environmental assessment under the *Canadian Environmental Assessment Act* (CEAA) 2012 (<http://laws-lois.justice.gc.ca/eng/acts/C-15.21/index.html>).

In addition, the proposed Project will require an environmental assessment under the *British Columbia Environmental Assessment Act* (2002; [http://www.bclaws.ca/Recon/document/ID/freeside/00\\_02043\\_01](http://www.bclaws.ca/Recon/document/ID/freeside/00_02043_01)). Provincially, the Project is considered a Reviewable Project given that the production capacity of the mine will be greater than 250,000 tonnes per year of clean coal and will result in a disturbance greater than 750 hectares that was not previously permitted for disturbance.

### **Other Federal Legislative Requirements**

The following federal Acts or Regulations may apply to the design, construction, and operation of the Project:

#### *Explosives Act*

Under the *Explosives Act* (1985; <http://laws-lois.justice.gc.ca/eng/acts/E-17/>), an explosives license will be required for the Project to acquire and store industrial explosives. Two distinct isolated areas are proposed for storing all-related explosives products for the mining operation (one for storage of bulk explosives and one for storage of blasting accessories such as primers).

### Fisheries Act

The placement of waste rock within sections of West Alexander Creek is expected to require an authorization under Section 35(2) of the *Fisheries Act* (updated 2012; <http://laws-lois.justice.gc.ca/eng/acts/f-14/>). The recently revised *Fisheries Act* now focusses on the protection of commercial, recreational and Aboriginal fisheries. Specifically, Section 35(1) prohibits “any work or undertaking which results in serious harm to fish that are part of a commercial, recreational or aboriginal fishery, or to fish that support such a fishery”. In addition to the placement of waste rock, works associated with potential watercourse crossings (e.g., proposed haul road along Grave Creek) may also require a *Fisheries Act* Authorization.

### Species at Risk Act

Potential effects to both aquatic and terrestrial species, as defined in subsection 2(1) of the *Species at Risk Act* (2002; <http://laws-lois.justice.gc.ca/eng/acts/S-15.3/>) could include loss of habitat and changes to water quality and flows (e.g., Westslope cutthroat trout), habitat disturbance and direct impacts (e.g., Whitebark pine), and disturbance due to increased noise and or habitat loss (e.g., American Badger). Potential impacts to listed species will be evaluated in detail and appropriate mitigative measures will be developed in consultation with regulators, Aboriginal Groups, and other stakeholders.

### Migratory Birds Convention Act

The Project has the potential to impact migratory birds which may utilize the areas of the Project such as high elevation grasslands and ridgetops. Potential impacts could include mortality as a result of construction activities and vehicle collisions, modification of behaviour (e.g., movement) as a result of habitat loss and sensory disturbance, and increased predation due to habitat alteration. Migratory birds are protected under the *Migratory Birds Convention Act* (1994; <http://laws-lois.justice.gc.ca/eng/acts/M-7.01/>). It must also be noted that birds are also protected under provincial legislation (i.e., the *British Columbia Wildlife Act*).

## **REFERENCES**

Teck Coal Limited. (2013). *Valley-Wide Selenium Management Action Plan for Teck Coal Limited Operations in the Elk Valley, Summary Report*. Report prepared for the British Columbia Ministry of Environment.