

Appendix 1

AER Terms of Reference and Concordance Tables

Appendix 1a

Terms of Reference

Final Terms of Reference Environmental Impact Assessment Report for Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project				
Cross Reference (Concordance) Table to Location in Application				
ToR No.	ToR Description	Reference Section in Application	Reference Section in Consultants Reports	Clarification Comments
1.0	PURPOSE OF THE TERMS OF REFERENCE			
	The purpose of this document is to identify Benga Mining Limited (Benga Mining) the information require by government agencies for an environmental impact assessment (EIS) report prepared under the <i>Environmental Protection and Enhancement Act (EPEA)</i> as it relates to the Grassy Mountain Coal Project (the project).			
2.0	SCOPE OF THE EIA REPORT			
	<p>Benga Mining will prepare and submit an EIA report that examines the environmental and socio- economic impacts of the entire Project. The EIA report will be a standalone document providing environmental and socioeconomic data, results, and analysis for the project area, local study areas, and regional study areas, including a cumulative effects assessment. The EIA report will also include information on aboriginal consultation and public engagement done for the project.</p> <p>Benga Mining will consider all applicable provincial and federal legislation, codes of practice, guidelines, policies, standards, and directives in conducting the EIA. The EIA report will be prepared in accordance with these terms of reference, the environmental information requirements prescribed under <i>EPEA</i> and associated regulations, and the <i>Canadian Environmental Assessment Act (CEAA)</i> if applicable. The EIA report will form part of Benga Mining’s application to the Alberta Energy Regulator (AER).</p> <p>Benga Mining will refer to the <i>Guide to Preparing Environmental Impact Assessment Reports in Alberta</i> (the guide), published by Alberta Environment, and these terms of references when preparing the EIA report. In any case, where there is a difference in requirements between the guide and these terms of reference, the terms of reference shall take precedence.</p>	Sections A to H Appendices 1 to 9	CR #1 to 12	
3.0	CONTENT OF THE EIA REPORT			
3.1	PUBLIC ENGAGEMENT AND ABORIGINAL CONSULTATION			
	[A] Describe the concerns and issues expressed by the public and the actions taken to address those concerns and issues, including how public input was incorporated into the Project development, impact mitigation and monitoring.	G.4 to G.6	---	
	[B] Describe the concerns and issues expressed by aboriginal communities and the actions taken to address those concerns and issues, including how aboriginal community input was incorporated into the Project design, EIA development, impact mitigation, monitoring and reclamation. Describe consultation undertaken with aboriginal communities and groups with respect to traditional ecological knowledge and potential impacts on current use of land and water resources for traditional purposes.	H.3 to H.13 Appendix 7a, b, c F.1.8, F.1.9, F.2.9, F.2.4, F.3.3	---	

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	[C] Describe plans to maintain the public engagement and aboriginal consultation processes following completion of the EIA report to ensure that the public and aboriginal peoples will have an appropriate forum for expressing their views on the ongoing development, operation and reclamation of the Project.	G.6 H.1.1	---	
	[D] Describe the efforts to obtain public input and identify concerns with the proposed project, including public consultation methods, locations, and timing.	G.3	---	
3.2	PROJECT DESCRIPTION			
3.2.1	Overview			
	[A] Provide a project description in sufficient detail to provide context for the EIA, including the following:			
	a) Background on the proponent, with specific reference to existing operation, proposed operations, mineral resources, environmental studies, and community involvement;	A.1, A.2, A.3, A.6, A.8, A.9, A.10	---	
	b) a development plan that outlines:			
	i. the phases of development;	C.1.3 Figure C.1.3-1 to C.1.3-26	---	
	ii. transportation, infrastructure and access routes;	C.3, C.4.1 to C.4.3	---	
	iii. activities associated with each stage of the Project; and	C.1.3.1 to C.1.3.5	---	
	iv. impacts from a delay in proceeding with the Project, or any phase of the Project or not going ahead with the Project.	A.2.7	---	
	[B] Provide maps and drawings for the Project components and activities that include:			Powerline is no longer being rerouted, but rather remaining in existing location. MDR #21 MDR #28
	a) existing infrastructure, leases and clearings, including exploration clearings;	---	CR #10 Figure 3.1-1, 4.3-1, 4.4-1, 4.4-2, 4.5-2, 4.6-1, 4.8-1	
	b) the extent of mine excavation and dump areas in each stage of the Project;	C.1 Figure C.1.3-1 to C.1.3-26	---	

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	a) coal recovery and processing facilities;	C.2 Figure C.2.4-1, C.2.5-2, C.2.6-2 C.2.6-3, C.2.6-5, C.2.6-12 to C.2.6-16	---	
	b) dewatering and water control facilities;	C.2 Figure C.2.5-1, C.2.6-11	---	
	c) other buildings and infrastructures, including temporary facilities (e.g., conveyors, power lines and utilities);	C.2, C.6 Figure C.2.4-1, C.6.0-1, C.6.1-1, C.6.8-1, C.6.11-1	---	
	d) containment structures such as retention ponds and storage ponds (e.g., stormwater runoff);	C.5 Figure C.5.3-1 to C.5.3-4	---	
	e) water wells/intakes, pipelines, and storage structures;	---	CR #3 Figure 4.6-3	
	f) waste storage, transfer treatment and disposal sites;	C.1.3 Figure C.1.3-1 to C.1.3-26	---	
	g) field maintenance operations; and	C.6 Figure C.6.0-1, C.6.1-1	---	
	h) sources of aggregate resources, borrow material and other construction material and locations of any stockpiles that will be developed.	A.1 Figure A.1.0-2	---	
	[C] Describe the primary resource recovery process, any proposed follow-up recovery process and other related processes and process facilities of the Project.	C.1.1, C.1.8, C.2.1, C.2.3	---	
	[D] Discuss the amount and source of energy required for the Project.	C.6.15	---	
	[E] Describe the proposed method to transport product to markets.	C.3.1, C.3.2	---	
	[F] Provide a list of facilities for which locations will be determined later.	C.1.7	---	
	[G] Provide the adaptive management approach that will be implemented throughout the life of the Project. Include how monitoring, mitigation and evaluation were incorporated.	C.7.6.1 F.2.3	---	

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3.2.2	Constraints			
	[A] Discuss the process and criteria used to identify constraints to development, and how the Project has been designed to accommodate those constraints. Include the following:			
	any applicable Regional Plan as per the <i>Alberta Land Stewardship Act (ALSA)</i> , as well as others such as the <i>Approved Water Management Plan for the South Saskatchewan River Basin (Alberta)</i> ;	A.7.5, C.5.1.2, F.1.6	CR #10 Section 4.2.1 to 4.2.4, 4.2.6	
	land-use policies and resource management initiatives that pertain to the project;	---	CR #10 Section 3.2, 3.3	
	Aboriginal traditional land and water use;	H.2.0 (assessment methods) H.3.8, H.4.8, H.5.8, H.6.8, H.7.8, H.8.5, H.9.8, H.12.8 (issues/concerns and Benga responses)	---	
	all known traplines;	---	CR #10 Section 3.2, 3.3	
	the environmental setting;	F.1.3	---	
	cumulative environmental impacts in the region;	F.1.5, F.4	---	
	cumulative social impacts in the region;	E.11.4	CR #11 Section 2.1, 2.2, 2.4 to 2.6	
	results of Project-specific or regional monitoring;	F.1.5, F.1.6	---	
	potential for new or additional technology to increase resource recovery at later times; and	C.1.8	---	
	potential for changes in the regulatory regime.	C.7.4	---	
3.2.3	Regional And Cooperative Efforts			
	[A] Discuss the Proponent's involvement in regional and cooperative efforts to address environmental and socio-economic issues associated with regional development.	F.1.7, F.1.8, F.1.9	CR #11 Section 7.4	Additional information for regional and cooperative efforts from a Socio-Economic standpoint is provided in CR #11 Section 7.4. MDR #9

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	[B] Describe opportunities for sharing infrastructure (e.g., access roads, utility corridors, water infrastructure) with other resource development stakeholders. Provide rationale where these opportunities will not be implemented.	A.6.5	---	Additional information on shared existing and new infrastructure provided in Section A.6.5.
3.2.4	Transportation			
	[A] Prepare a Traffic Impact Assessment as per Alberta Transportation's <i>Traffic Impact Assessment Guideline</i> (http://www.transportation.alberta.ca/613.htm).			
	a) describe background traffic and consider the cumulative effects of traffic impacts due to other	C.4.4.1 Appendix 8 Section 3.1, 3.3	CR #11 Section 10.2, 10.3.2, 10.3.3	
	b) existing and planned developments using the same highways and accesses.	C.4.4.1 Appendix 8 Section 3.1, 3.3	---	
	c) discuss anticipated changes to highway traffic (e.g., type, volume) due to the Project.	C.4.4.1 Appendix 8 Section 3.3	CR #11 Section 10.2, 10.3.2	
	d) assess potential traffic impacts for all stages of the Project (e.g., construction, operation, maintenance, expansion, shutdown).	Appendix 8 Section 4.1	---	
	e) determine any necessary improvements and methods to mitigate traffic impacts.	Appendix 8 Section 4.3	CR #11 Section 10.4	
	[B] Describe and map the locations of any new road or intersection construction, or any improvements to existing roads or intersections, related to the development of the Project, from the boundary of the Project Area up to and including the highway access points.	C.4.1 to C.4.3 Figure C.3.1-1, C.4.1-1, C.4.1-2	---	
	a) discuss the alternatives and the rationale for selection for the preferred alternative;	---	---	
	b) discuss compatibility of the preferred alternative to Alberta Transportation's immediate and future plans;	C.4.4.2	---	
	c) describe the impacts to local communities of the changes in transportation and infrastructure; and	---	CR #11 Section 10.3, 10.4	
	d) provide a proposed schedule for the work.	C.4.4.1	---	
	[C] Describe any infrastructure or activity that could have a potential impact on existing roads (e.g., pipelines or utilities crossing provincial highways, any facilities in close proximity of the highways, any smoke, dust, noise, light or precipitation generated by the Project that could impact the highway and road users).	C.3.1 Figure C.3.1-1	---	

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	[D] Provide a summary of any discussions with Alberta Transportation in regards to the Project and its traffic impacts.	C.4.4.2	---	Commitment to communicating with AB Transportation and BC Transportation and Infrastructure is provided in CR #11 Section 10.4. MDR #10
3.2.5	Air Emissions Management			
	[A] Discuss the selection criteria used, options considered, and rationale for selecting control technologies to minimize air emission and for air quality management.	---	CR#1a Section 6.6 Appendix A provides information on emission model parameters, which inherently contain mitigations.	
	[B] Provide emission profiles (type, rate and source) for the Project's operating emissions including point and non-point sources and fugitive emissions (including mine faces), and for construction emissions. Consider both normal and upset conditions. Discuss:	---	CR #1a Air Quality Section 4 Appendix A Section 4 to 10	
	a) odorous or visible emissions from the proposed facilities;	E.1.3.1, E.1.3.3	CR #1a Section 4.5 Appendix A Section 6	
	b) annual and total greenhouse gas emissions for all stages of the Project. Identify the primary sources and provide examples of calculations;	E.1.3.4	CR #1a Section 4.3 Appendix A Section 8	
	c) the Project's contribution to total provincial and national greenhouse gas emissions on an annual basis;	---	CR #1a Section 4.3 Appendix A Section 8.2	
	d) the Proponent's overall greenhouse gas management plans;	C.7.9	---	
	e) the Proponent's plans to manage emissions from the mining fleet;	---	CR #1a Section 6.6	
	f) the amount and nature of criteria air contaminant emissions; and	E.1.3.1, E.1.3.3, E.1.5.1	CR #1a Section 4.2 Appendix A Table A10-1	

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	g) the amount and nature of acidifying emissions, probable deposition patterns and rates.	E.1.3.1, E.1.3.3	CR #1a Section 4.2.4, 5.8, 5.9 Table 4.2-8 (see NOx and SO ₂) Figure 5.8-1, 5.8-2, 5.9-1, 5.9-2	
3.2.6	Water Management			
3.2.6.1	Water Supply			
	[A] Describe the water supply requirements for the Project, including:			
	a) the criteria used, options considered and rationale for selection of water supply sources(s);	A.7.10 C.5.1	---	
	b) the expected water balance during all stages of the Project. Discuss assumptions made or methods chosen to arrive at the water balances;	C.2.5.1, C.5.4 Appendix 10B	---	Additional information on water balance, including time for water-containing structures to fill, is provided in Appendix 10B MDR #7
	c) the process water, potable water, and non-potable water requirements and sources for construction, start-up, normal and emergency operating situations, decommissioning and reclamation. Identify the volume of water to be withdrawn from each source, considering plans for wastewater reuse;	C.2.5.1, C.5.1	---	
	d) the location of sources/intakes and associated infrastructure (e.g., pipelines for water supply);	C.5.1.2, C.5.2, Table C.5.2-1	---	
	e) the variability in the amount of water required on an annual and seasonal basis as the Project is implemented;	C.5.1.1	---	
	f) the expected cumulative effects on water losses/gains resulting from the Project operations;	---	CR #4 Section 5.1, 6	
	g) potable water treatment systems for all stages of the Project;	C.6.12, C.6.13, C.6.17	---	
	h) type and quantity of potable water treatment chemicals used; and	C.6.12, C.6.13	---	
	i) measures for ensuring efficient use of water including alternatives to reduce the consumption of non-saline water such as water use minimization, recycling, conservation, and technological improvements	A.7.10		

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3.2.6.2	Surface Water			
	[A] Describe the surface water management strategy for all stages of the project, including:			
	a) design factors considered, such as:			
	i. site drainage,	C.5.3.2, C.5.4 F.4.4.1	---	
	ii. run-off management,	C.5.3.2, C.5.3.3, C.5.4, C.5.5.1, C.5.5.3	---	
	iii. road and plant run-off,	C.5.3.2, C.5.3.3, C.5.5.1	---	
	iv. erosion/sediment control,	C.5.3.2 F.4.4.4	---	
	v. geotechnical stability concerns,	Appendix 9b Section 4, 5, 6	---	
	vi. groundwater and surface water protection,	C.5.3, C.5.4 F.4.4.2, F.4.4.3	---	
	vii. mine pit dewatering,	C.5.3.2, C.5.3.4.2, C.5.4, C.5.5.1 to C.5.5.3	---	
	viii. groundwater seepage, and	C.5.4	---	
	ix. flood protection;	C.5.3.3, C.5.5.1 to C.5.5.3	---	
	b) permanent or temporary alterations or realignments of watercourses, wetlands and other waterbodies;	---	CR #6 Aquatic Resources Section 6	
	c) the pre and post-disturbance alignment and condition of all ephemeral and permanent streams, wetlands and waterbodies including those created by the Project; and	F.4.4	---	
	d) factors used in the design of water management facilities that are in accordance with <i>Water (ministerial) Regulation, Part 6 (Dam and Canal Safety)</i> , as well as the Canadian Dam Safety Association <i>Dam Safety Guidelines</i> , including expected flood and flood protection.	C.5.3.4, C.5.5.1, C.9.5.2 Table C.5.5-1, C. 5.5-4, C. 5.5-5, C.5.5-8 Appendix 10B	CR #5 Surface Water Quality Section 4.6	
	[B] Describe and map crossings of watercourses or waterbodies (including bridges, culverts and pipelines) required.	C.3.1, C.5.3 Figure C.3.3-1, C.5.3-1 to C.5.3-4	---	

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	[C] Describe discharges to the surrounding watershed from existing and reclaimed sites, including potential end pit lakes and the management strategy for handling such releases.	C.5.3.3, C.5.3.5, C.5.4, C.5.5.1, C.5.5.2 F.3.6.4, F.4.4.1, F.4.5.7 Appendix 10C	---	Additional information on selenium attenuation effectiveness both at operations and closure provided in Appendix 10C. MDR #7
3.2.6.3	Wastewater Management			
	[A] Describe the wastewater management strategy for the Project, including:			
	a) the source, quantity and composition of wastewater streams from each component of the proposed operation (e.g., coal mining, coal processing) for all Project conditions, including normal, start-up, worst-case and upset conditions;	C.5.4	---	
	b) the design of facilities that will handle, treat and store wastewater streams, including measures to prevent or minimize potential impacts to the environment, and the type and quantity of any chemicals used in the wastewater treatment;	C.5.5 Appendix 10C	CR #4 Hydrology Section 5.1	Additional information on selenium attenuation effectiveness both at operations and closure provided. MDR #7
	c) the options for wastewater treatment, including the rationale for selecting the preferred options, and a discussion of why the other options were not chosen;	A.7.6 C.5.4, C.5.5	---	
	d) the options for the disposal of wastewater in the context of best management practices and best available technologies, including the rationale for choosing the preferred option and the measures taken to prevent impacts on potable groundwater, aquatic ecosystems and vegetation;	A.7.6 C.5.4, C.5.5	---	
	e) how make-up water requirements and disposal volumes will be minimized;	A.7.5 C.2.5.1, C.5.4	---	
	f) the potable water and sewage treatment systems for both the construction and operation stages. Discuss the sewage treatment system options considered including the rationale for the option selected; and	C.6.12, C.6.13	---	
	g) a monitoring plan for wastewater releases, including the rationale used to determine the frequency of sampling and the parameters to be measured.	A.11.5.2, A.11.5.3 C.5.7, C.5.8	---	

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3.2.7	Water Management			
	[A] Discuss the selection criteria used, options considered, and rationale for waste disposal. Discuss the strategy for on-site waste disposal versus off-site waste disposal.	A.7.2 Figure A.7.2-1	---	
	[B] Characterize and quantify the anticipated dangerous goods, and hazardous, non-hazardous, and recyclable wastes generated by the Project, and:			
	a) describe the composition and volume of specific waste streams and discuss how each stream will be managed;	C.1.2.5, C.1.3.1, C.2.3.2, C.2.3.3.5 Table C.1.2-2, C.1.3-1	---	
	b) describe the management plan for exploratory drilling wastes, overburden and other mining wastes, as well as any by-products;	C.1.3, C.1.5.3, C.5.4	---	
	c) describe how any disposal sites will be constructed; and	B.8.6.3.2 C.1.1	---	
	d) describe plans for pollution prevention, waste minimization, recycling, and management to reduce waste quantities over the life of the Project.	C.7.2	---	
	[C] Provide a list of chemical products to be manufactured, processed or otherwise used for the Project and describe, in general terms, how these products will be stored and managed. Identify products containing substances that are:			
	a) toxics under the <i>Canadian Environmental Protection Act, 1999</i> ;	C.2.8.5.2, C.8.3.3	---	
	b) listed on the National Pollutant Release Inventory;			
	c) dangerous goods as defined by the federal Transportation of Dangerous Goods Act; and	C.2.8.5.2	---	
	d) on the Domestic Substances List and categorized as requiring further assessment under Canada's Chemicals Management Plan.	C.2.4.6.6 Table C.2.4-1	---	
	[D] Describe the nature and amount of on-site hydrocarbon storage. Discuss containment and other environmental protection measures.	C.2.8.5.2, C.6.6, C.6.10	---	
3.2.8	Conservation And Reclamation			
	[A] Provide a conceptual conservation and reclamation plan for the Project. Describe and map as applicable:			
	a) any existing Conservation and Reclamation Plan;	No existing plan	---	

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	b) current land use and capability and proposed post-development land use and capability;	F.2.1.5 Table F.2.1-2 Figure F.2.1-5, F.2.1-6	CR #7 Section 4.5, 4.5.1, 4.5.2 Table 4.5-1 to 4.5-4, 4.5-5	Additional information has been added to the C&R Plan to characterize the current land use capability, and provide an inventory of the pre- and post-disturbance land capability classes for the soils in both the Project Area and Local Study Area. MDR #2
	c) anticipated timeframes for completion of reclamation stages and release of lands back to the Crown including an outline of the key milestone dates for reclamation and how progress to achieve these milestones will be measured;	F.2.2, F.3.6 Figure F.3.6-1 to F.3.6-8	---	
	d) constraints to reclamation such as timing of activities, availability of reclamation materials and influence of natural processes and cycles including natural disturbance regimes;	F.2.4	CR#7 Section 7.1, 7.4	
	e) post-development land capability with respect to:			
	i. self-sustaining topography, drainage and surface watercourses representative of the surrounding area,	F.4.1, F.4.4.1, F.4.4.3, F.4.5	CR #7 Section 7.4.1	Additional information on final self-sustaining drainage characteristics needed to support final revegetation communities, changes in biodiversity, impact on wildlife, and the long term viability of the end-pit lake to provide support for the conceptual plans. MDR #4
	ii. existing traditional use with consideration for traditional vegetation and wildlife species in the reclaimed landscape,	F.1.9, F.2.1.9, F.3.6.3.1	---	
	iii. end pit lakes,	F.3.6.4, F.4.4.1, F.4.5.7	---	

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	iv. wetlands,	F.3.6.3, F.4.4.3, F.4.5.4	---	
	v. self-sustaining vegetation communities representative of the surrounding area capable of ecological succession, and	F.3.6.3, F.4.3	---	
	vi. reforestation and forest productivity;	F.3.6.3, F.4.5	---	
	f) a revegetation plan for the disturbed terrestrial, riparian and wetland areas;	F.3.6.3	CR #8 Section 4.1.5.1	
	g) water supply capability of post-mine landscape;	F.4.4, F.4.5.4, F.4.5.7	CR #4 Section 5.1	
	h) reclamation material salvage, storage areas and handling procedures;	F.2.1.5, F.3.4, F.3.5 Figure F.1.2-1	CR #7 Section 4.1, 4.2, 7.1, 7.4	Information about reclamation material is provided in indicated references. MDR #27
	i) reclamation material replacement indicating depth, volume and type;	F.3.6.2, F.4.2 Table F.2.2-2	CR #7 Section 7.1	Additional information on the volumetric analysis of soil quantity available to achieve the final reclaimed landscape and equivalent land capability to provide support for the C&R Plan. MDR #3
	j) existing and final reclaimed site drainage plans;	F.4.4.1, F.4.5.4	CR #7 Section 7.2.3, 7.3.3, 7.4.1	
	k) integrating surface and near-surface drainage within the Project Area; and	F.4.4 Figure F.4.4-1	---	

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	l) promotion of biodiversity.	F.2.5, F.3.7	CR #7 Section 7.2 CR#8 Section 4.8.4 CR #9 Section 7.1	
	[B] Provide a map of the predicted Ecological Land Classification map for the post reclamation landscape considering potential land uses, including traditional uses and how the landscape and soils have been designed to accommodate future land use.	F.1.6, F.1.9, F.4.1, F.4 Figure F.3.6-7	---	
	[C] Provide a conceptual plan to monitor reclamation performance and success (including soils, vegetation, wildlife and aquatic resources).	F.3.9.3 E.6.3.2, E.7.5.2, E.8.5.2, E.9.5.2	CR #6 Section 6 CR #7 Section 7.1.3, 7.2.3, 7.3.3, 7.4.3 CR #8 Section 4.1.5, 4.2.6, 4.3.4, 4.4.4, 4.5.4, 4.6.4, 4.7.4, 4.8.4, 4.9.4, 4.10.3, 5.2 CR #9 Section 7.2	
	[D] Describe how the Proponent considered the use of progressive reclamation in project design and reclamation planning.	C.1.3 Figure C.1.3-1 to -26 F.2.2, F.3.6, F.4	---	
	[E] Discuss uncertainties related to the conceptual reclamation plan.	F.2.4	---	

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4.0	ENVIRONMENTAL ASSESSMENT			
4.1	AIR QUALITY, CLIMATE AND NOISE			
4.1.1	Baseline Information			
	[A] Discuss the baseline climatic and air quality conditions including:			
	a) the type and frequency of meteorological conditions that may result in poor air quality; and	E.1.2.1	CR #1a Section 3.2 Appendix C Section 4 Appendix B Section 3.2 to 3.4	Additional information on modelling parameters (i.e., TERRAD values), and source elevations is provided is provided in Appendix B. MDR #6
	b) appropriate ambient air quality parameters.	E.1.2.2	CR #1a Section 3.1 Appendix C Section 3	Additional information on baseline and background data sources is provided. MDR #6
	[B] Provide representative baseline noise levels at receptor locations.	E.2b.2	CR #2b Section 3.1	
4.1.2	Impact Assessment			
	[A] Identify components of the Project that will affect air quality, and:			
	a) describe the potential for reduced air quality (including odours and visibility) resulting from the Project and discuss any implications of the expected air quality for environmental protection and public health;	E.1.3	CR #1a Section 5 CR #12 Section 6.4, 7.1 to 7.3	
	b) estimate ground-level concentrations of appropriate air quality parameters;	E.1.3.3	CR #1a Section 5.1 to 5.6	
	c) discuss any expected changes to particulate deposition, nitrogen deposition or acidic deposition patterns;	E.1.3.3.7. E.1.3.3.8	CR #1a Section 5.7 to 5.9	

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	d) identify areas that are predicted to exceed Potential Acid Input (PAI) critical loading criteria;	E.1.3.3.9	CR #1a Section 5.9 Figure 5.9-1, 5.9-2 CR #7 Section 4.4 Figure 4.4-1	
	e) discuss interactive effects that may occur resulting from co-exposure of a receptor to all emissions; and	---	CR #12 Section 5.2.2, 5.3.2, 6.3, 7.3	
	f) describe air quality impacts resulting from the Project, and their implications for other environmental resources, including habitat diversity and quantity, soil resources, vegetation resources, and water quality.	E.1.4, E.1.5 E.7.2.5, E.8.3.10, E.9.3.5, E.12.6	CR #1a Section 6.3 CR #5 Section 4.5 CR#7 Section 4.4 Figure 4.4-1 CR#8 Section 4.10.1 CR #12 Section 8 Appendix H	
	[B] Identify stages or elements of the Project that are sensitive to changes or variability in climate parameters, including frequency and severity of extreme weather events. Discuss what impacts the change to climate parameters may have on elements of the Project that are sensitive to climate parameters.	E.1.2.1, E.1.3.5.3	CR #1 Section 5.14	
	[C] Identify components of the Project that have the potential to increase noise levels and discuss the implications. Present the results of a noise assessment. Include:			

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	a) potentially-affected people and wildlife;	E.2a.1	CR #2a Section 5.0 CR #2b Section 4.2, 5.0	
	b) an estimate of the potential for increased noise resulting from the development; and	E.2a.3 E.2b.3	CR #2a Section 5.0 CR #2b Section 4.2, 5.0	
	c) the implications of any increased noise levels.	E.2a.6 E.2b.4	CR #2a Section 5.0, 6.3 CR #2b Section 4.2, 5.0	
4.2	HYDROGEOLOGY			
4.2.1	Baseline Information			
	[A] Provide an overview of the existing geologic and hydrogeologic setting from the ground surface down to, and including, the coal zones, and if applicable, to the base of any deeper strata that would be potentially impacted by mining. Document any new hydrogeological investigations, including methodology and results, undertaken as part of the EIA, and:			
	a) present regional and Project Area geology to illustrate depth, thickness and spatial extent of lithology, stratigraphic units and structural features;	E.3.2.1	CR #3 Hydrogeology Section 4.2 Figures 4.2-2, 4.3.2 and 4.2-9	
	b) present regional and Project Area hydrogeology describing:			
	i. the major aquifers, aquitards and aquicludes (Quaternary and bedrock), their spatial distribution, properties, hydraulic connections between aquifers, hydraulic heads, gradients, groundwater flow directions and velocities. Include maps and cross sections,	E.3.2	CR #3 Section 4.4 Figure 4.2-1, 4.2-3 to 4.2-8, 4.3-1, 4.3-2, 4.4-1 to 4.4-3, 4.4-7, 4.5-3 Table B2, B3a, B3b, B4, B5	
	ii. the chemistry of groundwater aquifers including baseline concentrations of major ions, metals and hydrocarbon indicators,	E.3.2.4, E.3.2.5	CR #3 Section 4.4, 4.5 Figures 4.4-4 to 4.4-6, 4.5-1, 4.5-2 Tables B6 to B12	

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	iii. the potential discharge zones, potential recharge zones and sources, areas of groundwater-surface water interaction and areas of Quaternary aquifer-bedrock groundwater interaction,	E.3.2.5, E.3.2.6	CR #3 Section 4.4 to 4.6 Figures 4.3-1, 4.5-3	
	iv. water well development and groundwater use, including an inventory of groundwater users,	E.3.2.7	CR #3 Section 4.7 Figure 4.7-1 to 4.7-3 Table B14, B15	
	v. the recharge potential for Quaternary aquifers, and	---	CR #3 Section 4.5	
	vi. potential hydraulic connection between coal zones and other aquifers resulting from Project operations.	E.3.2.3, E.3.3	CR #3 Section 4.5	Additional information regarding karst potential beneath the open pit mine and potential for short circuiting local groundwater transport is provided (CR #3 Section 4.4.1). Additional information on legacy subsurface mine workings potential for short-circuiting local groundwater transport (CR #3 Section 5.4.1, 5.4.2). Additional information on linkage with Town of Blairmore's water supply (CR #3 Section 5.4.2, Figure 5.4-1). MDR #7
4.2.2	Impact Assessment			
	[A] Describe Project components and activities that have the potential to affect groundwater resource quantity and quality at all stages of the Project.	E3.3	CR #3 Section 5.0, 5.1	

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	[B] Describe the nature and significance of the potential Project impacts on groundwater with respect to:			
	a) inter-relationship between groundwater and surface water in terms of surface water quantity and quality;	E.3.2.6, E.3.3.1, E.3.3.2	CR #3 Section 5.3, 5.3, 5.5	Additional information on groundwater contribution to Blairmore and Gold Creek is provided in CR #3 Section 4.5.3. - MDR #8 Additional information on groundwater and surface water interactions is provided in CR #3 Section 4.5, 5.4.2.2.3. - MDR #7
	b) implications for terrestrial or riparian vegetation, wildlife and aquatic resources including wetlands;	E.3.2.6, E.3.3	CR #3 Section 4.5, 5.3.2.2.3, 5.4.2.2.3 CR #5 Section 4.1.1, 4.6	Additional information is provided on groundwater recharge (CR #3 Section 4.5, 4.6) MDR #11 Additional information on thermal regulation (MDR #11) will be provided with the IFN discussion in the EIA Fish & Aquatic Addendum (Q1 2017)
	c) changes in groundwater quality and quantity;	E.3.3	CR #3 Section 5.3.2.2, 5.4.2.2, 5.5.2 Figure 5.3-1 to 5.3-8	
	d) conflicts with other groundwater users, and proposed resolutions to these conflicts;	---	CR #3 Section 5.3.2.2, 5.4.2.2, 5.5.2 Figure 5.4-1	Additional information on the potential project effects to downstream users drinking water supply in CR #3 Section 5. MDR #8
	e) potential implications of seasonal variations; and	---	CR #3 Section 3.3.2, 5.3.2.2.2	

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	f) groundwater withdrawal for Project operations, including any expected alterations in the groundwater flow regime during and following Project operations.	---	CR #3 Section 5.1, 5.3.2 Figure 5.3-1 to 5.3-8	
	[C] Describe programs to manage and protect groundwater resources including:			
	a) the early detection of potential contamination;	A.11.3 C.7.6.5 E.3.5	CR #3 Section 5.4.3, 5.5.3, 7	
	b) groundwater remediation options in the event that adverse effects are detected; and		CR #3 Section 7	
	c) monitoring groundwater production or dewatering impacts.	A.11.3 E.3.5	CR #3 Section 5.3.3, 7	
4.3	HYDROLOGY			
4.3.1	Baseline Information			
	[A] Describe and map the surface hydrology. Include flow regimes of streams in the Project Area.	E.4.2	CR #4 Hydrology Section 3 Figure 21 to 40	
	[B] Provide surface flow baseline data, including:			
	a) seasonal variation, low, average and peak flows for watercourses; and	E.4.2	CR #4 Section 3.6, 3.7, 3.8	
	b) low, average and peak levels for waterbodies.	---	---	Not applicable: there are no open waterbodies (i.e., natural lakes) within the MPB. Seasonal variations are provided for flowing watercourses only.
	[C] Identify any surface water users who have existing approvals, permits or licenses.	---	CR #4 Section 5.1 Table 15	

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ToR No.	ToR Description	Reference Section in Application	Reference Section in Consultants Reports	Clarification Comments
4.3.2	Impact Assessment			
	[A] Discuss changes to watersheds, including surface and near-surface drainage conditions, potential flow impediment, and potential changes in open-water surface areas caused by the Project.	E.4.3	CR #4 Section 5.2, 6.4 Table 18	
	[B] Describe the extent of hydrological changes that will result from disturbances to groundwater and surface water movement:			
	a) include changes to the surface flow, water levels and channel regime in watercourses (during minimum, average and peak flows) and water levels in waterbodies;	E.4.3.2	CR #4 Section 5.2, 6.4	
	b) assess the potential impact of any alterations in flow on the hydrology and identify all temporary and permanent alterations, channel realignments, disturbances or surface water withdrawals;	E.4.3.2, E.4.3.3	CR #4 Section 6.4	
	c) discuss both the Project and cumulative effect of these changes on hydrology (e.g., timing, volume, peak and minimum flow rates, river regime and lake levels), including the significance of effects for downstream watercourses; and	E.4.3.3, E.4.4	CR #4 Section 6.4, 6.5 Table 18	
	d) identify any potential erosion problems in watercourses resulting from the Project.	E.4.3.3 F.4.4.1	CR #4 Section 6.4	
	[C] Discuss changes in sedimentation patterns in receiving waters resulting from the Project.	E.4.3.3	CR #4 Section 6.4	
	[D] Describe impacts on other surface water users resulting from the Project. Identify any potential water use conflicts.	C.5.2.3 E.4.3.1	CR #4 Section 5.1	
	[E] Describe potential downstream impact if surface water is removed.	C.5 E.4.3.2	CR #4 Section 5.2	
	[F] Discuss the impact of low flow conditions and in-stream flow needs on water supply and water and wastewater management strategies.	C.5 E.4.3.3	CR #4 Section 4.3 CR #6 Section 3.3.1.3	
	[G] Discuss how potential impacts of temporary and permanent roads on wetland hydrology will be minimized and mitigated.	---	CR #8 Section 3.1.3, 3.7.1	

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ToR No.	ToR Description	Reference Section in Application	Reference Section in Consultants Reports	Clarification Comments
4.4	SURFACE WATER QUALITY			
4.4.1	Baseline Information			
	[A] Describe the baseline water quality of watercourses and waterbodies. Discuss the effects of seasonal variations, flow and other factors on water quality.	E.5.2.2 Appendix 10A, 10B	CR #5 Section 3.2.3, 3.2.5	Additional information on legacy surface waste rock pile effluent quality and existing impacts on Blairmore and Gold Creek provided in Appendix 10A and 10B MDR #7
4.4.2	Impact Assessment			
	[A] Identify project components that may influence or impact surface water quality.	E.5.3.1	CR #5 Section 2.1	

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	[B] Describe the baseline water quality of watercourses and waterbodies. Discuss the effects of seasonal variations, flow and other factors on water quality.			
	a) discuss any changes in water quality resulting from the Project that may exceed the <i>Surface Water Quality Guidelines for Use in Alberta</i> or the <i>Canadian Water Quality Guidelines</i> ;	E.5.3	CR #5 Section 4.1.1.3, 4.2.1.3, 4.6	Additional information is provided on groundwater recharge (CR #3 Section 4.5, 4.6). – MDR #11 Additional information on thermal regulation (MDR #11) will be provided with the IFN discussion in the EIA Fish & Aquatic Addendum (Q1 2017) Additional information is provided on Selenium management plan is provided in Appendix 10A; Section C.5, C.8 – MDR #13 Additional information is provided on PAG in Appendix 10A; Section C.8 – MDR #12
	b) discuss seasonal variation and potential impacts on surface water quality;	---	CR #5 Section 4.1.1.3	
	c) assess the potential Project related and cumulative impacts of acidifying and other air emissions on surface water quality; and	E.5.3.3	CR #5 Section 4.5	
	d) discuss the effect of changes in surface runoff or groundwater discharge on water quality in surface waterbodies.	E.5.3.3	CR #3 Section 5.3.2.2.3 CR #5 Section 4.1.1.3, 4.6	
4.5	AQUATIC ECOLOGY			
4.5.1	Baseline Information			
	[A] Describe and map the existing fish resources of the lakes, rivers, ephemeral water bodies and other waters. Describe	E.6.2	CR #6	Additional data have been

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	the species composition, distribution, relative abundance, movements and general life history parameters. Also, identify any species that are:		Section 3.1, 3.2, 3.3	collected to provide a more detailed baseline description and habitat assessment. MDR #14 MDR #15
	a) listed as “at Risk, May be at Risk and Sensitive” in The Status of Alberta Species (Alberta Environment and Sustainable Resource Development [ESRD]);	E.6.2.1	CR #6, Section 3.1.1, Table 3.1	
	b) listed in Schedule 1 of the federal Species at Risk Act;	E.6.2.1	CR #6 Section 3.1.1, Table 3.1	
	c) listed as “at risk” by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC); and	E.6.2.1	CR #6 Section 3.1.1, Table 3.1	
	d) species used traditionally and currently by Aboriginal groups.	E.6.2.1	CR #6 Section 2.1, Table 2.1	
	[B] Describe and map existing critical or sensitive areas such as spawning, rearing, and over- wintering habitats, seasonal habitat use including migration and spawning routes.	---	CR #6 Section 3.2.1.1, 3.2.1.2 Figures 3.1, 3.2	
	[C] Describe the current and potential use of the fish resources by aboriginal, sport or commercial fisheries.	H.3.3, H.4.3, H.5.3, H.6.3, H.7.3, H.8.3, H.9.3, H.10.3, H.11.3, H.12.3, H.13.3 F.1.6.1, Table F.1.6-1	CR #10 Land Use Section 4.2.2.1, 4.11	
	[D] Describe and quantify the current extent of aquatic habitat fragmentation.	E.6.3	CR #6 Section 4.1.2	
4.5.2	Impact Assessment			
	[A] Describe the potential impacts to fish and fish habitat, such as stream alterations and changes to substrate conditions, water quality and quantity, whilst considering:			Additional sediment quality and benthic invertebrates data are provided in CR #6 Section 3.3.2.2 MDR #16 MDR #17

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	a) fish tainting, survival of eggs and fry, chronic or acute health effects, and increased stress on fish populations from release of contaminants, sedimentation, flow alterations, temperature and habitat changes;	E.6.2.3.2 E.6.3.1.3 C.8.3.2	CR #6 Section 3.3.1.2, 3.3.2.1	Acid rock drainage management is provided in C.8.3.2 MDR #12
	b) potential impacts on riparian areas that could affect aquatic biological resources and productivity;	E.6.2.3.1	CR #6 Section 3.3.1.1	
	c) the potential for increased fishing pressures in the region that could arise from the increased workforce and improved access resulting from the Project. Identify the implications on the fish resource and describe any mitigation strategies that might be planned to minimize these impacts, including any plans to restrict employee and visitor access;	E.6.3.1.3.3	CR #6 Section 4.1.2.3	
	d) changes to benthic invertebrate communities that may affect food quality and availability for fish; and	E.6.2.3.2	CR #6 Section 3.3.1.3,	
	e) The potential for increased fragmentation of aquatic habitat.	E.6.3.1.3.1	CR #6 Section 4.1.2	
	[B] Identify the key aquatic indicators that the Proponent used to assess project impacts. Discuss the rationale for their selection.	E.6.1.1	CR #6 Section 2.1	
	[C] Discuss the design, construction and operational factors to be incorporated into the Project to minimize impacts to fish and fish habitat and protect aquatic resources. Describe how any water intakes have been designed to avoid entrapment and entrainment of fish and provide information on the species of fish considered.	E.6.3.1.2	CR #6 Section 4.1.1	
	[D] Identify plans proposed to offset any loss in the productivity of fish habitat. Indicate how environmental protection plans address applicable provincial and federal policies on fish habitat.	E.6.3.2	CR #6 Section 4.1.2.1, 6.0	
	[E] Discuss the significance of any impacts on water quality and implications to aquatic resources (e.g., biota, biodiversity and habitat) and related implications for First Nations' traditional and current use of these resources.	E.6.2.3.2 E.6.3.1.3	CR #6 Section 4.1.2.2	
	[F] Describe the effects of any surface water withdrawals considered including cumulative effects on fish and fish habitat.	E.6.4	CR #6 Section 4.1.2.1, Section 5.0	

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4.6	VEGETATION			
4.6.1	Baseline Information			
	[A] Describe and map vegetation communities. Identify the occurrence, relative abundance and distribution and identify any species that are:	E.8.2	CR #8 Section 3.1, 3.2	
	a) listed as “at Risk, May be at Risk and Sensitive” in The Status of Alberta Species (ESRD);	E.8.2.2.1	CR #8 Section 3.2, 3.3.2 Figure 3.2-1 Appendix D	Additional information on native fescue grasslands has been provided. CR #8 Section 3.2.3, 3.3.2 MDR #18
	b) listed in Schedule 1 of the federal Species at Risk Act;	E.8.2.2.1	CR #8 Section 3.2.1	Additional Information on white bark pine has been provided. CR #8 Section 3.2.1.1, 4.2.1, 4.2.6.3 Table 3.2-2 MDR #18
	c) listed as “at risk” by COSEWIC; and	E.8.2.2.1	CR #8 Section 2.3.2, 3.2 Figure 3.2-1 Appendix D	
	d) traditional and currently used species.	E.8.2.6 Appendix 7c	CR #8 Section 3.6 Table 3.6-1 Appendix E	
	[B] Describe and quantify the current extent of habitat fragmentation.	E.8.2.8.3 (LSA), E.8.2.8.4 (RSA)	CR #8 Section 3.8	
	[C] Discuss the potential of each ecosite phase to support rare plant species, plants for traditional, medicinal and cultural purposes, old growth forests and communities of limited distribution. Consider their importance for local and regional habitat, sustained forest growth, rare plant habitat and the hydrologic regime.	E.8.2.2, E.8.2.5, E.8.2.6, E.8.2.7	CR #8 Section 3.1, 3.2, 3.5, 3.6, 3.7	
	[D] Describe the regional relevance of landscape units that are identified as rare.	---	CR #8 Section 2.3.8.2, 4.8.1.2	

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	[E] Provide Timber Productivity Ratings for both the Project Area and the Local Study Area, including identification of productive forested, non-productive forested and non-forested lands.	E.8.2.4	CR #8 Section 2.3.4, 3.4, 4.4.1 Table 3.4-1, 4.4-1	Additional information on timber production has been provided.
4.6.2	Impact Assessment			
	[A] Describe and assess the potential impacts of the Project on vegetation communities;	E.8.3	CR #8 Section 4.1	
	[B] Discuss any potential impacts the Project may have on rare plants or endangered species.	E.8.3.2	CR #8 Section 4.2	Additional information has been provided on the potential impacts and mitigations for WBP, fescue and rare plants. CR #8 Section 4.2.1, 4.2.6, 4.3.3, 4.3.4 MDR #18
	[C] Identify key vegetation indicators used to assess the Project impacts. Discuss the rationale for the indicator's selection.	E.8.1	CR #8 Section 2.4.2 Table 2.4-2	
	[D] Discuss temporary (include timeframe) and permanent changes to vegetation and wetland communities and comment on:	E.8.3.1, E.8.3.7, E.8.4.1, E.8.4.2	CR #8 Section 2.4.1.1, 4.0	
	a) the impacts and their implications for other environmental resources (e.g., habitat diversity and quantity, water quality and quantity, erosion potential);	---	CR #8 Section 4.1, 4.7, 4.8	
	b) the impacts on recreation, aboriginal and other uses; and	E.8.3.6	CR #8 Section 4.6	
	c) the sensitivity to disturbance (including acid deposition), as well as the techniques used to estimate sensitivity to disturbance and reclamation, of each vegetation community.	---	CR #8 Section 4.1.4, 4.2.5, 4.3.3, 4.4.3, 4.6.3, 4.7.3, 4.8.3, 4.9.3, 4.10	
	[E] Describe the regional impact of any ecosite phase to be removed.	E.8.4.2	CR #8 Section 4.1.4, 4.7.3	
	[F] Discuss from an ecological perspective, the expected timelines for establishment and recovery of vegetative communities and the expected differences in the resulting vegetative community structures.	E.8.4.3 F.3.6.3	CR #8 Section, 4.1.5, 4.3.1, 4.7.1, 4.8.1, 4.8.3,	

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	[G] Provide a predicted Ecological Land Classification map that shows the reclaimed vegetation. Comment on the importance of the size, distribution and variety of the reclaimed landscape units from both a local and regional perspective.	F.3.6 Figure F.3.6-8	---	
	[H] Discuss the impact of any loss of wetlands, including how the loss will affect land use.	E.8.3.7, E.8.4.2	CR #8 Section 4.7.1, 4.7.2, 4.7.3	
	[I] Discuss weeds and non-native invasive species and describe how these species will be assessed and controlled prior to and during operation and reclamation.	E.8.2.9, E.8.5 F.3.6.3.3	CR #8 Section 3.9, 4.9.4	
	[J] Discuss the predicted changes to upland, riparian and wetland habitats resulting from increased fragmentation.	---	CR #8 Section 4.8.3, 4.8.4, 4.8.5	
4.7	WILDLIFE			
4.7.1	Baseline Information			
	[A] Describe and map existing wildlife resources (amphibians, reptiles, birds and terrestrial and aquatic mammals). Describe species composition, distribution, relative abundance, seasonal movements, movement corridors, habitat requirements, key habitat areas, general life history including habitat disturbances and their use and potential use of habitats. Also, identify any species that are:	E.9.2	CR #9 Section 2.4, 4.0 Figure 2.4-1 to 2.4-5, 2.4-7 to 2.4-35, 4.2-1 to 4.4-25	Additional information from wildlife surveys conducted in 2016 has been provided in CR #9 Section 2.4.3, 2.4.5, 4.3, 4.4, 4.5 MDR #19
	a) listed as "at Risk, may be at Risk and Sensitive" in the Status of Alberta Species (Alberta Sustainable Resources Development);	E.9.2.3	CR #9 Section 2.4.2 Table 2.4-2	
	b) listed in Schedule 1 of the federal Species at Risk Act;	E.9.2.1.3	CR #9 Section 2.4.2 Table 2.4-2	
	c) listed as "at Risk" by COSEWIC.	E.9.2.3	CR #9 Section 2.4.2 Table 2.4-2	
	d) species of traditional and current use, and cultural keystone species.	Appendix 7c	CR #9 Section 2.2.8, 2.4.4 Table 2.2-1	

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	[B] Describe, quantify and map all existing habitat disturbance (including exploration activities) and identify those habitat disturbances that are related to existing and approved Project operations.	F.2.1 Figure F.2.1-1, F.2.1-2	CR #9 Section 6.1 Figure 1.2-2, 6.1-1	
4.7.2	Impact Assessment			
	[A] Describe and assess the potential impacts of the Project to wildlife populations and wildlife habitats, considering:			
	a) how the Project will affect wildlife relative abundance, movement patterns, and distribution for all stages of the Project;	E.9.3.2, E.9.3.4	CR #9 Section 5.3, 5.4, 5.5, 6.3 Figure 5.3-1 to 5.3-52	Additional information regarding incidental activities (golf course) has been integrated. MDR #20 Additional information for migratory birds has been provided in Section 5.5.
	b) how improved or altered access may affect wildlife including potential obstruction of movements, increased vehicle-wildlife collisions, and increased hunting pressures;	E.9.3.2	CR #9 Section 3.1.2 to 3.1.4, 5.3 to 5.6	Additional information for migratory birds has been provided in Section 5.5.
	c) how increased habitat fragmentation may affect wildlife considering edge effects, the availability of core habitat, and the influence of linear features and infrastructure on wildlife movements;	E.9.3.2	CR #9 Section 3.1.2, 3.2.5.4.2, 5.3 to 5.5	Additional information for migratory birds has been provided in Section 5.5.
	d) the spatial and temporal changes to habitat availability and habitat effectiveness (types, quality, quantity, diversity, and distribution);	E.9.3.1	CR #9 Section 5.1, 5.3, 5.4, 5.5 Figure 5.1-1 to 5.1-4, 5.3-1 to 5.3-52	Additional information for migratory birds has been provided in Section 5.5.
	e) the spatial and temporal changes to habitat availability and habitat effectiveness (types, quality, quantity, diversity, and distribution);	E.9.3.1	CR #9 Section 5.1, 5.3, 5.4, 5.5 Figure 5.1-1 to 5.1-4, 5.3-1 to 5.3-52	Additional information for migratory birds has been provided in Section 5.5.
	f) the resilience and recovery capabilities of wildlife populations and habitats to disturbance; and	---	CR #9 Section 5.3, 5.4, 5.5, 6.3, 6.4	Additional information for migratory birds has been provided in Section 5.5.

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	g) the potential for the Project Area to be returned to its existing state with respect to wildlife populations and their habitats.	E.9.4, E.9.5 F.2.1.7, F.2.6	CR #9 Section 7.0	
	[B] Identify key indicator species and discuss the rationale for their selection.	E.9.2.4	CR #9 Section 3.2.3 Table 3.2-2, 3.2-3	
	[C] Comment on the availability of species for traditional use considering habitat loss, habitat avoidance, vehicle-wildlife collisions, increased non-aboriginal hunting pressure and other Project related impacts on wildlife populations.	---	CR #9 Section 5.6	
4.8	BIODIVERSITY			
4.8.1	Baseline Information			
	[A] Describe the terrestrial and aquatic biodiversity metrics that will be used to characterize the existing ecosystems and probable impacts of the Project, and:	---	CR #6 Section 4.1.2 (will be included in Q1 2017 effects assessment) CR #8 Section 2.3.8 Table 2.3-3 CR #9 Section 2.3.9	
	a) describe the process and rationale used to select biotic and abiotic indicators for biodiversity within selected taxonomic groups;	---	CR #8 Section 1.4.8, 2.3.8 Table 2.3-3 CR #9 Section 2.3.9	Information on the process (i.e., methods) and rationale used to determine the indicators for calculating the biodiversity potential rating index is provided. MDR #5

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	b) determine the relative abundance of species in each ecosite phase;	---	CR #9 Section 2.4.3.2	
	c) provide species locations, lists and summaries of observed and estimated species richness and evenness for each ecosite phase;	E.6.2 E.8.2.8 E.9.2.3	CR #8 Section 3.8.1, Table 3.8-1 Appendix B CR #9 Section 2.4.3.5, Table 2.4-48 Section 4.3, Table 4.3-2	
	d) provide a measure of biodiversity on baseline sites that are representative of the proposed reclamation ecosites; and	---	CR #8 Section 3.8.1	
	e) rank each ecological unit for biodiversity potential. Describe the techniques used in the ranking process.	E.8.2.8.1	CR #8 Section 3.8.1.1 Table 3.8-3, 3.8-4	
4.8.2	Impact Assessment			
	[A] Describe the metrics used to assess the probable impacts of the Project. Discuss the contribution of the Project to any anticipated changes in regional biodiversity and the potential impact to local and regional ecosystems.	E.8.3.8 E.9.3.5	CR #6 Section 4.1.2 (will be included in Q1 2017 effects assessment) CR #8 Section 4.8.1, 4.8.2, 4.8.5 CR #9 Section 5.2	Information on the process (i.e., methods) and rationale used to determine the indicators for calculating the biodiversity potential rating index is provided. MDR #5
	[B] Identify and evaluate the extent of potential effects of fragmentation on biodiversity that may result from the Project. Discuss those effects at all relevant scales (from site specific to landscape level).	E.8.3.8 E.9.3.2, E.9.3.6, E.9.3.7, E.9.4	CR #8 Section 4.8.1.3, 4.8.5 CR #9 Section 5.5.2, Table 5.3-26 (see "movement" row for each VC, which reflects effects of fragmentation). Table 6.4-1 (see 'change in habitat	

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			fragmentation/connectivity)	
4.9	TERRAIN AND SOILS			
4.9.1	Baseline Information			
	[A] Provide descriptions and maps of the terrain and soils conditions, including:			
	a) surficial geology and topography;	---	CR #7 Section 2.3.2, 3.3 Figure 3.3-1 to 3.3-5	
	b) soil types and their distribution. Provide an ecological context to the soil resource by supplying a soil survey report and maps to Survey Intensity Level 2 for the Project Area;	E.7.2.1, E.7.2.2	CR #7 Section 3.2, 3.3 Figure 3.3-2 to 3.3-5	
	c) suitability and availability of soils within the Project Area for reclamation;	E.7.2.3	CR #7 Section 4.2 Figure 4.1-2 to 4.1-4	
	d) soils that could be affected by the Project with emphasis on potential acidification (by soil type); and	E.7.2.5	CR #7 Section 4.4	
	e) descriptions and locations of erosion sensitive soils.	E.7.2.4	CR #7 Section 4.3	
4.9.2	Impact Assessment			
	[A] Describe Project activities and other related issues that could affect soil quality (e.g., compaction, contaminants) and:	E.7.3	CR #7 Section 6.2, 6.3, 7.1	
	a) indicate the amount (ha) of surface disturbance from plant, mine, overburden disposal, reclamation material stockpiles, infrastructure (e.g., pipelines, power lines, access roads), aggregate and borrow sites, construction camps, waste disposal and other construction and operation activities;	---	CR #7 Section 2.1.1 Table 2.1-1	
	b) provide an inventory of the pre- and post-disturbance land capability classes for soils in both the Project Area and the Local Study Area and describe the impacts to land capability resulting from the Project. Indicate the size and location of soil types and land capability classes that will be disturbed;	E.7.3.4 F.2.1.5 Table F.2.1-2 Figure F.2.1-5, F.2.1-6	CR #7 Section 4.5, 4.5.1, 4.5.2 Table 4.5-1 to 4.5-4, 4.5-5	Additional information on characterizing the current land use capability, and an inventory of the pre- and post-disturbance land capability classes for the soils in both the Project Area and Local Study Area. MDR #3

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	c) discuss the relevance of any changes for the local and regional landscapes, biodiversity, productivity, ecological integrity, aesthetics and future use resulting from disturbance during the life of the Project;	E.7.3, E.7.4	CR #7 Section 7.2, 7.3, 7.4	
	d) describe potential sources of soil contamination;	E.7.3.1.3, E.7.4.1.3	CR #7 Section 6.2, 7.1	
	e) describe the impact of the Project on soil types and reclamation suitability and the approximate volume of soil materials for reclamation. Discuss any constraints or limitations to achieving vegetation/habitat reclamation based on anticipated soil conditions (e.g., compaction, contaminants, salinity, soil moisture, nutrient depletion, erosion, etc.); and	F.4.2	CR #7 Section 7.1, 7.4 (soil volumes located in Section F.2.2)	Additional information on the volumetric analysis of soil quantity available to achieve the final reclaimed landscape and equivalent land capability to provide support for the C&R Plan. MDR #3
	f) discuss the potential for soil erosion during the life of the Project.	E.7.2.4, E.7.3.1.2, E.7.4.1.2	CR #7 Section 4.3, 7.1.1.2	
	[B] Discuss the potential impacts caused by the mulching and storage of woody debris considering, but not limited to vulnerability to fire, degradation of soil quality, increased footprint.	F.3.1	---	
4.10	LAND USE MANAGEMENT			
4.10.1	Baseline Information			
	[A] Describe the existing land and resource uses and potential conflicts that exist considering oil and gas development, agriculture, forestry, tourism, and outdoor recreational activities.	E.10.2	CR#10 Section 4.2 to 4.9	Additional information regarding land use resources such as crown dispositions, overlapping dispositions, and grazing leases has been provided.(CR #10 Section 4.5, 4.6, 4.11) MDR #10 Information on recreational lease overlapping rail loadout facility (CR #10 Section 4.9).

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				MDR #26
	[B] Describe and map all Crown land and Crown Reservations (Holding Reservation, Protective Notation, Consultative Notation).	E.10.2.11	CR#10 Section 4.11 Figure 4.11-1	
	[C] Identify and map unique sites or special features such as Parks and Protected Areas, Heritage Rivers, Historic Sites, Environmentally Significant Areas, culturally significant sites and other designations (World Heritage Sites, Ramsar Sites, Internationally Important Bird Areas, etc.).	E.10.2.10	CR#10 Section 4.2.5, 4.2.6, 4.9, 4.10 Figure 4.2-3 to 4.2-5, 4.9-1, 4.10-1	
4.10.2	Impact Assessment			
	[A] Describe access corridors needed and/or planned by other resource development stakeholders including those responsible for Forest Management Areas and other timber quota holders, and describe:	E.10.2.8, E.10.3.5	CR#10, Section 5.6	
	a) how their needs are accommodated to reduce overall environmental impact from resource development; and	E.10.3.5	CR#10 Section 5.6	
	b) opportunities for cooperation in access development.	E.10.3.5	CR#10 Section 5.6	
	[B] Indicate where Crown land dispositions may be needed for roads or other infrastructure for the Project.	---	CR#10 Section 5.1.1 Figure 5.1-1	
	[C] Provide a description and timing of land clearing activities.	C.1.3 Figure C.1.3-1 to C.1.3-26	---	
	[D] Identify the potential impact of the Project on land uses, including:			
	a) impacts to unique sites or special features;	E.10.3.7	CR#10 Section 5.8	
	b) the results of consultation with Parks Canada Agency concerning potential impacts of the Project to the lands, waters, air, and natural and cultural heritage resources of National Parks, National Historic Sites, National Marine Conservation Areas, Canadian Heritage Rivers, UNESCO World Heritage Sites and Ramsar Convention Wetlands of International Importance. Where impacts are predicted, provide the results of the assessments and clearly identify the impacts to the special protected area;	---	---	Not applicable; no such sites are anticipated to be impacted by Project.

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	c) impacts caused by changes in public access arising from linear development, including secondary effects related to increased hunter, angler and other recreational access, decreased access to traditional use sites and facilitated predator movement;	E.10.3.4, E.10.3.6 H.3.5, H.4.5, H.5.5, H.6.5, H.7.5, H.8.4, H.9.5, H.10.4, H.11.4, H.12.5, H.13.4	CR#10 Section 5.5, 5.6, 5.7	
	d) the implications of relevant land use policies and resource management initiatives for the Project, including any constraints to development. Discuss how the Project will be consistent with the intent of these initiatives;	E.10.3.2, E.10.3.3	CR#10 Section 4.2	
	e) potential impacts to aggregate reserves that may be located on land under the Proponent's control and reserves in the region;	---	CR#10 Section 5.4.5	
	f) the impact of development and reclamation on commercial forest harvesting in the Project Area. Include opportunities for timber salvage, revegetation, reforestation and harvest for the reduction of fuel hazard;	E.10.3.3	CR#10 Section 5.4.4	Timber salvage plan has been provided in F.3.3 MDR #22
	g) the amount of commercial and non-commercial forest land base that will be disturbed by the Project. Compare the pre-disturbance and reclaimed percentages and distribution of all forested communities in the Project Area;	E.10.2.6	CR#10 Section 5.4.4	
	h) how the Project impacts Annual Allowable Cuts and quotas within the Forest Management Agreement area;	---	CR#10 Section 5.4.4	
	i) the potential impact on existing land uses of anticipated changes (type and extent) to the pre-disturbance topography, elevation and drainage pattern within the Project Area; and	---	CR#10 Section 5.4	
	j) impacts of the Project on public access, regional recreational activities, aboriginal land use and other land uses during and after development activities.	E.10.3.4, E.10.3.6 H.3.5, H.4.5, H.5.5, H.6.5, H.7.5, H.8.4, H.9.5, H.10.4, H.11.4, H.12.5, H.13.4	CR#10 Section 5.6, 5.7	
	[E] Identify any access restrictions including where appropriate, measures taken to control access to the Project Area while ensuring continued access to adjacent wildland areas.	Appendix 7d Aboriginal Access Management Plan	CR#10 Section 5.1.3, 5.6	
	[F] Provide a fire control plan highlighting:	C.7.7	CR#10 Section 5.1.4	A fire prevention and control plan has been added to section C.7.7. MDR #29

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	a) measures taken to ensure continued access for firefighters to adjacent wildland areas;	C.7.7.2.3.4	---	
	b) forest fire prevention, detection, reporting, and suppression measures, including proposed fire equipment;	C.2.9.2 , C.6.16.2 , C.7.6.3 , C.7.7.2	---	
	c) measures for determining the clearing width of power line rights-of-way; and	C.7.7.2.1.3	---	
	d) required mitigative measures for areas adjacent to the Project Area based on the FireSmart Wildfire Assessment System.	C.7.7.2 , C.7.7.3	---	
5.0	HISTORIC RESOURCES			
	[A] Describe consultation with Alberta Culture (AC) concerning the need for a Historic Resource Impact Assessment (HRIA) for the Project, and:	E.13.1	---	Additional information on clearance letters and detailed reports to Alberta Culture and Tourism (ACT) is provided. The preliminary HRIA was submitted to ACT August 5, 2015. MDR #23
	a) provide a general overview of the results of any previous historic resource studies that have been conducted, including archaeological resources, palaeontological resources, historic period sites, and any other historic resources as defined within the <i>Historical Resources Act</i> ;	E.13.2	---	
	b) summarize the results from the field program performed to assess archaeological, palaeontological and historic significance of both the Project Area and the Local Study Area;	E.13.3.1 , E.13.3.2	---	
	c) provide a summary of the results of the HRIA conducted to assess the potential impact of the Project on archaeological, palaeontological and historic resources;	E.13.3.3 , E.13.3.4 , E.13.4	---	
	d) provide an outline of the program and schedule of field investigations that AC may require the Proponent to undertake to further assess and mitigate the impacts of the Project on historic resources;	E.13.5 , E.13.6	---	
	e) document any historic resources concerns raised during consultation on the Project; and	H.3.4.4 , H.3.8 , H.4.4.4 , H.4.8 , H.5.4.4 , H.5.8 , H.6.4.4 , H.6.8 , H.7.4.4 , H.7.8 , H.9.4.4 , H.9.8 , H.12.4.4 , H.12.8	---	

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6.0	TRADITIONAL ECOLOGICAL KNOWLEDGE AND LAND USE			
	[A] Provide:			
	a) a map and description of traditional and current land and water resource use areas including fishing, hunting, trapping and nutritional, medicinal or cultural plant harvesting by affected aboriginal peoples (if the aboriginal community or group is willing to have these locations disclosed);	H.3.3, H.4.3, H.5.3, H.6.3, H.7.3, H.8.3, H.9.3, H.10.3, H.11.3, H.12.3, H.13.3 Figure H.3.1-1 to H.13.4-1 Appendix 7c	CR # 12 Section 2.2, 5.1.2 Figure A.3	
	b) a map of vision quest sites, cabin sites, spiritual sites, graves and other traditional use sites considered historic resources under the Historical Resources Act (if the aboriginal community or group is willing to have these locations disclosed), as well as traditional trails and resource activity patterns;	Figure H.3.1-1 to H.13.4-1 Appendix 7c	---	
	c) a description of the extent of traditional and current use of land and water in both the Project Area and the Local Study Area, including fishing, hunting, trapping, nutritional or medicinal plant harvesting, and cultural use by affected aboriginal peoples; and	H.3.3, H.4.3, H.5.3, H.6.3, H.7.3, H.8.3, H.9.3, H.10.3, H.11.3, H.12.3, H.13.3 Figure H.3.1-1 to H.13.4-1	---	
	d) a discussion of:			
	i. the availability of vegetation, fish and wildlife species for food, traditional, medicinal and cultural purposes in the identified traditional land and water use areas considering all Project related impacts,	H.3.5.1, H.4.5.1, H.5.5.1, H.6.5.1, H.7.5.1, H.9.5.1, H.12.5.1	---	
	ii. access to traditional lands and waters in the Project Area during all stages of the Project; and	Appendix 7d	---	
	iii. aboriginal views on monitoring and reclamation.	H.3.7, H.3.8, H.4.7, H.4.8, H.5.7, H.5.8, H.6.7, H.6.8, H.7.7, H.7.8, H.9.7, H.9.8, H.12.7, H.12.8	---	

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	[B] Describe how TEK and TLU information was incorporated into the project design and development, technical components of the EIA, the conservation and reclamation plan, monitoring and mitigation plans.	H.1.1.4.3, H.3.8, H.4.8, H.5.8, H.6.8, H.7.8, H.9.8, H.12.8 F.1.9, F.2.7, F.3.6.3,	CR #5 Section 3.2.2 CR #6 Section 2.1, 3.1 CR #8 Section 3.6, 4.6, 5.2 CR #9 Section 2.2.8, 3.2.3, 5.6, 7.2 CR #10 Section 3.2 CR #11 Section 9 CR #12 Section 2.2, 5.1.2	
7.0	PUBLIC HEALTH AND SAFETY ASSESSMENT			
7.1	Public Health			
	[A] Determine quantitatively whether there may be public health impacts from the project. Describe those aspects of the project that may impact public health or the delivery of regional health services.	E.12.3, E.12.4, E.12.6	CR #12 Section 6.1 to 6.4	
	[B] Document any health concerns raised any stakeholder during consultation on the project.	G.3.4	CR #12 Section 2.2	
	[C] Document any concerns aboriginal communities or groups have about existing development and about the proposed project on their health. Include an aboriginal receptor type in the assessment	H. 3.4.2, H.3.8, H.4.4.2, H.4.8, H.5.4.2, H.5.8, H.6.4.2, H.6.8, H.7.4.2, H.7.7, H.8.5, H.9.4.2, H.9.8, H.12.4.2, H.12.8	CR #12 Section 5.1.3	
	[D] Describe the potential health impacts resulting from higher regional traffic volumes and the increased risk of accidental leaks and spills	C.9.7, C.9.8	CR #12 Section 6.1 to 6.4 (air-based emissions, including from traffic)	

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7.2	PUBLIC SAFETY			
	[A] Describe those aspects of the project that may impacts public safety.			
	a) Describe the proponent's emergency response plan for minimizing adverse environmental impacts, including public notification protocol and safety procedures and emergency reporting procedures for spill contaminant and management;	C.7.6.3 to C.7.6.8	---	
	b) Document any safety concerns raised by stakeholders during consultation on the project;	G.4.0 Appendix 6a	---	
	Describe how local residents will be contact during an emergency and the type of information that will be provided;	C.7.6.2	---	
	d) Describe the existing agreement with area municipalities or industry groups such as safety cooperatives, emergency response associations, regional mutual-aid programs, and municipal emergency response agencies; and	C.7.6.2	---	
	e) Describe the potential safety impact from higher regional traffic volumes.	C.4.4.1, C.9.7 Appendix 8 – Section 2.3, 2.4, 4.3	---	
8.0	SOCIO-ECONOMIC ASSESSMENT			
8.1	Baseline Information			
	[A] Describe the existing socio-economic conditions in the region and in the communities in the region.	E.11.2	CR #11 Section 3, 5.2, 6.2, 7.2, 8.2, 9.2, 10.2	
	[B] Describe factors that may affect existing socio-economic conditions including:			
	a) population changes;	E.11.3.3	CR #11 Section 5.3	
	b) the Proponent's policies and programs regarding the use of regional and Alberta goods and services;	E.11.3.1	CR #11 Section 4.2.3	Additional information on regional and cooperative efforts is provided. MDR #9
	c) the project schedule and a general description of the overall engineering and contracting plan for the Project;	---	CR #11 Section 1.1, 4.2.1, 4.2.2	

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	d) the workforce requirements for the Project, including a description of when peak activity periods will occur; and	E.11.3.2	CR #11 Section 4.5	
	e) the planned accommodations for the workforce for all stages of the Project. Discuss the rationale for their selection.	C.6.17 E.11.3.4	CR #11 Section 6.3	MDR #24
8.2	Impact Assessment			
	[A] Describe the socio-economic impacts of construction and operation of the Project, including:			
	impacts related to:			
	i. local training, employment and business opportunities	E.11.3.2	CR #11 Section 4.2.3, 4.5	
	ii. regional and provincial economic benefits,	E.11.3.1	CR #11 Section 4.3, 4.4	
	iii. housing,	E.11.3.4	CR #11 Section 6.3	
	iv. recreational activities,	E.10.3.6	CR #11 Section 7.3	Information provided on overlap of recreational lease and rail loadout facility (CR #10 Section 4.9, 5.7) MDR #26
	v. hunting, fishing, trapping and gathering, and	E.10.3.4	CR #11 Section 9.3	
	vi. traditional land use by aboriginal communities and groups; and	E.11.3.8 H.3.4.3, H.4.4.3, H.5.4.3, H.6.4.3, H.7.4.3, H.9.4.3, H.12.4.3	CR #11 Section 9.3	
	vii. the need for additional Crown land to meet these needs.	---	---	
	[B] Discuss plans to work with Aboriginal communities and groups, other local residents and businesses regarding employment, training needs and other economic development opportunities arising from the Project; and	H.3.2.3, H.3.6.3.6, H.4.2.3, H.4.4.3, H.4.6.3.6, H.5.2.3, H.5.6.3.6, H.6.2.3, H.6.6.3.6, H.7.2.3, H.7.6.3.6, H.12.6.3.6	CR #11 Section 9.4	

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	[C] Provide the estimated total Project cost, including a breakdown for engineering and project management, equipment and materials, and labour for both construction and operation stages. Indicate the percentage of expenditures expected to occur in the region, Alberta, Canada outside of Alberta, and outside of Canada.	---	CR #11 Section 4.2	
9.0	MITIGATION MEASURES			
	[A] Discuss mitigation measures to avoid, minimize or eliminate the potential impacts for all stages of the Project.	Section A.11.11, E.11.5 Appendix 10B Section 2.3, 7, 8	As in cell below	
	[B] Identify those mitigation measures that will be implemented for each associated impact and provide rationale for their selection.	A.11.1.1, A.11.2.1, A.11.3.1, A.11.4.1, A.11.5.1, A.11.6.1, A.11.7.1, A.11.8.1, A.11.9.1, A.11.10, A.11.11, A.11.12, A.11.13.1 E.1a.4.1, E.2a.5.1 E.3.5.1 E.4.5.1 E.5.5.1 E.6.4 E.7.5.1, E.8.5.1, E.9.5.1, E.10.5, E.11.5, E.12.5, E.13.3.3, E.13.3.4 F.2.6, F.2.7, F.3.2, F.3.8, F.4.4.4, F.5 Appendix 10B Section 2.3, 7, 8	CR #1a Section 6.6 (Air quality), 5.16.2 (Light levels) CR #2a Noise Section 5.4 CR #3 Hydrogeology Section 5.3.3, 5.4.3, 5.5.3 CR #4 Hydrology Section 6.4 CR #5 Surface Water Quality Section 4.1.1.2, 4.2.1.2, 4.3.1.2, 4.4.1.2 CR # 6 Aquatic Resources Section 4.1.1, 6.0 CR #7 Terrain & Soils Section 7.1.3, 7.2.3, 7.3.3 CR #8 Vegetation Section 4.1.5.1, 4.2.6.1, 4.3.4.1, 4.4.4.1, 4.5.4.1, 4.6.4.1, 4.7.4.1, 4.8.4.1, 4.9.4.1, 4.10.3, 5.2	Additional information has been provided for rare plant mitigation in CR #8. MDR #18

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ToR No.	ToR Description	Reference Section in Application	Reference Section in Consultants Reports	Clarification Comments
			<p>CR #9 Wildlife Section 7.1</p> <p>CR #10 Land & Resource Use Section 6</p> <p>CR #11 Socio-economics Section 5.4, 6.4, 7.4, 8.4, 9.4, 10.4</p> <p>CR #12 Human Health Section 6.5 (refers back to mitigations of all other technical disciplines)</p>	
	[C] Discuss the effectiveness of the proposed mitigation.	<p>A.11.1.3, A.11.2.3, A.11.3.3, A.11.4.3, A.11.5.3, A.11.6.3, A.11.7.3, A.11.8.3, A.11.9.3, A.11.10.1, A.11.11.1, A.11.12.1, A.11.13.3</p> <p>E.1a.4.1, E.2a.5.1</p> <p>E.3.5.1</p> <p>E.4.5.1</p> <p>E.5.5.1</p> <p>E.6.4</p> <p>E.7.5.1, E.8.5.1, E.9.5.1, E.11.5, E.12.5, E.13.3.3, E.13.3.4</p> <p>F.2.6, F.2.7, F.3.2, F.3.8, F.4.4.4, F.5</p> <p>Appendix 10B Section 7, 8</p>	<p>CR #1a Section 6.6 (Air quality), 5.16.2 (Light levels)</p> <p>CR #2a Section 5.4</p> <p>CR #3 Section 5.6</p> <p>CR #4 Section 6.4</p> <p>CR #5 Section 4.1.1.2, 4.1.1.4, 4.2.1.2, 4.2.1.4, 4.3.1.2, 4.3.1.4, 4.4.1.2, 4.4.1.4</p> <p>CR # 6 Section 5</p> <p>CR #7</p>	

Final Terms of Reference Environmental Impact Assessment Report for Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project				
Cross Reference (Concordance) Table to Location in Application				
ToR No.	ToR Description	Reference Section in Application	Reference Section in Consultants Reports	Clarification Comments
			Section 6.3, 7.1.3, 7.2.3, 7.3.3 CR #8 Section 4.1.5.1, 4.2.6.1, 4.3.4.1, 4.4.4.1, 4.5.4.1, 4.6.4.1, 4.7.4.1, 4.8.4.1, 4.9.4.1, 4.10.3, 5.2 CR #9 Section 7.1 CR #11 Section 5.4, 6.4, 7.4, 8.4, 9.4, 10.4 CR #12 Section 6.5	
10.0	RESIDUAL IMPACTS			
	[A] Describe the residual impacts of the Project following implementation of the Proponent's mitigation measures and the Proponent's plans to manage those residual impacts.	E.1a.5.2, E.1a.5.3 E.2a.6 E.3.3, E.3.5 E.4.3, E.4.5 E.5.3, E.5.5 E.6.4 E.7.3, E.7.6 E.8.3, E.8.6 E.9.3, E.9.6 E.10.3, E.10.6 E.11.3, E.11.6 E.12.4, E.12.6 E.13.3.3, E.13.3.4, E.13.6	CR #1a Section 6.4.1 (fugitive dust), 6.4.2 (other) Table 6.5-1 CR #2a / CR #2b Section 6.3 / Section 4.2, 5.0 CR #3 Section 5.6 CR #4 Section 6.4 CR #5 Section 4.1.1.4, 4.2.1.4, 4.3.1.4, 4.4.1.4	

Final Terms of Reference Environmental Impact Assessment Report for Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project				
Cross Reference (Concordance) Table to Location in Application				
ToR No.	ToR Description	Reference Section in Application	Reference Section in Consultants Reports	Clarification Comments
			<p>CR # 6 Section 4, 5</p> <p>CR #7 Section 6.3, 7.1.4, 7.2.4, 7.3.4, 7.4</p> <p>CR #8 Section 4.1.1, 4.1.2, 4.1.6, 4.2.1 to 4.2.3, 4.2.7, 4.3.1, 4.3.5, 4.4.1, 4.4.5, 4.5.1, 4.5.2, 4.5.5, 4.6.1, 4.6.5, 4.7.1, 4.7.5, 4.8.1, 4.8.5, 4.9.1, 4.9.5, 4.10.1, 4.10.4 Table 4.5-1</p> <p>CR #9 Section 5.1 to 5.5 Table 5.3-26, 5.4-1</p> <p>CR #10 Section 5.2 to 5.9, 8.0 Table 8.0-1</p> <p>CR #11 Section 5.5, 6.5, 7.5, 8.5, 9.5, 10.5</p> <p>CR #12 Section 6.1, 6.2, 6.3</p>	
	Consistent use of EIA Methodology as outlined in Volume 1, Section D.2.5.3. Evaluation of significance as either “not significant” or “significant” was used.	Table E.1.5-1, E.2a.6-1, E.3.6-1, E.4.6-1, E.5.5-1, E.7.6-1, E.8.6-1, E.9.4-1, E.10.6-1, E.11.6-1, E.12.6-1, E.13.6-1	<p>CR #1a Table 6.5-1</p> <p>CR #3 Section 5.6</p> <p>CR #4 Table 18</p> <p>CR #5 Table 18</p> <p>CR #7 Table 7.5-1</p> <p>CR #8 Table 5.5-1</p> <p>CR #9 Table 6.4-1</p>	MDR #1

Final Terms of Reference Environmental Impact Assessment Report for Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project				
Cross Reference (Concordance) Table to Location in Application				
ToR No.	ToR Description	Reference Section in Application	Reference Section in Consultants Reports	Clarification Comments
			CR #10 Table 8.0-1 CR #11 Table 12.1 CR #12 Table 6.4-1	
11.0	MONITORING			
	[A] Describe the Proponent's current and proposed monitoring programs including:	A.11.1.2, A.11.2.2, A.11.3.2, A.11.4.2, A.11.5.2, A.11.6.2, A.11.7.2, A.11.8.2, A.11.9.2, A.11.10, A.11.11, A.11.12, A.11.13.2 E.1a.4.2 E.2a.5.2 E.3.5.2 E.4.5.2 E.5.5.2 E.6.3.2 E.7.5.2 E.8.5.2 E.9.5.2 E.10.5 E.11.5 E.12.5 E.13.5 F.3.9.3	CR #1a Section 6.5 Appendix C Section 3 CR #2a / CR #2b Section 7.0 / Section 3.1 CR #3 Section 5.3.3, 5.4.3, 5.5.3, 7.1 CR #5 Section 5 CR # 6 Section 6 CR #7 Section 6.3, 7.1.3, 7.2.3, 7.3.3 CR #8 Section 4.1.5.2, 4.2.6.2, 4.3.4.2, 4.4.4.2, 4.5.4.2, 4.6.4.2, 4.7.4.2, 4.8.4.2, 4.9.4.2, 4.10.3, 5.2 CR #9 Section 7.2 CR #10 Section 6 CR #11 Section 7.4	

Final Terms of Reference Environmental Impact Assessment Report for Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project				
Cross Reference (Concordance) Table to Location in Application				
ToR No.	ToR Description	Reference Section in Application	Reference Section in Consultants Reports	Clarification Comments
			CR #12 Section 6.5 (refers to Air Quality monitoring in CR #1a Section 6.5)	
	a) How the monitoring programs will assess any Project impacts and measure the effectiveness of mitigation plans;	A.11.1.2, A.11.2.2, A.11.3.2, A.11.4.2, A.11.5.2, A.11.6.2, A.11.7.2, A.11.8.2, A.11.9.2, A.11.10, A.11.11, A.11.12, A.11.13.2 A.11.1.3, A.11.2.3, A.11.3.3, A.11.4.3, A.11.5.3, A.11.6.3, A.11.7.3, A.11.8.3, A.11.9.3, A.11.10.1, A.11.11.1, A.11.12.1, A.11.13.3 E.1a.4.2 E.2a.5.2 E.3.5.2 E.4.5.2 E.5.5.2 E.6.3.2 E.7.5.2 E.8.5.2 E.9.5.2 E.10.5 E.11.5 E.12.5 E.13.5 F.3.9.3	CR #1a Section 6.5 CR #2a / CR #2b Section 7.0 / Section 4.2 CR #3 Section 5.3.3, 5.4.3, 5.5.3, 7 CR #5 Section 5.0 CR # 6 Section 6 CR #7 Section 6.3, 7.1.3, 7.2.3, 7.3.3 CR #8 Section 4.1.5.2, 4.2.6.2, 4.3.4.2, 4.4.4.2, 4.5.4.2, 4.6.4.2, 4.7.4.2, 4.8.4.2, 4.9.4.2, 5.2 CR #9 Section 7.2 CR #10 Section 6	
	b) Regional monitoring that will be undertaken to assist in managing environmental effects, confirm performance of mitigation measures and improve environmental protection strategies;		CR #3 Section 5.3.3, 5.4.3, 5.5.3, 7 CR #5 Section 5.0	

Final Terms of Reference Environmental Impact Assessment Report for Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project				
Cross Reference (Concordance) Table to Location in Application				
ToR No.	ToR Description	Reference Section in Application	Reference Section in Consultants Reports	Clarification Comments
			CR # 6 Section 6 CR #9 Section 7.2	
	c) how these monitoring programs are consistent with other current or proposed regional monitoring programs;		CR #3 Section 7.1 CR #5 Section 5.0	
	d) monitoring performed in conjunction with other stakeholders, including aboriginal communities and groups;	H.3.7, H.4.7, H.5.7, H.6.7, H.7.7, H.9.7, H.12.7	CR #5 Section 5.0 CR # 6 Section 6 CR #8 Section 4.6.4.2 CR #9 Section 7.2 CR #10 Section 6 CR #12 Section 7.4	
	e) new monitoring initiatives that may be required as a result of the Project; and		CR #5 Section 5.0 CR # 6 Section 6.0 CR #9 Section 7.2	
	f) how the results of monitoring programs and publicly available monitoring information will be integrated with the Proponent's environmental management system.	C.7.3, C.7.6		

Appendix 1b

EPEA Concordance Table



Benga Mining Limited operating as Riversdale Resources

Benga Mining Limited
12331 - 20 Avenue
Po Box 660
Blairmore, Alberta, T0K 0E0
Phone: +1 403 753 5160
Business Number 84170 9538

August 12, 2016

Mr. Terence Ko
Manager, EPEA and Water Act
Alberta Energy Regulator
Suite 950, Bell Tower 10104 – 103 Ave
Edmonton, AB T5J 0H8

Dear Mr. Ko,

RE: Benga Mining Ltd. – Grassy Mountain Coal Project: Environmental Protection and Enhancement Act Application

Benga Mining Limited (Benga), a wholly owned subsidiary of Riversdale Resources Limited, is proposing to develop a 4.5 million clean tonnes per year steelmaking coal mine, referred to as the Grassy Mountain Coal Project (the Project).

Pursuant to Section 66 under the *Environmental Protection and Enhancement Act* (EPEA), Benga are submitting the following application for an operating approval to construct, operate, and reclaim the Project.

Benga is filing a Technical Application and accompanying environmental impact assessment report (EIA), which addresses the technical, environmental and social aspects of the proposed Project, as an Integrated Application package. In addition to the information required for the EPEA application the accompanying EIA provides supporting information for the following applications:

- an application for approval for Mine Licences under the CCA (Part 4 Development, Operation and Abandonment of Mines, Section 11(b)) to construct, operate, and reclaim the associated open mine pit, a north rock disposal area, central rock disposal area, and south rock disposal area;
- an application for approval for a new coal processing plant under the CCA, (Part 5 Operation and Abandonment of Coal Processing Plants, Section 23(1)(a));
- a *Water Act* (WA) application for approval to capture, collect, treat and manage surface runoff and groundwater as part of the water management program including development of an end pit lake;

- a WA application to transfer surface water licences required for the Project and to divert surface and groundwater for use in the Project; and
- a *Public Lands Act* (PLA) application to obtain a MSL (and applicable LOCs) to use crown lands within the Project's mine permit boundary.

The attached Concordance Table is based on the Alberta Energy Regulator (AER) EPEA "Guide to Content for Energy Project Applications" (the Guide) (March 2014). Based on the approval application requirements, the Concordance Table follows Part 1: New Plants and Facilities, Section 1 to 8 of the EPEA *Guide*.

Correspondence regarding this integrated application package should be directed to the attention of:

Steve Mallyon, Managing Director
Benga Mining Ltd.
(403) 563-6160
Steve.Mallyon@rivresources.com

or Cal Clark, Manager Sustainability
Benga Mining Ltd.
12331 20th Avenue, Blairmore, Alberta T0K 0E0
(403) 562-7600
Cal.Clark@rivresources.com

Sincerely,

<Original signed by>

Steve Mallyon, Managing Director
Benga Mining Ltd.

Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
1.0	APPLICANT IDENTIFICATION			
1.1	Provide the applicant's name using the Authorization of Application for Approval Form (Appendix A). If an agent is authorized to represent person responsible, also provide this full name. If the person responsible or agent is a corporation, provide the full Alberta registered name of the corporation.	A.3.2	---	Contact names and signatures have been provided in Section A.3.1 in a similar format to the Authorization of Application for Approval Form.
1.2	Provide the mailing address of the person responsible, and the agent's office mailing address, if different.	A.3.2	---	
1.3	Provide the mailing address of the plant or facility where the activity is conducted, and the regional office of the person responsible, if different.	A.3.2	---	
1.4	For each contact on the application, provide the following information: <ul style="list-style-type: none"> • name and signature, • title and corporate department, • telephone number, • fax number, and • email address. 	A.3.2	---	
2.0	PLANT OR FACILITY IDENTIFICATION			
2.1	Describe the main activities of the plant or facility with the most suitable classification referenced in the <i>Activities Designation Regulation</i> . If additional activities at the site are also classified as regulated activities, provide this description in addition.	A.5.1.1 A.6 - Development Plan	---	
2.2	Provide the location of the plant or facility using both: <ul style="list-style-type: none"> • legal land description, and • latitude and longitude coordinates. 	A.4 – Project Location Figure A.1.0-2	---	
2.3	Provide a map showing the direction and distance of the plant or facility to nearby towns, cities, villages, or residences and special areas (e.g., recreation areas, camps or protected areas), other plants and facilities, and wetlands or watercourses or other potential locations of receptors.	A.4 – Project Location Figure A.4.0-2 Figure A.4.0-3	---	
2.4	Provide information about the physical size and capacity of the plant or facility site and the area with a reasonable potential to be affected by the activity. Provide maps and scaled diagrams.	A.6.2 - Processing Figure A.1.0-2 - location	---	

Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project				
Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
		Figure C.2.4-1 - layout		
3.0	PROJECT BACKGROUND			
	Plans, Public Interest Decisions, and Regulatory Authorizations (Leases, Licences, Approvals and Permits)			
3.1	Identify all government approved regional initiatives or plans that pertain to the area with requirements that relate to environment and resource management for the proposed activity, such as Land Use Framework Regional Plans and Management Frameworks, Integrated Resource Plans, Water Management Plans, or Municipal Development Plans.	A.10.10 – bullet list E.10.2.2 – full detail	CR #10 Land & Resource Use, Section 4.2	
3.2	<p>Related to this proposed project, identify any Hearing results or decisions by:</p> <ul style="list-style-type: none"> the Alberta Energy Regulator (AER), the Alberta Utilities Commission (AUC), the Natural Resources Conservation Board (NRCB), the local Regional Authority or Municipality, or the Canadian Environmental Assessment Agency (CEAA). <p>and identify and reference any terms, conditions or commitments for this project that relate to the environment. Staff may request the submission of this information if it cannot be sourced from public records.</p>	A.1 - Background A.5 – Regulatory Framework	---	At the request of the AER, this EPEA Application is part of a combined integrated application (AER EIA, CEAA EIS, EPEA, Coal Conservation Act, Water Act [Fenceline & Diversion], Pubic Lands Act) for the Project; subsequently, the EIA has not been formally accepted at the time of the application submission.
3.3	Specify the date an Environmental Impact Assessment (EIA) report was accepted by the Director for the purposes of a Hearing identified in 3.2.	NA	---	At the request of the AER, this EPEA Application is part of a combined integrated application (AER EIA, CEAA EIS, EPEA, Coal Conservation Act, Water Act [Fenceline & Diversion], Pubic Lands Act) for the Project; subsequently, the EIA has not been formally accepted at the time of the application submission.
3.4	<p>Identify any authorizations related to this project and their date of issuance, such as Leases, Permits or Approvals and their amendments issued by:</p> <ul style="list-style-type: none"> the Alberta Energy Regulator (AER), the Alberta Utilities Commission (AUC), 	A.5.1 – provincial A.5.2 – federal A.5.3 - other	---	At the request of the AER, this EPEA Application is part of a combined integrated application (AER EIA, CEAA EIS, EPEA, Coal Conservation Act, Water

Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project				
Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
	<ul style="list-style-type: none"> the Natural Resources Conservation Board (NRCB), the local Regional Authority or Municipality, or Alberta Environment and Parks (AEP) or the AER for authorizations under the <i>Environmental Protection and Enhancement Act</i> (including on-site potable water treatment and use and stormwater runoff), the <i>Water Act</i>, the <i>Climate Change and Emissions Management Act</i>, the <i>Public Lands Act</i>, and the <i>Forests Act</i>, <p>and identify and reference any terms, conditions or commitments for this project that relate to the environment. Staff may request the submission of this information if it cannot be sourced from public records.</p>			Act [Fenceline & Diversion], Pubic Lands Act) for the Project; subsequently, the EIA has not been formally accepted at the time of the application submission. In addition, applications are also being submitted pursuant to the Historical Resources Act, M.D. Ranchland, Municipality of Crowsnest Pass Land Use Bylaws, Electrical Utilities Act, and pre-construction approvals. Thus, authorizations have not been issued at time of submission.
3.5	Identify any <i>EPEA</i> applications for other plants or facilities that may require coordination of the application process for this proposed activity.	N/A	N/A	Not applicable – no other <i>EPEA</i> applications required
	<p>Financial Security</p> <p>Is your project subject to financial security?</p>			
3.6	If financial security is required, provide the calculation for it, and include the assumptions and justification for their use in the calculation. For more information on determining if financial security is required and how to calculate the amount, refer to Appendix A.	F.5 – C&R Plan, financial security	---	
	<p>Proposed Project Timelines and Consultation</p>			
3.7	<p>Provide proposed or estimated project timelines and major milestones. Highlight any significant schedule constraints or considerations. Include:</p> <ul style="list-style-type: none"> project duration from initial site preparation through to estimated time of operations ceasing and final closure, proposed or actual dates for commencement and completion of construction, proposed or actual dates for commencement of operation, and proposed or actual dates for public consultation.. 	<p>A.6.6, Table A.6.6-1 - Project schedule</p> <p>Appendix 6a, Table 3.1-1, G.6.0 - Public consultation Schedule</p> <p>Appendix 7a & 7b - Aboriginal consultation plan and records, respectfully</p>	---	

Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project				
Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
3.8	<p>If public consultation or stakeholder engagement has, or will be, conducted outside of this approval review process, provide the following information:</p> <ul style="list-style-type: none"> target audience(s), type, purpose, and frequency of consultation or engagement, and identified environmental concerns and how they were, or will be, addressed in this application. 	<p>A.8 – Public Engagement</p> <p>A.9 – Aboriginal Consultation</p> <p>G.2 Public Engagement overview</p> <p>G.4, Table G.4.0-1 Comments received</p> <p>G.5 Incorporation of public input into Project design</p> <p>H.1 Aboriginal Consultation: H.3.8, H.4.8, H.5.8, H.6.8, H.7.7, H.8.5, H.9.8, H.12.8 Aboriginal issues and concerns, and responses for each Aboriginal Group</p> <p>Appendix 6, 7</p>	---	
4.0	CURRENT SETTING FOR THE PROPOSED PROJECT AND ITS ENVIRONMENTAL CONDITION			
4.1	Describe the current setting and condition of the environment, including features of the local and regional landscape, drainage and surface watercourses, and groundwater. Identify existing land use and zoning for the site and adjacent lands.	<p>A.4, Figure A.4.0-1</p> <p>A.10 – discipline overview.</p> <p>Section E – EIA Assessment – per discipline, with full details of each in Consultant Reports.</p>	<p>CR #1a Air Quality section 3.0, Appendix C</p> <p>CR #2a Noise -section 5.0</p> <p>CR #3 Hydrogeology - section 4.0</p> <p>CR #4 – Hydrology – section 3.0</p> <p>CR #5 – Water Quality – section 3.0</p> <p>CR#6 – Aquatic Resources – section 3.0</p> <p>CR#7 – Soils – section 3.0</p> <p>CR#8 – Vegetation – section 3.0</p> <p>CR#9 – Wildlife – section 4.0</p>	

Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project				
Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
			CR #10 Land & Resource Use - section 4	
4.2	<p>Describe the current ambient air quality and identify influences and environmental pressures within a 5-kilometre radius of the site. Include:</p> <ul style="list-style-type: none"> topography and elevation, any ambient air environmental monitoring data (collected at or near the site which represents air quality prior to the influence of the proposed activity) and its collection location, the various environmental influences, effects and trends, and all constraints and limiting factors in the receiving environment. 	A.10.1 E.1.2.1, E.1.2.2, Table E.1.2-1	CR #1 Section 2.3.2, 3.1, 3.2, Appendix C Table 3.1-1 Figure 1.1-1, 3.2-1 to 3.2-4 (Date sources: Appendix C Section C.2.4)	
4.3	<p>Provide a current soil or land survey and data for the site and surrounding lands, and assess:</p> <ul style="list-style-type: none"> land capability class and rating(s), soil classification and distribution, Results of soil monitoring conducted at or near the site which is representative of soil quality prior to the influence of the proposed activity, anthropogenic effects on the soil, including previous disturbances, contamination issues, quality and quantity of soil, suitability for reclamation, of each topsoil and subsoil horizon including any constraints to future reclamation such as sensitive soils, chemical or physical characteristics, amounts (volume and depth of topsoil and subsoil). For mine sites include overburden characterization, local and regional vegetation types, include: <ul style="list-style-type: none"> types of vegetation, rare vegetation, weeds (named under the <i>Weed Control Act</i>), and health or anthropogenic effects on vegetation due to previous disturbances, air deposition, logging and clearing, etc., and for mine sites and in-situ developments, estimate the volume and describe the type of timber. 	A.10.7 (soils) A.10.8 (vegetation) E.7.2 (soils) E.8.2.1, E.8.2.2, E.8.2.9, E.8.2.10, E.8.2.4.1, and Tables within (vegetation) F.2.1.5 (soils) Figure F.2.1.4 Table F.2.1-1 F.2.1.6 (vegetation)	CR#7 Terrain & Soils Section 4.0 (baseline conditions), 5.3 (overburden characterization) Table 4.1-1, 4.1-2, 4.3-1, 4.3-2, 4.4-1, 5.3-1 Figure 4.1-1, 4.1-2 to 4.1-4, 4.4-1, 4.5-1 Appendix D (chemical lab results) CR#8 Vegetation & Wetlands Section 3.0, 3.1, 3.2, 3.4.1, 3.5, 3.9 Table 3.1-1, 3.1-2, 3.2-1, 3.2-2, 3.3-1, 3.3-2, 3.4-1, 3.4-2, 3.5-1, 3.7-1, 3.9-1 Figure 3.1-1, 3.2-1, 3.2-3, 3.2-4, 3.5-1, 3.9-1	
4.4	<p>For the situations identified above, where the end land use is likely to return to a natural, agricultural or forested land, describe the soil and vegetation for the site prior to the previous development or disturbance considering the factors listed in 4.3. This information will guide efforts to monitor and salvage soil material for future reclamation of the site.</p>	E.7.2 (soils) F.2.1.5 (soils) Figure F.2.1-1	CR#7 Terrain & Soils Section 4.0 (baseline conditions), 5.3 (overburden characterization) Table 4.1-1, 4.1-2, 4.3-1, 4.3-2, 4.4-1, 5.3-1 Figure 4.1-1, 4.1-2 to 4.1-4, 4.4-1, 4.5-1	

Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project				
Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
4.5	Describe the nature and condition of wildlife in the area, including the species and their habitats, and identify any sensitive species and special habitats.	A.10.9 E.9.2	CR #9 Wildlife, Section 2.4.1, 2.4.2, 2.4.3.5, 4.2, 4.4, 4.5 Table 2.4-1, 2.4-2, 2.4-5, 2.4-18, 2.4-27 to 2.4-29, 2.4-31, 2.4-32, 2.4-48, 3.2-2, 3.2-3	
4.6	Describe and evaluate the current environmental conditions, and characteristics and features within the area of both the site and proposed receiving watercourses for the area with reasonable potential to be affected by the activity. Include: <ul style="list-style-type: none"> associated geological considerations and other influences or environmental pressures, local area meteorology, including precipitation, runoff coefficients and infiltration rates, any collected water quality (characterization) data, which is representative of water quality prior to the influence of the proposed activity, and their collection location in the receiving watercourse, noting both the normal variability and any trends or elevated parameter levels as well as relationships to water quality guidelines for all potential uses, any collected water quantity data, which is representative of water quantity quality prior to the influence of the proposed activity, and their collection location in the receiving environment, noting both the normal variability and trends, any constraints or limiting factors in the receiving environment or area due to existing or potential water uses, such as protection of aquatic life, local drinking water (including groundwater), agriculture, recreation, and indicators for identified vulnerable ecosystems, any applicable setback distance requirements (e.g., flood plains, riparian zones, neighbouring residential use), any constraints or limiting factors in the receiving environment or area in order to meet water quality objectives, address persistent or bioaccumulative substances, or to manage cumulative loading requirements, any frequency, season, or timing restrictions, and anthropogenic effects on the aquatic ecosystem due to previous disturbances and releases, including the various environmental influences, effects and trends to water quality in the area resulting from other industrial and municipal releases, increased water use and climate change. 	B.2, B.5, B.6, B.7.2, B.8, Tables/Figures within – Geology and Geotechnical Assessment C.10, Table C.10.0-1 – Effects of environment and climate change on Project E.1.2.1 - Meteorology E.4 - Hydrology E.5.2.1 - Water Quality E.6.2 – Aquatic Resources C.5.2.3 – water licencing	CR #1a Air Quality, Section 3.2, Appendix C Section 4 CR#4 – Hydrology Section 3.5 and 3.6. Tables 11, 12, 13 and 14. CR #5 Surface Water Quality Section 3.1 – methods and 3.2 – baseline results. CR #6 Aquatic Resources, Section 3.1.1 (restricted activity period), 3.1.1.1 (westslope cutthroat trout), 3.2.1.1 and 3.2.1.2 (anthropogenic disturbance in Gold Creek and Blairmore Creek)	
4.7	Describe and evaluate the current properties, and suitability of the receiving soil for irrigation/ land application using the appropriate guidance, which should include, but not be limited to: <ul style="list-style-type: none"> irrigation classification ratio, soil pH and texture, 	N/A	N/A	Not applicable - There is no waste application or wastewater irrigation proposed for the Project.

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Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
	<ul style="list-style-type: none"> water holding field capacity, and soil analysis for existing, pre-application, soil concentrations for substances identified in the treated waste or wastewater stream (e.g., salts (EC and SAR), nutrients, metals and major ions). 			
4.8	<p>Describe and evaluate any restrictions to irrigation or land application of waste in the area due to:</p> <ul style="list-style-type: none"> proximity to water wells or high water tables, proximity to water bodies, surface drainage areas, or springs, proximity to property lines, potential public use (e.g., recreational areas, residential developments) exposure, potential agricultural use (crop or cattle grazing food consumption) exposure, frequency, season, or timing of applications, any other identified issues in the area, and identify if waivers for setbacks are required and provide signed land owner consent release forms. 	N/A	N/A	There is no waste application or wastewater irrigation proposed for the Project.
4.9	For 4.1 to 4.8, provide the information both aspatially (in tabular form) and spatially in scaled maps, diagrams or annotated aerial photographs. For each monitoring location, please identify the source of the information, for example from an Airshed organization or Watershed Planning and Advisory Council, and the location from which the data is sourced.	See 4.1 to 4.8	See 4.1 to 4.8	
4.10	In each of 4.1 to 4.8, identify and describe any pertinent terms, conditions or commitments that relate to the environment contained in government regional initiatives or plans identified in 3.1 (approved or under development). Describe the obligations or potential environmental obligations for the proposed plant or facility with respect to each initiative or plan.	A.11.1.3, A.11.3.3, A.11.4.3, A.11.5.3, A.11.6.3, A.11.7.3, A.11.8.3, A.11.9.3, A.11.10.1 E.10.2.2, E.10.2.3, E.10.3.2, E.10.5 F.1.6.1, F.1.6.2	CR #10 Land & Resource Use - section 4.2 CR# 6 Aquatic - section 3.1	
5.0	PLANT OR FACILITY DESIGN			
5.1	<p>Describe the plant or facility's process and provide a process flow diagram of the specific industrial processes related to the proposed industrial activity. Include both the processing operations (e.g., reactors, distillation, cooling towers, steam generation, compression, sulphur forming.) and the control processes (e.g., landfills, storage infrastructure, surface water runoff controls, industrial wastewater treatment facilities, particulate removal.). Include:</p> <ul style="list-style-type: none"> raw materials, products and by-products. Include maximum and normal operating and upset design quantities used or produced per unit of time. Provide all other pertinent capacity measurements for the site, major equipment and unit capacities, and mass balances. 	A.6 – Development plan; subsections A.6.1 to A.6.5 C.1.3.3 – annual mine production summary C.1.4 – mining equipment Section C.2.0 – Coal Handling and Processing; subsections C.2.1 to C.2.11 as well as associated tables and figures	---	

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Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
		within		
5.2	<p>Describe the substances that will be generated in a typical operating day at the plant or facility.</p> <ul style="list-style-type: none"> • For each process stream, examine the substances contained within and: <ul style="list-style-type: none"> ○ their characterization, including their nature, fate and transport (physical, chemical or biological properties or characteristics), and potential effects on the environment, ○ their quantity used or generated (note range variation in production or due to upsets). Tables in Appendix D and Appendix E can be used as examples for the types of sources of substances, ○ their source of introduction, and ○ the process streams' range of variation due to production changes or upsets. • From on-site operations, identify the types and quantities of waste that will be generated during operation including the type and nature of the waste (including designated hazardous waste) and potential effects on the environment. • For waste that will be accepted at this site, identify: <ul style="list-style-type: none"> ○ the type and nature of the waste (including designated hazardous waste) and potential effects on the environment, ○ the origin of the waste (i.e., in or out of the province), the sector (domestic, commercial, or industrial), and ○ the anticipated quantity and duration of the storage. 	<p>C.2.4.2 – C.2.4.6 – descriptions of wash plant and operations C.2.5 – process flowsheet C.2.6 – equipment flowsheet C.7.8 – waste management</p>	---	
5.3	Describe any alternative options examined in the proposed overall plant or facility processes to optimize efficiency and minimize anticipated substance releases and/or waste generation and discuss criteria used in selecting an option. Include any supporting mass or energy balances.	<p>A.7: subsections A.7.1 to A.7.13 C.2.2 – coal quality C.2.4.6 – product dewatering</p>	---	
5.4	Describe how the proposed project's footprint on the land will be minimized (e.g., shared infrastructure and right-of ways, and /or collaborative land management practices, especially on the boundary of the site and/or waste minimization).	<p>A.6.5 – shared infrastructure A.7.2 – mine configuration Figure A.7.2-1 – mine configuration A.7.3 – rail and loudout facility siting A.7.5 – coal processing fines management C.2.4.1 – plant location and layout considerations</p>	---	

Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project				
Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
5.5	<p>Provide scale diagrams of the proposed plant or facility site. On the diagrams, identify pollution prevention and control infrastructure and equipment associated with collection and storage of product or feedstock, hazardous materials, waste, wastewater, or runoff or permanent disposal (e.g., landfill). Include:</p> <ul style="list-style-type: none"> types of buildings and their locations, names and locations of all equipment used in manufacturing, processing, storage, and other units, location of all aboveground or underground tanks and type of service (e.g., product, feedstock, or waste), location of any equipment (e.g., piping) that will be installed subsurface, location of all waste management areas (e.g., containment, transfer and acceptance, and processing or treatment areas), and location of all wastewater or runoff collection control infrastructure, pre-treatment and post-treatment storage areas. 	<p>Fig A.1.0-2 – project footprint Fig A.1.0-6 – golf course Fig A.6.4-1 – water management ponds Fig C.2.4-1 – mine infrastructure layout Fig C.2.6-5 – CPP building Fig C.2.6-14 – product stacking pad Fig C.3.1-1 – proposed rail loadout Figs C.5.3-1 to C.5.3-5 – water management Fig C.6.1-1 – office complex Fig C.6.8-1 – covered cold storage Fig C.6.11-1 – emergency response building Fig C.6.18-1 – storage tanks</p>	---	
	Materials Storage			
5.6	<p>Provide design and specification details (not engineering blueprints) of the proposed control systems.</p> <ul style="list-style-type: none"> For each materials storage, waste management, transfer, or disposal area, include: <ul style="list-style-type: none"> primary containment method (e.g., tanks, containers), berms, dykes and/or other secondary containment structures (e.g., waste storage liners), special handling or storage methods for hazardous materials, run on/run off controls, and leak detection systems, <p>and assess the suitability for the quantity and characterization of waste, and identify any design features to manage incompatibility of substances, such as segregation.</p> <ul style="list-style-type: none"> For all aboveground and underground tanks, complete Appendix C Form, and identify: <ul style="list-style-type: none"> tank locations, type of service (e.g. produced water), capacity (m³), 	<p>C.2.8.5.2 – reagent storage C.5.3 – water treatment Table C.5.4-1 – summary of water management plan Figs C.5.3-1 to C.5.3-4 – water management C.5.5 – water management design specifications C.6.6 – fuel and lube storage C.6.10 – lube storage C.6.18 – above ground storage tanks C.6.18-1 – storage tank data</p>		

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Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
	<ul style="list-style-type: none"> ○ material type, ○ type of corrosion protection, ○ foundation or basepad preparation, ○ type and capacity of secondary containment, ○ measures planned to prevent overfilling of tanks (e.g., automatic shutoff valves, or high-level alarms), and ○ method of leak detection, <p>and assess the suitability of each tank and associated control systems for its content.</p> <ul style="list-style-type: none"> ● For each runoff or wastewater management system, identify: <ul style="list-style-type: none"> ○ collection and control berms, dykes and/or piping and any lining systems, ○ primary containment method (e.g., tanks, ponds), ○ secondary containment structures such as liners, and ○ leak detection systems, <p>and assess the suitability for the volume and rate of each wastewater generated during normal and upset conditions (or runoff events), as well as the suitability for each wastewater stream's characterization.</p>	<p>C.7.6.5 – spill prevention and detection monitoring procedures</p> <p>C.9.8 – Hazardous materials spill or release</p>		
5.7	Describe the proposed monitoring to evaluate the performance of collection and storage elements, and any leak detection systems, that will be used for each containment area or tank identified in 5.6, and their associated loading or transfer areas.	<p>C.6.6 – fuel storage</p> <p>Table C.6.18-1 – storage tank data</p> <p>C.7.6.5 - EPPs</p> <p>C.9.8.2 – HazMat</p>	---	
Wastewater and Runoff Treatment and Control				
5.8	<p>Describe and provide process flow diagrams for the proposed treatment and release control systems for the substances identified in each wastewater stream, along with mass balances and flow directions. Include:</p> <ul style="list-style-type: none"> ● wastewater reuse or minimization opportunities, ● anticipated volumes, rates, and amounts of each wastewater or runoff stream during: <ul style="list-style-type: none"> ○ predicted normal conditions (average daily/monthly volumes) and upset conditions, ○ predicted rainfall events (maximum daily/monthly volumes), ○ substances for each wastewater stream, their normal and maximum concentrations per unit of time and per unit of production, and the predicted duration of maximum concentrations, ○ substance fate and transport (physical, chemical or biological properties or characteristics), and potential effects on the environment, ● description of the physical size, location, and capacity of wastewater treatment systems along with, <ul style="list-style-type: none"> ○ explored alternatives and proposed method of treatment (including batch or continuous) and 	<p>C.2.5.1 – plant water balance</p> <p>C.5.3 – surface runoff treatment; subsections 5.3.1 to C.5.3.5</p> <p>C.5.4 – water balance and management</p> <p>C.6.5 – wash bay</p> <p>C.6.13 - sewage</p> <p>Figures C.5.3-1 to C.5.3-4,</p> <p>C.5.4 – water balance and management</p> <p>Table C.5.4-1 – water management plan summary</p>	CR #4 Grassy Mountain Surface Hydrology Baseline and Effects Assessment	

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Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
	<ul style="list-style-type: none"> considerations for both normal and upset conditions, and o proposed location and method of release (batch or continuous), and control of release (e.g., valves, diffusers, irrigators). 			
5.9	<p>Assess the suitability and capacity of the proposed treatment and release control systems for the substances identified in each wastewater stream, and for each proposed disposal alternative:</p> <p>a) For releases to watercourses,</p> <ul style="list-style-type: none"> use approved models to evaluate the potential effects in the environment for the following watercourse scenarios: <ul style="list-style-type: none"> o normal and maximum concentrations of substances in, and volumes of, wastewater to be released, o low and normal watercourse flow conditions, and normal and maximum background concentrations of substances as identified in Section 4, o if runoff or wastewater re-use is proposed, model the effect of the reduced return flow on the quantity and quality of the receiving environment, and o use benchmark or bench scale testing to establish the anticipated chronic and acute whole effluent toxicity for normal and maximum resulting modelled concentrations, discuss proposed responses to consideration of potential implications identified in Section 4: <ul style="list-style-type: none"> o of all substances of concern in the area, and/or identify any needs for conditional limits (e.g., for low flows or upset conditions), o to upstream and downstream releases (effects due to cumulative loads), potential impacts on the nearest water users, and implications to any identified areas of ecological sensitivity or public concern, o any additional research, ambient or biological monitoring, treatment optimization, or modifications to the release location, that are necessary to ensure that environmental objectives can be met, and o propose contingency plans for treated wastewater streams that do not meet applicable receiving environment condition requirements, <p>and describe how compliance with the applicable technology benchmarks and methods for watercourse policies, criteria, objectives, restrictions, environmental guidelines and any applicable regional outcomes will be achieved.</p> <p>b) For wastewater, runoff or sludge releases to land Not Applicable</p> <ul style="list-style-type: none"> using the treated wastewater or sludge characterization, calculate the required application rates and describe the technologies to manage considerations identified in Section 4 in accordance with applicable policy and soil criteria, and 	<p>A.10.4 and E.4- hydrology assessment summary</p> <p>A.10.5 and E.5 – water quality assessment summary</p> <p>C.5.3 – water treatment</p> <p>C.5.5 – water management structure design specificaitons</p> <p>C.5.7 – performance monitoring</p> <p>C.5.8 – water environmental monitoring</p> <p>C.7.4 – regulatory compliance and adaptive management</p>	<p>CR#4 – Hydrology Section 3.5 and 3.6. Tables 11, 12, 13 and 14.</p> <p>Appendix 10C – Water Quality Management</p>	---
5.9	<ul style="list-style-type: none"> assess how locations will be rotated to achieve application frequency restrictions. <p>c) For wastewater or runoff disposal by deepwell injection, Not Applicable</p> <ul style="list-style-type: none"> assess wastewater treatment alternatives, and specify reasons for selecting deepwell injection, and identify the proposed deepwell disposal receiving site and confirm they are authorized to receive this type of wastewater. 			

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	d) For wastewater or runoff release to municipal facilities or sludges to landfills, Not Applicable <ul style="list-style-type: none"> • provide information regarding the proposed receiving municipal wastewater or stormwater system or landfill, including: <ul style="list-style-type: none"> ○ their acceptance letter and any requirements imposed, ○ their <i>EPEA</i> approval number, and ○ a screening assessment of their treatment system's ability to treat and monitor for the substances identified in the proposed industrial activity. 			
5.10	For the systems identified in 5.8 and 5.9, provide a scale diagram, showing the location of proposed treatment facilities and disposal locations (latitude and longitude coordinates) with considerations identified in Section 4.	Figure C.2.4-1 – CHPP water infrastructure C.5.3-1 to C.5.3-4 – water management infrastructure progression	---	
5.11	For the systems identified in 5.8 and 5.9, describe proposed monitoring for performance evaluation of the treatment, reuse, and wastewater minimization elements.	C.5.7 – performance monitoring C.5.8 – water environmental monitoring	---	
5.12	For 5.8 to 5.10, identify locations and describe proposed monitoring and evaluation of the quality, quantity (rates/volumes/amounts) and whole effluent toxicity, for the release of treated wastewater.	C.5.3.1 – selenium treatment C.5.3.4.3 – seepage capture C.5.4 – water balance C.8.3.1 – mitigation strategy	CR #5 Surface Water Quality Section 5.0 Appendix 10C – Water Quality Management	
5.13	Identify and describe any proposed ambient monitoring (ambient water quality, biological, or soil), associated with the release of treated wastewater.	A.11.5.2 – water quality monitoring A.11.5.3 – mitigation effectiveness evaluation C.5.8 – environmental monitoring	CR #5 Surface Water Quality Section 5.0 Appendix 10C – Water Quality Management	
5.14	For the systems identified in 5.8 and 5.9, provide data, calculations, models, and reliable literature sources for each wastewater stream proposed for release, and the associated release or disposal method.	C.5.5 – Water Management Structure Design Specifications	Appendix 10B – Water and Load Balance report Appendix 10C – Water Quality Management	
	Air Treatment and Control			

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Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
5.15	Referencing 5.1 and 5.2, describe the substances that will be directly or indirectly released to the air in a typical operating day at the plant or facility, and include: <ul style="list-style-type: none"> the source of each substance, and its quantity, to any component streams that will contribute to the air emission streams, including auxiliary or standby process equipment, each substances physical, chemical or biological characteristics, fate and transport and potential environmental effect(s), and the proposed method of treatment or control, and method of release. 	---	CR#1a Air Quality, Section 4.2, 4.3, 4.6, 5.1 to 5.13, 6.3, 6.6 Table 4.2-3 to 4.2-8, 4.3-1, 4.6-3. 5.1-1 to 5.12-3, 6.2-1 Appendix A Section A2 to A8	
5.16	For each air emission stream, identify: <ul style="list-style-type: none"> the volume(s) and concentrations generated, per unit time, of the release substance, normal and maximum emission rate per unit time and per unit of production based on the design and throughput of the industrial site, whether the emissions are continuous or intermittent, and the frequency (if intermittent), and estimates of seasonal and/or monthly variability for each stream. 	---	CR#1a Air Quality, Section 4.2, 4.3, 4.6, 5.1 to 5.13, 6.3, 6.6 Table 4.2-3 to 4.2-8, 4.3-1, 4.6-3. 5.1-1 to 5.12-3, 6.2-1 Appendix A Section A2 to A8	
5.17	Describe the application of process technology, environmental control systems, and management practices that will be used to minimize substance release to the environment, and include: <ul style="list-style-type: none"> description of the physical size, location, and capacity of environmental control units/operations (e.g., air pollution control units), diagram(s) of the processes, flows, or operation units including engineered drawings, alternative processes and technologies for the release of substances that have been evaluated, and a rationale for their exclusion, all applicable industry standards, guidelines, and practices, as well as the manner in which the design and operation will achieve these. 	A.11.1.1 – Air Quality Monitoring. C.2.6.1 – ROM C.2.10 – Dust management C.2.11.1 – HVAC C.3.2.1 - transportation Figure C.2.6-1, C.2.6-2, C.2.6-6, C.2.6-7, C.2.6-12 to C.2.6-17	CR#1a Air Quality, Section 6.5, 6.6 CR#1b Air Quality, Section 4.1 Standards/Guidelines CR #1a Section 2.4.1 to 2.4.4	
5.18	Using tables as required, provide the following details for any: <ul style="list-style-type: none"> reciprocating or turbine engines, all fired heaters (including space heaters), treaters, and boilers, incinerators, and flare stacks. 	---	Not Applicable. All emissions sources are listed in CR#1a Table 4.2-1 and Appendix A	
5.19	Provide the following details for any flare pits on site: <ul style="list-style-type: none"> under what conditions is it used, type of proposed liner, frequency of use, and what goes into the pit, and 	N/A	N/A	Not Applicable – no flare pits

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	<ul style="list-style-type: none"> type of flare design (e.g., igniter, pilot). 			
5.20	<p>Describe all fugitive emissions related to the site. Include:</p> <ul style="list-style-type: none"> types of substances released, source identification, measured and estimated volumes, method of measuring and estimating fugitive emissions, and management approach. 	---	<p>CR#1a Air Quality, Section 2.2.2.1, 4.2.2, 4.2.3, 4.3.1, 4.4.3, 4.5.1, 5.11, 6.3, 6.5, 6.6</p> <p>Table 4.2-4, 4.3-1, 4.4-2</p>	
5.21	<p>Describe all significant area, or non-point, emission sources related to the industrial site (e.g., vehicle fleets, ponds, or onsite incineration). Include:</p> <ul style="list-style-type: none"> types of substance released, source identification, measured and estimated volumes, method of measuring and estimating associated emissions, and management approach. 	---	<p>CR#1a Air Quality, Section 4.2.1, 4.6, 5.1 to 5.13, 6.5, 6.6</p> <p>Table 4.2-1 to 4.2-5, 4.3-1, 4.6-1 to 4.6-4</p> <p>Figure 5.1-2, 5.1-4, 5.1-6, 5.1-8, 5.2-2, 5.2-4, 5.3-2, 5.3-4, 5.4-2, 5.4-4, 5.5-2, 5.6-2, 5.6-4, 5.8-2, 5.9-2</p>	
5.22	<p>Assess the suitability and capacity of the proposed treatment and release control systems using a dispersion-modelling run to show the maximum ground level concentration:</p> <ul style="list-style-type: none"> for substances of concern under both normal operating conditions, and upset conditions, for emergency flaring scenarios, including: <ul style="list-style-type: none"> rates and composition of flared streams (i.e., inlet stream, acid gas before sulphur recovery unit, tail gas after sulphur recovery unit, reactor over pressure), and dispersion-modelling run depicting the maximum ground level concentration. and describe any temporary or permanent environmental effect(s) that may, or will, result from the substances being released to air, include: <ul style="list-style-type: none"> consideration of any unique situations arising from the plant location, size, or capacity, and comparison to applicable ambient objectives, guidelines, or standards. 	---	<p>CR#1a Air Quality</p> <p>Section 5.1 to 5.13, 6.4</p> <p>Table 5.1-1 to 5.12-4, 5.15-1, 5.15-2, 6.5-1</p> <p>Appendix B</p>	
5.23	<p>Provide scale diagrams of the plant, plant site, and the surrounding area with regard to air emissions, and include the location and distance between all:</p> <ul style="list-style-type: none"> air emission point sources, including stacks, exhaust stacks, all other discharge points, and monitoring and sampling equipment. 	<p>Figure A.1.0-2</p> <p>Figure C.2.4-1, C.2.6-2 to C.2.6-5, C.3.1-1</p>	<p>CR#1a Air Quality</p> <p>Figure 2.2-1, 2.3-1, 5.1-2, 5.1-4, 5.1-6, 5.1-8, 5.2-2, 5.2-4, 5.3-2, 5.3-4, 5.4-2, 5.4-4, 5.5-2, 5.6-2, 5.6-4, 5.8-2, 5.9-2</p> <p>Appendix C Figure C2-1</p>	

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Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
5.24	For 5.18 to 5.23, describe proposed monitoring for performance evaluation of the treatment and control equipment (source) systems.	---	CR#1a Air Quality, Section 6.5	
5.25	Identify the location and describe proposed monitoring and evaluation of the ambient air quality.	A.11.1.2, A.11.1.3	CR#1a Air Quality, Section 6.5 Appendix C Section C2, Table C3.23 Figure C2-1, C3.10-1	
5.26	For air emissions, provide data, calculations, models, and reliable literature sources for each waste stream proposed for release, and the associated release or disposal method. Include: <ul style="list-style-type: none"> the volume(s), generated per unit of time, of the release substance, concentration of substance(s), and their physical or biological characteristics, fate and transport and potential environmental effect(s) of the substance(s), discharge rate per unit of time and per unit of production, maximum emission rates based on the design of the industrial site, typical emission rates based on current operations and throughput of the industrial site, whether the discharge or emissions are continuous or intermittent, and the frequency (if intermittent), and estimates of seasonal and/or monthly variability for each stream. 	---	CR#1a Air Quality Section 4.2.1, Section 4.2.2, 4.3, 5.1 to 5.13, 6.3, 6.4 Table 4.2-3 to 4.2-8, 4.3-1, 5.1-1 to 5.12-4, 6.5-1 Appendix A, B,	
6.0	CONSTRUCTION			
6.1	Provide a brief table or outline of the schedule for construction, including major milestones.	A.6.6 – Mine Schedule Table A.6.6.-1		
6.2	Describe and map the location on the site where the construction site will be located, how it will be laid out, and how it will affect sensitive areas, sensitive soils, and rare vegetation (identified under the Section 4) and how such effects will be avoided and/or mitigated.	A.6 – Development Plan Figure A.1.0-2 Figure C.1.3-1 to C.1.3-26, C.2.4-1, C.3.1-1, C.5.3-1 to C.5.3-5	CR #7 Terrain & Soils, Section 4, 5, 7 Table 4.1-1, 4.1-2, 4.3-1, 4.3-2, 4.4-3, 4.5-1 to 4.5-5, 5.2-1, 5.3-1, 7.5-1 CR#8 Vegetation & Wetlands, Section 3.2, 3.3, 3.5, 3.6, 3.7, 4.2, 4.3, 4.5, 4.6, 4.7, 5	
6.3	Provide scale diagrams of the site and surrounding area identifying locations of construction activities. Include: <ul style="list-style-type: none"> location of construction activities, and locations of areas designated for infrastructure and equipment, waste storage, control, treatment, incineration, and disposal during construction. 	Figure A.1.0-2, A.6.4-1 Figure C.1.3-1 to C.1.3-26, C.3.1-1, C.4.1-1	---	

Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project				
Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
Management of Reclamation Materials				
6.4	<p>Describe how reclamation materials will be salvaged and handled during construction. Include:</p> <ul style="list-style-type: none"> • protocols and equipment that will be used to ensure optimal soil salvage during construction (e.g., suspending and recommencing topsoil salvage when field conditions will result in the mixing, loss, degradation, or compaction of topsoil), • depths and horizons of soil planned for salvage, • special procedures that will be used to address any problem soils/subsoil/spoil, • quality control measures that will be employed during construction (An example might be the use of Professional Agrologists or Foresters), and • confirm that “as-built” details for soil materials will be permanently kept on record. 	<p>C.1.4 – Mining equipment C.1.5.1, C.1.5.3 – Unit operations</p> <p>C&R Plan F.2.1.5 – soils F.2.5 – biodiversity F.3.4 – soil conservation program F.3.6.2 – reclamation material replacement plan F.4.2 – soil management</p>	<p>CR #7 Terrain & Soils, Section 4.2, 4.3, 7.1.3, 7.2.3, 7.3.3, 7.4.3, Figure 4.1-1 to 4.1-4</p>	
6.5	<p>Identify the location and describe the method by which reclamation materials will be stored during and after construction. Include:</p> <ul style="list-style-type: none"> • storage methods (e.g., direct placement, stockpiles, or windrows), • storage locations provided on a map, • method for maintaining access (e.g., separation distances from other objects and stockpiles (preventing encroachment by future activities)), • types of material (e.g., topsoil, subsoil, or spoil), and • methods to control erosion and prevent degradation of the stored material (e.g., seeding, vegetation, and weed control). 	<p>F.2.2 – reclamation schedule F.2.7 – reclamation planning for vegetation F.3.6.1 – final grading and recontouring F.3.6.2 – reclamation material replacement plan F.4.2 – Closure Plan – soil management F.4.4.4 – Closure Plan – erosion control Table F.2.2-2 Figure A.1.0-2</p>	<p>CR #7 Terrain & Soils, Section 7.1.1.2, 7.1.3</p>	
6.6	<p>Describe how timber will be salvaged and non-merchantable timber and woody debris will be managed prior to and during construction.</p>	<p>F.2.1.6 – Vegetation F.3.1 – vegetation clearing F.3.3 – Timber management plan Table F.3.3-1, F.3.3-2</p>	<p>CR #8 Vegetation & Wetlands, Section 4.4.4</p>	

Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project				
Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
	Other Mitigation Requirements			
6.7	For construction on contaminated or potentially contaminated land, describe how contamination will be identified, assessed, and remediated before construction, and/or how it will be risk managed through the construction period.	Section C.7.6.10	---	
6.8	Describe and assess how contamination of the soil, groundwater, surface water, and air will be avoided, minimized, or managed during construction using approaches identified in Section 5. Include: <ul style="list-style-type: none"> construction and use of temporary sites for handling, recycling, storage, and/or disposal of waste, include: <ul style="list-style-type: none"> berms, liners, tankage and other secondary containment, control systems for runoff collection, treatment, and re-use, method of leak detection, and control and management of fugitive emissions and dust. 	A.11.1, A.11.3, A.11.4, A.11.5 C.2.10 – dust suppression C.5 – Water Management (comprehensive) C.6.5 – wash bay management C.6.6 – fuel storage C.6.10 – lub storage C.7.6.4 to C.7.6.9 – spill response plans C.8 – Geochemistry (comprehensive) C.9.3 to C.9.9 – accidents and malfunctions	CR #5 Water Quality – Section 4.1, 4.3, 4.4 and 4.5 Appendix 10A – geochemistry report Appendix 10C – Water Quality Management	
6.9	For releases during the construction phase, provide process flow diagrams with mass balances and flow directions, as well as pertinent calculations, models, and reliable literature sources for each air emission or wastewater stream you propose to release, as well as the release or disposal method. Include: <ul style="list-style-type: none"> identified substances of concern and how their potential effects on the environment will be prevented or mitigated, their anticipated volumes, rates, and amounts during normal and upset conditions, and proposed monitoring for performance evaluation of the treatment and release system. 	A.11.1, A.11.3, A.11.4, A.11.5 C.2.10 – dust C.5.3 – water treatment C.6.13 – sewage C.8 – Geochemistry (comprehensive) Figure C.2.5-1, C.2.5-2, C.2.6-6, C.5.4-1	CR #1a Air Quality, Section 4.2.1, 6.3, 6.6 CR #5 Water Quality – Section 4.1, 4.3, 4.4 and 4.5 Appendix 10A – geochemistry report Appendix 10B – Water and Load Balance Model report Appendix 10C – Water Quality Management	

Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
6.10	Describe how environmental releases will be monitored and identify the location of existing and planned infrastructure for environmental monitoring during construction.	A.11.1 – air A.11.3 – groundwater A.11.4, A.11.5 C.6.13 – sewage C.7.6.5 – spill prevention and monitoring	CR #1a Air Quality, Section 6.5, Appendix C, Figure C2-1 CR #5 Water Quality – Section 4.3	
6.11	Identify and describe the location of all equipment that will be used for ambient monitoring at the site during construction.	A.11.1 – air A.11.3 – groundwater A.11.5 – water quality C.5.3.1 – selenium treatment C.5.3.4.3 – seepage capture C.5.3.5 – design features	CR #1a Air Quality, Section 6.5, Appendix C, Figure C2-1 CR #3 Hydrogeology, Section 4.4.2.2.1 Figure 4.4-4	
7.0	OPERATION			
7.1	Describe the record keeping procedures to maintain copies of the application and correspondence with the AER.	A.11		
7.2	Further to 5.12 and 5.24, describe the maintenance and quality management (operating procedures) proposed for release monitoring and performance evaluation.	A.11.1.3 - groundwater A.11.5.3 – water quality C.5.7 – performance monitoring C.5.8 – environmental monitoring		
7.3	For 7.4 and 7.5, if this monitoring is proposed to be jointly delivered, identify the agency or group that will be performing the work (e.g., an airshed zone) and provide the pertinent information regarding their monitoring network.	N/A	N/A	Not applicable - No joint monitoring is proposed
7.4	Further to 5.25, describe and assess the suitability of proposed ambient air-monitoring network and associated operating procedures to meet requirements. Include: <ul style="list-style-type: none"> the parameters to be monitored, the monitoring frequency, the monitoring methodology, quality assurance processes for the equipment, and the rationale for selecting these monitoring locations. 	A.11.1.3 – air mitigation	CR#1 Section 6.5 Appendix C, Section C3.11	

Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project				
Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
7.5	Further to 5.13, describe and assess the suitability of proposed ambient monitoring of the receiving environment (e.g., watercourse) and operating procedures to meet requirements. Include: <ul style="list-style-type: none"> proposed confirmatory ambient water quality sampling and analysis recommendations, including frequency, proposed toxicity, biologic, or sediment quality monitoring and analysis recommendations, including frequency, quality assurance processes, the rationale for selecting the monitoring locations, and proposed notification and contingency plans in the event access becomes restricted. 	E.4.5.2, E.5.5.2 E.6.4	CR #5, Section 3.0, Appendix A1 CR #6 Aquatic Resources, Section 6	
7.6	Further to 7.2 and 7.5 submit a proposal for a periodic wastewater characterization testing, with comparison to existing data.	C.5.7, C.6.13, E.5.3.3, E.5.5.1	CR #5 Water Quality, Section 4.4	
7.7	For 7.2 to 7.6 describe the record keeping procedures to meet applicable requirements.	A.11	---	
7.8	For 7.2 to 7.6 describe the reporting procedures to meet applicable requirements.	A.11	---	
7.9	Confirm in writing that a spill response and reporting plan for the plant or facility has been developed.	C.7.6.4 to C.7.6.8 – spill management plans	---	
7.10	Confirm in writing that procedures and plans for storage, treatment, and monitoring systems related to wastewater, runoff, and sludge have been developed. In particular: <ul style="list-style-type: none"> operation and maintenance procedures, and contingency plans for upset, repair, and maintenance periods. 	C.5.3 – water management C.6.13 – sewage C.7.8 – waste management	CR #5 Water Quality, Section 4.4	
7.11	Further to Section 5, confirm in writing that scheduled air emission control equipment maintenance surveillance and repair plans have been developed.	E.1.4.2 – air commitment	CR#1a Section 6.6	
7.12	Describe how substance releases to groundwater will be monitored, managed and reported. Provide the rationale for why groundwater monitoring will not be conducted if the activity is not listed in Appendix B.	A.11.3 & E.3.5.2 – groundwater	CR #3 Hydrogeology, Section 5.3.3, 5.4.3, 5.5.3, 7	
7.13	In addition to the monitoring programs referred to above, describe how any other programs will identify, control, manage, monitor, and report on points of known and potential substance release to the groundwater.	C.7.6.4 to C.7.6.8 – spill response C.8 – geochemistry (comprehensive)	---	
7.14	Describe how releases from other media to soil will be monitored, managed, and reported, for example: <ul style="list-style-type: none"> air deposition, such as acid deposition (if any monitoring has been completed under the <i>Air Monitoring Directive</i>, provide a summary of the results), and groundwater discharge. 	C.7.6.4 to C.7.6.8 - spill response E.7.5 - soils	CR #7 Terrain & Soils, Section 4.4	

Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project				
Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
7.15	<p>If the plant or facility will accept third-party waste, describe the procedures for:</p> <ul style="list-style-type: none"> • acceptance of waste, • safe waste transfer at the plant or facility, including procedures for tank hook up, loading, and unloading, • labelling of waste drums and prevention of incompatible wastes mixing, • completing and tracking storage volumes with respect to capacity (maintaining waste inventory), • inspecting secondary containment (leaks), tank integrity, and liner integrity, including a description of the contingency plan for corrective actions, • control of contaminants, dust, odours, noise, vectors, vibration, and truck traffic to protect offsite neighbours, and • control of site access for the safety of staff and potential trespassers 	N/A	N/A	No applicable – Benga does not plan to accept third party waste at the Project site.
7.16	Confirm in writing that the applicable methods for classifying and characterizing waste will be used.	Section C.7.8 – waste management	---	
7.17	For soil storage locations, describe how ongoing protection from contamination and erosion will be provided.	A.11.7 & E.7.5 - soils	CR #7 Terrain & Soils, Section 7.1.4.2, 7.1.3.3	
7.18	If operator certification is required by legislation for an activity taking place on the site (e.g., landfill operator), or by an industry standard, provide evidence how that requirement is met.	N/A	N/A	No applicable – Benga’s proposed operations do not require the need of an operator certification. Any activity that would require such certification will be completed by a certified third-party.
8.0	RECLAMATION			
	Conceptual Reclamation Plan			
8.1	<p>Identify and describe the end land-use and land capability ratings. Include:</p> <ul style="list-style-type: none"> • the long-term, end land-use for the site and the surrounding lands, and where applicable, the municipal zoning category (note: where the long term land use is proposed to be restricted and different than the long term land-use in the area, for example, restricting to a commercial or industrial use, the applicant must obtain a written acceptance of the restriction from the municipality before finalizing the reclamation plans), • how the land capability ratings of the reclaimed site will be made equivalent to that of the preconstruction state, and • implications to wildlife and/or fish habitat. 	<p>Conservation and Reclamation Plan sections -</p> <p>F.1.4, F.1.5, F.1.6, F.1.6.1, F.2.5, F.2.1.5, F.2.1.6, F.2.1.7, F.2.6.1, F.2.6.5, F.2.1.8, F.2.3</p> <p>Table F.1.6-1,</p>	CR #9 Wildlife, Section 5	

Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project				
Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
8.2	Describe the proposed reclamation of landform, drainage, and watercourse(s). Include: <ul style="list-style-type: none"> how they will be integrated with adjacent land use, a plan for re-contouring (post-reclamation topography and landform design), and the stability of slopes and lakes, 	F.3.6.1, F.4.5, F.4.5.1 to F.4.5.11 Figure F.3.6-7, F.4.1-1 to F.4.1-5	---	
8.3	Provide a plan for replacing reclaimed soil that is compatible with the end land use. Include: <ul style="list-style-type: none"> the practices and principles that will be used, method to achieve acceptable soil quantity, depth and volume of the replaced soil, and the soil/materials balance, required to achieve reclamation goals, method to achieve acceptable chemical and physical soil quality, how and where de-compaction will occur (e.g., roads), and erosion control methods. 	F.1.5, F.2.1.5, F.3.1, F.3.4, F.3.5, F.3.6.2, F.3.6.3.3, F.4.5 Table F.2.1-2 Figure F.2.1-3, F.2.1-4	CR #7 Terrain & Soils, Section 7.1.1.1, 7.1.1.2.2, 7.1.3.1, 7.4.1	
8.4	Provide a plan for revegetating the site. Include: <ul style="list-style-type: none"> type of vegetation and species list, seed/seedling source and quality, seeding rates, stocking rates (reforestation), and methods, weed management, fertilization rates and methods, wetlands (e.g., establishment of riparian species), wildlife habitat, time to achieve revegetation, and method for measuring revegetation success. 	F.1.5, F.2.6, F.2.7, F.3.2, F.3.6, F.3.6.3, F.3.7, F.3.9, F.4.3, F.4.5.4 Table F.4.3-1	---	
8.5	For releases of wastewater and runoff during and after the reclamation phase, provide the following, as applicable: <ul style="list-style-type: none"> substances of concern and how their potential effects on the environment will be prevented or limited, method of release or disposal, process flow diagrams with mass balances and flow directions, anticipated volumes, rates, and amounts during both normal and upset conditions, pertinent calculations and models used, support from the literature for innovative treatment systems, and monitoring programs for evaluating the performance of the treatment and release systems. 	C.5 – water management (comprehensive) C.8 – geochemistry management (comprehensive) Conservation & Reclamation Plan section - F.2.1.2, F.2.1.3, F.4.4, F.4.5.4	---	
8.6	Describe how all wastes generated during reclamation will be managed.	C.7.8 – waste management	---	

Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
8.7	Describe how dust, odours, contaminants, and noise will be controlled and monitored to protect offsite neighbours.	A.11.1 – air A.11.2 – noise A.11.12 – human health C.2.10 – air mitigations C.2.12 – noise & visual mitigations C.5 – water management (comprehensive) C.7 - C.7.6 - EPP's	CR #1a Air Quality, Section 6.5, 6.6 CR #2a Noise Section 5.4 CR #12 Human Health, Section 6.5	
8.8	Describe how vapours from any remedial treatment systems will be controlled and monitored.	A.11.1.2 – air monitoring		
8.9	Identify the location of existing and planned infrastructure for environmental monitoring during reclamation.	F.3.9.3 – research and monitoring		
8.10	Describe stakeholder involvement, including who will be involved, at what point(s), and in what manner.	A.8, A.9 F.1.8, F.2.1.9, F.2.3 G.2.1 H.3.7, H.4.7, H.5.7, H.6.7, H.7.7, H.9.7, H.12.7		
8.11	Provide the contact information and means for which questions or concerns may be directed to the facility prior to and during reclamation activities.	A.3.2		
8.12	Describe and assess the effectiveness of alternatives for any proposed “engineered” watercourses (e.g., streams, lakes, wetlands). Include: <ul style="list-style-type: none"> • applicable policy or regulatory requirements, • prevention or mitigation of interactions between material with adverse chemical properties and proposed watercourse (e.g., leaching into the subsurface, lined ponds), • flow regimes, • contingencies for failures, • contingency treatment, • monitoring systems, and • the viability of a sustained healthy aquatic ecosystem if proposed as a “compensation” watercourse. 	C.5.5 F.3.6.4, F.4.4.1, F.4.4.3, F.4.5.4, F.4.5.7		

Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project				
Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
8.13	<p>Evaluate the short and long-term effects of reclamation and recontouring to watercourses. Include:</p> <ul style="list-style-type: none"> onsite surface water quality and quantity and the viability of sustained healthy aquatic ecosystem if proposed as a “compensation” watercourse, nearby watercourses (quality and quantity), onsite and offsite groundwater quality and quantity, and implications to people and ecology in the area. 	<p>C.5.3.6 - EPL E.3.3, E.3.6 –groundwater E.4.3, E.4.6 – hydrology E.5.3, E.5.6 – water quality F.4.4, F.4.5.4 – surface water reclamation</p>	<p>CR #3 Hydrogeology, Section 5.3 and 5.5</p>	
Progressive Reclamation Plan				
8.14	<p>Provide a plan that shows the footprint of disturbed land, presenting each proposed reclamation footprint section, and highlighting its phase of reclamation. Note: on large sites it can be helpful to divide the site into different geographic areas and undertake a phased approach.</p>	<p>C.1.3 – mine schedule Figure C.1.3-1 to C.1.3-25 F.2.2 – reclamation schedule, F.3.6 – mine reclamation</p>		
8.15	<p>Provide an approximate timeline for each phase of reclamation.</p>	<p>C.1.3 – mine schedule Figure C.1.3-1 to C.1.3-25 F.2.2 Table F.2.2-1</p>		
8.16	<p>Describe how progressive reclamation will be maximized to reduce cumulative impact to the site, adjacent lands, and other associated environmental media.</p>	<p>F.2.2 – reclamation schedule, F.4.1 – closure landscape</p>		
8.17	<p>Identify and describe how reclamation materials will be salvaged and handled during progressive reclamation. Include:</p> <ul style="list-style-type: none"> protocols and equipment that will be used to ensure optimal soil salvage during construction (e.g., suspending and recommencing topsoil salvage when field conditions will result in the mixing, loss, degradation, or compaction of topsoil), depths and horizons of soil planned for salvage, special procedures that will be used to address any problem soils, subsoil, and spoil, and quality control measures that will be employed during construction. An example might be the use of Professional Agrologists or Foresters. 	<p>C.1.4 – equipment Table C.1.4-1 C.1.5.1 – logging C.1.5.3 – mining equipment F.3.4 – soil conservation plan F.3.5 – overburden F.3.6.2 – material replacement plan F.3.9 - monitoring F.4.2 – soil management F.4.4.4 – water management Table F.2.2-2</p>	<p>CR #7 Terrain & Soils, Section 7.1.3, 7.2.3, 7.3.3, 7.4.3, Figure 4.1-1 to 4.1-4</p>	

Benga Mining Limited (Benga Mining) Proposed Grassy Mountain Coal Project				
Cross Reference (Concordance) Table to Location in Application				
Guide No.	Description	Reference Section in the EIA Application	Reference in the Consultant Reports	Supporting Information
8.18	Identify and describe how reclamation materials will be stored. Include: <ul style="list-style-type: none"> • storage methods (<i>e.g.</i>, direct placement, stockpiles, or windrows), • storage locations, provided on a map, • method for maintaining access (<i>e.g.</i>, separation distances from other objects and stockpiles (preventing encroachment by future activities)), • types of material (<i>e.g.</i>, topsoil, subsoil, or spoil), and • methods to control erosion and prevent degradation of the stored material (<i>e.g.</i>, seeding, vegetation, and weed control). 	E.7.3.1.2, E.7.5.1 - soils F.3.4 – soil conservation F.3.5 – overburden F.3.6.2 – material replacement plan	CR #7 Section 6.2	
8.19	Address 8.1 to 8.13 for progressive reclamation.	Included in references for 8.1 to 8.13	Included in references for 8.1 to 8.13	

Appendix 1c

Coal Concervation Act Licence Applications



Benga Mining Limited operating as Riversdale Resources

Benga Mining Limited
12331 - 20 Avenue
Po Box 660
Blairmore, Alberta, T0K 0E0
Phone: +1 403 753 5160
Business Number 84170 9538

August 12, 2016

Nadia Haider
Manager, Coal Mining Authorizations
Alberta Energy Regulator
Suite 1000, 250 – 5 Street SW
Calgary, Alberta T2P 0R4

Dear Mr. Joshi:

RE: Benga Mining Ltd., Grassy Mountain Project, Applications under the Coal Conservation Act

Benga Mining Limited (Benga), a wholly owned subsidiary of Riversdale Resources Limited, is proposing to develop a 4.5 million clean tonnes per year steelmaking coal mine, referred to as the Grassy Mountain Coal Project (the Project). Benga is filing a Technical Application and accompanying environmental impact assessment report (EIA), which addresses the technical, environmental and social aspects of the proposed Project.

Benga is submitting this Application to the AER for the following:

- as an application for approval for a Mine Permit under the Coal Conservation Act (CCA) (Part 4 Development, Operation and Abandonment of Mines, Section 10(1)(b));
- as an application for approval for a new coal processing plant under the Coal Conservation Act (CCA) (Part 5 Operation and Abandonment of Coal Processing Plants, Section 23(1)(a)); and
- as an application for approval of pit and dump licenses under the Coal Conservation Act (CCA), (Part 4 Development, Operation and Abandonment of Mines, Section 11(b)).

This submission contains an executive summary of the project along with two concordance tables. Table 1 will provide the appropriate location of the supporting documentation required for the various applications. A second concordance table (Table 2) refers to Supplemental Information Request 1 (SIR1) for the Mine Permit and Coal Processing Plant applications under the *Coal Conservation Act* (CCA) received in March, 2016

Correspondence regarding this application should be directed to the attention of:

Name: Steve Mallyon, Managing Director
Phone: (403) 563-1267
E-Mail: Steve.Mallyon@rivresources.com
Address: PO Box 660
12331 20th Ave
Blairmore, Alberta
T0K 0E0

Or

Name: Cal Clark, Manager Sustainability
Phone: (403) 753-5160
E-Mail: Cal.Clark@rivresources.com

Sincerely,

<Original signed by>

Steve Mallyon, Managing Director
Benga Mining Ltd.

EXECUTIVE SUMMARY

Benga Mining Limited (Benga), a wholly owned subsidiary of Riversdale Resources Limited (Riversdale), is proposing to develop a nominal 4.5 million clean tonnes per year metallurgical coal mine (for steel production), referred to as the Grassy Mountain Coal Project (the Project). The Project is located in southwest Alberta, approximately 150 km southwest of Calgary, in the Crowsnest Pass, and will cover areas within Townships 08 and 09 and Ranges 03 and 04, West of the 5th Meridian. The proposed metallurgical coal processing facility is planned to be located approximately 7 km north of the community of Blairmore.

The Project will include a surface metallurgical coal mine, a coal handling and preparation plant (CHPP) with associated infrastructure, an overland conveyor system, which will parallel an existing high grade access corridor and connect to a rail load-out facility, and a new section of rail track.

The intention of the Project is to re-establish a historical coal mine on Grassy Mountain, to ship high quality coking metallurgical coal to overseas steel producing markets. To do this the projected labour requirements will involve approximately 700 person-years of construction labour and 400 full time positions during operation. The Project is expected to provide significant economic stimulus to the Municipality of Crowsnest Pass and the Municipality of Ranchlands, as well as to the neighbouring communities to the west (e.g., Sparwood, Elkford, and Fernie).

The mine life is estimated to be 24 years, including a pre-development year and excluding final closure and reclamation. The mining method will be a large scale integrated truck and excavator operation. Mine production equipment will consist of rotary blast-hole drills, hydraulic mining shovels and backhoes, front-end loaders, track dozers, large off-highway haul trucks, and typical mining support equipment. Clean coal production will increase from approximately 1.9 million CMT in the first production year to its designed nominal capacity of 4.5 million CMT annually by the fourth production year. A clean coal production level of 4.5 Mt annually will be maintained for most of the mine life with production levels averaging closer to 3.8 million CMT over the least 9 years of the mine life. Mine operations will be scheduled 24 hours/day, 360 to 365 days/year.

Please refer to Table 1, CCA Mine Permit, Coal Processing Plant and Mine License Concordance Table for the locations of the information required to support this application. Table 2 has been provided to respond to SIR 1 which was received by Benga in March 2016. All information is contained in the EIA which is being submitted concurrently.

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
5.5	Technical Applications (Mine Permit Application)		
	General Outline The General Outline should include:		
	<ul style="list-style-type: none"> a statement of the applicant's rights to the coal and to the land surface, and a legal description of the lands to which such rights apply 	Sec A.1 – Background Sec A.4 – Project Location	
	<ul style="list-style-type: none"> a general statement concerning marketing plans 	Sec A.2 – Project Coal Type Overview and Project Need	
	<ul style="list-style-type: none"> a statement concerning the coal resources to be developed (reserves and type of coal) 	Sec B.0 – Geology and Geotechnical Table B.0.0-1 – Coal Resources summary	
	<ul style="list-style-type: none"> a statement regarding the proposed annual rate of extraction, the tonnage output of finished product, and the proportion of in-place coal expected to be recovered 	Sec A.6.1 – Mine Development Plan	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
	<ul style="list-style-type: none"> the names and qualifications of persons involved in the preparation of the application 	Sec A.3.2 – Proponent Contact Information	
	Photomosaic and Topographic Maps should show:		
	<ul style="list-style-type: none"> the boundaries of the proposed mine site, the location of all know aquifers, creeks, streams, siltation ponds or other water systems, pipelines, roads, other private or public works in the area; and the proposed relocation of roads 	Fig A.1.0-3 – Proposed Project Footprint – Aerial Photograph	
	<ul style="list-style-type: none"> all existing and proposed drainage ditches, canals, dams and other stream diversions; and muskeg areas 	Figures C.5.3-1 to C.5.3-5 Water Management	
	<ul style="list-style-type: none"> the proposed location of any coal processing plant and auxiliary facilities 	Fig A.1.0-3 - Proposed Project Footprint – Aerial Photograph Fig C.2.4-1 - Coal Handling and Preparation Plant and Mine Infrastructure Area Layout	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
	<ul style="list-style-type: none"> the location, type and capacity of power generation, transmission, and distribution facilities connected with the proposed project 	Fig A.1.0-3 – Proposed Project Footprint – Aerial Photograph	
	<ul style="list-style-type: none"> the location of existing surface and underground mines and all existing surface openings to underground workings 	Fig B.3.1-1 – Historical Mining	
	<ul style="list-style-type: none"> all proposed pits, discard disposal areas, and access and haulage routes 	Figures C.1.3-1 to C.1.3-26 – Annual Progression Maps	
	<ul style="list-style-type: none"> the proposed location of all mine buildings, campsites and explosive storage facilities 	Fig C.2.4-1 – Coal Handling and Preparation Plant and Mine Infrastructure Layout	
	<ul style="list-style-type: none"> the proposed clearing limits of any vegetation to be disturbed 	Figures C.1.3-1 to C.1.3-26 - Annual Progression Maps	
	<ul style="list-style-type: none"> the location of existing discard disposal areas 	Fig A.1.0-2 – Proposed Project Footprint and Mine Permit Boundary	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
	Geological Report		
	<ul style="list-style-type: none"> a geological map of the largest scale available showing: outcrops of all coal bearing formations, outcrops of all marker horizons, all known structural features, location of all completed drill holes, with their identification numbers, and a graphical distinction between those holes that are cored and those drilled by other methods, locations of all trenches, test pits and adits or other openings along with their identification 	<p>Fig B.1.1-3 – Geology Map</p> <p>Fig B.3.2-1 – Recent Exploration</p>	
	<ul style="list-style-type: none"> geological cross sections (preferably the same as those used to show the mining limits) of a scale not less than 1:2500 showing all correlatable coal seams and seams to be recovered together with proposed limits of mining, principal stratigraphy, lithology and structural geology, all geological control pints used for interpretation 	<p>Figures B.2.0-1 to B.2.0-7 – Geological Cross Sections</p>	

Table 1 <i>Directive 061: How to Apply for Government Approval of Coal Projects in Alberta</i> CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of <i>Directive 061</i>	Description	Reference Section in Application	Reference Section in Consultants Reports
	<ul style="list-style-type: none"> a typical lithological cross section of coal bearing formations representative of each 600 x 600 metres of area 	Fig B.1.1-2 – Typical Stratigraphic Column	
	<ul style="list-style-type: none"> a statement of the established coal resources in terms of in-place and recoverable (reserves) together with the details of the definition, criteria, procedures and type of density data used in determining these estimates 	Table B.0.0-1 – Coal Resource Summary Sec B.5.2 – Coal Quality Database Table B.5.2-2 – Average Raw Coal Quality Characteristics Sec B.6.4 – Bulk Density Sec B.6.5 – Description of Resource Estimate Results Sec B.7 – Mineral Reserves Table B.7.5-1 – Mineral Reserve Summary by Phase	

Table 1 <i>Directive 061: How to Apply for Government Approval of Coal Projects in Alberta</i> CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of <i>Directive 061</i>	Description	Reference Section in Application	Reference Section in Consultants Reports
	<ul style="list-style-type: none"> typical analyses of the coal seams used in the above 	<p>Table B.4.2-1 – Summary of Average Clean Coal Properties</p> <p>Table B.4.2-2 – Summary of Historical Analytical Procedures</p> <p>Table B.5.2-2 – Average Raw Coal Quality Characteristics</p>	
	<ul style="list-style-type: none"> isopach and structure contour maps of the coal seams to be mined if practical 	<p>Fig B.2.1-1 – Seam 1B Thickness</p> <p>Fig B.2.1-2 – Seam 1C Thickness</p> <p>Fig B.2.2-1 – Seam 2 Thickness</p> <p>Fig B.2.3-1 – Seam 4A Thickness</p> <p>Fig B.2.3-2 – Seam 4B Thickness</p> <p>Fig B.2.3-3 – Seam 4C Thickness</p>	
	<ul style="list-style-type: none"> a proposal for coal seam designation 	<p>Fig B.1.1-2 – Typical Stratigraphic Column</p>	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
	Mining Plan – The Mining Plan should contain:		
	<ul style="list-style-type: none"> a description of the proposed mining method(s) and sequence, supported by suitable plans and sections 	Sec C.1 – Mining Activities Sec C.1.1.1 – Description of Mining Sec C.1.3.3 – Annual Mine Production Summary Figures C.1.3-1 to C.1.3-26 – Annual Progression Maps Fig C.1.5-1 – Mining Methodology – Standard 5m Lift Fig C.1.5-2 – Underground Mine Recovery Schematic	
	<ul style="list-style-type: none"> the estimated mining recovery 	Sec C.1.1.1.2 – Dilution and Coal Loss Table C.1.2.2 – Mine Phase Reserve Summary	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
	<ul style="list-style-type: none"> the planned sequential rate of production 	Sec C.1.3 – Mine Schedule Table C.1.3-1 – Mine Plan production Statistics	
	<ul style="list-style-type: none"> the size and type of equipment to be used 	Sec C.1.4 – Mining Equipment	
	<ul style="list-style-type: none"> The feasibility of other types of mining 	Sec A.7.1 – Mining Type – Underground vs. Surface Mining	
	<ul style="list-style-type: none"> Cross sections to a scale of 1:2500 or larger, showing the final mining limits (where practical these should be the same cross sections used to furnish geological and geotechnical information) 	Figures F.4.1-1 to F.4.1-5 – Reclamation Cross Sections	
	<ul style="list-style-type: none"> The location of existing and proposed discard areas In addition for a surface mine a plan showing the ultimate dimensions of the pits and related discard areas 	Fig A.1.0-4 – Proposed Project Footprint	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
	Air Quality Report		CR #1 – Air Quality Assessment
	Hydrology Report		CR #4 – Surface Hydrology Baseline and Effects Assessment
	Groundwater Report		CR #3 - Grassy Mountain Coal Project Hydrogeology
	Surface Disturbance Report	Sec F.3.6 – Mine Reclamation	
	Reclamation Plan	Sec F C&R Plan	
	Statement of Oil, Gas & Water Occurrences	Sec E.10.2.5 – Oil and Gas Development	CR #10, Figures 4.5-1 and 4.5-2
6.1	Coal Processing Plant Application		
	Your application should include:		

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
	<ul style="list-style-type: none"> A legal description of the proposed plant location to include a statement justifying why the proposed plant was chosen over alternative locations 	Sec A.4 – Project Location Sec B.7.6-3 – Plant Site Sec C.2.4.1 – Plant Location and Layout Considerations	
	<ul style="list-style-type: none"> A description of the plant location 	B.7.6-3 – Plant Site	
	<ul style="list-style-type: none"> A topographic map to a scale not less than 1:2500 showing all sources of process water, the location of any proposed liquid discharge impoundment, the location of all coal handling, storage, and loading facilities, and other structures or operations associated with the proposed plant, the location of all pipelines, powerlines, roads, and railways associated with the plant that are within the boundaries of the area to be included in the permit to develop the mine site 	Fig A.1.0-4 – Proposed Project Footprint Fig C.2.4-1 – CHPP and Mine Infrastructure Layout Fig C.3.1-1 – Proposed Rail Layout Fig C.4.1-1 – Proposed Main Access Road Fig C.4.1-2 – Main Access Corridor	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
	<ul style="list-style-type: none"> Details of the plant process, capacity and potential for expansion 	Sec C.2.3 – Wash Plant Design Criteria Sec C.2.4 – Description of Washplant and Operation	
	<ul style="list-style-type: none"> A statement of the adaptability of the plant to process plant feeds dissimilar in composition to the plant feed for which the plant is designed; or details of methods proposed to ensure a consistent supply of the feed for which it was designed 	Sec C.2.2.10 - Washability	
	<ul style="list-style-type: none"> Details of proposed facilities for monitoring all product streams entering and leaving the plant, including weigh scales, flow motors and sampling stations 	Sec C.2.5.2.1 – Product Stream Monitoring Details Sec C.2.5.2.2 – Coal Handling Plant Sampling Points Tab C.2.5-1 – CPP Sampling Points	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
	<ul style="list-style-type: none"> A detailed flow diagram and material balance on the coal processed and the process water used 	<p>Sec C.2.5 – Process Flowsheet – Nominal Flows</p> <p>Fig C.2.5-1 – Plant Water Balance</p> <p>Fig C.2.5-2 – Overall CHPP Material Balance</p> <p>Fig C.2.6-6 – CPP Basic Flowsheet</p>	
	<ul style="list-style-type: none"> Details of the proposed facilities and procedures for determining washability data, specific gravities and solid densities 	<p>Sec C.2.8.3 - Laboratory</p>	
	<ul style="list-style-type: none"> Data on the washability of the plant feed 	<p>Sec C.2.2 – Coal Quality</p> <p>Fig B.2.1-3 – Seam 1 Wash Quality</p> <p>Fig B.2.2-2 – Seam 2 Wash Quality</p> <p>Fig B.2.3-4 – Seam 4 Wash Quality</p>	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
	<ul style="list-style-type: none"> Detailed analysis of coal to be used in the dryer; 	Not Applicable	
	<ul style="list-style-type: none"> Projected end use of the clean coal 	Sec A.1 – Background Sec A.2 – Project Coal Type Overview and Project Need	
	<ul style="list-style-type: none"> Analysis of plant feed, each product stream and tailings 	C.2.2 – Coal Quality Tab C.2.2-1 – Proximate, Ultimate and Carbonization Properties Tab C.2.2-2 – CSR and CRI Results Tab C.2.2-4 – Mass Percent Distribution Between Plant Circuits (%) Tab C.2.2-5 – Indicative Yield Window Sec C.2.4.6-3 – Reject Dewatering Fig C.2.5-2 – Overall CHPP Material	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
		Balance	
	<ul style="list-style-type: none"> Details of the solids content of the tailings feed and the method proposed for recycling clarified water to the plant 	Sec C.2.3.2.4 – Tailings Properties Sec C.2.6.5.7 – Tailings Thickener Sec C.2.6.5.8 – Rejects and Tailings Dewatering Circuit Sec C.5.2.2 – Non-consumptive Water Use	
	<ul style="list-style-type: none"> A description of any secondary solids removal equipment 	Sec C.2.6.4 – Coal Preparation Plant Fig C.2.6-6 – CPP Basic Flowsheet	
	<ul style="list-style-type: none"> Details of the method proposed for disposing of discard materials from the plant 	Sec C.2.3.3.5 – Coarse Rejects Handling Sec C.2.4.6.3 – Reject Dewatering	
	<ul style="list-style-type: none"> Details of methods proposed for disposal and subsequent recovery, when warranted, of plant tailings or middlings 	None Proposed	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
	<ul style="list-style-type: none"> A design report on any liquid discard impoundment as detailed in section 14 (n) of the Coal Conservation Regulations 	Not Applicable	
	<ul style="list-style-type: none"> Details of the storage capacity of the impoundment, including a calculation showing its approximate life expectancy 	Not Applicable	
	<ul style="list-style-type: none"> Details of any proposed method for extending the life expectancy for the impoundment, which should include provisions for increasing or reclaiming its storage volume 	Not Applicable	
	<ul style="list-style-type: none"> Reasons for the selection of the impoundment location, including a statement justifying the proposed location over alternative locations 	Not Applicable	
	<ul style="list-style-type: none"> An estimate of the quantities of surface runoff water that would require diversion round any 	Not Applicable	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
	proposed tailings disposal area		
	<ul style="list-style-type: none"> A description of the location of any proposed drainage or stream diversion, including a calculation to show a drainage capacity equivalent to 1-in-20-year flood conditions 	Not Applicable	
	<ul style="list-style-type: none"> Details of the method for dewatering or drying fuel, including the annual thermal requirement, and the hourly rated evaporative capacity for any thermal dryer in the plant design 	Not Applicable	
	<ul style="list-style-type: none"> Details of the methods proposed for monitoring and controlling dust from the dryer and from storage handling loading facilities, breaker stations, roadways, silos, conveyors and building ventilation. 	Sec C.2.6-1 – ROM Coal Stockpile Area Sec C.2.6.5-9 – Rejects and Tailings Disposal Sec C.2.9.2 Raw/Fire System/Washdown/Dust Suppression Systems	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
		Sec C.2.10 – Dust Management and Suppression	
	<ul style="list-style-type: none"> Distance to the nearest town and the nearest permanently occupied residence 	Sec A.4 – Project Location Sec E.10.2 – Baseline Conditions	
	<ul style="list-style-type: none"> Proximity of haul and access roads to any residence 	Sec E.10.2 – Baseline Conditions	
	<ul style="list-style-type: none"> A brief statement of the expected power requirements, water requirements exclusive of process water, space heating requirements exclusive of thermal drying requirements, amount and type of conditioning chemicals to be used including the method of their storage, conditioning, recovery and make-up 	Sec C.2.4.6.6 – Processing Plant Consumables Sec C.5.1.1 - Water Volume Required Sec C.6.15 – Site Power Supply and Communications	
	<ul style="list-style-type: none"> The names and qualifications of the persons responsible for engineering the plant design 		

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
8.2	LICENSE TO BEGIN SURFACE MINING		
	APPLICATION SHOULD CONTAIN:		
	<ul style="list-style-type: none"> A statement of your right to the coal and use of the surface and a legal description of the land to which such rights apply 	Sec A.3.1 – Proponent Overview Sec A.4 – Project Location Fig A.1.0-5 – Proposed Project Footprint – Land ownership	
	<ul style="list-style-type: none"> A statement of any changes to the original development program submitted with the permit application 	Not Applicable	
	<ul style="list-style-type: none"> Maps and plans showing the location, within the proposed area of the boundaries of the area to be included in the license, all know aquifers, creeks or other water systems, all existing and proposed drainage ditches, canals, dams or other stream diversions, all existing and proposed pipelines, roads powerlines and all other private or public works, any surface or 	Fig A.1.0-2 – Proposed Project Footprint and Mine Permit Boundary Fig A.4.0-1 – Proposed Mine Permit and CCA License Figures C.5.3-1 to C.5.5-3 – Water Management	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
	underground mines, showing their extent (include discussion on their condition, e.g. flooded, caved, etc)		
	<ul style="list-style-type: none"> Geological information previously required in the permit application, except that it should relate more specifically to the mine in question and contain greater detail 	Sections B.1 – Geological Setting through to B.6 – Mineral Resources and Coal Quality	
	<ul style="list-style-type: none"> The mining plan, including the design of pit walls, discard dumps and haul roads 	Sec B.8.6 – Design Criteria Sec C.1 – Mining Activities	
	<ul style="list-style-type: none"> An estimate of the in-place and recoverable reserves within the proposed licence area 	Table C.1.2.2 – Mine Phase Reserve Summary	
	<ul style="list-style-type: none"> Geotechnical report 	Appxs 9a, 9b, 9c and 9d	
	<ul style="list-style-type: none"> Air quality information 		CR #1 Air Quality
	<ul style="list-style-type: none"> Hydrological information 		CR #4 Hydrology
	<ul style="list-style-type: none"> A reclamation plan for the proposed mining operation; this should follow the pattern 	Sec F C&R Plan	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
	previously required but in greater detail		
	<ul style="list-style-type: none"> An economic evaluation of the limits proposed for the mine, including an appraisal to show that the coal beyond the limit could not be mined economically or technically by surface or underground methods 	<p>Sec B.7.6 – Unrecovered Coal Fig B.7.6-1 – NRDA Sterilization Cross Section 1 Fig B.7.6-2 – NRDA Sterilization Cross Section 2 Fig B.7.6-3 – Plant Site Sterilization</p> <p>Sec C.1.2 – Mine Design and Optimization Sec C.1.2.1 – Mine Design Overview Sec C.1.2.2 – Economic Pit Results</p> <p>Figure C.1.2-1 – Pit Targeting Results</p>	
	<ul style="list-style-type: none"> A general statement of your marketing plans 	Sec A.1 – Background	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
	<ul style="list-style-type: none"> The names and qualifications of the persons appointed as officials in charge of the operation 	Sec A.3.2 – Proponent Contact Information	
	GEOTECHNICAL REPORT		
	Your geotechnical report should consist of:		
	<ul style="list-style-type: none"> A topographical map of scale not less than 1:2500, and cross-sections, showing: <ul style="list-style-type: none"> Surficial soils and vegetation cover Local drainage systems Structural geology, including bedding, faults, joints, and milled zones Location and physical features including: <ul style="list-style-type: none"> Pit walls, surrounding natural slopes, earthfill structures, discard piles and foundations, artificial support structures support systems in underground operations, 	Fig A.1.0-2 – Proposed Project Footprint Fig B.8.3-1 – Consolidated Geotechnical Sampling Sites Appx 9b, sub-appx G Appx 9c, sub-appx A	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
	location of any proposed instrumentation or testing required to monitor slope strata movement and groundwater conditions		
	<ul style="list-style-type: none"> Design assumptions and supportive data respecting the stability of the physical features of the excavation and construction areas as listed above 	Sec B.8.6 – Design Criteria Appxs 9b, 9c	
	<ul style="list-style-type: none"> A description of the proposed method of monitoring slope strata movement and groundwater conditions, together with the frequency of reading and of maintaining the instruments 	Appx 9b, subsection 9.3	
	<ul style="list-style-type: none"> A description of investigation, testing and monitoring required later to ensure that the design assumptions remain valid 	Appx 9b, subsection 9.3 Appx 9c, subsection 8.0	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
	<ul style="list-style-type: none"> • An analysis of any proposed rock slopes and the effect on the stability of the <ul style="list-style-type: none"> ○ Rock properties (density, composition, cohesion friction co-efficient and permeability) ○ Local geology ○ Structural geology including bedding, faults, folds joints and milled zones ○ Surface water drainage systems ○ Groundwater drainage systems ○ Natural and existing slopes ○ Weathering 	<p>Appx 9b, subsections 2.1.2, 2.2, 4.1.1, 4.1.2, 4.1.3, 4.2.1, 4.3, 4.4, 5.0, 6.1, 9.3</p> <p>Appx 9c, subsections 6.1, 6.2, 6.3.1, Table 3,</p>	
	<ul style="list-style-type: none"> • An analysis of any proposed soil slopes (including those of discard dumps and liquid impoundments) including the results of any investigation of the: <ul style="list-style-type: none"> ○ surficial soils 	<p>Appx 9a, subsections 3.2 and 3.3</p> <p>Appx 9d, subsections 2.4.1, 4.0, 5.0, 6.5</p>	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
	<ul style="list-style-type: none"> ○ Embankment and slope soils ○ Structural geology, including the bedding, faults and joints of the foundation ○ Surface water drainage system ○ Groundwater drainage system ○ Natural and existing slopes ○ Effect on the rate of construction ○ Effect on pore pressure ○ Influence of any proposed artificial support 		
	<ul style="list-style-type: none"> ● An assessment of the influence of the: <ul style="list-style-type: none"> ○ Method and rate of excavation or construction ○ Site preparation ○ Method of any artificial support incorporated in the design 	<p>Appx 9a, subsection 4.4 Appx 9d, subsection 7</p>	

Table 1 Directive 061: How to Apply for Government Approval of Coal Projects in Alberta CCA Mine Permit, Coal Processing Plant and Mine License Application Cross Reference (Concordance) Table to Location in Application			
Section of Directive 061	Description	Reference Section in Application	Reference Section in Consultants Reports
	<ul style="list-style-type: none"> ○ Pore pressure build up and dissipation ○ Future extension of the excavation or embankment 		
	<ul style="list-style-type: none"> • Consideration, where applicable of both rock and soil slopes of the possibility of <ul style="list-style-type: none"> ○ Sliding along structural weaknesses ○ An inclined wedge failure ○ Overtopping ○ Differential settlement ○ Local sloughing or slumping 	<p>Appx 9b, sub-appendix H, Sec 1.1</p>	
	<ul style="list-style-type: none"> • Mention of slope stability from the viewpoint of <ul style="list-style-type: none"> ○ The safety of mining personnel ○ Optimum recovery of coal ○ Stability over the long and short term ○ Environmental acceptability ○ Capability of being reclaimed 	<p>Appx 9a, Tab 5</p>	

Table 2 CCA Supplemental Information Request 1 (SIR 1) March 2016 Cross Reference (Concordance) Table to Location in Application			
SIR #	Description	Reference Section in Application	Reference Section in Consultants Reports
	Geology		
1	<p>Section B Geology and Geotechnical, Sections B.8.4.4.2 and B.8.4.4.3, Page B-50</p> <p>There are only two test pits within the North Rock Disposal Area (NRDA). Benga states, "... there are no test pits or drillholes within the footprint of the South Rock Disposal Area (SRDA)." and, "... there are no test pits or drillholes within the footprint of the plant site."</p> <p>a) Provide a drilling program that will be conducted to understand the coal resource within the footprints of the NRDA, SRDA and plant site, to eliminate the potential of coal resource sterilization.</p> <p>b) In the event that coal resources are identified in either area, provide a schedule for incorporating the new data into the mine plan.</p>	<p>B.7.6 – Unrecovered Coal</p> <p>Fig B.7.6-1 – NRDA Sterilization Cross Section 1</p> <p>Fig B.7.6-2 – NRDA Sterilization Cross Section 2</p> <p>Fig B.7.6-3 – Plant Sterilization Cross Section</p>	

Table 2 CCA Supplemental Information Request 1 (SIR 1) March 2016 Cross Reference (Concordance) Table to Location in Application			
SIR #	Description	Reference Section in Application	Reference Section in Consultants Reports
	Mining		
1	<p>Section C Project description, Section C.1.2.1, Page C-7</p> <p>Benga states “ ...historical underground mining Seam No. 1 and Seam No. 2 constrained the proposed pit to the southwest due to uncertainty of the extent and status of the old underground working...”</p> <p>What safe work practices will be used as mining is conducted in close proximity to the historical underground mine workings?</p>	<p>Sec C.1.5.3 – Excavator/Truck Rock Stripping</p> <p>Fig C.1.5-2 – Underground Mine Recovery Schematic</p>	
	Coal Processing Plant		
1	<p>Section A Project Introduction, Section A.6.4, Page A-16</p> <p>Benga states that “The overall selenium management strategy, which has been built into the overall sequencing of the mine plan, includes the following: capture seepage from the north and south external rock disposal areas....as a backup to this plan, a water quality treatment plant could be constructed but is not planned at this time.”</p> <p>Provide the planned location of the water treatment plant on the site map.</p>	<p>Fig C.2.4-1 – Coal Handling and Preparation Plant and Mine Infrastructure Layout</p>	

Table 2 CCA Supplemental Information Request 1 (SIR 1) March 2016 Cross Reference (Concordance) Table to Location in Application			
SIR #	Description	Reference Section in Application	Reference Section in Consultants Reports
2	<p>Section C Project Description, Page C-1</p> <p>Benga states that “The following is a summary of the physical works associated with the designated project: Mina Activities....Coal Handling and Processing Plant (CHPP)two CPPs; three product coal radial stackers and stockpiles;”</p> <p>Provide the maximum volume and heights of the product stockpiles</p>	<p>Sec C.2.3.3.3 – Product Handling</p> <p>Sec C.2.6.6 – Clean Coal Storage and Reclaim</p>	
3	<p>Section C Project Description, Section C.2.3, Page C-41</p> <p>Benga states that “The coal handling and processing plant (CHPP) system has been designed to achieve the following objectives: to receive process and handle.....to produce saleable coal with the following target specifications: coking coal : 9-10% ash dry basis (asd), 10.0% total moisture (as).”</p> <p>Provide a plan to maintain the target moisture content of the clean coal product considering seasonal variations.</p>	<p>Sec C.2.3.1 – General Criteria</p>	

Table 2 CCA Supplemental Information Request 1 (SIR 1) March 2016 Cross Reference (Concordance) Table to Location in Application			
SIR #	Description	Reference Section in Application	Reference Section in Consultants Reports
4	<p>Section C Project Description, Section C.6.6, Page C-63</p> <p>Benga states that “Product coal will be reclaimed from the product stockpiles by dozer fed in pile reclaim feeders (RC-802, RC-803, RC-804, RC-805, RC-806 and RC-807.”</p> <p>Confirm whether RC-801 is a reclaim feeder.</p>	<p>Sec C.2.6.6 – Clean Coal Storage and Reclaim</p>	
5	<p>Section C Project Description, Section C.2.7, Page C-64</p> <p>Benga states that “A vibratory feeder (FE-801) located underneath the Overland Conveyor loading Bin (BN-801) will feed product coal onto the overland conveyor (CV-807) at a nominal capacity of 2000 t/h. The overland conveyor will have a belt width of 48” and a nominal capacity of 2000t/h. The overland conveyor will transfer the product coal approximately 4.4 km and deliver it into a surge bin (BN-851) with a storage capacity of 500 t. Please refer to Figure C.2.7.1.”</p> <p>Is there are a provision of emergency temporary stockpile while overland conveyor is under maintenance? If so, provide the location, maximum volume and height of the stockpile.</p>	<p>Sec C.2.7.1 – OLC Maintenance Provisions</p>	

Table 2 CCA Supplemental Information Request 1 (SIR 1) March 2016 Cross Reference (Concordance) Table to Location in Application			
SIR #	Description	Reference Section in Application	Reference Section in Consultants Reports
6	<p>Section C Project description, Figure C.2.6-1 and Figure C.2.6-16</p> <p>RC-807 is not identified in figures C.2.6-1 and C.2.6-16.</p> <p>Provide the location of RC-807 in figures C.2.6-1 and C.2.6-16.</p>	<p>Sec C.2.6.6 – Clean Coal Storage and Reclaim</p> <p>Fig C.2.6-1 – Overall Material Flowsheet</p>	
7	<p>Section C Project description, Section C.5.3.1, Page C-89</p> <p>Benga states that “Five settling/release ponds will treat and release water back into the environment.”</p> <p>Provide the water treatment method for the five settling/release ponds and include a plan location.</p>	<p>Sec C.5.3.3 – Capture and Release (Sedimentation Ponds)</p> <p>Figs C.5.3-1 to C.5.3-5 – Water Management</p>	

Appendix 1d

Water Act – Fence-line Approval



Benga Mining Limited
12331 - 20 Avenue
Po Box 660
Blairmore, Alberta, T0K 0E0
Phone: +1 403 753 5160
Business Number 84170 9538

Benga Mining Limited operating as Riversdale Resources

August 12, 2016

Terence Ko
Manager, EPEA and Water
Mining Authorizations at Alberta Energy Regulator
Suite 1000, 250 – 5 Street SW
Calgary, Alberta T2P 0R4
Dear Mr. Ko:

RE: Benga Mining Ltd., Grassy Mountain Coal Project, Water Act “Fence-line” Approval

Benga Mining Limited (Benga), a wholly owned subsidiary of Riversdale Resources Limited, is proposing to develop a 4.5 million clean metric tonnes (CMT) per year steelmaking coal mine, referred to as the Grassy Mountain Coal Project (the Project). Benga is filing a technical application and accompanying environmental impact assessment report (EIA), which addresses the technical, environmental and social aspects of the proposed Project.

Benga is submitting this Application to the AER for a Water Act “Fence-line” Approval. In consultation with the Alberta Energy Regulator (AER), Benga has relied on information that has been provided in the Application and EIA for this application. This document consists primarily of a concordance table that indicates where the required information can be found in the Application. This table provides the location of the supporting documentation required for the Fence-line Application. The EIA has been prepared in accordance with Section 48 of the EPEA and the final terms of reference (FToR) issued by the AER on March 19, 2015.

Correspondence regarding this application should be directed to the attention of:

Name: Steve Mallyon, Managing Director
Phone: (403) 563-1267
E-Mail: Steve.Mallyon@rivresources.com
Address: PO Box 660
12331 20th Ave
Blairmore, Alberta
T0K 0E0

Or

Name: Cal Clark, Manager Sustainability

Phone: (403) 753-5160

E-Mail: Cal.Clark@rivresources.com

Sincerely,

<Original signed by>

Cal Clark, Manager Sustainable Development
Benga Mining Ltd.

cc. Rick Nutbrown, AER
Werner Herrera, AER

GRASSY MOUNTAIN COAL MINE PROJECT – FENCE-LINE WATER ACT APPLICATION

Benga Mining Limited (Benga), a wholly owned subsidiary of Riversdale Resources Limited (Riversdale), is proposing to develop a nominal 4.5 million clean metric tonnes (CMT) per year metallurgical coal mine (for steel production), referred to as the Grassy Mountain Coal Project (the Project). The Project is located in southwest Alberta, approximately 150 km southwest of Calgary, in the Crowsnest Pass, and will cover areas within Townships 08 and 09 and Ranges 03 and 04, West of the 5th Meridian. The proposed metallurgical coal processing facility is planned to be located approximately 7 km north of the community of Blairmore.

The Project will involve a surface metallurgical coal mine, a coal handling and preparation plant (CHPP) with associated infrastructure, an overland conveyor system, which will parallel an existing high grade access corridor and connect to a rail load-out facility, and a new section of rail track. For the purpose of this Fence-line *Water Act* Application, the proposed Mine Permit Boundary is deemed to the “fence-line area” (Figure A.1.0-2, Table A.4.0-2).

The intention of the Project is to re-establish a historical coal mine on Grassy Mountain, to ship high quality coking metallurgical coal to overseas steel producing markets. To do this the projected labour requirements will involve approximately 700 person-years of construction labour and 400 full time positions during operation. The Project is expected to provide significant economic stimulus to the Municipality of Crowsnest Pass and the Municipality of Ranchlands, as well as to the neighbouring communities to the west (*e.g.*, Sparwood, Elkford, and Fernie).

Water is needed to operate the mine, including the coal wash plant which is the major user of water, dust control for roads and wash water. It has been estimated that approximately 960,000 m³ of water will be required annually to operate the mine. A portion of this volume will require licencing to allow use of the water. Benga has considered various sources of surface water and groundwater to supply the Project’s water needs.

The collection of surface runoff water and the management of pit water are required for the removal of total suspended solids (TSS). Management and mitigation of potential selenium laden water, from water infiltrating through the excavated rock placed in the ex-pit rock disposal areas, is also of primary concern. The main objective is to control selenium and TSS levels to meet wastewater guidelines and objectives.

Pit dewatering operations involve the removal of surface water (from rainfall and snow melt) and groundwater that enters the pits. The groundwater level is typically at greater depths in the mining area. As mining operations drop below the natural groundwater levels, continual dewatering of pit areas will be required. Pit dewatering is conducted by directing all water to containment sumps using pumps to transfer the water to a settling pond for treatment and release.

A series of collection ditches, sumps, pumps and settling ponds will be established to manage all surface water on the mine site. Surface runoff from mining areas and haul roads is collected and directed to settling ponds for treatment or will be pumped to the raw water pond for storage and use in the coal cleaning process. Water collected at the toes of disposal areas is expected to contain elevated levels of selenium which will be sent to surge ponds before being directed to saturated zones for selenium attenuation. Benga will control all surface runoff from disturbed areas.

The water model developed for the Grassy Mountain Project indicates the potential for some metals, such as cobalt, zinc and cadmium, to be found at the discharge of the saturated zones at levels above the water quality guidelines. Secondary water treatment may be required before release back to the environment. The following is a list of activities that will be included in the fence-line *Water Act* approval:

- construction and operation of sedimentation (release) ponds;
- construction and operation of surge (further management is required, no direct release) ponds;
- construction and operation collector drainage ditches;
- construction and operation clean water diversion ditches;
- construction and operation assorted sumps and pumping ponds;
- use of high density plastic pipelines for conveyance of water;
- construction and operation of a raw water/freshwater storage pond;
- construction and operation of saturated backfill areas for the semi-passive treatment of selenium enriched water;
- collection of surface run-off and groundwater that reports into the pit and subsequent pit dewatering;
- water monitoring sites; and
- end of mine lake; and possible metals treatment facility.

Please refer to [Table 1](#), Fence-line *Water Act* Concordance Table for the locations of the information required to support this application. All information is contained in the EIA which is being submitted concurrently. The Application under the *Water Act* for Approvals and/or Licences is provided in [Attachment 1](#).

Table 1 Fence-line Water Act Application Concordance Table		
Description	Reference Section in Application	Reference Section in Consultants Reports
Project Description		
Project Description	Sec A.1, Sec A.6, Sec C.1, Sec C.2	-
Project Proponent	Sec A.3	-
Application for Approval	Sec A.5.1	-
Location – Fence-line Approval	Figure A.1.0-2, Table A.4.0-1	-
Concurrent Applications		
EPEA Operating Approval Application	Appendix 1B	-
Coal Conservation Act Licence Applications	Appendix 1C	-
Water Act – Transfer and Diversion Licences	Appendix 1E	-
Public Lands Application	Appendix 1F	-
Water Requirements and Source		
Water Supply and Source	Sec C.5.1	-
Water Licencing	Sec C.5.2	-
Water Treatment	Sec C.5.3	-
Water Balance and Management	Sec C.5.4	-
Water Management Structure Design Specifications	Sec C.5.5	-
Water Management Construction Schedule	Sec C.5.6	-
Water Management at Closure	Sec F.4.4	-
Surface Drainage, Diversion and Water Management		
Water Treatment Approach	Sec C.5 Appendix 10A, 10B	
Operational Approach	Sec C.5.3, Figs. C.5.3-1 to C.5.3-6 Appendix 10A, 10B	

Table 1 Fence-line Water Act Application Concordance Table		
Description	Reference Section in Application	Reference Section in Consultants Reports
Capture and Release	Sec C.5.3.3 Appendix 10A, 10B	
Capture and Management	Sec C.5.3.4, C.8.3, Fig C.5.3-6 Appendix 10A, 10B	
End-of-mine Lake	Sec C.5.3.6, Sec F.4.5.7, Fig F.4.4-1, Fig F.4.1-3, Fig F.4.1-5	CR 3, Sec 5, CR 4, Sec 7, CR 5, Sec 4; CR 6, Sec 5
Water Balance/Water Management Sequence	Sec C.5.4, Fig C.5.4-1	CR 4, Sec 5
Water Management Structure Construction Specifications	Sec C.5.5, Tables C.5.5-1 to C.5.5-10	CR 4, Sec 5
Water Management Feature Construction Schedule	Sec C.5.6, Table C.5.6-1	-
Project Effects		
Effects on Other Users	E.10.3	CR 10, Sec 5
Effects on Aquatic Environment	E.3.3, E.4.3, E.5.3, E.6.3	CR 3, Sec 5, CR 4, Sec 7, CR 5, Sec 4; CR 6, Sec 5
Effects on Instream or Water Conservation Objectives	E.3.3, E.4.3, E.5.3, E.6.3	CR 3, Sec 5, CR 4, Sec 6, CR 5, Sec 4; CR 6, Sec 5
Hydraulic, Hydrological Effects	E.3.3, E.4.3, E.5.3, E.6.3	CR 4, Sec 6
Hydrogeological Effects	E.3.3	CR 3, Sec 5
Effects on Neighbouring Lands	E.10.3	CR 10, Sec 5
Effects on Wetlands	E.8.3.7	CR 8, Secs 4.7, 5.1
Consultation		
First Nations	Section H, Appendix 7	-
Stakeholders	Section G, Appendix 6	-
Land Ownership		
Public Lands Act	E.10, Appendix 1F	-

Attachment 1

Application under the Water Act for Approvals and/or Licences

Application under the *Water Act* for Approvals and/or Licences



This application form is for activities regulated under the *Water Act*.

Check one or more of the following to indicate type of application

Licence for Diversion of Water <input checked="" type="checkbox"/>	Renewal of Diversion Licence <input type="checkbox"/>	Approval for Constructing Works <input checked="" type="checkbox"/>
Licence Amendment <input type="checkbox"/>	Approval Amendment <input type="checkbox"/>	Preliminary Certificate Amendment <input type="checkbox"/>

Water Act File No. (if applicable)

Applicant

Name or Business Name:	Benga Mining Limited	Business Contact:	Cal Clark
Address: (include city, province and postal code)	PO Box 660 12331 20th Ave Blairmore, Alberta T0K 0E0	Cell No.:	403 563-6455
		Phone No.:	403 753-5160
		Fax No.:	
		E-mail:	cal.clark@rivresources.com

Are you the owner of the land or undertaking? Yes No

If no, please attach a copy of the written consent of the owner of the land or the undertaking. If working in "public land" administered under the Public Lands Act, include the disposition number obtained to undertake this activity."

Consent attached? Yes No

Disposition No. disposition has been applied for

Authorized Representative* Same as Applicant

Name or Business Name:	Millennium EMS Solutions Ltd.	Business Contact:	Dane McCoy
Address: (include city, province and postal code)	6111 – 91 Street Edmonton, AB T6E 6V6	Cell No.:	
		Phone No.:	(780) 391-2514
		Fax No.:	(780) 496-9049
		Email:	dmccoy@mems.ca

* Name of representative submitting application on behalf of applicant

Project Description

Tentative Construction Start Date:	mid-2017	Duration of Construction:	23 years
Tentative Water Diversion Start Date:	mid-2017	Duration of Water Diversion/Use:	27 years

Application under the *Water Act* for Approvals and/or Licences

Provide a detailed description, including location of works and activities, relating to the project and attach plans:

Details are provided in Water Act Application for "Fence-line Approval" and include:

The following is a list of activities that will be included in the fence-line Water Act approval:

- construction and operation of sedimentation (release) ponds;
- construction and operation of surge (further management is required, no direct release) ponds;
- construction and operation collector drainage ditches;
- construction and operation clean water diversion ditches;
- construction and operation assorted sumps and pumping ponds;
- use of high density plastic pipelines for conveyance of water;
- construction and operation of a raw water/freshwater storage pond;
- construction and operation of saturated backfill areas for the semi-passive treatment of selenium enriched water;
- collection of surface run-off and groundwater that reports into the pit and subsequent pit dewatering;
- water monitoring sites; and
- end of mine lake; and possible metals treatment facility.

Application under the *Water Act* for Approvals and/or Licences

Water Sources (Location of Works and Activities): Surface Water Groundwater

Surface Water – Point of Diversion or Activity
(if constructing works only, complete the first three columns)

+	Water Body e.g., lake, stream, or name of source, if known	Water Diversion/Activity Location					Is Construction Required?	Annual Volume of Water Required (cubic metres)	Maximum Pumping Rate (show units)	Purpose (for diversion only)
		1/4	Sec	Twp	Rge	M				
X	Crowsnest River Basin	NE	23	8	4	5	Yes			
	Plan/Block/Lot						UTM Coordinates	Zone:	Easting (m)	Northing (m)

+ - add additional row
x - remove current row

Indicate the "Point of Use " if different than the "Water Diversion Location(s)" same location as source(s)

To ensure your application is complete, please refer to the *Guidelines for Licensing Water Diversion Projects*
(<http://environment.alberta.ca/03222.html>).

Amendment Description

Approval Amendment

Please provide description of amendment required and attach plan if necessary

Licence Amendment

Preliminary Certificate Amendment

Complete applicable information below:

Increase or decrease rate of diversion.

Please specify

Add a rate of diversion of water if none specified on the licence or preliminary certificate.

Please specify

Add terms or conditions to the licence or preliminary certificate.

Please specify


Add/change the timing of diversion or water specified in the licence or preliminary certificate.

Please specify

Add/change the point of use

Please specify

Application under the *Water Act* for Approvals and/or Licences

<input type="checkbox"/> Move the point of diversion of water or add another point of diversion of water. (Licences only)			
Please specify			
<input type="checkbox"/> Notice of disposition of land or undertaking. (Change of ownership)			
Please specify			
<input type="checkbox"/> Other amendments requested.			
Please specify			
Statement of Confirmation:			
The information given on this form is true to the best of my knowledge.			
If you wish to sign the form with an electronic signature you are bound with the same force as though you had a fixed signature on paper.			
<Original signed by>		05-Aug-2016	Cal Clark
			Benga Mining Ltd.
 Signature	Date of Signing	Printed Name	Company Name

Application under the *Water Act* for Approvals and/or Licences

For projects under ESRD jurisdiction, submit the completed form to the following address:

**Alberta Environment and Sustainable Resource Development
Regulatory Approval Centre**
Main Floor, Oxbridge Place
9820 106 Street NW
Edmonton AB T5K 2J6
Telephone: 780 427-6311
Fax: 780 422-0154

or e-mail the completed and signed form to one of the following e-mail addresses:

- ~ AENV.NorthWaterApprovals@gov.ab.ca
- ~ AENV.CentralWaterApprovals@gov.ab.ca
- ~ AENV.SouthWaterApprovals@gov.ab.ca

For projects under AER jurisdiction, e-mail the completed form to the *EPEA* and *Water Act* Authorizations Centre at EPEA.WA.Applications@aer.ca.

PERSONAL INFORMATION COLLECTION AND USE NOTIFICATION

*Personal information on this form is collected under the authority of section 33(c) of the Freedom of Information and Protection of Privacy (FOIP) Act and will be used to administer the Water Act and its associated regulations. **This form is a public record and is available to anyone.** All information contained on this form (including personal information) is disclosed by Alberta Environment and Water to anyone requesting a copy in accordance with Section 15(1)(a) of the Water (Ministerial) Regulation. For further information about the collection and use of this information, please contact Alberta Environment and Water's Regulatory Approvals Centre at RAC.Environment@gov.ab.ca or call (780) 427-6311.*

WATER (MINISTERIAL) REGULATION - REQUEST FOR CONFIDENTIALITY

As identified in Section 15(4) of the *Water (Ministerial) Regulation*, if the applicant wishes that a trade secret, process or technical information in the application be kept confidential, the applicant may make a written request to the Director within 30 days after the information is submitted, identifying the information, and requesting that the information be kept confidential and not be disclosed. The written request must identify the specifics of the information to be kept confidential and not to be disclosed. Ultimately, it is the Director who makes the decision regarding the confidentiality of the identified information.

If you are submitting a request to assure confidentiality of certain information such as a trade secret, process or technical information for the Directors consideration, **submit this information in a separate attachment to the application form.**

Protect Fields

Appendix 1e

Water Act – Transfers and Diversion Licences

August 12, 2016

Alberta Energy Regulator
Suite 1000, 250 – 5th Street SW
Calgary, Alberta T2P 0R4

Attn: Nellshah Khakoo (nellshah.khakoo@aer.ca)

Dear Nellshah:

Please find attached the documents for three *Water Act* applications needed for the Benga Mining Ltd Project at Grassy Mountain Mine in the Crowsnest Pass. With the restrictions on new applications in the area, Benga finds it necessary to compile the water allocations it needs to offset the mine operations from numerous sources. The three allocations required will come from the transfer of licence from Devon Energy to Benga Mining Ltd., a new application from water set aside for industrial purposes by the Oldman River Basin Water Allocation Order, and an application for an allocation recently cancelled on Gold Creek.

Point of Diversion

Given the highly variable water flow patterns that will occur at the boundaries of the proposed mine site, due to changes to runoff as the topography is altered, Benga proposes that the *Water Act* requirements for the Project be administered by identifying the total reduction in water runoff from the site. The most downstream point where the rest of the basin will be affected is the Crowsnest River at the mouth of Gold Creek. This is similar to the “fence-line approval” system used for other large area surface impact projects.

Blairmore Creek and Gold Creek, where they are affected by mine operations, will be assured of meeting IFN values for fisheries and all other water user’s needs (stock water) at all times. At many times, and at mine closure, Blairmore Creek will have the same or slightly more flow than pre-mining conditions; however, Benga will apply for allocations for the shortfall periods. The reach of the Crowsnest River between Blairmore and Gold Creeks will be assured of meeting pre-mining operation flows at all times with a portion of the transferred allocation from the upstream former Devon licence. Benga is proposing to use this most downstream point (NW 30-7-3-W5M) as a “water allocation accounting point”. The Grassy Mountain hydrology assessment predicts a flow reduction at this point of 430,000 m³ per year (349 acre feet), as a result of the Project related activities. This land is privately owned (and not by Benga) and since no works are needed or planned for this location, landowner consents have not been requested or provided.

Allocation Volumes

The water diversions during mining operations that cause less flow than current background flows will be totaled at the Crowsnest River below the mouth of Gold Creek (where the diversions would have the potential to impact downstream licensees and the environment). This would be the “water allocation accounting point”. The lower flows would be compensated with licences from new allocations and the transfer of an existing licence. Documentation of the hydrology model showing the required allocations is provided in the Application, [Appendix 10B](#) (Water and Load Balance Report). The results show 430,000 m³ per year (349 acre feet) to be the minimum annual allocation needed with significant operations and reservoir management. The three available proposed sources of allocation total 558,775 m³ (453 acre feet), which is about a +20% contingency needed to manage unusual weather conditions during mining operations.

The three sources for this application package includes the Devon transfer for 123,350 m³ (100 ac ft), the Oldman River Basin Water Allocation Order reserved allocation for industrial use of 185,025 m³ (150 ac ft) and the new allocation from water not reserved by the Bow, Oldman and South Saskatchewan River Basin Water Allocation Order on Gold Creek for 250,400 m³ (203 ac ft) totaling 558,775 m³ (453 ac ft). Each of these is discussed in further detail below. The form with the Application under the *Water Act* for Approvals and/or Licences is provided in [Attachment 1](#) and contains the information for all three sources.

The Transfer from Devon Canada Corporation

In [Attachment 2](#) attached, please find a *Water Act* application for the transfer of the Devon allocation. With respect to the Devon licence, we acknowledge the licensee is in the latter stages of decommissioning the project. The test of “in good standing” must be able to accommodate the reality of industrial operations where the licence transfer cannot be committed to until the decommissioning of a facility is near completion. If a licensee were to commit to a transfer before the final completion of decommissioning and land reclamation (which can, and in this case has, taken many years), they may place themselves in a difficult position if the water allocation is needed beyond the first anticipated timeline for completion.

The record shows Devon utilized the licence for the intended purpose at the intended site for many years, and was just arriving at the completion of their decommissioning when Benga contracted with Devon one year ago to transfer the water allocation. As a guideline to the appropriate time for an industrial site to still be “in good standing”, we suggest a record of appropriate water use followed directly by the initiation of decommissioning and a water licence transfer documented before the disposition of the land where the reclaimed facility is located. This transfer application meets that standard.

Benga requests that the new licence issued to Benga have a 25 year expiry from the tentative start date of January 1, 2018. Benga suggests this is necessary to ensure that the project can achieve project completion without interruption and finalize the landscape design. If a shorter licence expiry period is contemplated, there is a concern that the mining/excavation sites could not be brought to acceptable contours for the permanent reclamation of this historically disturbed site.

Benga requests that the 10% holdback, that is sometimes enacted, not be taken as it is not necessary in this unusual circumstance, where the allocation will be used to maintain instream flows in the Crowsnest River below the point where the sum of the mine diversions will be evident. To take 10% of the allocation to run alongside the licensed allocated flows in the river, thus requiring Benga to acquire an addition 10% allocation for the same purpose to run in the same place would not be productive or create any additional security for instream flows in the river. Further, upon mine reclamation, the entire allocation may be committed to a transfer to Water Conservation Objective to be held by the government.

The supporting documentation is provided in [Attachment 2](#).

The application under the Oldman River Basin Water Allocation Order

In [Attachment 1](#) attached, please find a *Water Act* application for a new water allocation for the 185,025 m³ (150 ac ft) reserved for industrial purposes by the Oldman River Basin Water Allocation Order, Alberta Regulation 319/2003 and amended to 109/2010.

The order makes the reserved water available to new allocations in the tributaries of the Oldman River including the Crowsnest River and its tributaries, Blairmore and Gold creeks.

In the Order, section 2(b) states that the limit for industrial allocations is 150 acre feet. In conversations with government staff Benga has been advised that the Grassy Mountain Mine Project as a whole would most likely be considered under the category of “industrial” for allocation purposes. Benga has, therefore, applied for the allocation in this category; however, if the Alberta Energy Regulator finds that all or some of the water use in the projects several types of water use such as truck wash, office buildings, and land reclamation activities may better fall under the “commercial” designation in the Order, Benga has no objection to the allocation being identified as such.

Benga requests that the new licence issued to Benga have a 25 year expiry from the tentative start date of January 1, 2018. Benga suggests this is necessary to ensure that the project can achieve project completion without interruption and finalize the landscape design. If a shorter license expiry period is contemplated, there is a concern that the mining/excavation sites could not be brought to acceptable contours for the permanent reclamation of this historically disturbed site.

Benga request the priority date for this application reflect the 2003 date identified in the Order.

The supporting documentation is provided in [Attachment 3](#).

The application from unallocated water in Gold Creek

In [Attachment 1](#), please find an application for a new allocation of water from Gold Creek for 250,400 m³ (203 ac ft) at a point of diversion of NE 31-7-3-W5.

In March of 2016, a licence issued to Joseph Margetak at NE 31-7-3-W5 was cancelled by Alberta Environment and Parks. Although the cancellation decision is currently under appeal to the Environmental Appeals Board no decision has yet been made and no timeline for a decision is available. If Benga is successful in its appeal and able to acquire the Margetak licence, Benga commits this application to be withdrawn or cancelled if issued. However, Benga finds it has no choice at this time but to advance this application to complete its *Water Act* applications to the AER in a timely manner.

The Bow, Oldman and South Saskatchewan River Basin Water Allocation Order, Alberta Regulation 171/2007 in section 2 states "*All the water in the ... Oldman River Basin ... that is not, on the date this Order is filed under the Regulations Act, allocated under a licence ... is reserved*" the Order was filed in August 2007. On that date, the 203 acre feet of allocation under the Margetak licence on Gold Creek in the Oldman Basin was allocated under a licence; therefore, the allocated water that was cancelled in March 2016 is not reserved by the order. Benga hereby applies for exactly that 203 acre feet of now unallocated and unreserved water on Gold Creek at exactly the same diversion point and exactly the same source of supply.

Benga requests that the new licence issued to Benga have a 25 year expiry from the tentative start date of January 1, 2018. Benga suggests this is necessary to ensure that the project can achieve project completion without interruption and finalize the landscape design. If a shorter licence expiry period is contemplated, there is a concern that the mining/excavation sites could not be brought to acceptable contours for the permanent reclamation of this historically disturbed site.

The supporting documentation is provided in [Attachment 4](#).

Please contact me with any concerns or to schedule a meeting where we can present the allocation concept we have outlined above.

Sincerely,

<Original signed by>

Cal Clark, Manager Sustainable Development

Benga Mining Ltd.

cc. Rick Nutbrown, AER

Werner Herrera, AER

Attachment 1

Application under the Water Act for Approvals and/or Licences:

- *Application under the Oldman River Basin Water Allocation Order (Alberta Regulation 319/2003 and amended to 109/2010)*
- *Application from Unallocated Water in Gold Creek*

Application under the *Water Act* for Approvals and/or Licences



This application form is for activities regulated under the <i>Water Act</i> .			
Check one or more of the following to indicate type of application			
Licence for Diversion of Water	<input checked="" type="checkbox"/>	Renewal of Diversion Licence	<input type="checkbox"/>
Licence Amendment	<input type="checkbox"/>	Approval Amendment	<input type="checkbox"/>
Approval for Constructing Works		<input type="checkbox"/>	
Preliminary Certificate Amendment		<input type="checkbox"/>	
Water Act File No. (if applicable)			
Applicant			
Name or Business Name:	Benga Mining Limited	Business Contact:	Cal Clark
Address: (include city, province and postal code)	PO Box 660 12331 20th Ave Blairmore, Alberta T0K 0E0	Cell No.:	403 563-6455
		Phone No.:	403 753-5160
		Fax No.:	
		E-mail:	cal.clark@rivresources.com
Are you the owner of the land or undertaking?		<input checked="" type="radio"/> Yes <input checked="" type="radio"/> No	
Some of the land where the works will occur is owned by Benga, see L/U Report CR #10			
If no, please attach a copy of the written consent of the owner of the land or the undertaking. If working in "public land" administered under the Public Lands Act, include the disposition number obtained to undertake this activity."		Consent attached? <input type="radio"/> Yes <input checked="" type="radio"/> No	
Disposition No. <input type="text"/>			
Authorized Representative*		<input type="checkbox"/> Same as Applicant	
Name or Business Name:	Millennium EMS Solutions Ltd.	Business Contact:	Dane McCoy
Address: (include city, province and postal code)	6111 – 91 Street Edmonton, AB T6E 6V6	Cell No.:	(780) 717-9766
		Phone No.:	(780) 391-2514
		Fax No.:	(780) 496-9049
		Email:	dmccoy@mems.ca
* Name of representative submitting application on behalf of applicant			
Project Description			
Tentative Construction Start Date:	mid-2017	Duration of Construction:	23 years
Tentative Water Diversion Start Date:	mid-2017	Duration of Water Diversion/Use:	27 years
Provide a detailed description, including location of works and activities, relating to the project and attach plans: A detailed description of the works and activities are provided in the Application and EIA, Section C.			

Application under the *Water Act* for Approvals and/or Licences

Water Sources (Location of Works and Activities): Surface Water Groundwater

Surface Water – Point of Diversion or Activity
(if constructing works only, complete the first three columns)

+	Water Body e.g., lake, stream, or name of source, if known	Water Diversion/Activity Location					Is Construction Required?	Annual Volume of Water Required (cubic metres)	Maximum Pumping Rate (show units)	Purpose (for diversion only)
		1/4	Sec	Twp	Rge	M				
X		NW					No			
X	Crowsnest River Basin	NW	30	7	3	5	Yes	185,025	70.6 m3/hr	Industrial (mining) and reclamation
X	Gold Creek	NE	31	7	3	5	No	250,400	0.28 cfs	Industrial (mining) and reclamation
	Plan/Block/Lot						UTM Coordinates	Zone:	Easting (m)	Northing (m)
	Plan/Block/Lot						UTM Coordinates	Zone:	Easting (m)	Northing (m)
	Plan/Block/Lot						UTM Coordinates	Zone:	Easting (m)	Northing (m)

+ - add additional row
x - remove current row

Indicate the "Point of Use " if different than the "Water Diversion Location(s)" same location as source(s)

+	1/4	Sec	Twp	Rge	M	or provide a general description of where the water will be used (below)
X						fence-line approval see WA Application for Grassy Mtn Mine - Appendix 1D

To ensure your application is complete, please refer to the *Guidelines for Licensing Water Diversion Projects* (<http://environment.alberta.ca/03222.html>).

Amendment Description

Approval Amendment

Please provide description of amendment required and attach plan if necessary

Licence Amendment

Preliminary Certificate Amendment

Complete applicable information below:

Increase or decrease rate of diversion.

Please specify

Add a rate of diversion of water if none specified on the licence or preliminary certificate.

Please specify

Add terms or conditions to the licence or preliminary certificate.

Application under the *Water Act* for Approvals and/or Licences

Please specify			
<input type="checkbox"/> Add/change the timing of diversion or water specified in the licence or preliminary certificate.			
Please specify			
<input type="checkbox"/> Add/change the point of use			
Please specify			
<input type="checkbox"/> Move the point of diversion of water or add another point of diversion of water. (Licences only)			
Please specify			
<input type="checkbox"/> Notice of disposition of land or undertaking. (Change of ownership)			
Please specify			
<input type="checkbox"/> Other amendments requested.			
Please specify			
Statement of Confirmation:			
The information given on this form is true to the best of my knowledge.			
If you wish to sign the form with an electronic signature you are bound with the same force as though you had a fixed signature on paper.			
<Original signed by>			
	08-Aug-2016	Cal Clark	Benga Mining Ltd.
Signature	Date of Signing	Printed Name	Company Name

Application under the *Water Act* for Approvals and/or Licences

For projects under ESRD jurisdiction, submit the completed form to the following address:

**Alberta Environment and Sustainable Resource Development
Regulatory Approval Centre**
Main Floor, Oxbridge Place
9820 106 Street NW
Edmonton AB T5K 2J6
Telephone: 780 427-6311
Fax: 780 422-0154

or e-mail the completed and signed form to one of the following e-mail addresses:

- ~ AENV.NorthWaterApprovals@gov.ab.ca
- ~ AENV.CentralWaterApprovals@gov.ab.ca
- ~ AENV.SouthWaterApprovals@gov.ab.ca

For projects under AER jurisdiction, e-mail the completed form to the *EPEA* and *Water Act* Authorizations Centre at EPEA.WA.Applications@aer.ca.

PERSONAL INFORMATION COLLECTION AND USE NOTIFICATION

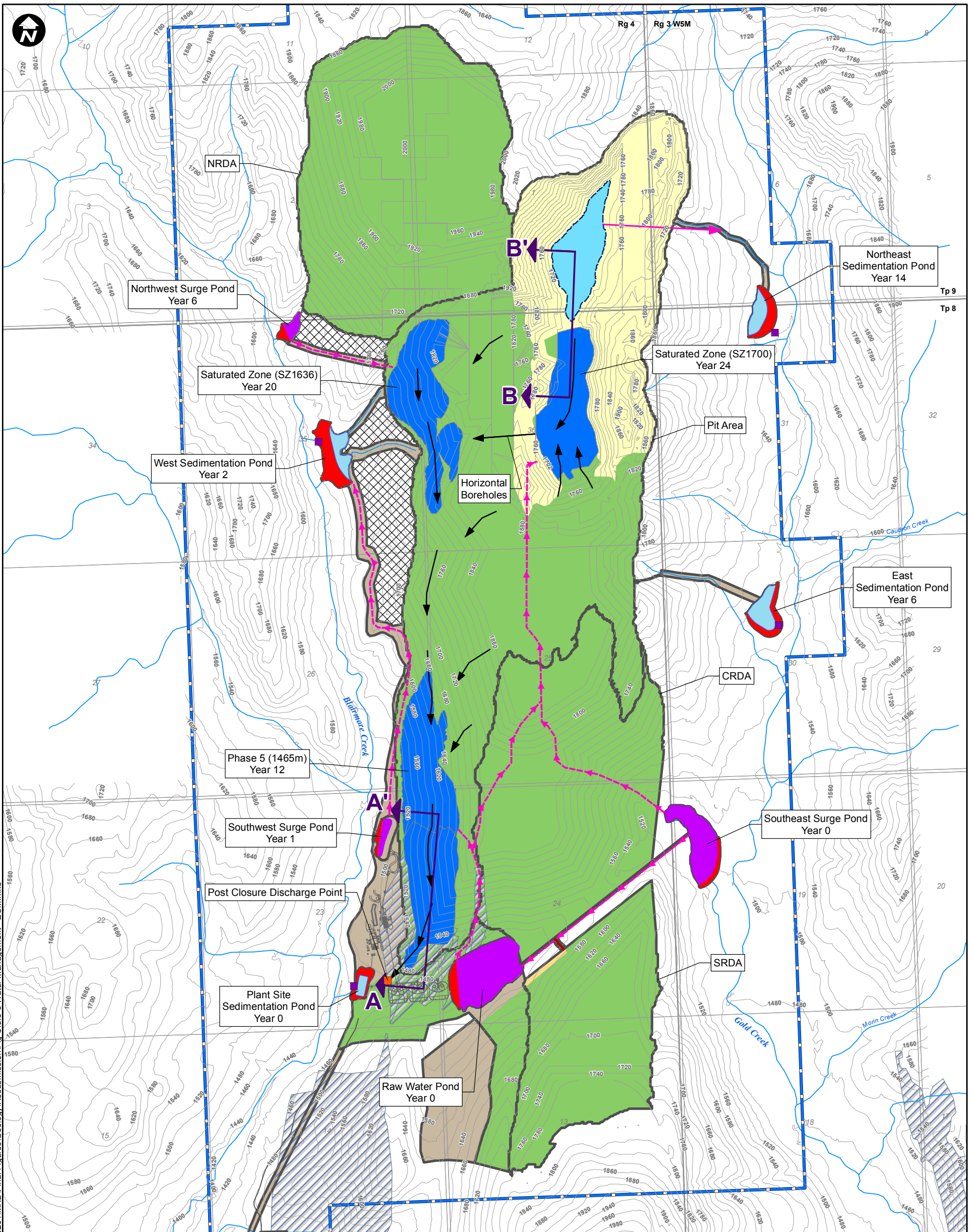
Personal information on this form is collected under the authority of section 33(c) of the Freedom of Information and Protection of Privacy (FOIP) Act and will be used to administer the *Water Act* and its associated regulations. **This form is a public record and is available to anyone.** All information contained on this form (including personal information) is disclosed by Alberta Environment and Water to anyone requesting a copy in accordance with Section 15(1)(a) of the *Water (Ministerial) Regulation*. For further information about the collection and use of this information, please contact Alberta Environment and Water's Regulatory Approvals Centre at RAC.Environment@gov.ab.ca or call (780) 427-6311.

WATER (MINISTERIAL) REGULATION - REQUEST FOR CONFIDENTIALITY

As identified in Section 15(4) of the *Water (Ministerial) Regulation*, if the applicant wishes that a trade secret, process or technical information in the application be kept confidential, the applicant may make a written request to the Director within 30 days after the information is submitted, identifying the information, and requesting that the information be kept confidential and not be disclosed. The written request must identify the specifics of the information to be kept confidential and not to be disclosed. Ultimately, it is the Director who makes the decision regarding the confidentiality of the identified information.

If you are submitting a request to assure confidentiality of certain information such as a trade secret, process or technical information for the Directors consideration, **submit this information in a separate attachment to the application form.**

Protect Fields



Document Path: K:\Active Projects\2014\AP_14-00201\14-00201\MXD\Final Figures\Geology\Resubmission\Fig_C.5.3-5-Water_Management_-_EOM.mxd

LEGEND	
	Release Point
	Post Closure Discharge Point (1468m)
	Cross-Section Location
	CHPP Facilities
	Subsurface Flow
	Subsurface Lake Discharge
	Water Transfer Pipeline
	Surface Water Drainage
	Reclaimed Topographic Contour (20m interval)
	Proposed Mine Permit Boundary
	Project Footprint
	Undisturbed Area
	Release Pond
	Dam
	Surge Pond (No Release)
	Saturated Fill Zone
	End-Pit Lake
	Rock Disposal Area
	Active Mining Area
	Topsoil Replacement
	Disturbed Area
	Legacy Underground Mine

PROJECT RIVERSDALE RESOURCES		GRASSY MOUNTAIN COAL PROJECT		MILLENNIUM EMS Solutions Ltd.	
TITLE WATER MANAGEMENT					
NOTES AltaLIS, 2016; Deswik, 2016; Golder 2016; MEMS, 2016; NRCAN, 2015; Riversdale, 2016 Datum/Projection: UTM NAD 83 Zone 11					
				PROJECT: 14-00201-01 DRAWN BY: CP/SL CHECKED BY: DM DATE: JULY 18, 2016	
				FIGURE 1	

Attachment 2

Request for:

Water Licence Transfer From Devon Canada Corporation to Benga Mining Limited

Devon transfer for 123,350 m³ (100 ac ft)

Application Form for Transfer of Water Allocation



PART 1A EXISTING LICENCE

IMPORTANT: A LICENCE MUST BE IN GOOD STANDING TO BE ELIGIBLE FOR TRANSFER (SEE SECTION 1B).

EXISTING LICENSEE INFORMATION

Name or Company Name: Greg Rokosh, Devon Canada Corporation		Home Telephone: n/a
Address (Street, PO Box, etc.): 2000 400, 3 Ave SW.		Bus. Telephone: 403-515-5751
		Fax:
Place, Province: Calgary, Alberta	Postal Code: T2P 4H2	Email: greg.rokosh@dvn.com

CONTACT PERSON FOR LICENSEE (IF DIFFERENT FROM ABOVE)

Name or Company Name:		Home Telephone:
Address (Street, PO Box, etc.):		Bus. Telephone:
		Fax:
Place, Province:	Postal Code:	Email:

EXISTING LICENCE INFORMATION

Licence Number*: 0039493-00-01	File Number: 10400
Approved Plan Numbers*: 10400-1, 10400-2, 10400-3, 10400-4, 10400-5. Please note: Devon is not intending to transfer the works as shown on the attached plans to Riversdale. As such, information relating to these plans is not deemed relevant for this transfer.	
Purpose: Industrial (processing)	Source: Crowsnest River (NE 2-8-5W5)

* Attach copies (e.g., licence, interim licence, licence amendments, approved plans, etc.)

Is the licence the result of a previous transfer where the transferred allocation is to revert back to the original licence? Yes No If yes, attach relevant documentation describing the temporary transfer.

Application Form for Transfer of Water Allocation



PROPOSED TRANSFER INFORMATION

The proposed transfer is: Permanent Temporary

If temporary, describe the terms of the transfer:

Date of expiry for the temporary transfer:
Additional terms of the temporary transfer:

The proposed transfer is for: the entire allocation a portion of the allocation

Describe the allocation to be transferred:

Priority Number: 1961-12-14-002
Quantity of water to be transferred (indicate units): 100 acre-feet annually
Rate of diversion to be transferred (indicate units): 0.59 cubic feet per second
Second priority number (if applicable): n/a
Quantity of water to be transferred (indicate units):
Rate of diversion to be transferred (indicate units):

I hereby certify that I have read and understand the above information, it is correct to the best of my knowledge, and I agree to the above allocation of water being transferred.

<Original signed by>

11/05/2016
Date (dd/mm/yy)

Greg Rokosh
Print Name

Signature

Devon Canada Corporation
Company Name

PART 1B

EXISTING LICENCE

CERTIFICATION OF LICENCE IN GOOD STANDING

Complete and attach a Licensee Declaration Document.

Application Form for Transfer of Water Allocation



PART 2

PROPOSED LICENSEE

PROPOSED LICENSEE INFORMATION

Name or Company Name: Benga Mining Ltd.		Home Telephone:
Address (Street, PO Box, etc.): PO Box 660, 12331 – 20 Ave		Bus. Telephone: 403-753-5160
		Fax:
Place, Province: Blairmore, AB	Postal Code: T0K 0E0	Email:

CONTACT PERSON FOR LICENSEE (IF DIFFERENT FROM ABOVE)

Name or Company Name: Cal Clark,		Home Telephone:
Address (Street, PO Box, etc.): PO Box 660, 12331 – 20 Ave,		Bus. Telephone: 403-563-6455
		Fax:
Place, Province: Blairmore, AB	Postal Code:T0K 0E0	Email: Cal.Clark@rivresources.com

PROPOSED LICENCE INFORMATION

Point of diversion (legal land description): NW30-3-7-W5, Crowsnest River at the mouth of Gold Creek
Point(s) of use (legal land description): within the Grassy Mountain Mine Plan area
Source: Crowsnest River, Blairmore Creek and Gold Creek
Purpose: Coal Mine Landscape re-contouring, coal washing and mine operations
Annual quantity to be transferred (indicate units): 100 acre feet
Rate of diversion to be transferred (indicate units): up to 0.59 cfs
Proposed rate of diversion if more/less than transferred rate of diversion (indicate units)

The proposed transfer is: Permanent Temporary

If temporary, describe the terms of the transfer:

Date of expiry for the temporary transfer:
Additional terms of the temporary transfer:

FOLLOWING INFORMATION IS REQUIRED

- Description of the construction or development required for the proposed project. This includes tentative starting date, phases of construction, etc. (can be described in the space provided below).
- Detailed plans for the proposed project.

Application Form for Transfer of Water Allocation



To protect the aquatic environment or to implement a water conservation objective, I understand that Director may withhold up to 10% of the transferred amount of water.

I hereby certify that I have read and understand the above information and it is correct to the best of my knowledge.

<Original signed by>

05/08/2016
Date (dd/mm/yyyy)

Cal Clark
Print Name

Signature

Benga Mining Limited
Company Name

Licensee Declaration Form

**Water Licence – In Good Standing
Licensee Declaration**

UNLESS OTHERWISE STATED, COMPLETE ALL PARTS OF THE FORM

File No.: 10400		Licence No: 0039493-00-01
Licensee Name: Devon Canada Corporation		
Licensee Representative Name: Maude Ramsay –Senior Supervisor, Environment & Regulatory		Mailing Address: 2000, 400 3 Ave SW, Calgary, AB T2P 4H2
		Phone: 403-776-4273 Fax: (if applicable)
Declaration Completed by: (If different than the licensee) Greg Rokosh – Environment Professional	Date Declaration Completed: 2016/08/05	Cell Phone: 403-891-9251
		Email: greg.rokosh@dvn.com

Purpose: Industrial (processing).	Priority No. 1961-12-14-02
Source of Water: Crowsnest River.	Point (s) of Diversion: NE 2-8-5W5 Point of diversion is as shown on approved plan no. 100400-3
	Point(s) of Use: Coleman Gas Plant (01-11-08-05W5). Point of use as shown on approved plan no. 10400-2
Annual Volume for Diversion: 100.0 acre-feet	Maximum Rate of Diversion: 0.59 cubic feet per second (220.0 imperial gallons per minute)
Timing of Diversion: Are there any timing restrictions (time periods of use) on your licence Yes/No. No.	
Storage Capacity (if applicable): N/A	

In this next section, make a complete list of all of the conditions attached to your licence; indicate whether the condition is met or not met; provide comments and/or documentation to support the status of the condition.

#	Conditions of Licence	M	NM	Comments	M=Met; NM = Not Met
1	The licensee is responsible for the operation and maintenance of the works and for any damages that may result there from.	X			
2	The licensee shall submit an annual water use return to the Controller of Water Resources, Alberta Environment on or before January 31 st in each year from the preceding calendar year showing: a) Periods and rates of diversion; b) The total monthly quantity of water diverted c) The total annual quantity of water diverted d) Such other information as may be required from time to time.	X		Water use data has been submitted to the online Water Use Reporting System monthly since January 2005. All total monthly and annual volumes can be retrieved from this system.	
3	The Controller of Water Resources may designate a minimum residual flow rate immediately downstream of the point of diversion and the licensee shall be required to cease or reduce any further diversion during periods when the residual flow falls below the rate designated.	X			
4	To protect the prior rights of other water users on this source of supply the licensee may be required to reduce the rate of diversion or cease diverting when requested to do so by the Controller of Water Resources, a Watermaster or other authorized officer of the department.	X			

Provide a list of all the approved plans. Are the constructed works as shown on approved plans? No

- 10400-1 Topographic Map
- 10400-2 General Plant Plot Plan
- 10400-3 Raw Water Intake Structure
- 10400-4 Pump House Foundation
- 10400-5 Topographic Plan

Comment: Please note, none of the approved plans are being transferred with the Licence. The Coleman Gas Plant as referred to in 10400-2 is decommissioned and no structures related to the raw water intake currently exist within the Plant boundaries. The pump house foundation, including the pumping suction and filter structure remain in place, however the pump has been decommissioned. The raw intake structure exists as shown on the approved plan.

Are the existing works capable of diverting the full volume, rate and timing on your licence? If no, provide explanation

Comment: Please see comments above. Coleman Gas Plant has been decommissioned. Existing works are not being transferred with the licence.

No

Are reservoir area/capacity/structures as shown on approved plans and are they capable of operating in accordance with the approved plans? Water intake structure still exists. Pump has been decommissioned and is not currently capable of diverting water. Existing works are not being transferred with the licence.

Is the Licensee the Landowner?	No
At the Point of Diversion?	Yes
At the Point of Use?	Yes
Of the Delivery System? (See attached Crown PIL)	No

Additional Declaration Comments Devon initiated decommissioning of the Coleman Gas Plant in 2013 and has maintained the associated water licence as a water source to support decommissioning activities if needed. Decommissioning was completed in the fall of 2015. Devon has since reviewed its water requirements and determined that a water licence is no longer necessary to support reclamation of the Coleman Gas Plant. In the event water is needed for future activities, Devon would apply for a temporary diversion licence.

Statement of Declaration:
The information given on this form is true to the best of my knowledge.

Reviewer's Signature (Person who completed the declaration): <Original signed by>	Printed Name: Greg Rokosh	Date: 2016/08/05
Licensee Representative Signature (if different from the Reviewer): <Original signed by>	Printed Name: Maude Ramsay	Date: 2016/08/05

OFFICE USE: (These following sections will be completed by a Water Act Approvals Writer)			
Reviewed by:	Review Date:		Follow-up Required Y/N: Specify
Field Inspection Required Y/N	Field Inspection Completed by:	Field Inspection Date:	
Outstanding/pending compliance items or related compliance history.	Date Referred to Enforcement and Surveillance	Date Referral Received	Comments:
LICENCE IN GOOD STANDING: Y/N	If no, specify follow-up action	ASSESSMENT DATE:	Signature of Approval Writer:

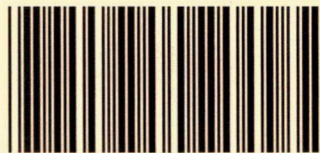
Additional Approval Writer Assessment Comments:

Patch 3

SURFACE LAND SCANNING PROJECT

SEPARATOR SHEET:

SURVEY



SURVEY

755 JK

Certification

335

I certify that the within instrument is duly Entered and Registered in the Land Titles Office for the South Alberta Land Registration District at Calgary in the Province of Alberta, at 2:15 o'clock P.M. on the 1st day of Dec 1961 A.D. as number 755 Book JK

<Original signed by>

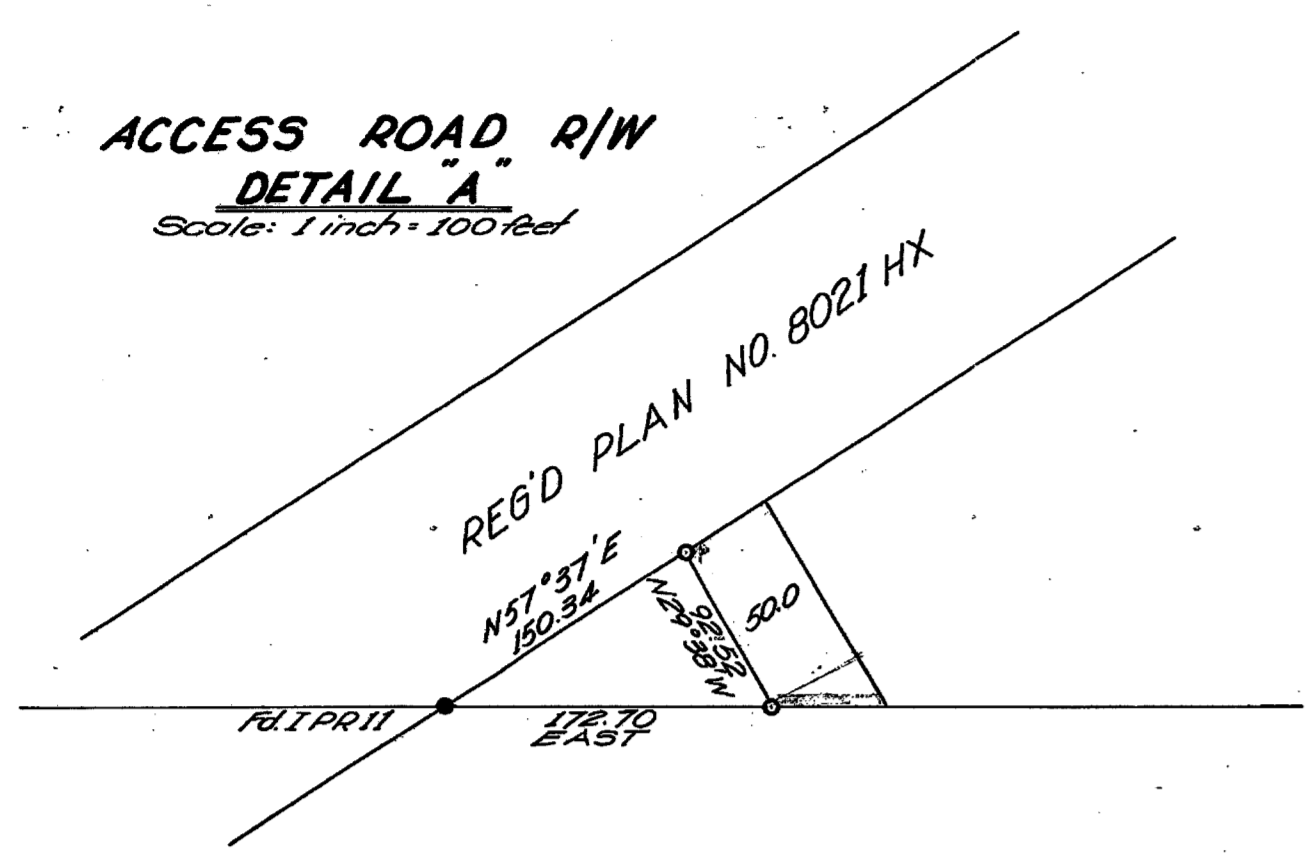
Original

APPROVED this 22 day of November, 1961.

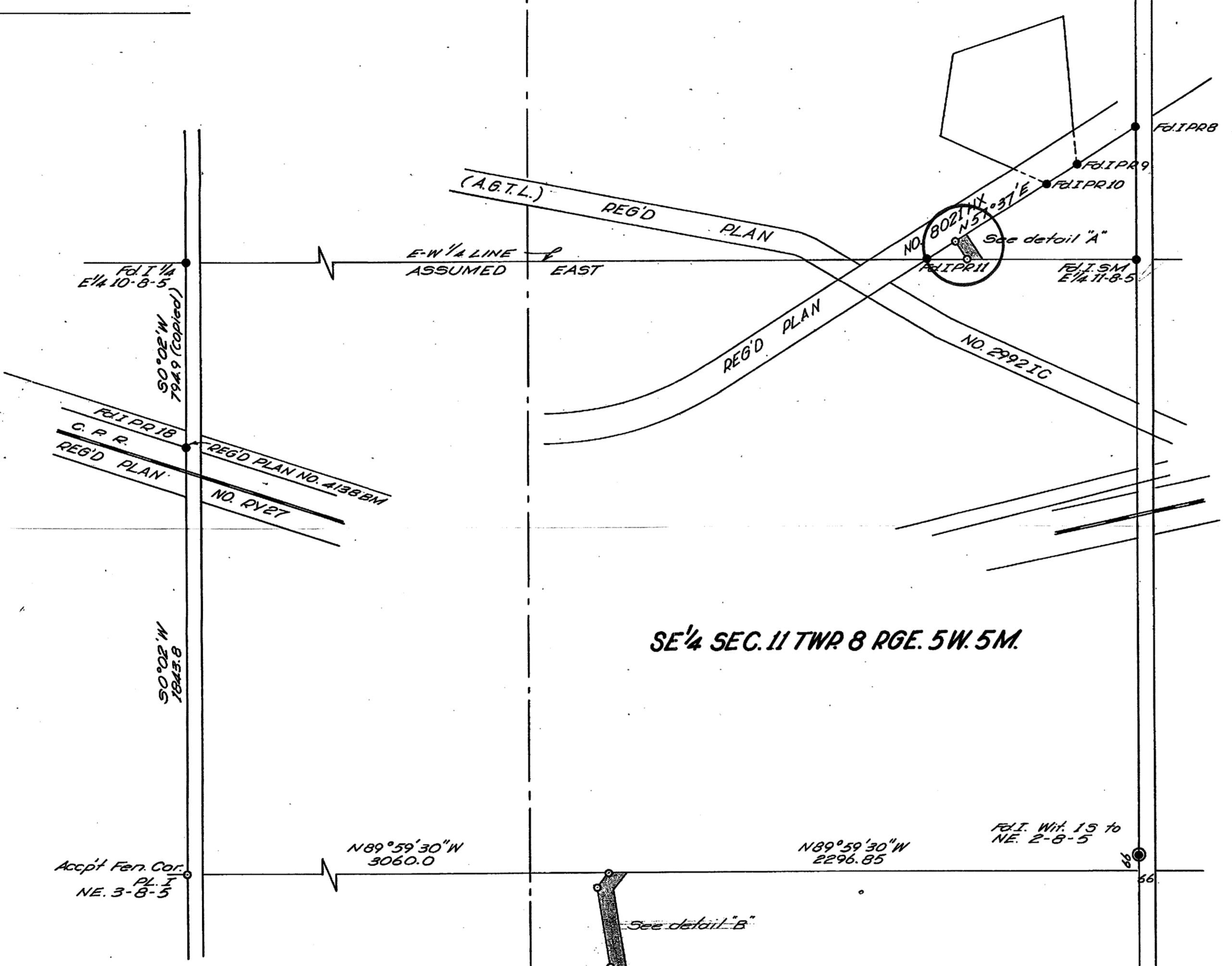
<Original signed by>

for Director, Technical Division
Dept. of Lands and Forests

ACCESS ROAD R/W
DETAIL A
Scale: 1 inch = 100 feet

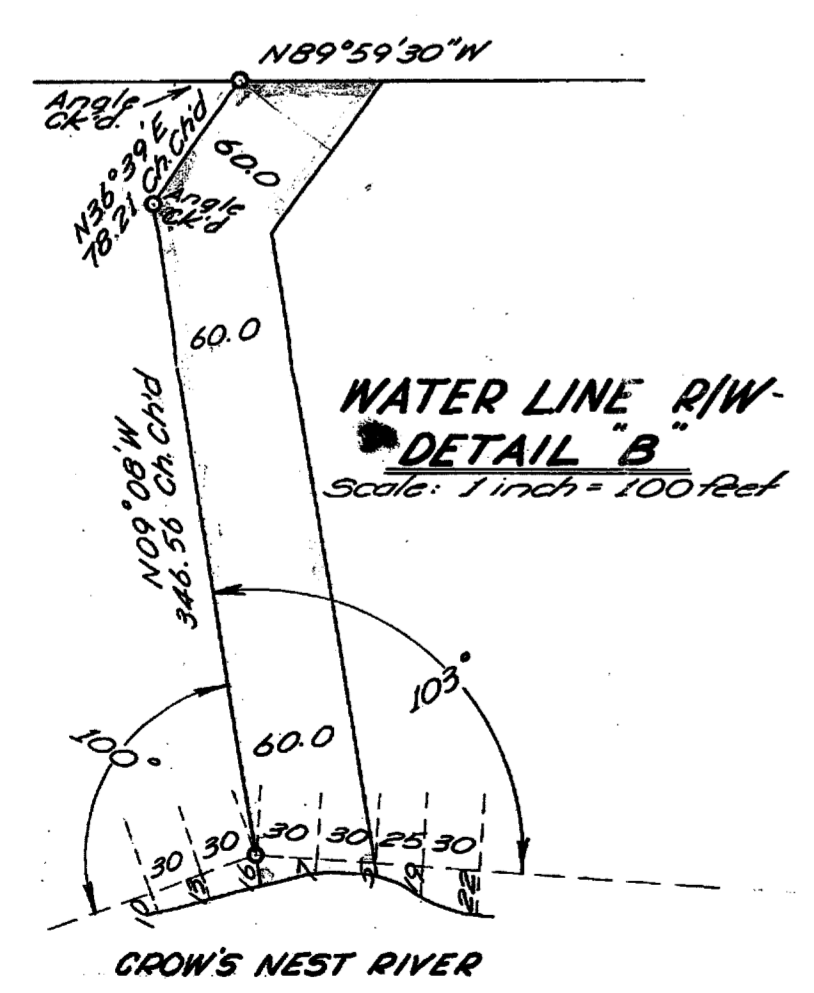


NE 1/4 SEC. 11 TWP. 8 RGE. 5 W. 5 M.
AREA RECD = 0.13 ACRES



SE 1/4 SEC. 11 TWP. 8 RGE. 5 W. 5 M.

NE 1/4 SEC. 2 TWP. 8 RGE. 5 W. 5 M.
AREA RECD = 0.60 ACRES



Legend

Witness Monument found shown thus ●
Statutory Iron posts found shown thus ○
Statutory Iron Road posts found shown thus ● Rd I.R.
Area to be registered by this plan shown shaded in red
Chained distances are from post to post unless otherwise shown
Distances are shown in feet and decimals of a foot.

Affidavit

I, Walter E. Bright, of the City of Calgary in the Province of Alberta, Alberta Land Surveyor, make oath and say that the survey represented by this plan has been made in accordance with the provisions of the Alberta Survey Act and that this survey was performed between the dates of SEPTEMBER 29th and SEPTEMBER 30th A.D. 1961 and that this plan is correct and true and is being prepared in accordance with the provisions of the Land Titles Act.

Sworn before me at Calgary in the Province of Alberta this 22nd day of November 1961

<Original signed by> *Walter E. Bright*
Alberta Land Surveyor

<Original signed by> *[Signature]*
A Commissioner for oaths in and for the Province of Alberta

Acknowledgement

Saratoga Processing Company Limited

<Original signed by>

<Original signed by>

CANADIAN BECHTEL LIMITED
Agent
CALGARY ALBERTA

SARATOGA PROCESSING COMPANY LIMITED

PLAN OF SURVEY OF
RIGHT-OF-WAYS
FOR
ACCESS ROAD & WATER LINE
IN PART OF THE
NE 1/4 SEC'S 2 & 11 TWP. 8 RGE. 5 W. 5 M.

GOVERNMENT OF ALBERTA
DEPT. OF HIGHWAYS
EDMONTON

Approved only as to system of survey
<Original signed by>

ALBERTA
W. E. BRIGHT A.L.S.
1960

Scale: 1 inch = 400 feet
Date: 1961
Drawing No.: LS 100

755 JK

ASSIGNMENT OF DISPOSITION(S)

THIS ASSIGNMENT made this 1st day of March, 1999.

BETWEEN:

SARATOGA PROCESSING COMPANY LIMITED, a body corporate, with an office at 3000, 400 – 3rd Avenue S. W., Calgary, Alberta, T2P 2H8

(hereinafter called the "Assignor")

- and -

NORTHSTAR ENERGY CORPORATION, a body corporate, with an office at 3000, 400 - 3rd Avenue S. W., Calgary, AB, T2P 4H2

(hereinafter called the "Assignee")

The Assignor, being the holder of the Disposition(s) as described in Schedule "A", attached hereto, in consideration of the sum of One (\$1.00) Dollar, payment of which is hereby acknowledged by the Assignor, hereby assigns the Disposition(s) to the Assignee, and the Assignee hereby accepts and agrees to be bound by this Assignment.

Signed in the presence of:
<Original signed by>

SARATOGA PROCESSING COMPANY LIMITED
<Original signed by>

Greg Baum / J
Vice President

NORTHSTAR ENERGY CORPORATION
<Original signed by>

Celeste Rissling
Senior Surface Analyst

AFFIDAVIT

I, **Shelly Millett**, of the City of Calgary, in the Province of Alberta, Surface Rights Administrator, MAKE OATH AND SAY:

1. THAT I was personally present and did see **GREG BAUM** in his capacity for SARATOGA PROCESSING COMPANY LIMITED named in the within instrument, who is personally known to me, to be the person named therein, duly sign and execute the same for the purposes named therein.
2. THAT the same was executed at the City of Calgary, in the Province of Alberta, and that I am the subscribing witness thereto.
3. THAT I know the said **GREG BAUM**, and he is, in my belief, of the full age of eighteen years.

SWORN BEFORE me at the City of)
Calgary, in the Province of Alberta,)
this 6 day of Oct, 1999)
<Original signed by>)

<Original signed by>

Karen Pugsley, A Commissioner for Oaths in)
and for the Province of Alberta,)
My Appointment expires June 6, 2000)

SHELLY MILLETT _____

**THIS IS SCHEDULE "A" ATTACHED TO AND MADE
PART OF THAT ASSIGNMENT OF DISPOSITION(S)
DATED THE 1ST DAY OF MARCH, 1999, BETWEEN
SARATOGA PROCESSING COMPANY LIMITED
AND
NORTHSTAR ENERGY CORPORATION**

<u>FILE NO.</u>	<u>DISPOSITION NO.</u>	<u>FEE</u>
S004435	PIL 000024	\$25

GOVERNMENT OF THE PROVINCE OF ALBERTA
DEPARTMENT OF LANDS AND FORESTS

The Public Lands Act

Pipe Line Installation Lease No. 24

THIS INDENTURE made in duplicate this 8th day of January A. D. 1962;

BETWEEN:

HER MAJESTY THE QUEEN in the right of the Province of Alberta,
represented herein by the Minister of Lands and Forests of the said
Province, (hereinafter called "the Minister"),

OF THE FIRST PART

- and -
SARATOGA PROCESSING COMPANY LIMITED, a body corporate incorporated under
the laws of the Province of Alberta having its principal place of business
within the Province at the City of Calgary.

(hereinafter called "the lessee");

OF THE SECOND PART

WHEREAS the lands hereinafter described are public lands within the
meaning of The Public Lands Act (hereinafter referred to as "the Act");
and

WHEREAS the lessee is an operator within the meaning of The Public Lands
Pipe Line Regulations (hereinafter referred to as "the Regulations"); and

WHEREAS the lessee requires the public lands hereinafter described for the
purposes of a site for a pipe line installation;

NOW THEREFORE THIS INDENTURE WITNESSETH, that in consideration
of the rents, covenants and agreements hereinafter reserved and contained and
on the part of the lessee to be paid, kept, observed and performed, the Minister
by these presents hereby demises and leases unto the lessee, as tenant, all that
certain parcel or tract of land situate in the Province of Alberta, and being more

particularly described as follows namely:

All that parcel or tract of land, situate, lying, and being in the 8th Township, in the 5th Range, West of the 5th Meridian, in the Province of Alberta, Canada, and being composed of:

All that portion of the North East quarter of Section 2 of the said Township, required for a pipeline right-of-way and pump house, as shown colored red upon a plan of survey of the said right-of-way of record in the Department of Lands and Forests at Edmonton as No. 1561 P. and on file in the Land Titles Office at Calgary for the South Alberta Land Registration District as No. 755 J.K.

The land herein described containing by admeasurement 0.60 of an acre, more or less.

TO HAVE AND TO HOLD the said lands unto the lessee, subject to the rents hereby reserved and the agreements, conditions and covenants herein contained for the term of twenty-five years to be computed from the 8th day of January, 1962; renewable for further terms of twenty-five years subject to and in the manner provided by the Regulations.

YIELDING AND PAYING THEREFOR unto the Minister

the clear yearly rent of \$35.00 Dollars, such rent being payable yearly in advance of the 8th day of January in each year of said term, the first of which payments has been made on or before the 8th day of January, 1962, and such rent to be free and clear of and from all rates, taxes and assessments and from all manner of deductions.

THE LESSEE HEREBY COVENANTS AND AGREES with the Minister as follows:

1. The lessee shall at all times during the term hereby created, perform, observe and comply with all the provisions, obligations and requirements which the lessee is required to perform, observe and comply with by the Act, and by any Act hereafter enacted in substitution therefor, and the Regulations and any regulations passed in substitution therefor, and the terms, conditions and provisions of all such Acts and regulations shall be deemed to form part of this lease, which shall be read and construed as if the same had been set out and incorporated herein.
2. The lessee shall yield and pay or cause to be yielded and paid to the Minister at Edmonton, or to such other person duly authorized by the Minister in that behalf, the rent hereby reserved in the manner aforesaid.
3. The said lands and the buildings, structures and equipment erected thereon shall be used by the lessee solely for the purposes permitted by the Regulations and any regulations passed in substitution therefor.

THE MINISTER COVENANTS AND AGREES with the lessee as follows:

4. The lessee while it is not in default of performance and observance of the covenants and conditions on its part to be performed and observed shall peaceably hold and enjoy the said lands hereby granted without hindrance, molestation or interruption on the part of the Minister or of any person claiming by, through, under or in trust for the Minister.

THE MINISTER AND THE LESSEE HEREBY COVENANT AND AGREE as follows:

FEB 23 9 12 AM 1952

5. This indenture is a disposition made pursuant to The Public Lands Act and the rights and interest granted hereby are therefore subject to all reservations and exceptions required to be reserved or excepted, as the case may be, by that Act.

6. The provisions of the Act, and any Act passed in substitution therefor, that expressly or by implication relate to all leases and lessees generally apply to this indenture and the lessee, except those sections of any such Act which, according to the Regulations, expressly do not apply.

7. Any notice affecting this indenture which the Minister may desire to serve upon the lessee is sufficiently served upon the lessee by registered mail addressed to the lessee at **Room #427, Petroleum Building, Calgary, Alberta.** or personally left at the said address. Any such notice sent by registered mail shall be deemed to be given at the time when in due course of posting it would be delivered to the address to which it was sent.

8. Unless the context otherwise requires, any terms or expressions used in this lease that are defined in the Act or the regulations have the meaning given them by such Act or regulations, as the case may be.

9. This indenture shall not affect nor shall anything herein contained affect or prejudice the rights of the lessee to acquire public lands pursuant to expropriation or similar proceedings under any Act of the Legislature or of Canada.

IN WITNESS WHEREOF the parties hereto have executed this Indenture the day and year first above written.

SIGNED, SEALED AND DELIVERED)
by the Minister of Lands and Forests)
in the presence of:)

<Original signed by>

<Original signed by>

For Deputy Minister of Lands and Forests

Saratoga Processing Company Limited

<Original signed by>

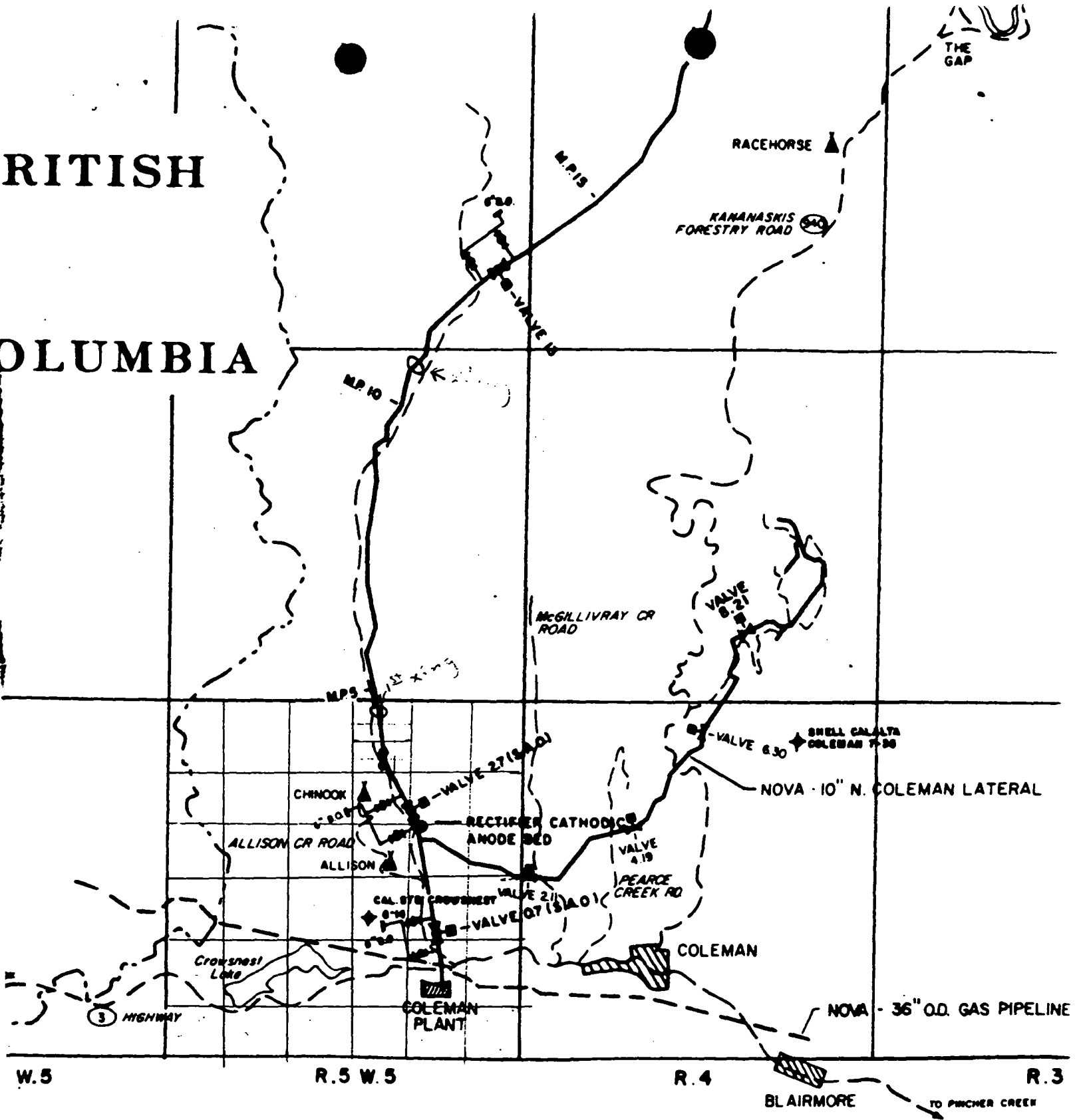
<Original signed by>

VICE-PRESIDENT
<Original signed by>

(Execution by Lessee)

Asst. Secretary

BRITISH COLUMBIA





ENVIRONMENT

UPDATED AND RE-ISSUED
INTERIM LICENCE

Pursuant to Section 18
THE WATER RESOURCES ACT

Issued to: Saratoga Processing Co. Ltd.
Drawer 460
Coleman, Alberta
TOK OMO

No. 4329

File No. 10400

Priority No. 1961-12-14-02

This updated and re-issued Interim Licence particularizes the rights, privileges and obligations embodied in and associated with the original Interim Licence as numbered above, or with any other form of authorization or approval issued in connection with the project identified herein under any former applicable Act or regulation, and updates same to conform to and comply with the current Act, regulations and standards

In particular this Interim Licence provides for the right to

A Construct, maintain and operate works as shown on current plans and reports filed, approved and identified in departmental records as:

- 10400 - 1 Topographic Map
- 10400 - 2 General Plant Plot Plan
- 10400 - 3 Raw Water Intake Structure
- 10400 - 4 Pump House Foundation
- 10400 - 5 Topographic Plan

B Divert and use water as hereinafter specified and described subject to the terms and conditions attached hereto and incorporated herein

PURPOSE: Industrial (processing)

SOURCE OF SUPPLY: Crowsnest River

POINT OF DIVERSION: NE 2-8-5-W5M

GROSS DIVERSION: Up to 100.0 acre-feet annually consisting of:

- 1. Estimated Consumptive Use: NIL
- 2. Estimated Losses: 100.0 acre-feet
- 3. Estimated Return Flow: NIL

RATE OF DIVERSION: 0.59 cubic feet per second
(220.0 imperial gallons per minute)

Date first issued 1976 07 14

<Original signed by>

Date re-issued 1982 08 05

Controller of Water Resources

Attachment 3

Request for:

Application under the Oldman River Basin Water Allocation Order (Alberta Regulation 319/2003 and amended to 109/2010)

*New water allocation for the 185,025 m³
(150 ac ft) reserved for industrial purposes*

The Integrated Application for the Grassy Mountain Coal Project contains information that describes the Project and the need for water and licencing requirements under the Alberta *Water Act*. The following are the locations where this information can be found in the Application:

- [Section A](#) – Project Introduction ([Sections A.1](#) to [A.6](#));
- [Section C](#) – Project Description ;
- [Appendix 1D](#) – Water Act – Fence-line Approval;
- [Appendix 10A](#) - SRK – Grassy Mountain Geochemistry Characterization Report. August 2016;
- [Appendix 10B](#) - SRK - Grassy Mountain Water and Load Balance Report. August 2016;
- [Appendix 10C](#) - SRK - Grassy Mountain Water Quality Management Report. August 2016;
- [Consultant Report #3](#) – Hydrogeology;
- [Consultant Report #4](#) – Hydrology;
- [Consultant Report #5](#) – Surface Water Quality;
- [Consultant Report #6](#) – Aquatic Resources; and
- [Consultant Report #10](#) – Land and Resource Use.

The maximum diversion rate requested for the application under the Oldman River Basin Water Allocation Order (185,025 m³) will be 70.6 m³/hour. The Devon Transfer and the Gold Creek allocations are licenced to divert 2170 m³/day or 90.5 m³/hour. The difference between the total licence requested and the Devon Transfer and the Gold Creek allocations is 70.6 m³/hour, which is required during the month of June.

Annual Maximum Withdrawal – 430,000 m ³ /yr				
Month	Monthly Runoff Distribution	Total Estimated Withdrawal Rate		
		m ³ /month	m ³ /day	m ³ /hr
January	2%	8,600	277	12
February	2%	8,600	307	13
March	3%	12,900	416	17
April	7%	30,100	1,003	42
May	25%	107,500	3,468	144
June	27%	116,100	3,870	161
July	13%	55,900	1,803	75
August	6%	25,800	832	35
September	5%	21,500	717	30
October	4%	17,200	555	23
November	4%	17,200	573	24
December	3%	12,900	416	17

Attachment 4

Request for: Application from Unallocated Water in Gold Creek

New allocation of water from Gold Creek for 250,400 m³ (203 ac ft) at a point of diversion of NE 31-7-3-W5M – cancelled Margetak Licence

The Integrated Application for the Grassy Mountain Coal Project contains information that describes the Project and the need for water and licensing requirements under the Alberta *Water Act*. The following are the locations where this information can be found in the Application:

- [Section A](#) – Project Introduction ([Sections A.1 to A.6](#));
- [Section C](#) – Project Description;
- [Appendix 1D](#) – Water Act – Fence-line Approval;
- [Appendix 10A](#) - SRK – Grassy Mountain Geochemistry Characterization Report. August 2016;
- [Appendix 10B](#) - SRK - Grassy Mountain Water and Load Balance Report. August 2016;
- [Appendix 10C](#) - SRK - Grassy Mountain Water Quality Management Report. August 2016;
- [Consultant Report #3](#) – Hydrogeology;
- [Consultant Report #4](#) – Hydrology;
- [Consultant Report #5](#) – Surface Water Quality;
- [Consultant Report #6](#) – Aquatic Resources; and
- [Consultant Report #10](#) – Land and Resource Use.



Benga Mining Limited operating as Riversdale Resources

Benga Mining Limited
12331 - 20 Avenue
Po Box 660
Blairmore, Alberta, T0K 0E0
Phone: +1 403 753 5160
Business Number 84170 9538

August 12, 2016

Mr. Norm Van Vliet
Land Use Officer, Public Lands Act, South Region
Alberta Energy Regulator
Suite 1000, 250 – 5th Street SW
Calgary, Alberta T2P 0R4

RE: Benga Mining Ltd. – Grassy Mountain Coal Project: Public Lands Act Application

Dear Mr. Van Vliet,

Benga Mining Limited (Benga), a wholly owned subsidiary of Riversdale Resources Limited, is proposing to develop a 4.5 million clean tonnes per year steelmaking coal mine, referred to as the Grassy Mountain Coal Project (the Project).

Benga is currently applying for a Mineral Surface Lease (MSL) for the mining area, a Licence of Occupation (LOC) for the rail loadout facilities and adjacent access road and a Miscellaneous Lease (MLL) for the construction camp and adjacent portion of the overland conveyor/access road/powerline right of way.

The attached document constitutes the application for surface disposition in accordance with the *Public Lands Act*. Complete disposition application packages including applicable forms, sketch plans, Public Land Standing reports and consents from overlapping disposition holders are provided in [Appendix 1](#), [Appendix 2](#) and [Appendix 3](#), respectively.

Correspondence regarding this integrated application package should be directed to the attention of:

Steve Mallyon, Managing Director
Benga Mining Ltd.
(403) 563-6160
Steve.Mallyon@rivresources.com

or

Cal Clark, Manager Sustainability
Benga Mining Ltd.
12331 20th Avenue, Blairmore, Alberta T0K 0E0
(403) 562-7600
Cal.Clark@rivresources.com

Sincerely,

Steve Mallyon, Managing Director
Benga Mining Ltd.

Appendix 1f

Public Lands Application



Public Lands Act Application

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- Appendix 3 – MLL Application

1. INTRODUCTION

Benga Mining Limited (Benga), a wholly owned subsidiary of Riversdale Resources Limited (Riversdale), is proposing to develop the Grassy Mountain Coal Project (the Project) located in southwest Alberta, approximately 150 km southwest of Calgary ([Figure 1-1](#)). The Project will involve a surface metallurgical coal mine (for steel making), a coal handling and preparation plant (CHPP) with associated infrastructure, an overland conveyor system, which will parallel an existing high grade access corridor and connect to a rail load-out facility, and a new section of rail track ([Figure 1-2](#)). An Environmental Impact Assessment (EIA) has been undertaken for the Project and applications in accordance with the *Coal Conservation Act* (CCA), *Environmental Protection and Enhancement Act* (EPEA) and *Water Act* were submitted to the Alberta Energy Regulator in August 2016. This integrated document submission is herein referred to as the EIA.

The Project is situated on both crown and freehold land; therefore, an application in accordance with the *Public Lands Act* is also required in order to obtain approval to carry out activities on crown land. The following document constitutes the application for surface disposition in accordance with the *Public Lands Act*. The layout of the report follows the requirements outlined on the applicable *Public Lands Act* forms including:

- Application for Surface Disposition;
- Environmental Field Report (EFR) Cover Document for all Dispositions 2.0;
- EFR Sites and Installations 3.0 Completion of Supplement A;
- EFR Access 4.0 Supplement B; and
- EFR Miscellaneous Use 7.0 Supplement E.

Complete disposition application packages including applicable forms, sketch plans, Public Land Standing reports and consents from overlapping disposition holders are provided in [Appendix 1](#), [Appendix 2](#) and [Appendix 3](#).

2. APPLICATION FOR SURFACE DISPOSITION

An overview of the Project development footprint is provided as [Figure 1-2](#). Benga is currently applying for a Mineral Surface Lease (MSL) for the mining area, a Licence of Occupation (LOC) for the rail loadout facilities and adjacent access road and a Miscellaneous Lease (MLL) for the construction camp and adjacent portion of the overland conveyor/access road/powerline right of way ([Figure 2-1](#)).

The following section includes the information required on the “Application for Surface Disposition” form that is required to apply for a disposition under the *Public Lands Act*. Sketch plans of the proposed MSL, LOC and MLL areas are included in [Appendix 1](#), [Appendix 2](#) and [Appendix 3](#).

2.1 Contact Information

Questions in regards to this application can be directed to:

Steve Mallyon
Managing Director
Benga Mining Limited
PO Box 660, 12331 – 20th Avenue
Blairmore, AB, Canada, T0K 0E0
Email: Steve.Mallyon@rivresources.com
Business: 403-563-6160

2.2 Lands Requested

The Project overlies both Crown and freehold land ([Figure 2-1](#)). In order to determine the boundaries of the dispositions to be requested, Benga has undertaken a review of the land ownership for the entire Mine Permit Boundary area that was proposed in the CCA application. A list of the freehold titles located within the proposed Mine Permit Boundary is provided in [Table 2-1](#).

Title No.	Owner	Legal Location				
		QTR	SEC	TWP	RGE	Meridian
161 002 147	Benga Mining Limited	NW	19	8	3	5
051 223 917	Donkersgoed Feeders Ltd. & Berdina Farms Ltd.	SW	19	8	3	5
161 005 571	Benga Mining Limited	NW	30	8	3	5
041 017 188	Private	SW	30	8	3	5
931 216 964	Private	SW	31	8	3	5
131 243 634 +1	Benga Mining Limited	pt. NW	2	8	4	5
081 457 306	Crowsnest Pass Golf & Country Club	pt. NW	2	8	4	5
131 235 727	Benga Mining Limited	pt. SW	2	8	4	5

Title No.	Owner	Legal Location				
		QTR	SEC	TWP	RGE	Meridian
021 022 477 +2	Crowsnest Pass Golf & Country Club	pt. SW	2	8	4	5
081 457 306	Crowsnest Pass Golf & Country Club	pt. SW	2	8	4	5
081 457 306	Crowsnest Pass Golf & Country Club	pt. NE	3	8	4	5
081 457 306 +1	Crowsnest Pass Golf & Country Club	pt. SE	3	8	4	5
081 457 306	Crowsnest Pass Golf & Country Club	pt. SE	3	8	4	5
131 235 727 +2	Benga Mining Limited	NW	11	8	4	5
131 235 728 +6	Benga Mining Limited	NW	11	8	4	5
131 235 727 +2	Benga Mining Limited	SW	11	8	4	5
131 235 728 +6	Benga Mining Limited	SW	11	8	4	5
131 236 676	Benga Mining Limited	NW	14	8	4	5
131 236 677	Benga Mining Limited	NW	14	8	4	5
131 236 676	Benga Mining Limited	pt. SW	14	8	4	5
131 236 677	Benga Mining Limited	pt. SW	14	8	4	5
131 236 674	Benga Mining Limited	NE	23	8	4	5
131 236 675	Benga Mining Limited	NE	23	8	4	5
131 236 674	Benga Mining Limited	SE	23	8	4	5
131 236 675	Benga Mining Limited	SE	23	8	4	5
151 261 447	Benga Mining Limited	NE	24	8	4	5
131 235 106	Benga Mining Limited	NW	24	8	4	5
131 235 107	Benga Mining Limited	NW	24	8	4	5
971 175 776	Private	SE	24	8	4	5
131 235 106	Benga Mining Limited	SW	24	8	4	5
131 235 107	Benga Mining Limited	SW	24	8	4	5
131 235 209	Benga Mining Limited	pt. NE	25	8	4	5
131 235 210	Benga Mining Limited	pt. NE	25	8	4	5
131 235 211	Benga Mining Limited	NW	25	8	4	5
131 235 212	Benga Mining Limited	NW	25	8	4	5

Title No.	Owner	Legal Location				
		QTR	SEC	TWP	RGE	Meridian
131 235 212	Benga Mining Limited	SE	25	8	4	5
131 235 211	Benga Mining Limited	SE	25	8	4	5
131 235 211	Benga Mining Limited	SW	25	8	4	5
131 235 212	Benga Mining Limited	SW	25	8	4	5
131 235 151	Benga Mining Limited	pt. NE	36	8	4	5
131 235 150	Benga Mining Limited	pt. NE	36	8	4	5
131 235 148	Benga Mining Limited	NW	36	8	4	5
131 235 149	Benga Mining Limited	NW	36	8	4	5
131 235 152	Benga Mining Limited	pt. SE	36	8	4	5
131 235 153	Benga Mining Limited	pt. SE	36	8	4	5
131 235 148	Benga Mining Limited	SW	36	8	4	5
131 235 149	Benga Mining Limited	SW	36	8	4	5

Note:

Private Names of individuals have been redacted.

The lands to be included within the MSL, LOC and MLL dispositions (herein referred to as the proposed surface dispositions) are outlined in [Table 2-2](#) and shown on [Figure 2-1](#). Sketch plans of the proposed disposition areas, following requirements outlined in the Government of Alberta’s guidance document “Content Requirements for Disposition Sketch Plans” are provided in [Appendix 1](#), [Appendix 2](#) and [Appendix 3](#).

Qtr/LS	Section	Township	Range	Meridian
Mineral Surface Lease				
pt.L05, pt.L06, pt.L09, pt.L10, NW, L15, pt.L16,	13	8	4	5
pt.L08, pt.L09, pt.L15, pt.L16	14	8	4	5
L10, L15	25	8	4	5

Table 2-2 Lands to be included in the proposed surface dispositions.				
Qtr/LS	Section	Township	Range	Meridian
L01, L08, L09, pt.L10, pt.L15, L16	26	8	4	5
L01, pt.L02, pt.L07, L08, pt.L09, pt.L10, pt.L14, pt.L15, pt.L16	35	8	4	5
L02, L07, L10, L15	36	8	4	5
pt.L13, pt.L14, pt. L15	31	8	3	5
pt.L02, pt.L03, pt.L04, pt.L05, pt.L06, pt.L12, pt.L13	6	9	3	5
SE, SW, pt.L09, pt.L10, pt.L11, L12, L13, pt.L14, pt.L16	1	9	4	5
SE, NE, pt.L03	2	9	4	5
pt.L01, pt.L02	11	9	4	5
pt.L03, pt.L04	12	9	4	5
Licence of Occupation				
pt.L03, pt.L06	2	8	4	5
pt.L09, pt.L10, pt.L15	3	8	4	5
Miscellaneous Lease				
pt.L03, pt.L04	14	8	4	5

Note:

L Denotes Legal Subdivision (LS)

pt. Denotes portion of area indicated

3. ENVIRONMENTAL FIELD REPORT COVER

3.1 Communications

As stated in [Section 2.1](#), the applicant is Benga Mining Limited.

Numerous environmental assessments for the Project were initiated in 2014 and undertaken throughout 2015 and into 2016 as part of the EIA. These assessments were undertaken on behalf of Benga by a number of environmental and engineering firms. Contact details for any questions related to the environmental assessment and engineering can be directed to:

Cal Clark
Manager Sustainable Development
Riversdale Resources
12331 – 20th Avenue
P.O. Box 660
Blairmore, Alberta T0K 0E0
Cal.Clark@rivresources.com
Business: 403-753-5160

3.2 Surface Location

A summary of lands to be included in the proposed surface dispositions is provided in [Table 2-2](#).

The mine is scheduled to begin pre-development activities in 2017 once licensing is complete, with the coal processing plant commissioning scheduled to come on-line in the third quarter of 2018. First commercial coal production is scheduled to begin January, 2019. Construction will occur in both frozen and non-frozen ground conditions throughout the life of the Project. Final reclamation will be initiated in early 2042 with mine closure in late 2045.

3.2.1 Land Standing Review

A Public Land Standing Report was obtained, for each of the proposed surface dispositions, from the Geographic Land Information Management and Planning System on August 10, 2016 and is provided in [Appendix 1](#), [Appendix 2](#) and [Appendix 3](#). Land reservations within the proposed disposition boundaries are presented in [Table 3-1](#) and [shown on Figures 3-1 and 3-2](#).

The proposed surface disposition boundaries are not located within a provincial grazing reserve or the Chungo Access Management Area; however, it is located within a FireSmart Community Zone. Benga has developed a fire control plan based on the FireSmart Wildfire Assessment System (see [Section C.7.6](#) of the EIA).

No Permanent/Research Sample Plots/Rangeland Benchmarks are located within 100 m of the proposed surface disposition boundary(s).

3.2.2 Stakeholders, Other Land Users

A summary of surface dispositions and associated conflicts within the proposed disposition areas are presented in [Table 3-2](#) and [Figure 3-3](#). Consents with holders of these overlapping dispositions are provided in [Appendix 1 \(MSL Application\)](#), [Appendix 2 \(LOC Application\)](#) and [Appendix 3 \(MLL Application\)](#).

Benga has been consulting with other land users in the area since 2013 and is working towards resolving stakeholder concerns as they arise. Key issues that have been raised through public engagement to-date, and where applicable, comments on how they have been resolved is provided in [Section G.4.0 \(Table 4.0-1\)](#) of the EIA.

The existing right of entry(s) (ROE) held by Devon Consol Canada (Devon) and located within the proposed MSL boundary ([Figure 3-3](#)) are administered by the Alberta Surface Rights Board. The Surface Rights Board has indicated that the transfer of the ROE's from Devon to Benga cannot occur until the Project's EPEA and CCA applications are approved and issued by the AER. Although shown on the sketch plans included in [Appendix 1](#) as being located within the MSL boundaries, the areas associated with these ROE's are excluded from the MSL application until such time as the ROE's have been transferred to Benga. Once the ROE's have been transferred to Benga, they will be closed and Benga will apply to have these areas included within the Project MSL.

Table 3-1 Reservations within the proposed disposition boundaries.				
Reservation/ Activity Number	Conflict	Mitigation/ Action Required	Comment	Location within Proposed Surface Disposition Boundary
Mineral Surface Lease (Mining Area)				
CNT 090027	FireSmart Community Zone	Benga has prepared a fire control plan in accordance with the FireSmart Wildfire Assessment System (see Section C.7.6 of the EIA).	Disposition held by Forestry and Emergency Response Division of Environment and Sustainable Resource Development – Calgary Office	13-008-04 W5M; L08, NE 14-008-04 W5M; L01, L08, NE 26-008-04 W5M; SE, NE, L14 35-008-04 W5M; L10, L15 25-008-04 W5M; L02, L07, L10, L15 36-008-04 W5M; L13, L14, L15 31-008-03 W5M; SW, L02, L07, L12, L13 06-009-03 W5M; L09, L10, L16, SE, SW NW 01-009-04 W5M; L03, L06, L11, L14, SE, NE, 02-009-04 W5M; L01, L02, L03 11-009-04 W5M; L03, L04 12-009-04 W5M
CNT 860041	Potential Timber Disposal – to determine volumes and establish AU A.A.CC. within the McCrillivary Creek Misc. timber use area of the CS M.U.	There are no restrictions with use of this area. Main mitigation is to reclaim the area to equivalent capability as described in Section F of the EIA.	Disposition held by the Lands Division of Department of Sustainable Resource Development – Blairmore Office – Land Use Area	L09, L10, L16, SE, SW NW 01-009-04 W5M; L03, L06, LS11, LS14, SE, NE, 02-009-04 W5M; L01, L02, L03 11-009-04 W5M; L03, L04 12-009-04 W5M
CNT 980012	Snowmobile Trails – managed/maintained by Crowsnest Economic Development Board	Mitigation measures to be determine in consultation with local trail users such as the Crow Snow Riders Snowmobile Club.	Disposition held by the Lands Division of Department of Sustainable Resource Development – Blairmore Office – Land Use Area	L14 35-008-04 W5M; L02, L07, L12, L13 06-009-03 W5M; L03, L06 02-009-04 W5M; L01, L02, L03 11-009-04 W5M

Table 3-1 Reservations within the proposed disposition boundaries.				
Reservation/ Activity Number	Conflict	Mitigation/ Action Required	Comment	Location within Proposed Surface Disposition Boundary
PNT 090084	Multiple Resource Concerns - This location may fall within an area of foothills fescue grassland, a very valuable native grassland type that is limited in remaining area.	Mitigation measures as described in Section 4.3.4 of CR #8 and Section E.8.5.1 of the EIA.	Disposition held by the Lands Division of Department of Sustainable Resource Development – Pincher Creek Office – Rangeland District	SW 02-008-04 W5M 13-008-04 W5M; L08, NE 14-008-04 W5M; L01, L08, NE 26-008-04 W5M
PNT 090087	Multiple Resource Concerns - This location may fall within an area of foothills fescue grassland, a very valuable native grassland type that is limited in remaining area.	Mitigation measures as described in Section 4.3.4 of CR #8 and Section E.8.5.1 of the EIA.	Disposition held by the Lands Division of Department of Sustainable Resource Development – Pincher Creek Office – Rangeland District	L02, L07, L12, L13 06-009-03 W5M; SE 35-008-04 W5M; NW, SE 01-009-04 W5M; L03, L06, L11, L14, NE, SE 02-009-04 W5M; L01, L02, L03 11-009-04 W5M; L03, L04 12-009-04 W5M
PNT 880617	Steep rolling topography. No agricultural dispositions are permitted with the exception of unimproved grazing.	In order to mitigate the concern associated with potential instability, Benga has developed mine design criteria based on the results of the geotechnical investigation and geological modelling (Section B.8.6 of the EIA). A Conservation and Reclamation Plan has been developed for the Project (Section F of the EIA), which outlines measures that will be utilized to return the land to equivalent capability.	Disposition held by the Lands Division of Department of Sustainable Resource Development – Pincher Creek Office – Rangeland District	L01, L08, NE 26-008-04 W5M

Reservation/ Activity Number	Conflict	Mitigation/ Action Required	Comment	Location within Proposed Surface Disposition Boundary
PNT 880618	Steep rolling topography. No agricultural dispositions are permitted.	In order to mitigate the concern associated with potential instability, Benga has developed mine design criteria based on the results of the geotechnical investigation and geological modelling (Section B.8.6 of the EIA).	Disposition held by the Lands Division of Department of Sustainable Resource Development – Pincher Creek Office – Rangeland District	L10, L15 25-008-04 W5M; L02, L07, L10, L15-36-008-04 W5M
PNT 880619	Steep rolling topography. No agricultural dispositions are permitted with the exception of unimproved grazing.	A Conservation and Reclamation Plan has been developed for the Project (Section F of the EIA), which outlines measures that will be utilized to return the land to equivalent capability.	Disposition held by the Lands Division of Department of Sustainable Resource Development – Pincher Creek Office – Rangeland District	L08, L09, L16-14-008-04 W5M
PNT 930299	Grazing allotment area, no agricultural dispositions, grazing permits only. Gap Range Allotment.	Consultation has been undertaken with the grazing lease holders in the area (Section G of the EIA). A Conservation and Reclamation Plan has been developed for the Project (Section F of the EIA), which outlines measures that will be utilized to return the land to equivalent capability.	Disposition held by the Department of Sustainable Resource Development – Rocky Mountain Forest Reserve South Office – Rangeland District	L09, L10, L16, NW 01-009-04 W5M; L01, L02 11-009-04 W5M; L03, L04 12-009-04 W5M

Reservation/ Activity Number	Conflict	Mitigation/ Action Required	Comment	Location within Proposed Surface Disposition Boundary
PNT 940130	Grazing allotment area, no agricultural dispositions, grazing permits only. Blairmore Gold Range Allotment.	Consultation has been undertaken with the grazing lease holders in the area (Section G of the EIA). A Conservation and Reclamation Plan has been developed for the Project (Section F of the EIA), which outlines measures that will be utilized to return the land to equivalent capability.	Disposition held by the Department of Sustainable Resource Development – Rocky Mountain Forest Reserve South Office – Rangeland District	L02, L07, L12, L13, SW 06-009-03 W5M; L14, NE, SE 35-008-04 W5M; L09, L10, L16, NW, SW, SW 01-009-04 W5M; L03, L06, LS11, L14, SE, NE 02-009-04 W5M
PNT 960092	Steep rolling topography. No agricultural dispositions are permitted with the exception of “Grazing Haying” - These lands best suited for grazing due to steep slopes ranging from 15% to >30%. Prime watershed protection along gold creek and fish habitat; potentially valuable for ungulate habitat and potential for reforestation under a multiple use plan.	In order to mitigate the concern associated with potential instability, Benga has developed mine design criteria based on the results of the geotechnical investigation and geological modelling (Section B.8.6 of the EIA). A Conservation and Reclamation Plan has been developed for the Project (Section F of the EIA), which outlines measures that will be utilized to return the land to equivalent capability.	Disposition held by the Department of Sustainable Resource Development – Pincher Creek Office – Rangeland District	L13, L14, L15 31-008-03 W5M

Table 3-1 Reservations within the proposed disposition boundaries.				
Reservation/ Activity Number	Conflict	Mitigation/ Action Required	Comment	Location within Proposed Surface Disposition Boundary
Miscellaneous Lease (Construction Camp Area)				
PNT 900430*	Waste Disposal/Reclamation Site	Construction and Reclamation processes as discussed in Section 6.4 and 6.5 in order to return the land to equivalent capability. Utilization of waste storage (see Section 6.3) and spill response procedures (see Section C.7.6 of the EIA) that will reduce potential for contamination to enter the adjacent drainage.	Disposition held by the Department of Environment and Water	L03, L04, L15 14-008-04 W5M
Licence of Occupation (Rail Loop Area)				
CNT 090027	FireSmart Community Zone	Benga has prepared a Development of a fire control plan in accordance with the FireSmart Wildfire Assessment System (Section C.7.6).	Disposition held by the Forestry and Emergency Response Division of Environment and Sustainable Resource Development – Calgary Office	L03 02-008-04 W5M; L09, L10 03-008-04 W5M
PNT 090084	Multiple Resource Concerns - This location may fall within an area of foothills fescue grassland, a very valuable native grassland type that is limited in remaining area.	Mitigation measures as described in Section 4.3.4 of CR #8 and Section E.8.5.1 of the EIA.	Disposition held by the Lands Division of Department of Sustainable Resource Development – Pincher Creek Office – Rangeland District	SW 02-008-04 W5M NE 13-008-04 W5M NW 13-008-04 W5M NE 14-008-04 W5M SE 14-008-04 W5M NE 26-008-04 W5M SE 26-008-04 W5M

Reservation/ Activity Number	Conflict	Mitigation/ Action Required	Comment	Location within Proposed Surface Disposition Boundary
PNT900426*	Registered Historic Resource – Greenhill Mine Complex	A Historical Resource Impact Assessment has been undertaken (see Section E.13 of the EIA and Section 5.8 of CR #10).	Not listed in LSAS report.	pt.L03, pt.L06 02-008-04 W5M
RRD8711435	Highway 3	Benga has been in contact with Alberta Transportation as part of the rail loop development planning. This disposition is for the HWY 3 rerouting which is not planned for the near term. There are no outstanding concerns. The RRD will need to be amended in order to accommodate the LOC for the rail line.	Transportation	pt.L09, pt.L10 03-008-04 W5M
DRS850045	Blairmore Ranger Station; disposition listed as expiring in 2015/08/07	Impacted by development of the rail line and relocation of the golf course facilities. Benga has consulted with the local lands office and it was agreed that the access to the helicopter pad within the DRS would be rerouted as shown in CR #10, Figure 5.1-2 .	Disposition is held by the Blairmore Office, Lands Division Department of Sustainable Resource Development	pt.L10-03-008-04 W5M

Note:

* Not included in LSAS Report but shown on AEP's Disposition Spatial Processing Tool.

Table 3-2 Dispositions within the boundaries of the dispositions proposed by Benga.				
Disposition	Disposition Holder	Purpose	Location within Proposed Disposition Boundary	Status of Consent
Mineral Surface Lease				
CTPC 050124	Private	Coniferous Timber Permit	NW-01-009-04 W5M; L09, L16-02-009-04 W5M; L01-11-009-04 W5M; L04-12-009-04 W5M	Consent letter in accordance with AER Bulletin 2015-02 is included in Appendix 1 .
DLO140170	1653488 Alberta Inc.	Water Intake	NE 13-008-04 W5M	Not required at this time, as disposition is under application has not been approved.
EZE830147	Altalink Management Ltd.	Powerline	L13-13-008-04 W5M; L15, L16-14-008-04 W5M	Consent letter in accordance with AER Bulletin 2015-02 is included in Appendix 1 .
GRL 36801	Private	Grazing Lease	NE-31-008-03 W5M	Consent letter in accordance with AER Bulletin 2015-02 is included in Appendix 1 .
GRL960066	Private	Grazing Lease	NW-31-008-03 W5M	Disposition listed as expiring in 2016/06/14. Consent letter in accordance with AER Bulletin 2015-02 is included in Appendix 1 .
GRP870052	Gold Creek Grazing Co-Op Ltd.	Grazing Permit	L08, L09, L16-14-008-04 W5M; L01, L08, L09, L15, L16-26-008-04 W5M	Consent letter in accordance with AER Bulletin 2015-02 is included in Appendix 1 .
LOC141938	Benga Mining Ltd.	Access Road	L10, L15-25-008-04 W5M; L02, L10-36-008-04 W5M	None Required – Benga disposition.
MLL 1948	Devon Canada Corporation	Other Industrial	LSD 02, 07, 10, 15-14-008-04 W5M	Disposition listed as expiring in

Disposition ID	Holder	Disposition Type	Disposition Details	Notes
MSL043285	Devon Canada Corporation	Wellsite	L01, LS02-11-009-04 W5M	2008/09/15.
MSL801502	Devon Canada Corporation	Wellsite And Access Road	L13-01-009-04 W5M; L16-02-009-04 W5M; L01, L02-11-009-04 W5M; L04-12-009-04 W5M	Consent letter in accordance with AER Bulletin 2015-02 is included in Appendix 1 .
PLA052764	Devon Canada Corporation	Pipeline	L02-11-009-04 W5M	
PLA800692	Lonlife Resources Ltd.; Norco Resources Limited; Canadian Natural Resources Limited; Opinac Exploration Limited	Pipeline	L13-01-009-04 W5M; L16-02-009-04 W5M; L01, L02-11-009-04 W5M; L04-12-009-04 W5M	
ROE156**	Devon Canada Corporation	Coal Mining	L10-25-008-04 W5M	Dispositions administered by Surface Rights Board, who will not transfer disposition to Benga until the Project receives EPEA and CCA approval.
ROE324**	Devon Canada Corporation	Coal Mining	N½LS05, S½L12-06-009-03 W5M	
ROE1169**	Devon Canada Corporation	Coal Mining	L04, L05-06-009-03 W5M; LS01, L08-01-009-04 W5M	
ROE8751**	Devon Canada Corporation	Coal Mining	L15-25-008-04 W5M; L02, L07, L10-36-008-04 W5M	
TFA 154961	Benga Mining Ltd.	AER Access Temporary – Industrial	NW 31-008-03 W5M; NW 06-009-03 W5M; SE 01-009-04 W5M	None Required – Benga disposition.
TFA 155858	Benga Mining Ltd.	AER Access Temporary – Industrial	N 13-008-04 W5M; W 13-008-04 W5M; SE 14-008-04 W5M	None Required – Benga disposition.
TFA 162596	Benga Mining Ltd.	AER Access Temporary – Industrial		None Required – Benga disposition.
TFA 162911	Benga Mining Ltd.	AER Access Temporary – Industrial	N-13-008-04 W5M	None Required – Benga disposition.

Table 3-2 Dispositions within the boundaries of the dispositions proposed by Benga.				
TPA 1677	Private	Trapping Agreement	L14, NE, SE 35-008-04 W5M L03, L06, L11, L14, NE, SE-02-009-04-W5M; L03-11-009-04-W5M; SE, SW, NW, L16, L09, L10, 01-009-04-W5M; SW, L02, L07, L12, L13-06-009-03 W5M; pt.LS3, pt. L04-12-9009- 04 W5M	Benga has notified the holder of the trapline. No formal consent required under the <i>Public Lands Act</i> .
TPA 2426	Private	Trapping Agreement	pt.L01, pt.L2-11-09-04 W5M; pt.L03, pt.L04- 12-09-04 W5M	Benga has notified the holder of the trapline. No formal consent required under the <i>Public Lands Act</i> .
Miscellaneous Lease				
No surface dispositions are present within the proposed MLL area.				
Licence of Occupation				
PLA000472	Atco Gas And Pipelines Ltd. (South)	Pipeline	pt. LS03, pt. LS06-02-008-04 W5M	Consent letter in accordance with AER Bulletin 2015-02 is included in Appendix 2 .
REC910007*	Crowsnest Pass Golf & Country Club	Non-Commercial Recreational Development	pt. LS09-03-008-04 W5M	Consent will be obtained prior to development of the project in accordance with AER Bulletin 2015-02. Benga has consulted with the Golf & Country Club, there are no outstanding issues related to this REC.

Notes:

* Not included in LSAS Report but shown on AEP's Disposition Spatial Processing Tool.

** Administered by the Surface Rights Board

3.2.3 Stakeholder Concerns

Benga has been undertaking an extensive public engagement and Aboriginal Consultation program for the Project, which was initiated in 2013 and is still ongoing as part of the regulatory process. The public engagement and Aboriginal Consultation programs are described in [Section G](#) and [H](#) of the EIA, respectively.

Benga has held three Public Forums and three Open Houses in the Crowsnest Pass to inform the public about the Project. Numerous meetings have also been held with the regional municipalities, local stakeholders, local residents and land owners, special interest groups, provincial and federal government agencies, senior cabinet ministers and specific individuals with concerns.

In addition to the Public Forums and Open House sessions, Benga has attended a local Trade Show in Blairmore and held numerous meetings with the municipalities in the region, particularly the specialized Municipality of Crowsnest Pass and the Municipal District of Ranchland.

Benga is working towards identifying and addressing stakeholder concerns as they are identified. Key issues that have been raised through public engagement to-date, and where applicable, comments on how they have been resolved is provided in [Section G.4.0 \(Table 4.0-1\)](#) of the EIA.

3.2.4 Integrated Planning

The Project is located in an area with significant historic mining activity. The proposed MSL boundary is located with consideration for the location of the coal resource and design requirements. Opportunities for use of existing clearings for the ancillary activities such as the rail loop, conveyor and construction camp were evaluated and facilities sited accordingly. The final location of the rail loop was determined based on discussions with various stakeholders. Additional information on the different alternatives evaluated for the Project is provided in [Section A.7](#) of the EIA.

3.2.5 Aesthetic Concerns

As stated in [Section G.4.0 \(Table G.4.0-1\)](#) of the EIA, some concerns have been raised regarding the visual impact of the Project. A majority of the concerns raised focussed on the visual impacts of the proposed load-out facility.

Benga presented two viable locations at which to site the load-out facilities to the community for consideration and discussion. These options, referred to as “the golf course option” and “the valley bottom option” (see [Section A.7.3](#) of the EIA). The community indicated a strong preference for the costlier “golf course option” and accordingly, Benga eliminated the valley bottom option from further consideration. In designing the golf course load-out facility, Benga incorporated input from the community in an effort to mitigate potential visual impacts. Members of the community frequently

voiced concerns that the load-out facility would be too visible from Highway 3. Accordingly, Benga redesigned the location of the load-out infrastructure to the back side of the rail loop, thereby moving the infrastructure further away from Highway 3. The site preparation (*i.e.*, grading) necessary to install load-out infrastructure in the proposed location will position the base of the load-out lower than the level of the highway, thereby reducing the relative height of the structure from Highway 3. To further obscure the view of the infrastructure from the highway and community, Benga will construct berms and plant vegetation around the perimeter of the railway. Benga will continue to engage in discussions with the community to address ideas for landscaping and other measures that would diminish concerns related to the visual impact of the load out infrastructure from the community's perspective.

In addition, a visual assessment of lighting around the rail load-out was undertaken and is provided in [Section 5.16](#) of [CR#1](#) (Air Quality) of the EIA. Several options for mitigation were identified and with the implementation of these mitigation measures it was determined that the visibility of operations will be low and the overall impact will be insignificant.

Visual impacts on what the mountain will look like post mining has been raised by the Piikani Nation. Benga has developed a Conservation & Reclamation Plan for the Project (see [Section F](#) of the EIA). The reclaimed lands will feature regionally compatible landforms and vegetation patterns that are ecologically functional and successional. The goal of the reclamation plan is to develop lands that are maintenance-free and self-sustaining. The landscape will evolve through seral states of initial revegetation to self-sustaining ecosystems, consisting of mature vegetation communities typical of the Subalpine or Montane Sub Regions of the Rocky Mountain Natural Region (Natural Regions Committee 2006). Although new landscapes will be created during development and reclamation of the Project, they will be integrated with the surrounding undisturbed lands.

3.2.6 Land and Resource Use Planning

Management plans and policies applicable to the area were discussed in [Section 4.2](#) and [5.3](#) of the Land Use Report ([CR#10](#)) of the EIA. The plans and policies applicable to the area include:

- Coal Development Policy (Alberta Energy 2015);
- Livingstone- Porcupine Hills Sub-Integrated Resource Plan (Alberta Forestry, Lands and Wildlife, 1987);
- Crowsnest Corridor Local Integrated Resource Plan (Alberta Forestry, Lands & Wildlife, 1991);
- South Saskatchewan Regional Plan (Alberta Government 2014); and
- South Saskatchewan River Basin Plan (Alberta Environment 2006).

The intent of these policies and planning initiatives are to help inform land use decisions. Through a review of regional policies and initiatives environmental issues and concerns have been identified and appropriate mitigation measures included in the design, construction, operation and reclamation plans for the Project. Therefore, development of the Project does not conflict with the intent of these policies and initiatives.

3.2.7 First Nations Consultation

A summary of Aboriginal Group consultation activities undertaken is provided in [Section H.1.1](#) of the EIA.

Benga has been consulting with Aboriginal Groups potentially affected by the Project and those less affected who may have views on the Project. Groups included in the consultation program were identified by the Alberta Aboriginal Consultation Office (ACO) and the Canadian Environmental Assessment Agency. The ACO did not issue a First Nations Consultation Number for the Grassy Mountain Coal Project as the project was initiated prior to the ACO issuing consultation numbers for EPEA applications.

Aboriginal groups identified as potentially affected by the Project are:

- Blood Tribe (Kainai Nation);
- Piikani Nation;
- Siksika Nation;
- Stoney Nakoda Nation:
 - Bearspaw;
 - Chiniki; and
 - Wesley.
- Tsuut'ina Nation.

Aboriginal groups that are expected to be less affected by the Project include:

- Ktunaxa Nation:
 - St. Mary's Indian Band;
 - Lower Kootenay Indian Band;
 - Tobacco Plains Indian Band; and
 - Akisq'nuk First Nation.
- Samson Cree Nation;

- Shuswap Indian Band;
- Foothills Ojibway First Nation;
- Métis Nation of Alberta; and
- Métis Nation of British Columbia.

3.3 Wildlife/Environmental Concerns

3.3.1 Key/Critical Wildlife Zones

The northern most portion of the proposed MSL is located in a Grizzly Bear Zone and the southern portion is located within a Mountain Goat and Sheep Range (Figure 3-4). The proposed LOC area is located in a Key Wildlife and Biodiversity Zone and Mountain Goat and Sheep Range, and the proposed MLL is located in a Mountain Goat and Sheep Range (Figure 3-4).

An assessment of the potential impacts to grizzly bears has been undertaken (Section 5.3.8 of CR #9 and Section E.9.3.7 of the EIA). It was predicted that with progressive reclamation as outlined in Section F of the EIA, the impacts on grizzly bears would be insignificant.

An assessment of the potential impacts to mountain goats has been undertaken (Section 5.4.6 of CR #9 and Section E.9 of the EIA). During the field assessments it was determined that there is no quality mountain goat habitat within the study area and no mountain goats were detected during the surveys conducted in 2014 or 2015.

An assessment of the potential impacts to bighorn sheep was also undertaken (Section 5.4.7 of CR #9 and Section E.9 of the EIA). Bighorn sheep were not identified during any of the wildlife surveys undertaken for the Project but are known to occur along Highway 3. Bighorn sheep may move through the mine permit boundary while travelling between winter and summer ranges, and therefore movement could be altered by the development of the overland conveyor. The conveyor has been designed to include wildlife crossings, which will mitigate the impact to wildlife movement (see Section 7.1.4 of CR #10 and Section E.9.5.1 of the EIA).

The Key Wildlife and Biodiversity Zones are a combination of key winter ungulate habitat and high potential for biodiversity (ESRD 2015). Key strategies for protection of these zones have been identified by ESRD 2015 and include minimizing vegetation clearing, minimizing activity in the winter, not creating new access and adhering to timing restrictions. The proposed LOC is located adjacent to areas of existing developments (*e.g.* golf course, Highway 3, the community of Blairmore), where only a minimal amount of new clearing will be required for development of the LOC.

3.3.2 Timing Constraints

The proposed MSL is located between Blairmore Creek and Gold Creek. Gold and Blairmore creeks are both classified as Class B watercourses under the Alberta *Water Act* Code of Practice for Watercourse Crossings. As all of their associated tributaries within the proposed MSL area are less than 2 km from their associated creeks they are also considered Class B watercourses. The timing constraints for Gold Creek and associated tributaries are May 1 to August 15 and September 16 to April 5. The timing constraint for Blairmore Creek and its associated tributaries is May 1 to August 15. Neither of the mainstems of Blairmore Creek or Gold Creek will be directly impacted by development of the Project; however, mine pit and waste rock disposal area development will encroach upon some tributaries of both watercourses (Figure 1-2). Assessments on the potential impacts of this development, on aquatic resources, were included in the following sections of the EIA:

- CR #4 and E.4 discuss potential impacts on hydrology;
- CR #5 and E.5 discuss potential impacts on water quality; and
- CR #6 and E.6 discuss potential impacts on fish and fish habitat.

There are no aquatic resource timing restrictions associated with the proposed MLL. Figure 2-1 indicates that the camp MLL encroaches upon an existing tributary to Blairmore Creek. The portion of tributary associated with this location has been substantially altered due to historical mining activities (*i.e.*, this area was once a drainage valley; however, was filled with legacy waste rock, with the surface reclaimed with vegetation). Currently, Alberta Environment and Parks holds a Protective Notation (PNT) for this drainage management system (PNT 900430 listed in Table 3-1). The LSAS report does not identify any restrictions associated with this PNT.

Construction of the rail line associated with the proposed LOC will require a crossing of Blairmore Creek, which has a timing restriction of May 1 to August 15. Benga is planning to construct a clear span crossing at this location.

Wildlife timing constraints are discussed in CR #9 and Section E.9.5.1 and E.9.5.2 of the EIA. To avoid disrupting nesting migratory and resident songbirds and raptors, in accordance with Alberta's *Wildlife Act* and Canada's *Migratory Birds Convention Act* (Regulation 12:1) and the *Species at Risk Act*, Benga will schedule vegetation clearing activities outside the April 15 to August 31 period. In the event that vegetation clearing must occur within the restricted activity period, pre-disturbance nesting surveys will be conducted by experienced avian biologists according to established sensitive species inventory guidelines (Government of Alberta 2013a). Any active nest sites encountered will be buffered with the recommended setback distances based on specific species requirements (Government of Alberta 2013b, Environment Canada 2015).

3.3.3 Species at Risk (Plants/Animals)

As part of the EIA undertaken for the Project, several wildlife and vegetation species that are at risk were identified to occur within the Project Area. The assessment on impact to these species at risk is provided in the EIA as follows:

- Wildlife – Sections 5.3 and 5.4 of CR#9 and Section E.9.3.6; and
- Vegetation – Section 4.2 and 4.3 of CR #8 and Section E.8.3.2.

The wildlife species at risk that were either recorded during field surveys undertaken for the EIA or reported in FWMIS within the boundary of the proposed MSL, and for which there is moderately to highly suitable habitat in the proposed MSL boundary, are outlined in Table 3-4. Incidental flyovers of birds (e.g., golden eagles) are not included, unless accompanied by a sign of habitat usage (e.g., breeding calls, confirmed nest). Measures to mitigate impact to these species are provided in Section 7.1.1 of CR #9 and Section E.9.5.1 of the EIA.

Table 3-4 Species at Risk that may occur in the proposed MSL boundary.			
Common Name	Provincial Status¹	Federal Status²	Key Habitat Requirements
<i>Amphibians and Reptiles</i>			
Columbia spotted frog	Sensitive	Not At Risk	Permanent water bodies in mixed coniferous/ subalpine forests; 995 - >2,150 m in elevation.
Long-toed Salamander	Sensitive	Not At Risk	Under rocks, rotting logs, debris; near ponds, lakes, streams.
Western toad	Sensitive	Special Concern	Ponds, streams, rivers, lakes; overwinter in sandy upland forest.
<i>Birds</i>			
Bald eagle	Sensitive	Not At Risk	Forages in lakes and rivers with treed shorelines. Nests in mature trees along the edges of forests.
Barred owl	Sensitive	-	Mature and old mixedwood forests, with large trees containing large cavities for nesting.
Common nighthawk	Sensitive	Threatened – SARA Schedule 1	Cutblocks, forest clearings, prairies, rock outcrops. Nests near logs, boulders, and shrubs.
Olive-sided flycatcher	May Be At Risk	Threatened – SARA Schedule 1	Semi-open coniferous/mixedwood forests along edges/openings, near water with tall trees/snags.

Table 3-4 Species at Risk that may occur in the proposed MSL boundary.			
Common Name	Provincial Status¹	Federal Status²	Key Habitat Requirements
Sora	Sensitive	-	Shallow and moderately deep water (marshes, ponds) with emergent vegetation.
Western wood pewee	Sensitive	-	Mature deciduous and mixed forests, forest edges, and riparian zones. Absent from dense forest.
Mammals			
American badger	Sensitive	-	Open spaces, grasslands, prairies, treeless slopes, riparian meadows.
Little brown myotis	Secure	Endangered – SARA Schedule 1	Roosts under loose bark on trees, tree cavities, buildings, bridges, caves. Forages near water.
Hoary bat	Sensitive	-	Open grassy areas in coniferous and deciduous forests. Forages near farmlands. Roosts in trees.
Bobcat	Sensitive	-	Coniferous/deciduous forests, brushy areas in coulees. Dens in rocky crevices, hollow logs.
Canada lynx	Sensitive	Not At Risk	Coniferous forest with downed woody debris and dense understory.
Wolverine	May Be At Risk	Special Concern	Large areas of remote wilderness in the foothills and mountains. Avoids human development.
Grizzly bear	Threatened	Special Concern	Open slopes, alpine meadows, cutblocks, burns, riparian areas, mature forest, and disturbed sites.

1 Alberta Wild Species General Status Listing (AEP 2010c)

2 COSEWIC/SARA status. Species with SARA status are indicated with SARA Schedule 1.

The wildlife species at risk that were either recorded during field surveys undertaken for the EIA or reported in FWMIS within a 1-km buffer around the centre of the proposed MLL, and for which there is moderately to highly suitable habitat in the proposed MLL boundary, are outlined in [Table 3-5](#). As with the MSL, incidental flyovers of birds (e.g., golden eagles) are not included, unless accompanied by a sign of habitat usage (e.g., breeding calls, confirmed nest).

The proposed MLL is located within a landscape characterized by open mixedwood, closed mixedwood, and closed spruce. However, the disposition itself is predominantly open grassland, with anthropogenic disturbance and a very small amount of riparian habitat and forest edge. The species indicated in [Table 3-5](#) are based on the habitat within the disposition. Measures to mitigate

impact to these species are provided in [Section 7.1.1 of CR #9](#) and [Section E.9.5.1 of the EIA](#).

Table 3-5 Species at Risk that may occur within the proposed MLL boundary.			
Common Name	Provincial Status¹	Federal Status²	Key Habitat Requirements
<i>Amphibians and Reptiles</i>			
Long-toed Salamander	Sensitive	Not At Risk	Under rocks, rotting logs, debris; near ponds, lakes, streams.
Western toad	Sensitive	Special Concern	Ponds, streams, rivers, lakes; overwinter in sandy upland forest.
<i>Birds</i>			
Common nighthawk	Sensitive	Threatened – SARA Schedule 1	Cutblocks, forest clearings, prairies, rock outcrops. Nests near logs, boulders, and shrubs.
Western wood pewee	Sensitive	-	Mature deciduous and mixed forests, forest edges, and riparian zones. Absent from dense forest.
<i>Mammals</i>			
Hoary bat	Sensitive	-	Open grassy areas in coniferous and deciduous forests. Forages near farmlands. Roosts in trees.
Grizzly bear	Threatened	Special Concern	Open slopes, alpine meadows, cutblocks, burns, riparian areas, mature forest, and disturbed sites.

1 Alberta Wild Species General Status Listing (AEP 2010c)

2 COSEWIC/SARA status. Species with SARA status are indicated with SARA Schedule 1.

The proposed LOC boundary is located near the golf course and adjacent to Highway 3. The habitat is predominantly cleared, with some open mixedwood, pine, and deciduous forest. The species indicated in [Table 3-6](#) are based on the habitat within the LOC boundary. Measures to mitigate impact to these species are provided in [Section 7.1.1 of CR #9](#) and [Section E.9.5.1 of the EIA](#).

Table 3-6 Species at Risk that may occur within the proposed LOC boundary.			
Common Name	Provincial Status ¹	Federal Status ²	Key Habitat Requirements
<i>Birds</i>			
Common nighthawk	Sensitive	Threatened – SARA Schedule 1	Cutblocks, forest clearings, prairies, rock outcrops. Nests near logs, boulders, and shrubs.
<i>Mammals</i>			
Little brown myotis	Secure	Endangered – SARA Schedule 1	Roosts under loose bark on trees, tree cavities, buildings, bridges, caves. Forages near water.

1 Alberta Wild Species General Status Listing (AEP 2010c)

2 COSEWIC/SARA status. Species with SARA status are indicated with SARA Schedule 1.

Twenty-two vegetation species identified within the boundaries of the proposed surface dispositions at the time of the field assessment were on the Alberta Rare Plant Tracking and Watch Lists (ACIMS 2014) (Table 3-7). Two species identified are federally listed by COSEWIC and SARA: *Pinus albicaulis* (whitebark pine) and *Pinus flexilis* (limber pine). Whitebark pine is listed as Endangered in Alberta and British Columbia under SARA Schedule 1. Limber pine was designated as Endangered throughout its range in Alberta and British Columbia by COSEWIC in November 2014. Measures to mitigate impact to these species are provided in the EIA in Section 4.2.6 and 5.2 of CR #8 and Section E.8.5.1.

In addition, portions of the proposed dispositions are located within an area covered by protective notations due to the potential presence of foothills fescue grassland (Table 3-1). Measures that will be utilized to mitigate impact to these grasslands are provided in the EIA in Section 4.3.4 of CR #8 and Section E.8.5.1.

Table 3-7 Rare Plants Occurrences in the proposed surface disposition boundary.

Scientific Name	Common Name	Rank or Conservation Status				
		GRANK ¹	SRANK ¹	Tracked ²	COSEWIC / SARA ³	Provincial ⁴
Vascular plants						
<i>Angelica dawsonii</i>	Yellow angelica	G4	S3	W	-	Sensitive
<i>Carex petasata</i>	Pasture sedge	G5	S1S2	Y	-	May be at risk
<i>Eriogonum cernuum</i>	Nodding umbrella-plant	G5	S2	Y	-	May be at risk
<i>Eucephalus engelmannii</i>	Elegant aster	G4G5	S3S4	W	-	May be at risk
<i>Phacelia hastata</i>	Silver-leaved scorpionweed	G5	S3	W	-	Sensitive
<i>Pinus albicaulis</i>	Whitebark pine	G3G4	S2	Y	Endangered	At risk (Endangered)
<i>Pinus flexilis</i>	Limber pine	G4	S2	Y	Endangered	At risk (Endangered)
<i>Piperia unalascensis</i>	Alaska bog orchid	G5	S2?	Y	-	Sensitive
Mosses and liverworts						
<i>Conocephalum salebrosum</i>	Liverwort	G5	S2	Y	-	May be at risk
<i>Dicranum tauricum</i>	Broken-leaf moss	G4	S1S2	Y	-	Sensitive
<i>Lophozia ascendens</i>	Liverwort	G4	S1	Y	-	May be at risk
<i>Lophozia longidens</i>	Liverwort	G5	S1	Y	-	May be at risk
<i>Lophozia wenzelii</i>	Liverwort	G4G5	S1	Y	-	May be at risk
<i>Pellia neesiana</i>	Liverwort	G5	S2	Y	-	-
<i>Racomitrium aciculare</i>	Moss	G5	S1	Y	-	Sensitive
<i>Schistidium tenerum</i>	Thread bloom moss	G5?	S2	Y	-	Sensitive
Lichens						
<i>Cladonia umbricola</i>	Shaded cladonia	G3G5	S1	Y	-	May be at risk
<i>Nodobryoria abbreviata</i>	Tufted foxtail lichen	G4?	S1	Y	-	May be at risk
<i>Peltigera cinnamomea</i>	Cinnamon dog pelt lichen	GNR	S2	Y	-	May be at risk

Table 3-7 Rare Plants Occurrences in the proposed surface disposition boundary.

Scientific Name	Common Name	Rank or Conservation Status				
		GRANK ¹	SRANK ¹	Tracked ²	COSEWIC / SARA ³	Provincial ⁴
<i>Umbilicaria americana</i>	American rock tripe lichen	G5?	S2S3	Y	-	May be at risk
<i>Vulpicida canadensis</i>	Brown-eyed sunshine lichen	G3G5	S2	Y	-	Sensitive
<i>Xylographa parallela</i>	Black woodscript lichen	G5	S2S4	Y	-	May be at risk

¹ GRANK refers to global conservation rank and SRANK refers to subnational conservation rank). See EIA [CR #8, Section 1.6.3](#) for definitions of rankings.

² Y – species is tracked, W – species is watched (ACIMS 2014).

³ COSEWIC (2014), SARA (2014).

⁴ General Status of Alberta Wild Species database (Government of Alberta 2010). (Endangered) refers to Endangered under Alberta’s *Wildlife Act* (Government of Alberta 2014).

3.4 Historical Resources

A Historical Resources Impact Assessment (HRIA) was undertaken and submitted to Alberta Culture. The HRIA is currently under review and Alberta Culture has indicated that clearance for the Project will not be granted until the EPEA and CCA approvals have been issued. Further discussion on historical resources can be found in [Section E.13](#) of the EIA.

3.5 Vegetation and Timber Cover

Vegetation within the MSL boundary includes forest (deciduous dominant, coniferous dominant and mixedwood) treed wetlands, cutblocks and grassy meadows. The proposed MSL area is within Forest Management Unit (FMU) C5 and C02. No Forestry Management Agreement (FMA) holders are located within these FMU's. Timber salvage is expected to commence in 2018 and continue through the life of the project as mining operations expand. Approximately 1,316 m² of coniferous timber and 114,550 m² of deciduous timber is present within the MSL boundary.

The proposed MLL is located in FMU CO2 in a previously developed area and only a small number of trees will need to be cleared during construction ([Figure 6-1](#)).

The proposed LOC is located in FMU CO1 and CO2 in an area adjacent to significant development ([Figure 5-1](#) and [5-2](#)). Approximately 50 m³ of deciduous timber and 600 m³ of coniferous timber is present in the LOC boundary.

A timber management plan for the Project is provided in [Section F.3.3](#) of the EIA. Timber volumes from crown land will be offered to the two main quota holders, Spray Lakes Sawmills (1980) Ltd. and Crowsnest Forest Products. Should these quota holders decline, the volumes will be made available to other interested parties.

3.6 Soil and Vegetation Management

The following sections outline soil sensitivities and topography within the boundary of the proposed dispositions, as well as problem vegetation/weeds/invasive species occurrence and management.

3.6.1 Soil and Topography

A Soil and Terrain Assessment was undertaken for the project and is provided in the EIA as [CR #7](#). The area has varying mountainous topography, with slopes ranging from Class 1 to Class 9 (0 to >45 degrees). Steeper slopes Classes between 7 and 9 (16.5- 45 degrees) are most prevalent in the northern portion of the proposed MSL boundary areas of the proposed disposition boundary with the southern portion of the proposed MSL boundary having slopes primarily between Class 6 and 7 (8 to 24 degrees). Surface expression varies across the area and includes sections of level, hummocky,

terraced and inclined expression. The proposed MLL and a majority of the LOC is located in previously disturbed area with variable topography due to existing development. Surface expression and slope class are further discussed in [Section 3.3](#) of [CR #7](#) in the EIA.

There are a few soil sensitivities within the mine area including, shallow depth to bedrock (bedrock at surface to depths <100 cm) and gravely and stony soils. Drainage ranged from very poor to very rapid. Very poor and well drained soils are located at the lower and mid slopes in the most southern portion of the proposed disposition area. Rapid to very rapidly drained areas are located throughout the area. These sensitivities have been considered during development of the Conservation & Reclamation Plan for the Project ([Section F](#) of the EIA), including the salvage and replacement of adequate material for use during reclamation (as discussed in [Section F.2.1.5](#) of the EIA) and the establishment of positive surface and subsurface drainage (as discussed in [Section F.4.4.1](#) of the EIA).

3.6.2 Problem Vegetation/Weeds/Invasive Species

During the vegetation survey undertaken as part of the EIA, nine noxious weeds, and 20 invasive vegetation species were identified within and surrounding the proposed surface disposition boundary ([Section 3.9](#) of [CR #8](#) of the EIA). The majority of the noxious and invasive species were observed in areas with existing disturbance (*i.e.*, pipelines, well sites, clearings, pastures, cutblocks, and along roads). A list of the noxious weeds identified in the MSL and their associated degree of infestation is provided in [Table 3-8](#). The location of noxious weeds found during the assessment is provided in the EIA in [CR #8](#), [Figure 3.9-1](#).

Scientific Name	Common Name	Degree of Infestation
<i>Bromus tectorum</i>	downy brome	Low
<i>Chrysanthemum leucanthemum</i>	ox-eye daisy	Moderate
<i>Cirsium arvense</i>	creeping thistle	Moderate
<i>Cynoglossum officinale</i>	hound's-tongue	NA
<i>Echium vulgare</i>	blueweed	Low
<i>Linaria dalmatica</i>	dalmatian toadflax	Low
<i>Linaria vulgaris</i>	common toadflax	Moderate
<i>Ranunculus acris</i>	tall buttercup	High
<i>Verbascum thapsus</i>	common mullein	High

Proposed clearing and construction activities have a moderate to high risk of increasing the spread of weeds on site. As required by the *Weed Control Act* and Regulations, noxious weed populations identified during baseline field sampling will be controlled prior to site disturbance and mine operation to prevent the further spread of weeds. Noxious weed management will occur in compliance with R&R/03-4 *Weeds on Industrial Development Sites* (Alberta Environment 2003).

3.7 Incidental Activities

Benga does not have any incidental activities associated with the proposed surface dispositions that will be located on crown land and required for temporary use. All facilities associated with the Project will be included in the MSL, LOC or MLL boundaries.

4. SITES AND INSTALLATIONS

In accordance with the *Public Lands Act*, Benga is requesting a Mineral Surface Lease (MSL) for the main mining area that is located on Crown land ([Figure 2-1](#)). The MSL application package including the a completed application form, sketch plans, the completed Environmental Field Report (EFR) forms, LSAS report and consent letters is provided in [Appendix 1](#).

4.1 Site Description

A description of the Grassy Mountain Coal Project is included in [Section C](#) of the EIA. Physical works in support of the Project that will occur within the proposed MSL boundary are shown on [Figure 1-2](#) and include:

- open pit truck and shovel mining operations area;
- waste rock disposal areas (north and south of the pit area, in addition to in-pit);
- internal haul roads;
- topsoil storage area; and
- water management structures.

The topography of Grassy Mountain consists of rounded hills at lower elevations with moderate to steep grade slopes at higher elevations. The regional area is characterized by relatively high relief, with numerous valleys where watercourses are present. The site has a history of coal mining with the presence of both legacy surface and underground mines ([Figure 4.4-1](#) in [CR#10](#) of the EIA). The legacy surface mine is currently inside the footprint of the new proposed open pit.

The proposed mine is a truck/shovel operation where the rock overlying the coal seams will be drilled, blasted and excavated by mining shovels. The overburden rock will be loaded into haul trucks and then transported to designated disposal areas. The uncovered coal is then placed into

trucks and hauled to the coal preparation plant for cleaning. The maximum pit depth is approximately 430 m at the north-central area of the pit. Mineable reserves total approximately 168 million RMT coal, or 92.6 million CMT, with 854 million BCM of overburden rock for an average product strip ratio of 9.2:1 BCM/CMT. Potential stability concerns that may influence construction procedures/requirements include:

- historic mining activities creating unstable slopes;
- steep grades;
- pit wall failures; and
- rock disposal area failures.

In order to mitigate the concern associated with potential instability, Benga has developed mine design criteria based on the results of the geotechnical investigation and geological modelling ([Section B.8.6](#) of the EIA).

4.2 Vehicle and Equipment Access

The MSL area will be accessed from an access road that parallels the overland conveyor ([Figure 1-2](#)). A majority of this access is through land owned by Benga. A small portion of the road (approximately 180 m) is located on Crown land as described in [Section 5](#). This portion of the access will be included as part of the LOC application.

4.3 Contamination Prevention

Blairmore Creek and Gold Creek are located to the west and east of the Project, respectively. Although Benga will maintain a 100 m vegetated buffer between mine development and these environmentally sensitive watercourses, the mine will encroach on tributaries to both Blairmore and Gold creeks (as outlined in [Section 3.3.2](#)).

The main potential mechanism for transport of deleterious materials from the site will be from surface runoff mobilizing the deleterious materials and transporting them to adjacent watercourses. Benga has included a comprehensive water management system in the mine design to reduce the potential for deleterious material to leave the site. These water management facilities are described in [Section C.5.3](#) of the EIA, and include:

- maintaining a 100 m vegetated buffer between mine development and Blairmore Creek and Gold Creek;
- the development of a series of collection ditches and sedimentation settling ponds (which release to either Gold Creek or Blairmore Creek);

- the development of a series of collection ditches and surge ponds (three ponds which are part of Selenium Management Plan that will not release to Gold Creek or Blairmore Creek); and
- the development of site wide drainage civil works.

In addition, Benga will develop an Environmental Protection Program for the Project based on the Project design, potential environmental risk and outcomes of the environmental assessment and regulatory review process. The goal for the Environmental Protection Program is to first prevent and second to minimize adverse environmental impacts resulting from mine related operations. A brief discussion illustrating how environmental impacts are prevented and/or minimized through each of these mechanisms is provided in [Section C.7.6](#) of the EIA.

4.4 Sumps

Benga does not anticipate the development of any sumps throughout the life of the Project.

4.5 Water Source

Proposed water supply sources and associated licensing are discussed in [Sections C.5.1](#) and [C.5.2](#) of the EIA.

4.6 Construction Strategy

As described in [Section F.3.1](#) of the EIA, development of the mine will require clearing existing vegetation from the Project Footprint. A timber management plan is provided in [Section F.3.3](#) of the EIA.

Soil conservation will be undertaken to ensure there will be sufficient volumes of suitable reclamation material to support the self-sustaining vegetation communities required to achieve the planned end land uses. A description of soil salvage and handling procedures is provided in [Sections F.2.1.5, F.3.4](#) and [F.4.2](#) of the EIA.

4.7 Reclamation Strategy

Proposed conservation and reclamation plans throughout the life of the project are presented in [Section F.3.6](#) of the EIA and the mine closure plan is presented in [Section F.4](#) of the EIA.

5. ACCESS

In accordance with the *Public Lands Act*, Benga is requesting a Licence of Occupation for the portions of the rail loop and a portion of the access road that are located on Crown land ([Figure 2-1](#)). Details of the proposed rail loop including infrastructure, operations, maintenance and decommissioning are provided in [Section C.3](#) of the EIA.

The LOC application package including the a completed application form, sketch plans, the completed Environmental Field Report (EFR) forms, LSAS report and consent letters is provided in Appendix 2.

5.1 Type of Access/Dimensions

There are three different portions of the rail loop that are located on crown land for a total length of approximately 1,000 m of track with a variable disturbance width due to the cut and fills requirements and 300 m of access road with approximate width of 20 m ([Figure 5-1](#) and [Figure 5-2](#)).

5.2 Topography

A Soil and Terrain Assessment was undertaken for the project and is provided in the EIA as [CR #7](#). A majority of the LOC is located in a previously disturbed area with variable topography that has been altered due to existing development. Topography within the proposed LOC area ranges from gentle to extreme (Class 4 to 8).

5.3 Watercourse Crossings

The proposed rail line will require a clear span crossing of Blairmore Creek, with no instream work required. Final crossing design has not yet been completed.

5.4 Construction Strategy

A significant portion of the proposed LOC area to be developed for the rail loop is located on previously developed land ([Figure 5-1](#) and [Figure 5-2](#)). Any merchantable timber found will be salvaged (as outlined in [Section F.3.3](#) of the EIA). Non-merchantable timber and slash materials will be left on the surface and will be incorporated into the soil during salvage operations. If there are excessive volumes of timber harvest residue that cannot be incorporated in the soil without degrading the soil quality, it will be separated and windrowed.

Soil conservation will be undertaken to ensure there will be sufficient volumes of suitable reclamation material to support the self-sustaining vegetation communities required to achieve the planned end land uses. A description of soil salvage and handling procedures is provided in [Sections F.2.1.5, F.3.4](#) and [F.4.2](#) of the EIA.

5.5 Reclamation Strategy

The LOC will be reclaimed using the same practices and procedures outlined in [Section F.3.6](#) of the EIA. After initial construction, interim reclamation will be undertaken in order to stabilize slopes. As stated in [Section F.4.5.5](#) of the EIA, at mine closure the rail loop and supporting infrastructure will be fully reclaimed. The track will be dismantled and all associated infrastructure will be removed. The

area will be recontoured to meet the sloping requirements, compaction will be alleviated and conserved soil will be replaced. The area will be revegetated to integrate with adjacent lands.

The rail loop will be reclaimed to a coniferous forest and mixed forest landscape ([Figure F.3.6-8](#) of the EIA) using the revegetation procedures as for the rest of the mine as outlined in [Section F.3.6.3](#).

6. MISCELLANEOUS USE

In accordance with the *Public Lands Act*, Benga is requesting a Miscellaneous Lease (MLL) for the construction camp and portions of the conveyor/powerline/access road right-of-way that are located on a small area of crown land ([Figure 2-1](#)). As identified in [Section 3.2.1](#), this portion of Crown land is also covered by a Protective Notation (PNT 900430). Details of the proposed construction camp, access road and conveyor can be found in [Sections C.6.17, C.4.1 and C.2.7](#) of the EIA.

The MLL application package including the a completed application form, sketch plans, the completed Environmental Field Report (EFR) forms, LSAS report and consent letters is provided in [Appendix 3](#).

6.1 Site

The total area of the MLL is 3.52 ha, a majority of which is existing clearing ([Figure 6-1](#)). The boundary of the site is located within 100 m of a mapped watercourse, but this watercourse path was altered by drainage management works undertaken by Alberta Environment and Parks under PNT 900430. This watercourse is a tributary to Blairmore Creek, therefore is considered a Class B watercourse. Construction of the conveyor will also cross this tributary but is an overland structure that will be constructed out of the bed and bank of the tributary; therefore, will not disrupt site drainage.

Benga will utilize waste storage (see [Section 6.3](#)) and spill response procedures (see [Section C.7.6](#) of the EIA) that will reduce potential for contamination to enter the adjacent drainage. Construction and Reclamation processes as discussed in [Section 6.4](#) and [6.5](#) will be utilized in order to return the land to equivalent capability.

6.2 Access

The construction camp will be accessed through the mine access corridor, which runs from Highway 3 to the mine infrastructure area. A majority of this road is within private land owned by Benga. [Section C.4.1](#) of the EIA provides more detail on mine access.

6.3 Waste Management

Construction camp sewage will be collected locally and stored in two local 63,000-litre sewage collection tanks. This allows for approximately one and a half days of sewage storage for the construction camp based on an estimated daily potable water usage of 225 litres per day per person at the maximum camp size of 360 beds. These tanks will be remotely emptied by a third party tanker with the sewage treated off site.

6.4 Site Development Strategy

A majority of the MLL area is on a previously cleared area ([Figure 6-1](#)). If encountered, merchantable timber will be salvaged as described in the timber management plan included in [Section F.3.3](#) of the EIA.

Soil conservation will be undertaken to ensure there will be sufficient volumes of suitable reclamation material to support the self-sustaining vegetation communities required to achieve the planned end land uses. A description of soil salvage and handling procedures is provided in [Sections F.2.1.5, F.3.4](#) and [F.4.2](#) of the EIA.

6.5 Reclamation Strategy

The MLL will be reclaimed using the same practices and procedures outlined in [Section F.3.6](#) of the EIA. As stated in [Section F.4.5.3](#) of the EIA, the construction camp and conveyor facilities will be dismantled and removed from the site. The building site and access road areas will be ripped to relieve compaction, recontoured and conserved reclamation materials will be replaced. The camp area will be reclaimed to a coniferous forest landscape ([Figure F.3.6-8](#) of the EIA) using the revegetation procedures similar to the rest of the mine as outlined in [Section F.3.6.3](#).

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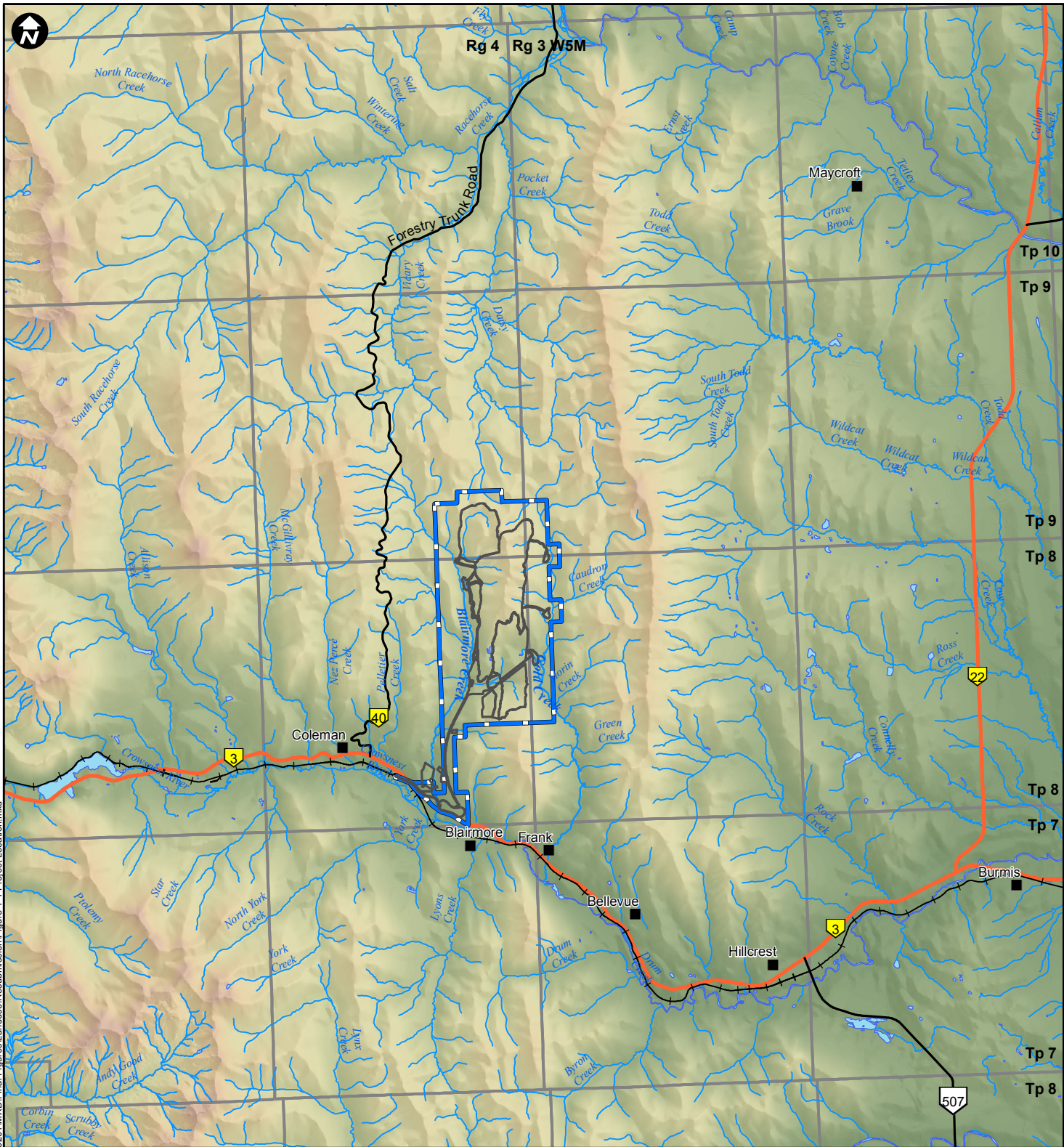
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FIGURES



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- LEGEND**
- Primary Highway
 - Secondary Highway
 - +— Existing Railway
 - Surface Water Drainage
 - Mine Permit Boundary
 - Project Footprint



PROJECT



GRASSY MOUNTAIN COAL PROJECT

TITLE
PROJECT LOCATION

NOTES
 AltaLIS, 2016; GeoBase, 2016; NRCAN, 2016; Riversdale, 2016
 Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01
 DRAWN BY: JDC/JL
 CHECKED BY: KY
 DATE: JUNE 27, 2016

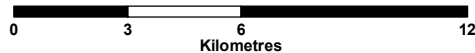
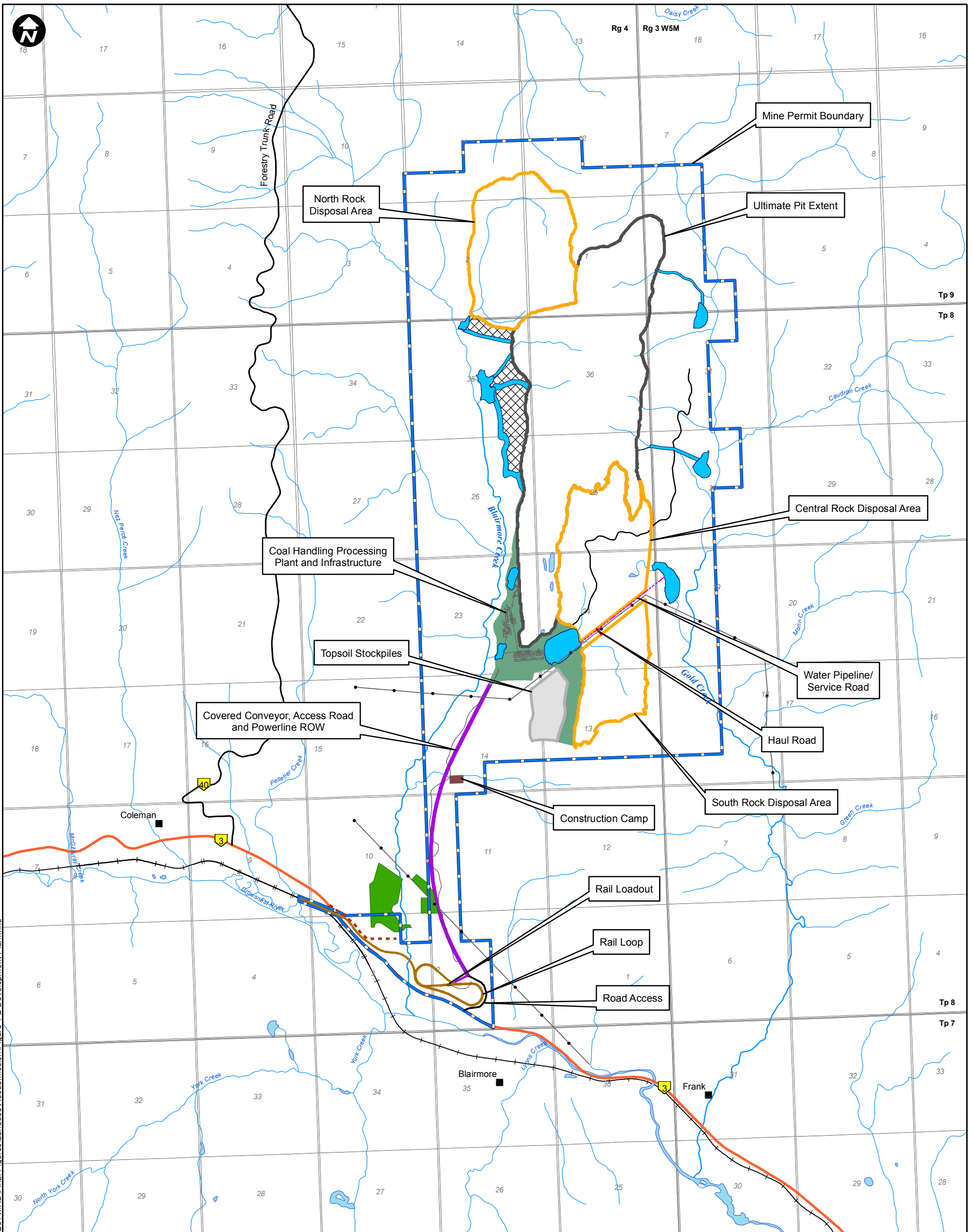


FIGURE
1-1



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LEGEND

Primary Highway	Mine Permit Boundary
Secondary Highway	Ultimate Pit Extent
Existing Railway	Ultimate Rock Disposal Area Extent
Existing Access Road	Topsoil Storage
Existing Powerline	Construction Camp
CHPP Facilities	Ponds and Ditches
Water Pipeline/Service Road	Coal Handling Processing Plant and Infrastructure
Railway Loop	Covered Conveyor, Access Road
Helipad Access	Golf Course Area
	Undisturbed Area

PROJECT

GRASSY MOUNTAIN COAL PROJECT

TITLE

DEVELOPMENT PLAN

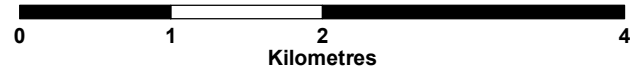
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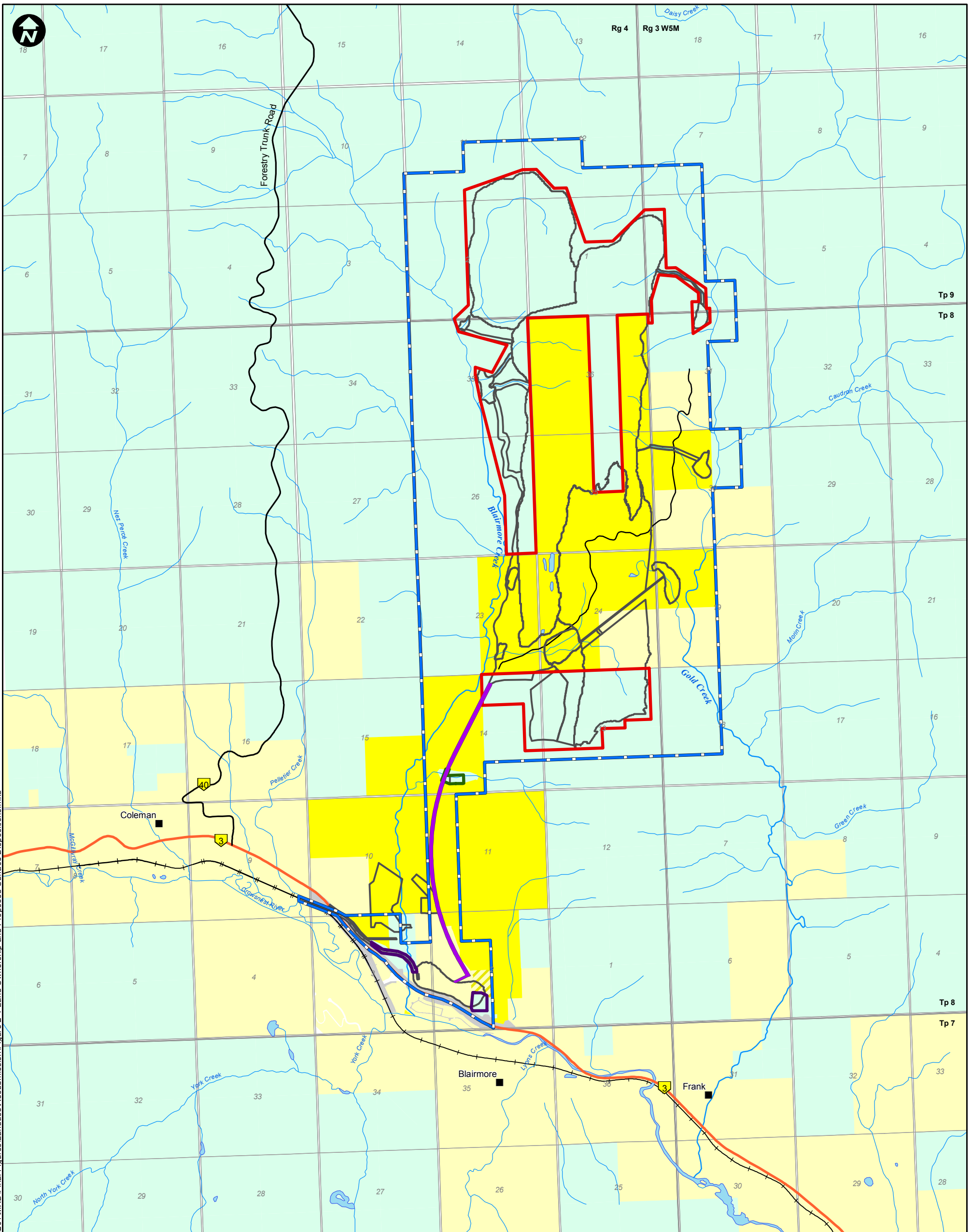
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PROJECT: 14-00201-01
DRAWN BY: JDC/JL
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DATE: JUNE 27, 2016

FIGURE

1-2





Document Path: K:\Active Projects\2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Landuse\Resubmission\Figure 2-1 Land Ownership and Proposed Surface Dispositions.mxd

LEGEND

- Primary Highway
 - Secondary Highway
 - Existing Railway
 - Mine Permit Boundary
 - Covered Conveyor, Access Road and Powerline ROW
 - Project Footprint
 - MSL Boundary
 - MLL Boundary
 - LOC Boundary
-
- Land Ownership**
 - Crown
 - Freehold - Benga
 - Freehold - Benga 50%, Other 50%
 - Freehold - Other
 - Registered Roadway

PROJECT



GRASSY MOUNTAIN COAL PROJECT

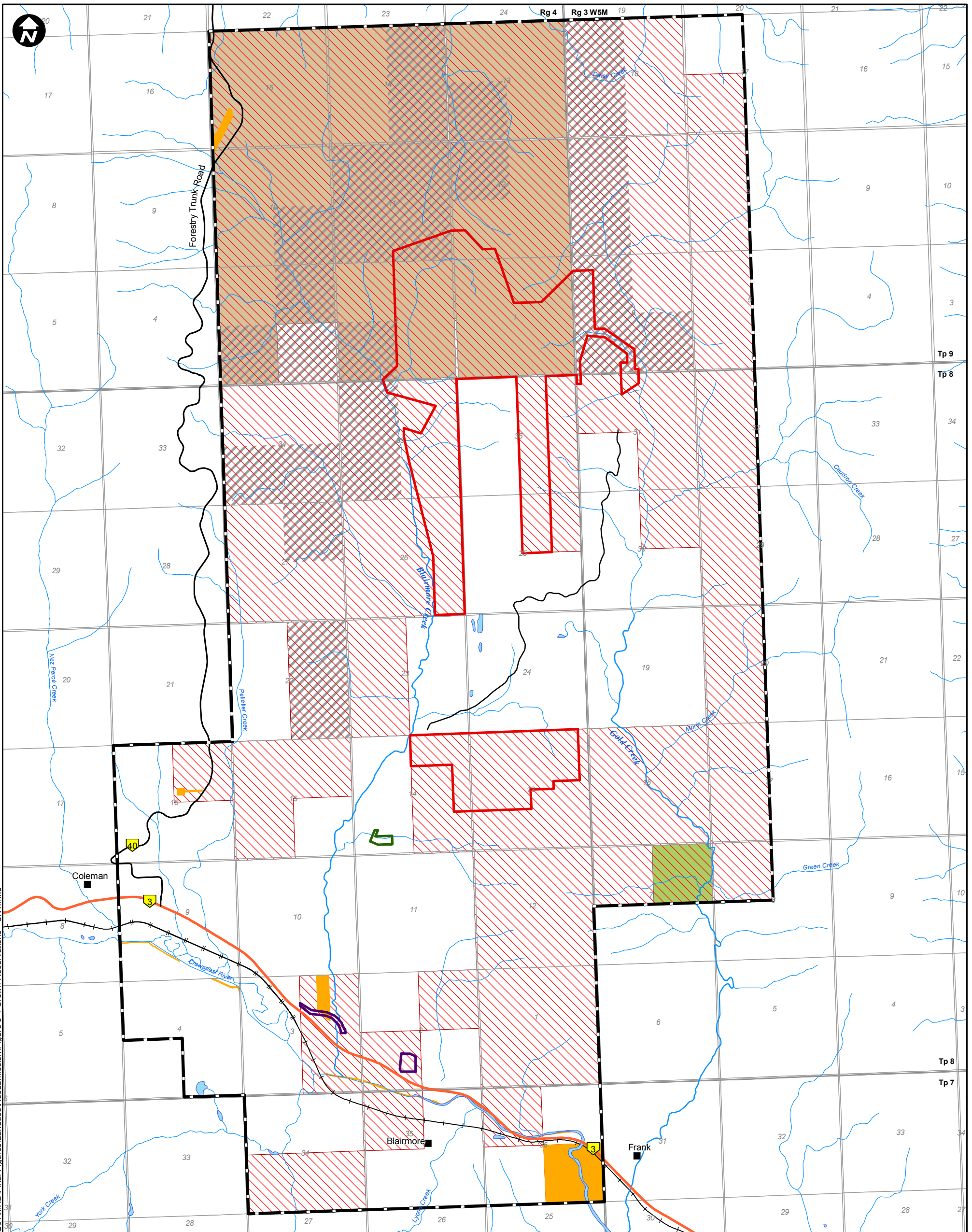
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NOTES
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Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01
DRAWN BY: JL/SL
CHECKED BY: KY
DATE: AUGUST 10, 2016



FIGURE
2-1



Document Path: K:\Active Projects\2014\AP 14-00201 to 14-00250\14-00201\MXD\Final Figures\Landuse\Resubmission\Figure 3-1 Crown Reservations - CNT.mxd

LEGEND

- Primary Highway
- Secondary Highway
- Existing Railway
- Study Area
- MSL Boundary
- MLL Boundary
- LOC Boundary
- Disposition Type**
- Disposition Reservation (DRS)
- Firesmart Zone (CNT090027)
- Potential Timber Disposal (CNT860041)
- Green Creek Wintering Site (CNT880242)
- Snowmobile Trails (CNT980012)

PROJECT



GRASSY MOUNTAIN COAL PROJECT

TITLE

CROWN RESERVATIONS - CONSULTATIVE NOTATIONS AND DISPOSITION RESERVATIONS

NOTES

AltaLIS, 2016; MEMS, 2016; Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

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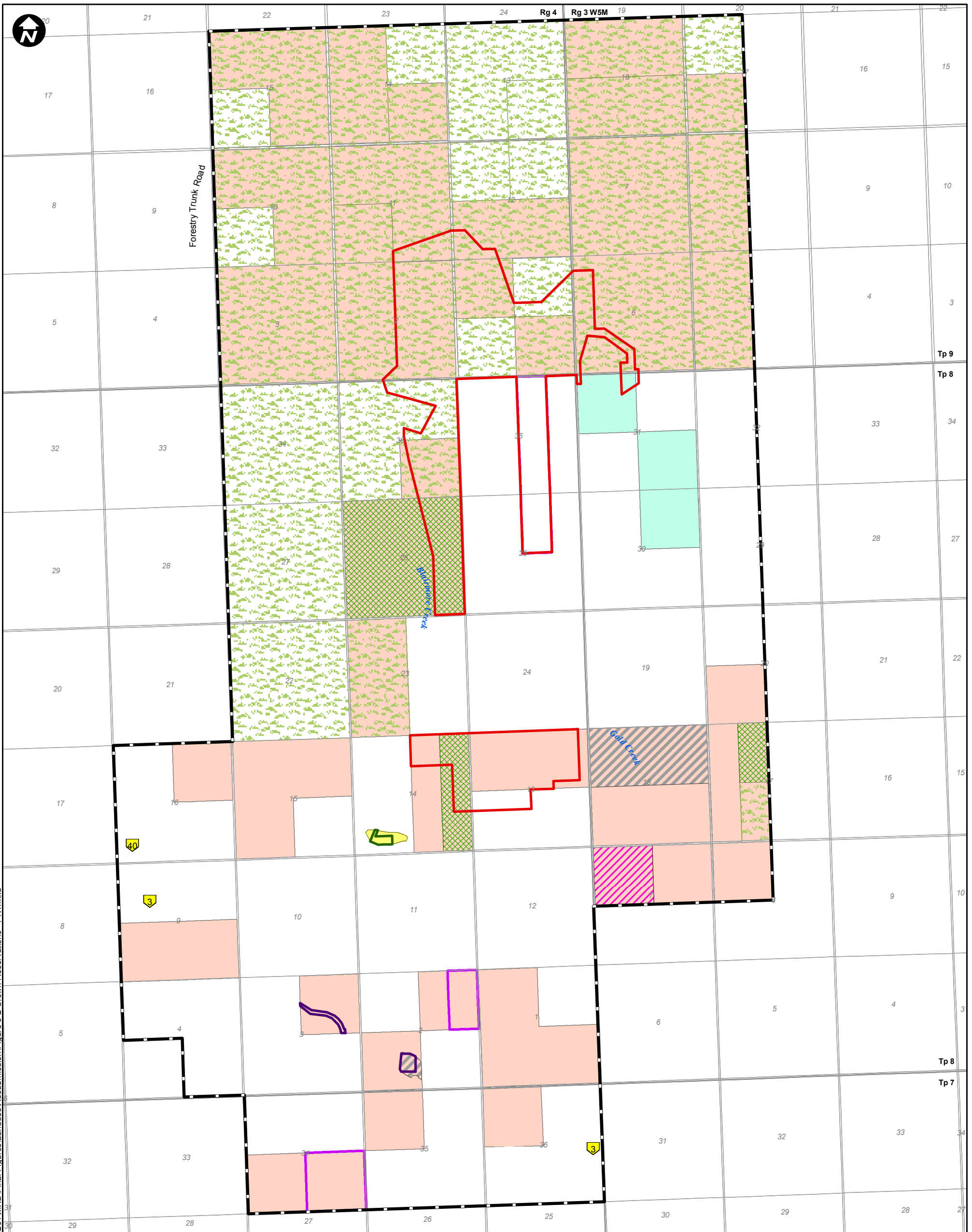
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FIGURE

3-1





LEGEND

- Primary Highway
- Secondary Highway
- Existing Railway
- Study Area
- MSL Boundary
- MLL Boundary
- LOC Boundary

Protective Notation (PNT)

- Grazing Area (PNT890351, PNT890378, PNT930299, PNT940130)
- Grazing, Watershed Protection, Wildlife Habitat (PNT960092)
- Unimproved Grazing (PNT880617, PNT880619, PNT880625)
- Mountainous Terrain Rock Outcrop (PNT810769)
- No Agricultural Disposition (PNT700566, PNT776398, PNT880618)
- Potential Fescue Grassland (PNT090084, PNT090087)
- Water Disposal/Reclamation (PNT 900430)
- Registered Historic Resource (PNT900426, DHR010001)

PROJECT

RIVERSDALE
RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**

TITLE

CROWN RESERVATIONS - PROTECTIVE NOTATIONS

NOTES

AltaLIS, 2016; MEMS, 2016; Riversdale, 2016
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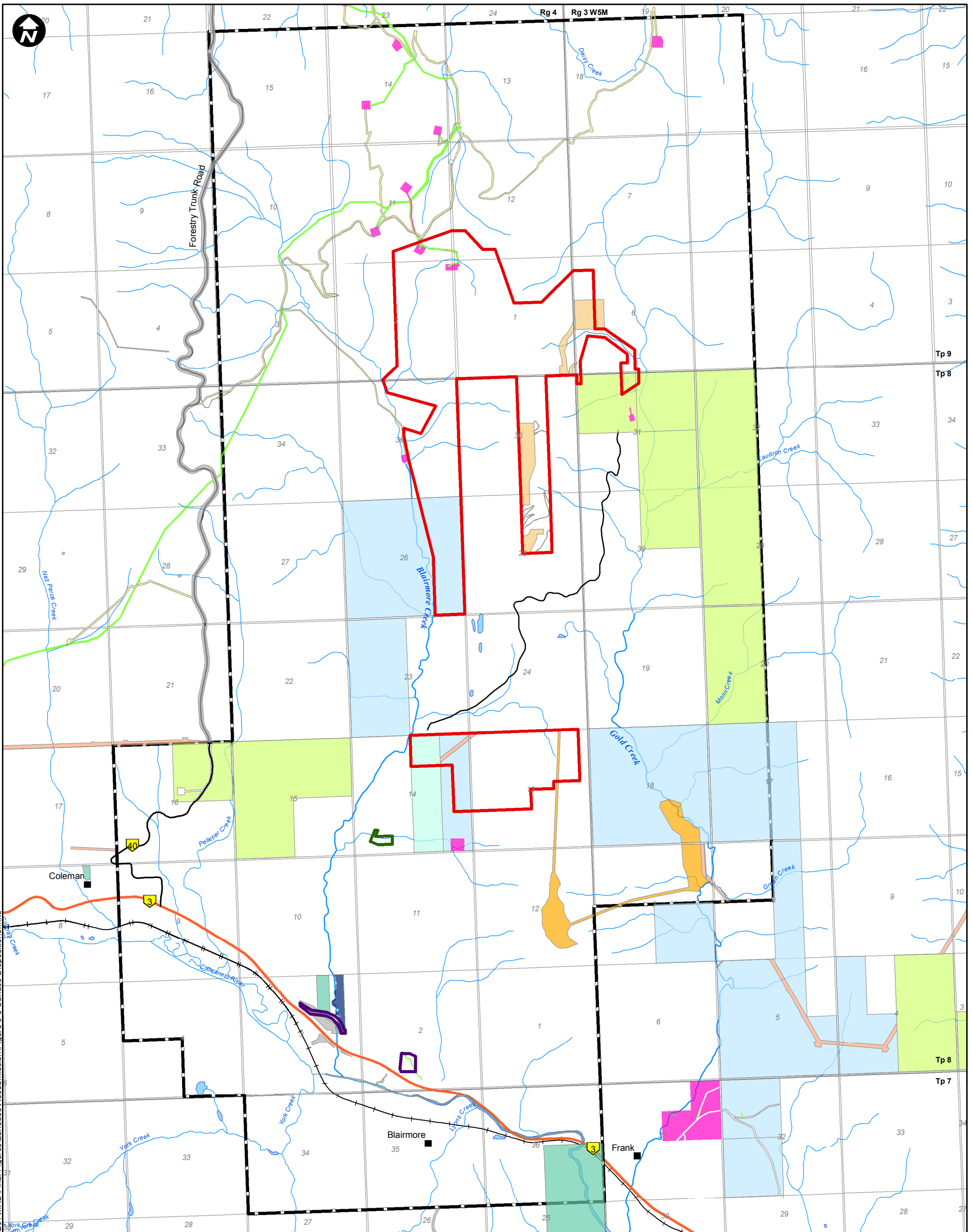
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FIGURE

3-2



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Document Path: K:\Active Projects\2014\AP 14-00201 to 14-00250\14-00201\MXD\Final\Figures\Landuse\Resubmission\Figure 3-3 Surface Dispositions.mxd

LEGEND

- Primary Highway
 - Secondary Highway
 - Existing Railway
 - Study Area
 - MSL Boundary
 - MLL Boundary
 - LOC Boundary
-
- Existing Surface Dispositions**
- Mineral Surface Lease (MSL)
 - Pipeline Agreement (PLA)
 - License of Occupation (LOC)
 - Right-of-Entry (ROE)
 - Easement (EZE)
 - Registered Roadway (RRD)
 - Grazing Permit (GRP)
 - Disposition Reservation (DRS)
 - Pipeline Installation Lease (PIL)
 - Grazing Lease (GRL)
 - Recreational Lease (REC)
 - Miscellaneous Lease (MLL)
 - AEP License of Occupation (DLO)

PROJECT



GRASSY MOUNTAIN COAL PROJECT

TITLE

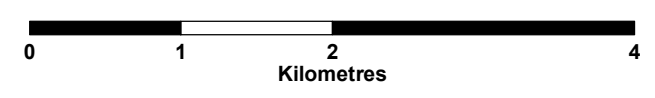
EXISTING SURFACE DISPOSITIONS

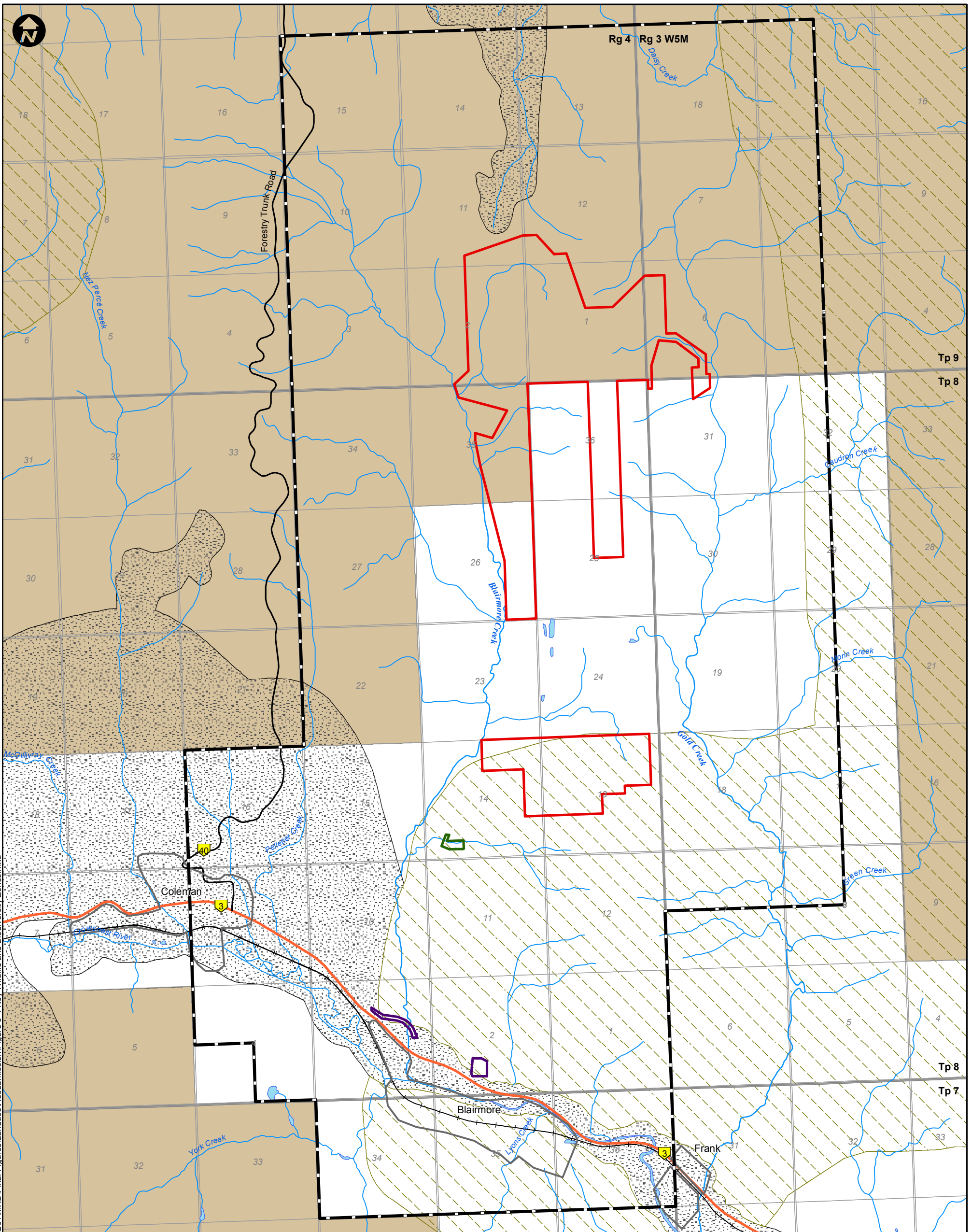
NOTES

AltaLIS, 2016; MEMS, 2016; Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01
DRAWN BY: JDC/JL
CHECKED BY: KY
DATE: AUGUST 10, 2016

FIGURE 3-3





Document Path: K:\Active Projects\2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Landuse\Resubmission\Figure 3-4 Key Wildlife and Biodiversity Zones.mxd

LEGEND

- Existing Railway
- Surface Water Drainage
- Study Area
- MSL Boundary
- MLL Boundary
- LOC Boundary
- Mountain Goat and Sheep Range
- Key Wildlife and Biodiversity Zone
- Grizzly Bear Zone

PROJECT



RIVERSDALE
RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**

TITLE

KEY WILDLIFE AND BIODIVERSITY ZONES

NOTES

AltaLIS, 2016; GeoBase, 2011; NRCAN, 2016; Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

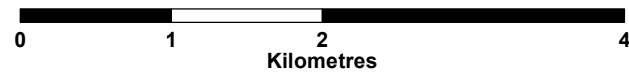
DRAWN BY: JDC/JL

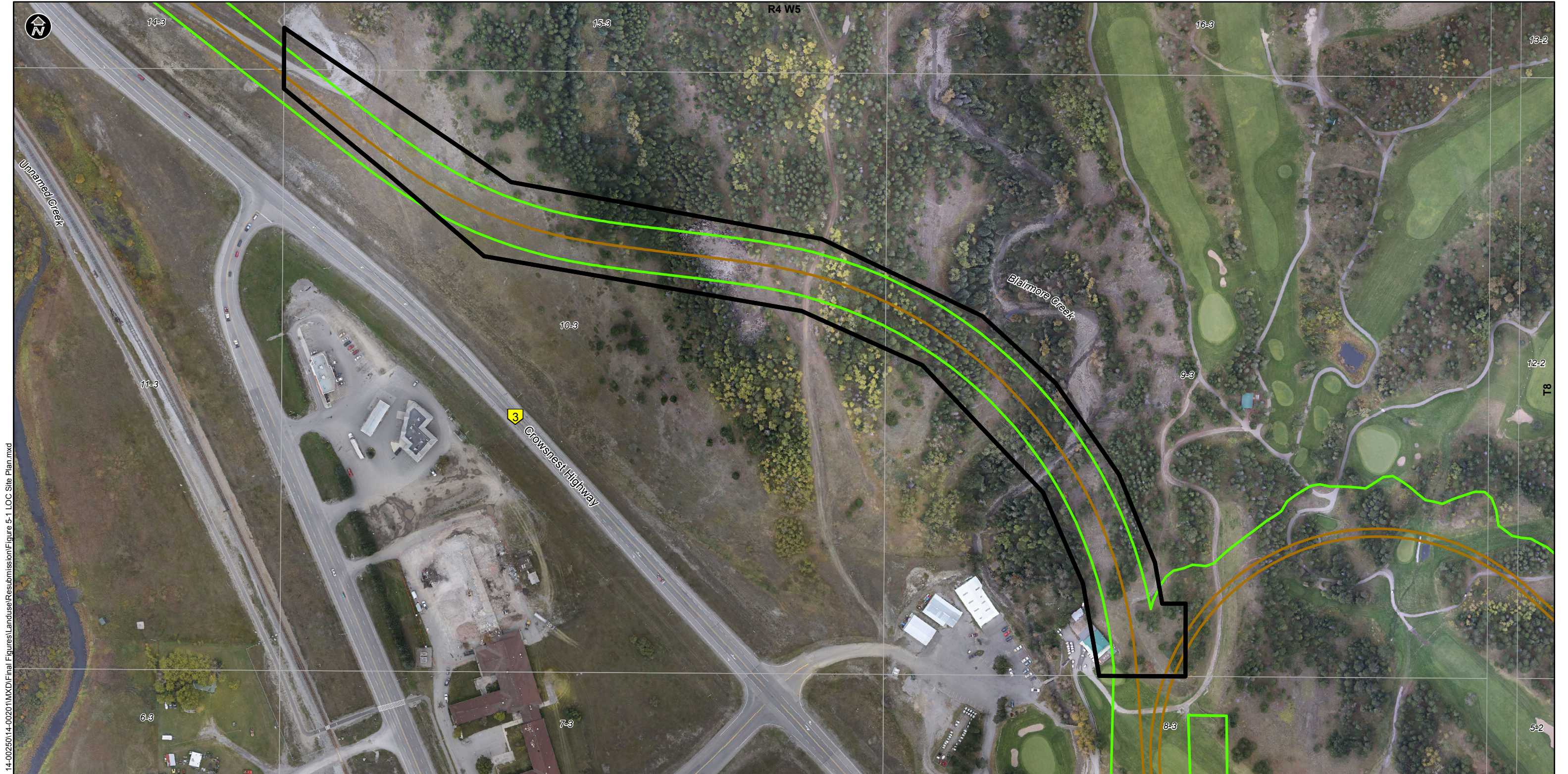
CHECKED BY: KY

DATE: AUGUST 10, 2016

FIGURE

3-4





Document Path: K:\Active Projects 2014\AP 14-00201 to 14-00250\14-00201\MXD\Final Figures\Landuse\Resubmission\Figure 5-1 LOC Site Plan.mxd

- LEGEND**
- Railway Alignment
 - License of Occupation (LOC) Boundary
 - Extent of Clearing and Disturbance

<p>PROJECT</p> <p>RIVERSDALE RESOURCES</p>	<p>GRASSY MOUNTAIN COAL PROJECT</p>	
<p>TITLE</p> <p>RAIL ALIGNMENT LICENSE OF OCCUPATION (LOC) SITE PLAN 09/10/15-03-008-04 W5</p>		<p>PROJECT: 14-00201</p> <p>DRAWN BY: JL</p> <p>CHECKED BY: KY</p> <p>DATE: JULY 14, 2016</p>
<p>NOTES</p> <p>AltaLIS, 2016; MEMS, 2016 RapidEye, 2015 (Image Date: Jul 26/13); Riversdale, 2016. Datum/Projection: UTM 3TM Nad 83</p>	<p>0 25 50 100 Metres</p>	<p>FIGURE</p> <p>5-1</p>

Disclaimer: This figure was derived from multiple data sources and while we make every effort to assure its' accuracy, Millennium EMS Solutions Ltd. disclaims any representation or warranty and assumes no liability either for any errors, omission or inaccuracies that may occur.



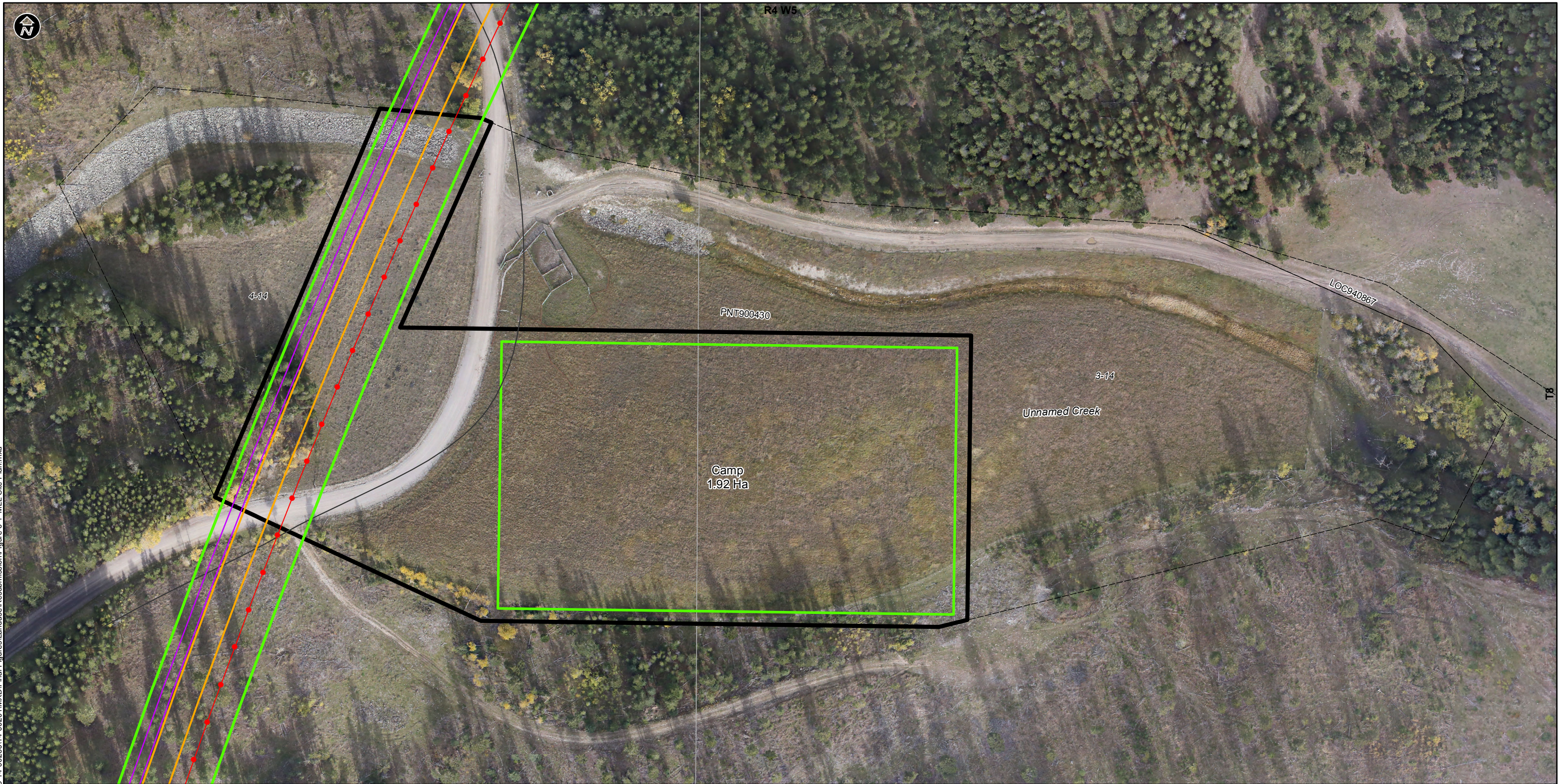
Document Path: K:\Active Projects\2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Landuse\Resubmission\Figure 5-2 LOC Site Plan.mxd

- LEGEND**
- Existing Powerline
 - Railway Alignment
 - Proposed Access Road
 - - - Extent of Clearing (20m Right of Way)
 - ▭ License of Occupation (LOC) Boundary
 - ▭ Extent of Clearing and Disturbance

<p>PROJECT</p> <p>RIVERSDALE RESOURCES</p>	<p>GRASSY MOUNTAIN COAL PROJECT</p>
<p>TITLE</p> <p>LICENSE OF OCCUPATION (LOC) SITE PLAN</p> <p>6-2/3-2-03-008-04 W5</p>	
<p>NOTES</p> <p>AltaLIS, 2016; MEMS, 2016 RapidEye, 2015 (Image Date: Jul 26/13); Riversdale, 2016. Datum/Projection: UTM 3TM Nad 83</p>	
<p>PROJECT: 14-00201</p> <p>DRAWN BY: JL</p> <p>CHECKED BY: KY</p> <p>DATE: JULY 14, 2016</p>	
<p>FIGURE</p> <p>5-2</p>	

Disclaimer: This figure was derived from multiple data sources and while we make every effort to assure its accuracy, Millennium EMS Solutions Ltd. disclaims any representation or warranty and assumes no liability either for any errors, omission or inaccuracies that may occur.

Document Path: K:\Active Projects\2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Landuse\Resubmission\Figure 6-1 MLL Site Plan.mxd

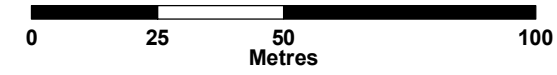


- LEGEND**
- Access Road
 - Conveyor
 - Extent of Clearing and Disturbance
 - Powerline
 - Existing Road Access
 - Miscellaneous Lease (MLL) Boundary
 - Disposition

PROJECT
RIVERSDALE **GRASSY MOUNTAIN**
 RESOURCES **COAL PROJECT**

TITLE
MISCELLANEOUS LEASE (MLL) SITE PLAN
3/4-14-03-008-04 W5

NOTES
 AltaLIS, 2016; MEMS, 2016
 RapidEye, 2015 (Image Date: Jul 26/13); Riversdale, 2016.
 Datum/Projection: UTM 3TM Nad 83



PROJECT: 14-00201
 DRAWN BY: JL
 CHECKED BY: KY
 DATE: JULY 14, 2016

FIGURE
6-1

Disclaimer: This figure was derived from multiple data sources and while we make every effort to assure its' accuracy, Millennium EMS Solutions Ltd. disclaims any representation or warranty and assumes no liability either for any errors, omission or inaccuracies that may occur.

APPENDIX 1 – MSL APPLICATION

Application for Surface Dispositions

<i>Please Print Or Type</i>	EFR attached? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A					File Number:								
	If No, AOA # _____ or					Confirmation Number:								
	Other: _____					FNC Number: Not Issued								
<input checked="" type="checkbox"/> Mineral Surface Lease [MSL]		<input type="checkbox"/> Licence of Occupation [LOC]		<input type="checkbox"/> Pipeline Installation Lease [PIL]		<input type="checkbox"/> R.E.A. Easement [REA]								
<input type="checkbox"/> Pipeline Agreement [PLA]		Project Name: Grassy Coal					<input type="checkbox"/> Easement [EZE]							
Application:							Transmission Line							
<input type="checkbox"/> Class I [INDEX > 2690]							Length _____ km							
<input type="checkbox"/> Class II [INDEX < 2690]							Kilovolts _____							
Does this application include watercourse crossings regulated under the <i>Water Act</i> (Ministerial) Regulations' Code of Practice for Pipelines and Telecommunication Lines Watercourse Crossings? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, the applicable <i>Water Act</i> Notice must be submitted with this application.														
Applicant: Benga Mining Limited					Client ID: 1008823002			Applicant File Number Grassy Mountain Coal Mine						
Address: PO Box 660, 12331 - 20 Avenue							Tel: 403-563-6160							
City/Province: Blairmore Alberta					Postal code: T0K 0E0			Fax:						
Contact person/Agent as above <input checked="" type="checkbox"/> or:							File:							
Address:							Tel:							
City/province:					Postal code:			Fax:						
Attached: <input checked="" type="checkbox"/> Sketch <input type="checkbox"/> Survey Plan <input type="checkbox"/> As Built					Occupant's consent: <input checked="" type="checkbox"/> Attached <input type="checkbox"/> Not Required									
Purpose of application: <input type="checkbox"/> Wellsite <input type="checkbox"/> Access <input type="checkbox"/> Pipeline <input type="checkbox"/> Powerline <input checked="" type="checkbox"/> Other Coal Mine														
Land being applied for [<i>Attach Schedule if insufficient space</i>]														
Name of Subdivision					Subdivision Plan			Block		Lot	Parcel			
Qtr/LS	Sec	Twp	Rge	Mer	Qtr/LS	Sec	Twp	Rge	Mer	Qtr/LS	Sec	Twp	Rge	Mer
See	Table	2-2												
Are you a Canadian citizen?			Have you attained the age of 18 years?			Are you an employee of the Government of Alberta or member of the Legislative Assembly?								
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			<input type="checkbox"/> Yes [<i>Dept/Agency/Board</i>] <input checked="" type="checkbox"/> No								
<Original signed by>										For Internal Use Only				
Signature _____										Authorization is hereby granted to enter upon and immediately occupy public land as described on this application and in accordance with the plan/sketch submitted to the issuing regulatory body subject to conditions specified in schedule "A":				
Steve Mallyon Print Name														
August 12, 2016 Date					\$ _____ Amount Enclosed									
					Date _____ Authorizer, <i>Public Lands Act</i>									
Approval from	Lands	Forest	F & W	Trans	Parks									Dept. Plan:
Referral Date														Copies for:
Received Date														Municipal Authority
Comments:										Field Services				
										Forest				
										F & W				
										Other				

Completion of EFR Cover Document For all Dispositions 2.0 Environmental Field Report (EFR)

The cover document and the appropriate supplement form must be submitted for each surface disposition application. All blanks must either be filled in or 'N/A' noted where applicable.

Failure to fill out the document and form(s) completely will result in the EFR being rejected.

New Revised

Date Submitted 12/08/2016 Department Number _____

_____ dd/mm/yyyy

Site/Project Name: Grassy Mountain Coal Project

A. Communications

1. Applicant: Benga Mining Limited

2. Company contact person for EFR: Steve Mallyon

Phone: (403) 563-6160

3. E-mail: Steve.Mallyon@rivresources.com

Cell Phone: (____) ____

4.

5. Company representative who conducted the onsite assessment for the EFR:

Cal Clark

6. Phone: (403) 753-5160

Cell Phone: (____) ____

7. Fax: (____) ____

E-mail: Cal.Clark@rivresources.com

8. Date of on-site assessment: 2014 to 2016
dd/mm/yyyy

Note: The Regulatory body reserves the option to audit individual EFR's to ensure field visits have been conducted and information supplied is accurate.

B. Surface Location

LSD 03 Sec 11 Twp 009 Rge 04 W 5

To:

LSD 07 Sec 18 Twp 008 Rge 03 W 5

1. Construction is proposed under the following soil conditions (check the box that applies):

Frozen

Non-Frozen

Other (If "Other", explain)

See Section 3.2 of Public Lands Act Application

Proposed construction date: 2017 to 2041
dd/mm/yyyy

2. Specify associated developments/dispositions that may be required as a result of this disposition.

- Power line
- Pipeline
- Compressor
- Metering Station
- Access
- Other LOC for rail line and adjacent access and MLL for the construction camp and conveyor/powerline/access road right of way (see Public Lands Act Application)

Land Standing Review

3. A complete Land Standing Review check must be made on the proposed area.

Date Land Standing search was completed: 10/08/2016
dd/mm/yyyy

Reservation/Activity Number	Action required/identify conflicts/contact name and or comments
See Public Lands Act Application Table 3-1.	

- a. Within a Provincial Grazing Reserve? Yes No
If 'Yes', complete the Provincial Grazing Reserve template and attach to the Environmental Field Report. (Refer to Appendix I in the instruction document.)
 - b. Within the Chungo Access Management Area? Yes No
If 'Yes', complete the Chungo Area template (located at the end of IL 2005-01 – Annex to Chungo Creek Industrial Access Management Area Information Letter and attach it to the Environmental Field Report.
 - c. Within a FireSmart Community Zone? Yes No
If 'Yes', contact Forest Protection Division for additional hazard reduction requirements.
 - d. Follow the "Bear Smart" program to reduce bear-human conflicts and increase public stewardship of black and grizzly bears in Alberta by providing strategies, information and education materials to its staff and contractors, see srd.alberta.ca and search for "Alberta BearSmart"
4. Are Permanent/Research Sample Plots/Rangeland Benchmarks located within 100 m of the boundary of the lands under application? Yes No

If 'Yes', indicate the legal land description and GPS coordinates for each plot/benchmark in relation to the disposition boundary (degree, decimal, minutes).

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____

Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____

Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____

Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____

Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____

Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____

Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____

Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____

Latitude _____ Longitude _____ Distance away _____ m

PSP's held by the Regulatory body appear as DRS or PNT reservations on the LSAS report. The forest industry also has sample plots, and if these are registered, they will appear as ISP's on the LSAS report. If the forest industry sample plots are not registered, they will not appear on the LSAS report. The proponent is responsible for determining if there are any PSP's or ISP's on the land under application. PSP's and ISP's must not be disturbed.

Stakeholders, Other Land Users

5. Is there potential impact on or conflict with stakeholders and other land users? Yes No

If "Yes" to either, please list and explain mitigation:

See Section 3.2.2 and 3.2.3 of the PLA Application for details.

6. What actions have been taken to integrate this disposition with other existing/planned activities and resources to minimize the impacts on the land base? (Check appropriate boxes.)

- Not applicable
- Use common corridor
- Parallel existing clearing/right of way
- Use existing clearing/right of way
- Other _____

Explain: Existing clearings have been utilized where feasible given the mining area needs to be located over the coal resource. See Section 3.2.4 of the PLA Application.

7. Identify any aesthetic concerns related to the proposed activity (i.e., negative effects on the aesthetic/sensory aspects of the surrounding land including view, smell, noise, etc.).

- Not applicable
 From public access
 From residence
 From recreation facility
 Other Land Users

Explain: Visual impacts on what the mountain will look like post mining has been raised by the Piikani Nation see Section 3.2.5 of the PLA Application.

8. Are there any conflicts with Access Management Plans, Integrated Resource Plans or policy documents for the area? Yes No

If 'Yes', explain mitigation strategy: Land and resource use planning is discussed further in Section 3.2.6 of the PLA application.

9. Was First Nations (Aboriginal) consultation required by the Regulatory body? Yes No

If "Yes", with whom: See Section 3.2.7 of the PLA Application for a list of First Nations groups who were consulted.

C. Wildlife/Environmental Concerns

1. Within a Key/Critical Wildlife Zone? Yes No

If 'Yes', provide information on mitigation strategies that will be implemented: See Section 3.3.1 of the PLA Application.

2. Wildlife Timing Constraint apply? Yes No

If 'Yes', provide dates of restricted period: From See Section 3.3.2 of the PLA Application To _____ (See Provincial Timing Guidelines or FW referral maps.)

3. Fisheries Timing Constraint apply? Yes No

If 'Yes', provide dates of restricted period: From _____ To See Section 3.3.2 of the PLA Application (See Provincial Watercourse Codes of Practice for restricted periods.)

4. Within a Caribou Area? Yes No. If 'Yes', specify the Caribou Protection Plan number and name.

Species at Risk (Plant/Animals)

5. Is it likely that a species at risk (not including Woodland Caribou in number 4 above) will be found in the area of the proposed development? Yes No

If 'Yes', specify the status and protective strategy for each species: For further details on species at risk within the proposed activity, see Section 3.3.3 of the PLA Application.

<p>Species 1 _____</p> <p><input type="checkbox"/> Endangered</p> <p><input type="checkbox"/> Threatened</p> <p><input type="checkbox"/> Special Concern</p> <p><input type="checkbox"/> At Risk</p> <p><input type="checkbox"/> May Be At Risk</p> <p>Explain any conflict and proposed mitigation</p> <p>_____</p>	<p>Species 2 _____</p> <p><input type="checkbox"/> Endangered</p> <p><input type="checkbox"/> Threatened</p> <p><input type="checkbox"/> Special Concern</p> <p><input type="checkbox"/> At Risk</p> <p><input type="checkbox"/> May Be At Risk</p> <p>Explain any conflict and proposed mitigation</p> <p>_____</p>
--	--

<p>Species 3 _____</p> <p><input type="checkbox"/> Endangered</p> <p><input type="checkbox"/> Threatened</p> <p><input type="checkbox"/> Special Concern</p> <p><input type="checkbox"/> At Risk</p> <p><input type="checkbox"/> May Be At Risk</p> <p>Explain any conflict and proposed mitigation</p> <p>_____</p>	<p>Species 4 _____</p> <p><input type="checkbox"/> Endangered</p> <p><input type="checkbox"/> Threatened</p> <p><input type="checkbox"/> Special Concern</p> <p><input type="checkbox"/> At Risk</p> <p><input type="checkbox"/> May Be At Risk</p> <p>Explain any conflict and proposed mitigation</p> <p>_____</p>
--	--

Alberta Fish and Wildlife Division recommends predevelopment inventory be conducted on all native grasslands habitats within the Grassland Natural Region due to high concentration of Species at Risk and limited site specific information on occurrences.

6. Has a pre-development Species at Risk inventory been completed to alert the applicant of any wildlife concerns related to this project? Yes (copy of inventory attached) No

If 'No', explain: See Section 3.3.3 of the PLA Application

Has the activity been assessed to ensure it does not negatively affect any species at risk? Yes No

If 'No', explain: The project has been assessed to determine its effect on species at risk and mitigation measures have been suggested to reduce adverse effects. Additional details are presented in Section 3.3.3 of the PLA Application.

8. If Access Restrictions apply, include legal land description and explain mitigation measures.

LSD _____ Sec _____ Twp _____ Rge _____ W _____

LSD _____ Sec _____ Twp _____ Rge _____ W _____

Explain mitigation strategy: _____

9. If within or adjacent (within 100 m) to a *Protected Area*, indicate the type of protected area and explain what measures will be taken to avoid conflict with the protected area.

Natural Area Ecological Reserve Park Other Crown reservations as discussed in Section 3.2.1 of the PLA Application.

Name of protected area: _____

Explain mitigation strategy: _____

10. Are there any environmentally *sensitive areas* in the vicinity (within 100 m) of the proposed activity that will require special measures to protect? Yes No

If 'Yes', list and explain: See Section 3.3.1 of the PLA Application for additional details.

11. Is the proposed activity within a permafrost area? Yes No

If 'Yes', specify the Permafrost Protection Plan number and name: _____

D. Historical Resources

Date search completed A Historical Resource Impact Assessment was undertaken as part of the EIA. See Section 3.4 of the PLA Application.

dd/mm/yyyy

What is the Historical Resource Value (HRV) of the affected lands?

Not Listed 1 2 3 4 5

If HRV is 1-5, an 'Application for Historical Resources Act Clearance' must be submitted to the Cultural Facilities and Historical Resource Division (CFHRD) of Alberta Community Development.

Date submitted 05/08/2016

dd/mm/yyyy

Note: Activities on land that has an HRV or 4 or 5 may require a Historical Resources Impact Assessment (HRIA).

E. Vegetation and Timber Cover

Vegetation (check all that apply)

Native grassland

Treed wetland

Deciduous-dominant forest:

- | | | |
|--|--|--|
| <input type="checkbox"/> Tame pasture | <input type="checkbox"/> Shrubby wetland | <input checked="" type="checkbox"/> ("D" less than 30% coniferous trees) |
| <input type="checkbox"/> Cropland | <input type="checkbox"/> Grass or grass-like wetland | Coniferous-dominant forest: |
| <input type="checkbox"/> Sparsely or non-vegetated | <input type="checkbox"/> Native aspen parkland | <input checked="" type="checkbox"/> ("C" more than 70% coniferous trees) |
| <input checked="" type="checkbox"/> Cutblock – planted | <input checked="" type="checkbox"/> Other (specify) <u>Grass Meadow.</u> | Mixedwood forest: |
| <input type="checkbox"/> Natural regeneration >2 m | | <input checked="" type="checkbox"/> ("CD" 70% to 50% coniferous trees) |
| | | <input checked="" type="checkbox"/> ("DC" 50% to 30% coniferous trees) |

Timber Salvage

1. Merchantable timber present? Yes No

Provide a volume inventory as follows:

Coniferous approx. volume 1,316m³ or _____ number of loads

Spruce 14% Pine 80% Other 6 %

Deciduous approximate volume 114,550m³ or _____ number of loads

Aspen 98 % Other 2 %

2. Specify the timber disposition or FMA(s) shown on LSAS.

No disposition (Contact the Regulatory body)

Disposition number of FMA: No FMA, see Table 3-2 of PLA Application for lease and permit holders Section ,
holder name _____

3. Utilization standards:

Coniferous 15 cm stump diameter to a 11 cm top diameter.

Deciduous 15 cm stump diameter to a 11 cm top diameter.

4. Timber salvage waiver requested? Yes No

If 'Yes', provide justification: _____

5. Provide the name of the salvage purchaser See Section 3.5 of the PLA Application, or check one of the following:

Not known at this time

By TM88 (or equivalent)

By Timber permit

6. When will the salvage be removed/hailed from the site to a wood processing plant?

Proposed date start: 01/07/2017
dd/mm/yyyy

Proposed date complete: Ongoing through life of the mine.
dd/mm/yyyy

Notes: The operator is responsible for moving the salvage to a site that is accessible to ensure all the wood can be removed. This may require forwarding the wood to a site with all-weather access.

A copy of the TM88 or equivalent must be submitted to the the Regulatory body to ensure proper tracking of ownership, transport and manufacturing can occur.

F. Soil and Vegetation Management

Soil salvage, storage, replacement, and handling procedures shall be in keeping with those outlined in *Section 6 “Site Disturbance, Clearing and Soil Management,”* of the *“Public Lands Operational Handbook”*.

Note: Projects on specific areas of public land may require a soil survey. The proponent is to identify such requirements during the planning process.

Are there soil sensitivities (i.e., shallow depth to water table; shallow depth to bedrock; soils are gravely or stony, etc.)? Yes No

Explain: See Section 3.6.1 of the PLA Application for details on soil sensitivities.

Surface expression (i.e., topography). See Section 3.6.1 of the PLA Application for details on project area topography.

Site drainage (i.e., drainage is very poor, poor, imperfect, moderately well, well, rapid, or very rapid)

See Section 3.6.1 of the PLA Application for details on site drainage.

Are there problem vegetation/weeds/invasive species on or near site at time of assessment?

Yes No **Explain** Problem vegetation/weeds/invasive species are discussed further in Section 3.6.2 of the PLA Application.

Identification of species, degree of infestation and approximate amount of area infested per species.

	Species 1	Species 2	Species 3
Trace (rare)		Refer to Section 3.6.2 of the PLA Application.	
Low (occasional)			
Moderate (scattered plants)			
High (fairly dense)			

Is there a risk of weed spread to the site if development proceeds?

High Moderate Low

If any risk, provide details in reclamation and construction sections of supplements.

If high or moderate, show location on the application plan.

G. Incidental Activities

The applicant is to identify and outline on the application plan any incidental activities required for temporary use.

Note: No additional approval is required for incidental activities that are applied for with the disposition and included in the plan.

If the incidental activity is *not approved* under the disposition, a separate approval is required. Incidental activities approved in this manner are for temporary use only and are *not* part of the surface disposition.

1. According to field assessment, will additional incidental clearings be required? Yes No

If 'Yes', indicate the purpose:

- Campsite Borrow Pit Salvage Deck
 Temporary Workspace Backslope Temporary Access
 Other Incidental activities are discussed further in Section 3.7 of the PLA Application

2. Are any additional clearings planned in reforested areas? Yes No

If 'Yes', explain _____

The Core Operating Conditions are standard practices that must be applied to all activities.

H. Core Operating Conditions

Prior to Entry - Confirmation Number

099 The holder shall contact and advise Regulatory body of its intentions:

- prior to entry upon the lands for a stated purpose,
- prior to any additional construction during the term of this authority,
- at the completion of operations or construction, and
- upon abandonment of this activity.

Upon contact prior to initial entry on the land, the Regulatory body shall issue a confirmation number that shall be maintained on file by the holder and be provided to the Regulatory body on request.

<Location & Telephone No.> _____

Adverse Ground Conditions

105 Any activity on the land during adverse ground conditions must be suspended if the activity is likely cause unacceptable damage to vegetation or soil, as may be determined by the holder or the Regulatory body.

Sample Plots

108 No entry is allowed within the boundaries of any research or sample plot.

Reclamation - Interim

127 The holder shall reclaim all disturbed land surfaces within two growing seasons. Interim reclamation, including site and debris clean-up, slope stabilization, recontouring with subsoil, and spreading of topsoil shall be done progressively and concurrently with operations.

Reclamation - Final

128 Final surface reclamation must meet the requirements for the specific activity in place at the time of abandonment.

Noxious Weeds

131 The holder shall cut, keep down and destroy all noxious weeds and restricted weeds as per the *Public Lands Act*.

Waste Material Disposal

135 The holder shall remove all garbage and waste material from this site to the satisfaction of the Regulatory body, in its sole discretion.

Watercourse/Water Body - No Material to be Deposited

148 The holder shall not deposit or push debris, soil or other deleterious materials into or through any watercourse or water body or on the ice of any watercourse/water body.

Erosion Prevention

158 The holder shall take all precautions and safeguards necessary to prevent soil and surface erosion to the satisfaction of the Regulatory body in its sole discretion.

Natural Drainage - No Interruption

161 The holder shall not create any interruptions to natural drainage, including ephemeral draws that may result in blockage of water flow.

**Sites and Installations
3.0 Completion of Supplement A
Environmental Field Report (EFR)**

The cover document and the appropriate supplement form must be submitted for each surface disposition application. All blanks must either be filled in or 'N/A' noted where applicable.

Failure to fill out the document and form(s) completely will result in the EFR being rejected.

New Revised

Date Submitted: 10/08/2016
dd/mm/yyyy

MSL Number _____

PIL Number: _____

Site/Project Name: Grassy Mountain Coal Project

Legal land description: LSD _____ Sec _____ Twp 8/9 Rge 3/4 W 5

A. Site Description

1. Stability concerns: Yes No If 'Yes', explain mitigation: See Section 4.1 of PLA Application.

Questions 2, 3, 4 and 5 of section A apply to MSL only. The "Wellsite Spacing Recommendations" may be used as a guide, search for "Wellsite Spacing Recommendations" on srd.alberta.ca.

2. Well type: Oil Sweet Gas Sour Gas (H²S) Coalbed Methane Single Well pad Multi-well pad

Other Coal mine as described in Section 4.1 of the PLA Application.

3. Well depth: N/A

4. Flare requirements for drilling: 50 m 35 m 25 m

Flare pit Flare tank Flare stack

5. Number of zones to be completed/produced N/A Inter-well spacing N/A m.

B. Vehicle/Equipment Access

How will the site be accessed? (Check boxes that apply)

By an existing access held under disposition or jurisdiction (specify name, disposition number, and owner):
Mine access is discussed in Section 4.2 of the PLA Application.

New application (LOC)

New access included in this application.

Note: If access is part of the site and installation application, an access supplement must be submitted.

C. Contamination Prevention

1. Is the boundary of the site located within 100 m of a watercourse? Yes No

If 'Yes', specify distance from edge of lease to top of breaks in meters See below

Explain mitigation strategy if within 100 meters Setback distances and contamination prevention are discussed in Section 3.3.2 and Section 4.3 of the PLA Application

2. Will the site be diked during drilling? Yes No During production? Yes No

If 'No', explain why not. N/A

Will other methods of on-site contamination prevention be required? Explain See Section 4.3 in PLA Application.

Applicable to MSL only

D. Sump

Type of sump (check appropriate box): On-site pit Above-ground tank on site
 In-ground tank on site Remote sump

Remote sump location: LSD _____ Sec _____ Twp _____ Rge _____ W _____

Private land Public land (if location known, indicate on the survey plan)

GPS coordinates: (deg/min/decimal) NAD83 Latitude _____ Longitude _____

Proposed mud type: Hydrocarbon: _____ Salt base: _____ Gel chem: _____

Other: N/A

Applicable to MSL only

Disposal

Estimate volumes to be disposed of: Solids _____ m³ Liquids _____ m³

Proposed disposal method: Mix/bury/cover Land spreading Land farming Pump-off

Disposal on forested public land

Other N/A Approximate date of disposal _____

Private Land

Public Land

Indicate land farming or land spreading location if off site on public land.

LSD _____ Sec _____ Twp _____ Rge _____ W _____

Applicable to MSL only

E. Source of Water

1. Water Required: Yes No Water well on lease

2. Offsite source: Offsite water well Lake Stream River

Other (specify type) Water supply sources are discussed in Section 4.5 of the PLA Application.

Location: LSD _____ Sec _____ Twp _____ Rge _____ W _____

3. Access required to water source? Yes No If 'Yes' attach a sketch.

F. Construction Strategy

1. Vegetation Removal

Explain: See Section 4.6 of the PLA Application

2. Brush Disposal

Explain: See Section 4.6 of the PLA Application

3. Topsoil handling: (Check appropriate boxes) No stripping Minimum surface disturbance
 Stripping Single Lift Two Lift Other (Explain) See below

Additional details: The proposed construction strategy, including vegetation/brush removal and topsoil handling, is discussed in Section 4.6 of the PLA Application.

4. Will padding of the wellsite be required? Yes No,

If 'Yes' Explain: N/A

G. Reclamation Strategy

Revegetation strategy: (Check appropriate boxes) Natural Recovery Native Seed
 Non-native Seed Other See Section 4.7 of the PLA Application

Interim: The reclamation strategy for the mine is discussed in Section 4.7 of the PLA Application.

Production/Operation: The reclamation strategy for the mine is discussed in Section 4.7 of the PLA Application.

Applicable to MSL only

See Appendix III - Lease Description and Wellsite Sizing Information

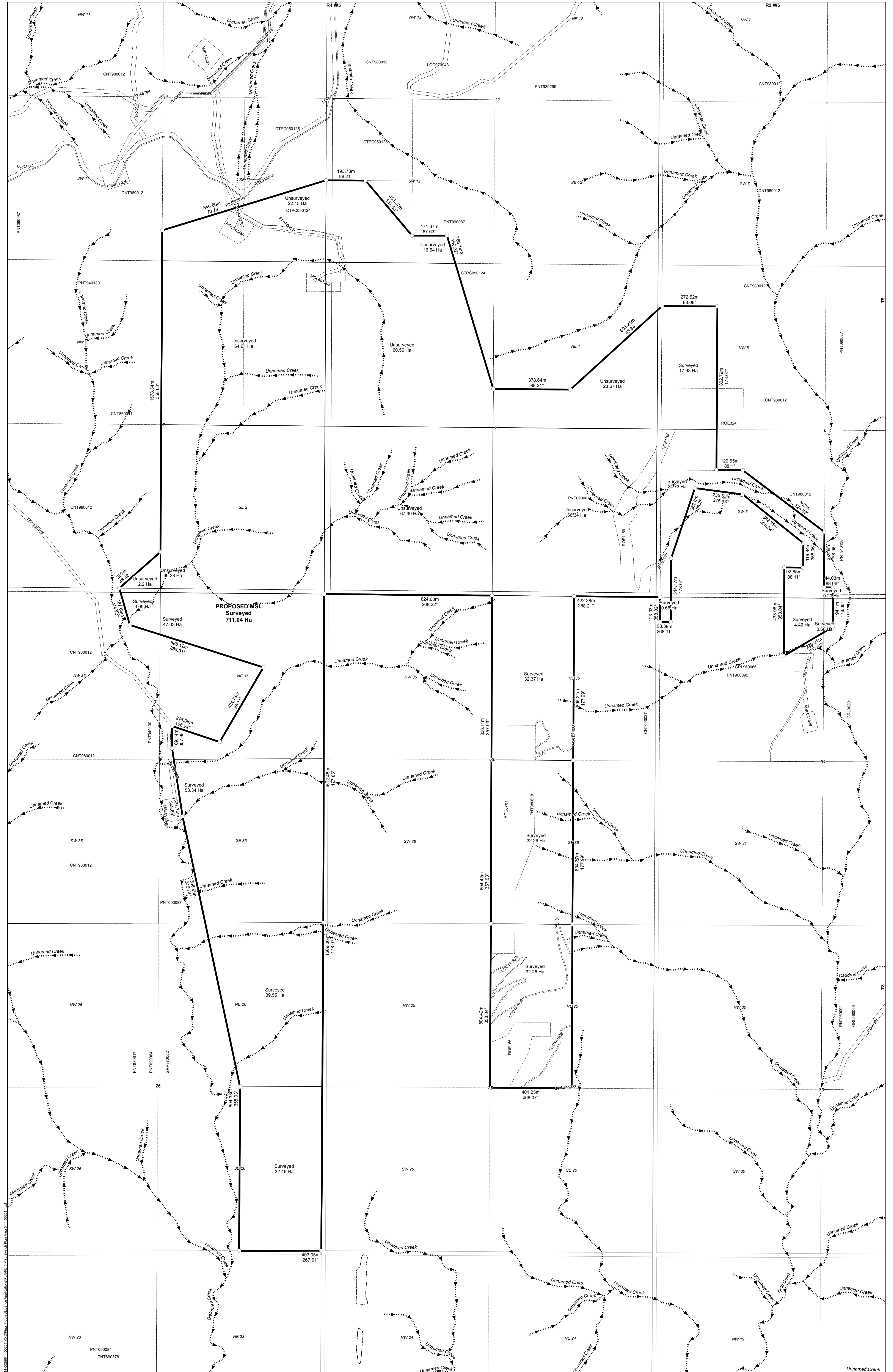
Note: Complete and attach the lease description and wellsite sizing template (in the Appendix) if a non-standard wellsite is required as per the lease description and wellsite sizing document (see instructions).

Operating Condition

Contamination Prevention

136 In addition to complying with Federal, provincial and local laws and regulations respecting the environment, including release of substances, the holder shall, to the regulatory body's satisfaction, take necessary precautions to prevent contamination of land, water bodies and the air with particulate and gaseous matter, which, in the opinion of the regulatory body in its sole discretion, is

or may be harmful.



LEGEND

- Deflection Point
- ▬ Creek (Flow Direction)
- ▭ Proposed Disposition Boundary
- ▭ Disposition

PROJECT

GRASSY MOUNTAIN COAL PROJECT

TITLE

PROPOSED MINERAL SURFACE LEASE (MSL) SKETCH PLAN
008/009-03/04 W5

NOTES

AtlaLIS, 2016, MEMS, 2016
 Datum/Projection: UTM 31M Nad 83

PROJECT: 14-02201

DRAWN BY: JLUJC

CHECKED BY: KY

DATE: JULY 29, 2016

FIGURE

1 of 2

Scale: 1:8,000

0 100 200 400 Metres

Disclaimer: This figure was derived from multiple data sources and while we make every effort to assure its accuracy, Millennium EMS Solutions Ltd. disclaims any representation or warranty and assumes no liability either for any errors, omission or inaccuracies that may occur.

Selection Criteria

Selected Sections

Geo-Administrative Area: **Y**
 Requested Lands: **Y**
 Title Information: **N**
 Activity Details: **Y**
 Subdivisions: **NA**
 Client List: **Y**

Selected Activities

Surface Dispositions	Y	Status:	Number Assigned, Application, Letter of Authority, Land Amendment Application, Letter of Authority for Amendment, Active/Disposed, Cancelled - Outstanding Obligation
		Types:	All
Geophysical	NA	Status:	All
		Types:	All
Reservations	Y	Status:	Number Assigned, Application, Letter of Authority, Land Amendment Application, Letter of Authority for Amendment, Active/Disposed, Cancelled - Outstanding Obligation
		Types:	All
Encumbrances	Y	Status:	All
		Types:	All
Land Postings	Y	Status:	Number Assigned, Open, Closed
		Types:	All

Land Keys

W5-03-008-31-NE
 W5-03-008-31-NW
 W5-03-009-06-NW

Public Land Standing

W5-03-009-06-SE
W5-03-009-06-SW
W5-04-008-25-NE
W5-04-008-26-NE
W5-04-008-26-SE
W5-04-008-35-NE
W5-04-008-35-NW
W5-04-008-35-SE
W5-04-008-36-NE
W5-04-008-36-SE
W5-04-009-01
W5-04-009-02-NE
W5-04-009-02-SE
W5-04-009-11-SE
W5-04-009-12-SW

Public Land Standing

Requested Land

Requested Land	Ownership Status	Administered By	Titled Status	Survey Status	Area in Hectares		Area in Acres		
					Land	Title	Land	Title	Water
W5-03-008-31-NW	Crown	FLW	Titled	Surveyed	64.750	0.000	160.00	0.00	No Water Coverage
W5-03-008-31-NE	Crown	FLW	Untitled	Surveyed	64.345	0.000	159.00	0.00	No Water Coverage
W5-03-009-06-SE	Crown	FLW	Untitled	Surveyed	64.750	0.000	160.00	0.00	No Water Coverage
W5-03-009-06-SW	Crown	FLW	Untitled	Surveyed	64.750	0.000	160.00	0.00	No Water Coverage
W5-03-009-06-NW	Crown	FLW	Untitled	Surveyed	64.750	0.000	160.00	0.00	No Water Coverage
W5-04-008-25-NE	Mixed	FLW-FRH	Mixed	Surveyed	0.000	32.415	0.00	80.10	No Water Coverage
<i>Remarks: FRHOLD 80.10 LS 9&16 ENR 79.90 LS 10&15</i>									
W5-04-008-26-SE	Crown	FLW	Titled	Surveyed	64.750	0.000	160.00	0.00	No Water Coverage
W5-04-008-26-NE	Crown	FLW	Untitled	Surveyed	64.750	0.000	160.00	0.00	No Water Coverage
W5-04-008-35-SE	Crown	FLW	Untitled	Surveyed	64.750	0.000	160.00	0.00	No Water Coverage
W5-04-008-35-NW	Crown	FLW	Untitled	Surveyed	66.368	0.000	164.00	0.00	No Water Coverage
W5-04-008-35-NE	Crown	FLW	Untitled	Surveyed	65.559	0.000	162.00	0.00	No Water Coverage
W5-04-008-36-SE	Mixed	FLW-FRH	Mixed	Surveyed	0.000	32.415	0.00	80.10	No Water Coverage
<i>Remarks: FRH 80.10 LS 1&8 ENR 79.90 LS 2&7</i>									
W5-04-008-36-NE	Mixed	FLW-FRH	Mixed	Surveyed	0.000	32.375	0.00	80.00	No Water Coverage
<i>Remarks: FRHOLD 80.00 LS 9&16 ENR 80.00 LS 10&15</i>									
W5-04-009-01	Crown	FLW	Untitled	Partly Surveyed	259.000	0.000	640.00	0.00	No Water Coverage
W5-04-009-02-SE	Crown	FLW	Untitled	Surveyed	64.750	0.000	160.00	0.00	No Water Coverage
W5-04-009-02-NE	Crown	FLW	Untitled	Unsurveyed	64.750	0.000	160.00	0.00	No Water Coverage
W5-04-009-11-SE	Crown	FLW	Titled	Unsurveyed	64.750	0.000	160.00	0.00	No Water Coverage
W5-04-009-12-SW	Crown	FLW	Untitled	Unsurveyed	64.750	0.000	160.00	0.00	No Water Coverage
TOTAL					1,167.522	97.205	2,885.01	240.20	

Geo Administrative Areas

ALBERTA ENERGY
REGULATOR

SOUTH REGION

Code: AER-S

W5-03-008
W5-03-009

Public Land Standing

ALBERTA ENERGY REGULATOR	SOUTH REGION		Code: AER-S
W5-04-008			
W5-04-009			
COAL DEVELOPMENT REGION	SETTLED		Code: CDR-1
W5-03-008-31			
W5-04-008-25			
W5-04-008-26			
W5-04-008-36			
COAL DEVELOPMENT REGION	EASTERN SLOPES		Code: CDR-3
W5-03-009-06			
W5-04-008-35			
W5-04-009			
ENVIRONMENT CORPORATE REGION	SOUTHERN		Code: ENV-1
W5-03-008			
W5-03-009			
W5-04-008			
W5-04-009			
ENVIRONMENT CONS. & RECL. DISTRICT	NO. 20		Code: ERD-020
W5-03-008			
W5-03-009			
W5-04-008			
W5-04-009			
EASTERN SLOPE ZONE			Code: ESZ
W5-03-008			
W5-03-009			
W5-04-008			
W5-04-009			
FOREST MANAGEMENT UNIT	SOUTHWEST	C5 SOUTHERN ROCKIES	Code: FMU-C-05
W5-03-009-06			
W5-04-008-35			
W5-04-009			
FOREST MANAGEMENT UNIT	SOUTHWEST	CO2 SOUTHERN ROCKIES	Code: FMU-C-52
W5-03-008-31			

Public Land Standing

FOREST MANAGEMENT UNIT	SOUTHWEST	CO2 SOUTHERN ROCKIES	Code: FMU-C-52
W5-04-008-25			
W5-04-008-26			
W5-04-008-36			
FOREST RESERVE	ROCKY MOUNTAINS		Code: FR-001
W5-03-009-06			
W5-04-008-35			
W5-04-009			
FISH & WILDLIFE ADMIN REGION	SOUTHERN REGION	BLAIRMORE	Code: FWA-1-02
W5-03-008			
W5-03-009			
W5-04-008			
W5-04-009			
FISH AND WILDLIFE DISTRICT	SOUTHERN REGION	BLAIRMORE	Code: FWD-1-09
W5-03-008			
W5-03-009			
W5-04-008			
W5-04-009			
GENERAL LANDS CLASSIFICATION	GREEN		Code: GLC-G
W5-03-009-06			
W5-04-008-35			
W5-04-009			
GENERAL LANDS CLASSIFICATION	WHITE		Code: GLC-W
W5-03-008-31			
W5-04-008-25			
W5-04-008-26			
W5-04-008-36			
GRAZING ZONE	A2		Code: GRZ-A2
W5-03-008			
W5-03-009			
W5-04-008			
W5-04-009			
INTEGRATED RESOURCE PLAN	LIVINGSTONE-PORCUPINE HILLS		Code: IRP-L2

Public Land Standing

INTEGRATED RESOURCE PLAN	LIVINGSTONE-PORCUPINE HILLS		Code: IRP-L2
W5-03-008-31			
W5-03-009			
W5-04-008-25			
W5-04-008-26			
W5-04-008-35			
W5-04-008-36			
W5-04-009			
LAND USE AREA	SOUTHWEST 1	BLAIRMORE	Code: LUA-SW1-2
W5-03-008			
W5-03-009			
W5-04-008			
W5-04-009			
MUNICIPAL DISTRICT	RANCHLAND NO. 66		Code: MD-066
W5-03-008-31			
W5-03-009-06			
W5-04-008-25			
W5-04-008-26			
W5-04-008-35			
W5-04-008-36			
W5-04-009			
OPERATIONAL APPROVAL DISTRICTS	South Saskatchewan Region	South Saskatchewan District	Code: OPD-5-1
W5-03-008			
W5-03-009			
W5-04-008			
W5-04-009			
RANGELAND DISTRICT	SOUTHWEST	ROCKY MOUNTAIN FOREST RESERVE SOUTH	Code: RLD-SW-4
W5-03-009-06			
W5-04-008-35			
W5-04-009			
RANGELAND DISTRICT	SOUTHWEST	PINCHER CREEK	Code: RLD-SW-6
W5-03-008-31			
W5-04-008-25			
W5-04-008-26			
W5-04-008-36			

Public Land Standing

REGIONAL PLANNING
COMMISSIONS

OLDMAN RIVER

Code: RPC-02

W5-03-008

W5-03-009

W5-04-008

W5-04-009

End of Geo Administrative Areas

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
CNT090027	Active/Disposed	2009/03/10	2034/03/31		175,167.31	70,887.690

CALGARY OFFICE - FORESTRY AND EMERGENCY RESPONSE DIVISON OF ENVIRONMENT AND SUSTAINABLE RESOURCE DEVELOPM
 0510 : BUFFER
 1 : NO RESTRICTON
 710 : SEE COMMENTS

Agency CommentsFOR EAP APPLICATIONS, SEND EMAIL TO BELOW ADDRESS BASED ON CRITERIA. A TEN DAY REFERRAL WINDOW WILL APPLY AND NOTE OF RECIEPT WILL BE PROVIDED BY EMAIL. IF NO REPLY IS RECEIVED THEN PROCEED WITH APPLICATION. NON-EAP APPLICANTS FOLLOW NORMAL REFERRAL PROTOCOLS. ALL PROPONENTS ARE TO REFER TO THE FIRESMART GUIDEBOOK FOR THE OIL AND GAS INDUSTRY, BEST MANAGEMENT PRACTICES FOR WILDFIRE PREVENTION AND FIRESMART FIELD GUIDE FOR WILDFIRE RISK AND MITIGATION STRATEGIES; LINK TO E-DOCUMENTS HTTP://WILDFIRE.ALBERTA.CA/FIRE-SMART-INDUSTRY/DEFAULT.ASPX FIRESMART CONSULATATIVE NOTATION COMMENTS: TYPES OF ACTIVITES AND DISPOSITIONS THAT REQUIRE REFERRAL; *RECREATION LEASE (REC) *DISPOSTION RESERVATION (DRS)-USE CRITERIA FOR MLL* ,SML AND LOC AS DEFINED BELOW *EASEMENT (EZE) *VEGETATION CONTROL EASEMENT (VCE) *LICENSE OF OCCUPATION (LOC)-HIGH GRADE ROAD OR ACCESS ROAD 20M+ WIDE *MINERAL SURFACE LEASE (MSL), *MISCELLANEOUS LEASE (MLL) *MISCELLANEOUS PERMIT (MLP) *PIPELINE AGREEMENT (PLA)-IF 20M+WIDE *PIPELINE INSTALLATION LEASE (PIL)- IF OVER 5 HECTARES *RURAL ELECTRIC ASSOCIATION EASEMENT (REA) *SURFACE MATERIAL LEASE (SML)- ONLY IF PEATMOSS *ALL AGRICULTURAL DISPOSITIONS REQUIRING FENCE LINE CLEARING/FIELD CLEARING AND DEBRIS DISPOSAL *REGIONAL GRAZING/TIMBER INTRGRATION PLANS . ALL APPLICATIONS MUST BE REFERRED VIA EMAIL TO THE "WILDFIRE PREVENTION OFFICER" AT THE CALGARY FORESTRY OFFICE: ESRD.EDS-CLGR-FIRESMART@GOV.AB.CA TYPES OF ACTIVITES AND DISPOSITIONS NOT REQUIRING REFERRAL *GEOPHYSICAL ACTIVITIES. *AGRICULTURAL DISPOSITIONS WHERE CLEARING IS NOT REQUIRED E.G. HAY PERMIT *HAP), FOREST GRAZING LICENSE (FGL) WITH NO FENCE LINES *TIMBER DISPOSITIONS

ACTIVITY DETAIL INFORMATION

PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)		
5999 RN			2009/02/24		
W5-03-008-31-NE				(0.00)	(0.000)
W5-03-008-31-NW				(0.00)	(0.000)
W5-03-009-06				(640.00)	(259.000)
W5-04-008-25-NE				(0.00)	(0.000)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Total Area	
					Acres	Hectares
W5-04-008-26-NE					(0.00)	(0.000)
W5-04-008-26-SE					(0.00)	(0.000)
W5-04-008-35					(646.00)	(261.427)
W5-04-008-36-NE					(0.00)	(0.000)
W5-04-008-36-SE					(0.00)	(0.000)
W5-04-009-01					(640.00)	(259.000)
W5-04-009-02					(640.00)	(259.000)
W5-04-009-11					(640.00)	(259.000)
W5-04-009-12					(640.00)	(259.000)

 CNT860041 Active/Disposed 1986/02/13 2017/02/28 12,280.00 4,969.539

BLAIRMORE OFFICE - LAND USE AREA - LANDS DIVISION DEPT. OF
 SUSTAINABLE RESOURCE DEV
 0222 : POTENTIAL TIMBER DISPOSAL
 1 : NO RESTRICTON
 710 : SEE COMMENTS

TO DETERMINE VOLUMES AND ESTABLISH AU A.A.CC. WITHIN THE MCCRILLIVARY CREEK
 MISC. TIMBER USE AREA OF THE CS M.U.

ACTIVITY DETAIL INFORMATION

NO PLANS

W5-04-009-01					(640.00)	(259.000)
W5-04-009-02					(640.00)	(259.000)
W5-04-009-11					(640.00)	(259.000)
W5-04-009-12					(640.00)	(259.000)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Total Area	
					Acres	Hectares
CNT980012	Active/Disposed	1998/02/17	2018/02/28	BLAIRMORE OFFICE - LAND USE AREA - LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV 0363 : SNOWMOBILE TRAILS 1 : NO RESTRICTON 710 : SEE COMMENTS THESE TRAILS MANAGED/MAINTAINED BY CROWSNEST ECONOMIC DEVELOPMENT BOARD. INCLUDES ALL THEORETICAL ROAD ALLOWANCE. REFER ALL DISPOSITIONS TO L&FS-BLAIRMORE. SKETCH ON FILE.	1,840.26	744.727

ACTIVITY DETAIL INFORMATION

NO PLANS

W5-03-009-06-NW	(4.00)	(1.619)
W5-03-009-06-SE	(4.00)	(1.619)
W5-03-009-06-SW	(4.00)	(1.619)
W5-04-008-35-NW	(4.00)	(1.619)
W5-04-009-11	(16.00)	(6.475)

CTPC050124	Active/Disposed	2016/05/31	2018/04/30	EGBERT VELDMAN	320.00	129.500
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ACTIVITY DETAIL INFORMATION

OPTION TO PURCHASE (Y/N): WITHIN 100M OF WATERBODY (Y/N): PURPOSE:
DIMENSION: CLIENT FILE NO:

NO PLANS

W5-04-009-01-NW
W5-04-009-02-09
W5-04-009-02-16
W5-04-009-11-01
W5-04-009-12-04

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
CTPC050125	Active/Disposed	2016/06/07	2018/04/30	HENRY VELDMAN	80.56	32.600
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N):		PURPOSE:		
DIMENSION:		CLIENT FILE NO:				
NO PLANS						
W5-04-009-11-08						
W5-04-009-12-05						
EZE 990090	Letter of Authority	1999/07/07	2999/12/31	DEVON CANADA CORPORATION	8.98	3.635
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N): N		PURPOSE: POWERLINE		
DIMENSION: 5M X 7615M		CLIENT FILE NO:				
PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)			
8113 T			1999/06/10			
W5-04-009-11-SE					(1.33)	(0.537)
W5-04-009-12-SW					(0.56)	(0.228)
GRL 36801	Active/Disposed	1962/12/01	2022/11/30	DON DRIVER	1,119.00	452.843
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N): N		WITHIN 100M OF WATERBODY (Y/N):		PURPOSE:		
DIMENSION:		CLIENT FILE NO:				
PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)			
3031 SK			1962/12/01			

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Hectares								
W5-03-008-31-NE					(159.00)	(64.345)								

GRL 960066	Active/Disposed	1996/06/15	2016/06/14	DON DRIVER	480.00	194.249								
<p style="text-align: center;">ACTIVITY DETAIL INFORMATION</p> <p>OPTION TO PURCHASE (Y/N): WITHIN 100M OF WATERBODY (Y/N): Y PURPOSE:</p> <p>DIMENSION: CLIENT FILE NO:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">PLAN NO</th> <th style="width: 25%;">LTO PLAN NO</th> <th style="width: 25%;">ITEM</th> <th style="width: 25%;">VERSION DATE(S)</th> </tr> </thead> <tbody> <tr> <td>4556 SK</td> <td></td> <td></td> <td>1996/06/20</td> </tr> </tbody> </table>							PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)	4556 SK			1996/06/20
PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)											
4556 SK			1996/06/20											
W5-03-008-31-NW					(160.00)	(64.750)								

GRP 870052	Active/Disposed	1989/01/01	2017/12/31	GOLD CREEK GRAZING CO-OP LTD.	3,427.00	1,386.858								
<p style="text-align: center;">ACTIVITY DETAIL INFORMATION</p> <p>OPTION TO PURCHASE (Y/N): WITHIN 100M OF WATERBODY (Y/N): PURPOSE:</p> <p>DIMENSION: CLIENT FILE NO:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">PLAN NO</th> <th style="width: 25%;">LTO PLAN NO</th> <th style="width: 25%;">ITEM</th> <th style="width: 25%;">VERSION DATE(S)</th> </tr> </thead> <tbody> <tr> <td>7919 SK</td> <td></td> <td></td> <td>1990/06/01</td> </tr> </tbody> </table>							PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)	7919 SK			1990/06/01
PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)											
7919 SK			1990/06/01											
W5-04-008-26-NE					(160.00)	(64.750)								
W5-04-008-26-SE					(160.00)	(64.750)								

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
LOC 890772	Active/Disposed	1989/10/06	2014/10/05	TAQA NORTH LTD.	10.49	4.245

ACTIVITY DETAIL INFORMATION

OPTION TO PURCHASE (Y/N): DIMENSION: 15 M X 2.83 KM
 WITHIN 100M OF WATERBODY (Y/N): CLIENT FILE NO:
 PURPOSE: ACCESS ROAD

PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)
36298 MS			1989/09/07

W5-04-008-35-NE	(0.00)	(0.000)
W5-04-008-35-NW	(0.00)	(0.000)
W5-04-008-35-SE	(0.00)	(0.000)

MSL 12533	Letter of Authority for Amendment	1997/06/27	2026/05/16		6.51	2.633
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DEVON CANADA CORPORATION

ACTIVITY DETAIL INFORMATION

OPTION TO PURCHASE (Y/N): N DIMENSION: W/S - IRREGULAR; A/R - 20.117 M
 WITHIN 100M OF WATERBODY (Y/N): N CLIENT FILE NO:S001374
 PURPOSE: WELLSITE AND ACCESS ROAD

PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)
13785 MS			1858/11/17
13785 MS		A	1997/06/18
13785 MS			1997/06/18

W5-04-009-11-SE	(0.00)	(0.000)
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Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
MSL 011735	Letter of Authority	2001/05/10	2026/05/09	CANADIAN NATURAL RESOURCES LIMITED	2.79	1.128
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N): N		PURPOSE: WELLSITE AND ACCESS ROAD		
DIMENSION: IRREGULAR; 7M A/R		CLIENT FILE NO:S008129				
PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)			
79371 MS			2001/04/18			
W5-03-008-31-NW					(2.79)	(1.128)
MSL 021309	Letter of Authority	2002/06/26	2027/06/25	CANADIAN NATURAL RESOURCES LIMITED	2.15	0.870
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N): N		PURPOSE: WELLSITE AND ACCESS ROAD		
DIMENSION: W/S - IRREGULAR ; A/R - 20 X 123.85 M		CLIENT FILE NO:02-1826				
PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)			
84607 MS			2002/06/13			
W5-03-008-31-NW					(2.15)	(0.870)
MSL 043285	Letter of Authority for Amendment	2005/09/19	2029/12/19	DEVON CANADA CORPORATION	3.74	1.514
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N): N		PURPOSE: WELLSITE		
DIMENSION: IRREGULAR		CLIENT FILE NO:DEV#9565				
PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)			
96823 MS			2005/09/15			
W5-04-009-11-SE					(3.74)	(1.514)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
MSL 801502	Active/Disposed	1980/08/29	2030/08/28	DEVON CANADA CORPORATION	8.33	3.371
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N): N		WITHIN 100M OF WATERBODY (Y/N):		PURPOSE: WELLSITE		
DIMENSION:		CLIENT FILE NO:				
PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)			
21117 MS			1858/11/17			
W5-04-009-01-NW				(0.00)	(0.000)	
W5-04-009-02-NE				(0.00)	(0.000)	
W5-04-009-11-SE				(0.00)	(0.000)	
W5-04-009-12-SW				(0.00)	(0.000)	
MSL 890948	Active/Disposed	1989/10/06	2014/10/05	TAQA NORTH LTD.	2.29	0.925
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N):		PURPOSE: WELLSITE		
DIMENSION: IRREGULAR		CLIENT FILE NO:				
PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)			
36298 MS			1989/09/07			
W5-04-008-35-SE				(2.29)	(0.925)	

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
PIL 050504	Letter of Authority	2005/10/06	2030/10/05	DEVON CANADA CORPORATION	0.10	0.040
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N): N		PURPOSE: VALVE SITE AND ACCESS ROAD		
DIMENSION: 15 M X 20 M & 10 M A/R		CLIENT FILE NO:DEV#P1616				
PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)			
59171 P			2005/08/17			
W5-04-009-11-SE					(0.10)	(0.040)

PLA 5009	Active/Disposed	1974/06/26	2999/12/31	LONLIFE RESOURCES LTD NORCO RESOURCES LIMITED CANADIAN NATURAL RESOURCES LIMITED OPINAC EXPLORATION LIMITED	21.78	8.814
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N): N		WITHIN 100M OF WATERBODY (Y/N): Y		PURPOSE: PIPELINE		
DIMENSION: 20, 60 AND 75 FT		CLIENT FILE NO:G-34,792				
PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)			
5462 P	7411056		1999/04/26			
W5-04-009-11					(640.00)	(259.000)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares								
PLA 5796	Active/Disposed	1975/04/02	2999/12/31	DEVON CANADA CORPORATION SCURRY RAINBOW OIL LIMITED 34.1688% OPINAC EXPLORATION LIMITED 9.3899% NORCEN ENERGY RESOURCES LIMITED 22/3899% NORCO RESOURCES LIMITED 3.5000% HERSHEY OIL CORPORATION 20.2994% AMERADA HESS CANADA LTD. 10.2520% SCURRY RAINBOW OIL LIMITED 34.1688% OPINAC EXPLORATION LIMITED 9.3899% NORCEN ENERGY RESOURCES LIMITED 22/3899% NORCO RESOURCES LIMITED 3.5000% HERSHEY OIL CORPORATION 20.2994% AMERADA HESS CANADA LTD. 10.2520% ACTIVITY DETAIL INFORMATION OPTION TO PURCHASE (Y/N): N WITHIN 100M OF WATERBODY (Y/N): PURPOSE: PIPELINE DIMENSION: 4.572 M (WIDENING), 18.288 M (W) (15, 60 FEET) CLIENT FILE NO: <table border="1"> <thead> <tr> <th>PLAN NO</th> <th>LTO PLAN NO</th> <th>ITEM</th> <th>VERSION DATE(S)</th> </tr> </thead> <tbody> <tr> <td>6091 P</td> <td>7610241</td> <td></td> <td>1988/08/15</td> </tr> </tbody> </table>	PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)	6091 P	7610241		1988/08/15	18.56	7.511
PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)											
6091 P	7610241		1988/08/15											
W5-04-009-11						(640.00)	(259.000)							
PLA 052764	Letter of Authority for Amendment	2008/06/12	2999/12/31	DEVON CANADA CORPORATION ACTIVITY DETAIL INFORMATION OPTION TO PURCHASE (Y/N): WITHIN 100M OF WATERBODY (Y/N): N PURPOSE: PIPELINE DIMENSION: 10 M CLIENT FILE NO:1616 <table border="1"> <thead> <tr> <th>PLAN NO</th> <th>LTO PLAN NO</th> <th>ITEM</th> <th>VERSION DATE(S)</th> </tr> </thead> <tbody> <tr> <td>59169 P</td> <td>0613401</td> <td></td> <td>2008/06/09</td> </tr> </tbody> </table>	PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)	59169 P	0613401		2008/06/09	0.34	0.139
PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)											
59169 P	0613401		2008/06/09											
W5-04-009-11-SE						(0.34)	(0.139)							

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
PLA 800692	Active/Disposed	1981/02/17	2999/12/31	LONLIFE RESOURCES LTD NORCO RESOURCES LIMITED CANADIAN NATURAL RESOURCES LIMITED OPINAC EXPLORATION LIMITED FOR RELATED CLIENTS REFER TO ASSIGNMENT FORM LG54 FOR RELATED CLIENTS REFER TO ASSIGNMENT FORM LG54 ACTIVITY DETAIL INFORMATION OPTION TO PURCHASE (Y/N): N DIMENSION: 15 M (W) PLAN NO LTO PLAN NO ITEM VERSION DATE(S) 10434 P 8111128 1988/07/18	5.21	2.108
					(0.00)	(0.000)
					(0.00)	(0.000)
					(0.00)	(0.000)
					(0.00)	(0.000)
PLA 800809	Active/Disposed	1980/10/24	2999/12/31	LONLIFE RESOURCES LTD NORCO RESOURCES LIMITED CANADIAN NATURAL RESOURCES LIMITED OPINAC EXPLORATION LIMITED FOR RELATED CLIENTS REFER TO LG 54 ON FILE FOR RELATED CLIENTS REFER TO LG 54 ON FILE ACTIVITY DETAIL INFORMATION OPTION TO PURCHASE (Y/N): N DIMENSION: 10 M (W) PLAN NO LTO PLAN NO ITEM VERSION DATE(S) 10152 P 8111664 1988/07/18	3.11	1.259
					(0.00)	(0.000)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares								
PLA 920136	Active/Disposed	1985/12/12	2999/12/31	DEVON CANADA CORPORATION HOME OIL COMPANY LIMITED 34.1688% OPINAC EXPLORATION LIMITED 9.3899% NORCEN ENERGY RESOURCES LIMITED 22,3899% NORCO RESOURCES LIMITED 3.5000% HERSHEY OIL CORPORATION 20.2994% AMERADA HESS CANADA LTD. 10.2520% HOME OIL COMPANY LIMITED 34.1688% OPINAC EXPLORATION LIMITED 9.3899% NORCEN ENERGY RESOURCES LIMITED 22,3899% NORCO RESOURCES LIMITED 3.5000% HERSHEY OIL CORPORATION 20.2994% AMERADA HESS CANADA LTD. 10.2520% ACTIVITY DETAIL INFORMATION OPTION TO PURCHASE (Y/N): WITHIN 100M OF WATERBODY (Y/N): Y PURPOSE: PIPELINE DIMENSION: VARIABLE WIDTHS CLIENT FILE NO: <table border="1"> <thead> <tr> <th>PLAN NO</th> <th>LTO PLAN NO</th> <th>ITEM</th> <th>VERSION DATE(S)</th> </tr> </thead> <tbody> <tr> <td>17308 P</td> <td>8410872</td> <td></td> <td>1992/02/13</td> </tr> </tbody> </table>	PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)	17308 P	8410872		1992/02/13	1.78	0.720
PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)											
17308 P	8410872		1992/02/13											
W5-04-009-11-SE	LYING WITHIN PLAN 7411056 (FLW PLAN NO. 5462 P).				(0.00)	(0.002)								

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
PNT090084	Active/Disposed	2011/10/20	2021/10/19		132,888.84	53,778.200

PINCHER CREEK OFFICE - RANGELAND DISTRICT-LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV
 0181 : MULTIPLE RESOURCE CONCERNS
 5 : NO SURFACE SALE DISPOSITIONS
 710 : SEE COMMENTS

THIS LOCATION MAY FALL WITHIN AN AREA OF FOOTHILLS FESCUE GRASSLAND, A VERY VALUABLE NATIVE GRASSLAND TYPE THAT IS LIMITED IN REMAINING AREA. ROUGH FESCUE GRASSLANDS ARE VERY SENSITIVE TO SURFACE DISTURBANCE AND DIFFICULT AND COSTLY TO RECLAIM. PROPONENTS MUST CONSULT INFORMATION LETTER (IL) 2010-02, FESCUE GRASSLANDS -- PRINCIPLES FOR MINIMIZING SURFACE DISTURBANCE AND MAKE EARLY CONTACT WITH ALBERTA ENVIRONMENT & SUSTAINABLE RESOURCE DEVELOPMENT STAFF FOR THE AREA IN QUESTION. THE INFORMATION LETTER ADDRESSES OBLIGATIONS AND SPECIFIC DIRECTION REGARDING ALL POTENTIAL SURFACE DISTURBANCE RELATED ACTIVITY IN FOOTHILLS ROUGH FESCUE GRASSLAND PLANT COMMUNITIES. THIS DIRECTIVE SUPPLEMENTS THE ERCB'S IL 2002-01: PRINCIPLES FOR MINIMIZING SURFACE DISTURBANCE IN NATIVE PRAIRIE AND PARKLAND AREAS. IL 2010-02 MAY BE FOUND AT:
[HTTP://WWW.SRD.ALBERTA.CA/FORMSONLINESERVICES/INFORMATIONLETTERS/LANDSINFORMATIONLETTERS/DOCUMENTS/IL2010-02-FOOTHILLSFESCUEGRASSLANDPRINCIPLESFORMINIMIZINGSURFACEDISTURBANCE-MAR23-2010.PDF](http://www.srd.alberta.ca/formsonlineservices/informationletters/landsinformationletters/documents/il2010-02-foothillsfescuegrasslandprinciplesforminimizingsurfacedisturbance-mar23-2010.pdf) IL 2002-01 MAY BE FOUND AT:
[HTTP://WWW.ALBERTAPCF.ORG/RSU_DOCS/EUB_NATIVE_PRAIRIE.PDF](http://www.albertapcf.org/rsu_docs/eub_native_prairie.pdf)

ACTIVITY DETAIL INFORMATION

PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)
7837 RN			2011/09/09
7837 RN			2013/03/15
W5-04-008-26-NE			
W5-04-008-26-SE			

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Total Area Acres	Hectares
PNT090087	Active/Disposed	2011/10/19	2021/10/18		420,194.02	170,046.474

PINCHER CREEK OFFICE - RANGELAND DISTRICT-LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV
 0181 : MULTIPLE RESOURCE CONCERNS
 5 : NO SURFACE SALE DISPOSITIONS
 710 : SEE COMMENTS

THIS LOCATION MAY FALL WITHIN AN AREA OF FOOTHILLS FESCUE GRASSLAND, A VERY VALUABLE NATIVE GRASSLAND TYPE THAT IS LIMITED IN REMAINING AREA. ROUGH FESCUE GRASSLANDS ARE VERY SENSITIVE TO SURFACE DISTURBANCE AND DIFFICULT AND COSTLY TO RECLAIM. PROPONENTS MUST CONSULT (DRAFT 2009) INFORMATION LETTER, FESCUE GRASSLANDS-- PRINCIPLES FOR MINIMIZING SURFACE DISTURBANCE AND MAKE EARLY CONTACT WITH ALBERTA SUSTAINABLE RESOURCE DEVELOPMENT STAFF FOR THE AREA IN QUESTION. THE IL ADDRESSES OBLIGATIONS AND SPECIFIC DIRECTION REGARDING ALL POTENTIAL SURFACE DISTURBANCE RELATED ACITIVITY IN FOOTHILLS ROUGH FESCUE GRASSLAND PLANT COMMUNITIES. THIS DIRECTIVE SUPPLEMENTS THE ERCB'S IL 2002-1, PRINCIPLES FOR MINIMIZING SURFACE DISTURBANCE IN NATIVE PRAIRIE AND PARKLAND AREAS. THE DRAFT 2009 IL MAY BE FOUND AT :
[HTTP://SRD.ALBERTA.CA/MAPSFORMSPUBLICATIONS/FORMS/LANDSFORMS/INFORMATIONLETTERS.ASPX](http://SRD.ALBERTA.CA/MAPSFORMSPUBLICATIONS/FORMS/LANDSFORMS/INFORMATIONLETTERS.ASPX) IL 2002-1 MAY BE FOUND AT:
[HTTP://WWW.ERCB.CA/PORTAL/SERVER.PT/GATEWAY/PTARGS_0_0_323_253_0_43/HTTP%3B/ERCBCONTENT/PUBLISHEDCONTENT/PUBLISH/ERCB_HOME/INDUSTRY_ZONE/RULES_REGULATIONS_REQUIREMENTS/INFORMATION_LETTERS_INTERIM_DIRECTIVES/INFORMATIONAL_LETTERS/IL2002_01.ASPX](http://WWW.ERCB.CA/PORTAL/SERVER.PT/GATEWAY/PTARGS_0_0_323_253_0_43/HTTP%3B/ERCBCONTENT/PUBLISHEDCONTENT/PUBLISH/ERCB_HOME/INDUSTRY_ZONE/RULES_REGULATIONS_REQUIREMENTS/INFORMATION_LETTERS_INTERIM_DIRECTIVES/INFORMATIONAL_LETTERS/IL2002_01.ASPX)

ACTIVITY DETAIL INFORMATION

PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)		
7839 RN			2011/09/14		
W5-03-009-06				(640.00)	(259.000)
W5-04-008-35-SE				(0.00)	(0.000)
W5-04-009-01-NW				(0.00)	(0.000)
W5-04-009-01-SE				(0.00)	(0.000)
W5-04-009-02				(640.00)	(259.000)
W5-04-009-11				(640.00)	(259.000)
W5-04-009-12-SW				(0.00)	(0.000)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
PNT880617	Active/Disposed	1988/12/12	2999/12/31	PINCHER CREEK OFFICE - RANGELAND DISTRICT-LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV 0142 : STEEP ROLLING TOPOGRAPHY 3 : NO AGRICULTURAL DISPOSITION 110 : UNIMPROVED GRAZING	640.00	258.999
ACTIVITY DETAIL INFORMATION						
NO PLANS						
W5-04-008-26-NE					(160.00)	(64.750)
W5-04-008-26-SE					(160.00)	(64.750)
PNT880618	Active/Disposed	1988/12/12	2999/12/31	PINCHER CREEK OFFICE - RANGELAND DISTRICT-LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV 0142 : STEEP ROLLING TOPOGRAPHY 3 : NO AGRICULTURAL DISPOSITION	239.60	96.963
ACTIVITY DETAIL INFORMATION						
NO PLANS						
W5-04-008-25-10					(39.85)	(16.127)
W5-04-008-25-15					(39.85)	(16.127)
W5-04-008-36-02					(39.90)	(16.147)
W5-04-008-36-07					(40.00)	(16.187)
W5-04-008-36-10					(40.00)	(16.187)
W5-04-008-36-15					(40.00)	(16.187)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
PNT930299	Active/Disposed	1993/08/23	2018/08/31		122,762.00	49,680.015

ROCKY MTN FOREST RESERVE SOUTH OFFICE - RANGELAND DISTRICT
 DEPT. OF SUSTAINABLE RESOURCE DEV
 0165 : GRAZING ALLOTMENT AREA
 3 : NO AGRICULTURAL DISPOSITION
 130 : GRAZING PERMIT ONLY
 710 : SEE COMMENTS

#14 GAP RANGE ALLOTMENT - FOREST RESERVE HEAD TAX PERMITS ONLY, SKETCH ON FILE.

ACTIVITY DETAIL INFORMATION

NO PLANS

W5-04-009-01-NE					(20.00)	(8.094)
W5-04-009-01-NW					(5.00)	(2.023)
W5-04-009-11-SE					(75.00)	(30.351)
W5-04-009-12					(640.00)	(259.000)

PNT940130	Active/Disposed	1994/04/14	2019/04/30		18,469.06	7,474.163
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ROCKY MTN FOREST RESERVE SOUTH OFFICE - RANGELAND DISTRICT
 DEPT. OF SUSTAINABLE RESOURCE DEV
 0165 : GRAZING ALLOTMENT AREA
 3 : NO AGRICULTURAL DISPOSITION
 130 : GRAZING PERMIT ONLY
 710 : SEE COMMENTS

#3 BLAIRMORE - GOLD RANGE ALLOTMENT - FOREST RESERVE. HEAD TAX PERMITS ONLY

ACTIVITY DETAIL INFORMATION

NO PLANS

W5-03-009-06					(640.00)	(259.000)
W5-04-008-35					(646.00)	(261.427)
W5-04-009-01					(640.00)	(259.000)
W5-04-009-02					(640.00)	(259.000)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
W5-04-009-11					(640.00)	(259.000)
W5-04-009-12-SW					(45.00)	(18.211)

PNT960092	Active/Disposed	1996/04/18	2999/12/31	PINCHER CREEK OFFICE - RANGELAND DISTRICT-LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV 0142 : STEEP ROLLING TOPOGRAPHY 3 : NO AGRICULTURAL DISPOSITION 100 : GRAZING HAYING 710 : SEE COMMENTS THESE LANDS BEST SUITED FOR GRAZING DUE TO STEEP SLOPES RANGING FROM 15% TO > 30%. LANDS WERE ACQUIRED THROUGH LAND EXCHANGE IN 1993. PRIME WATERHSED PROTECTION ALONG GOLD CREEK AND FISH HABITAT; POTENTIALLY VALUABLE FOR UNGULATE HABITAT AND POTENTIAL FOR REFORESTATION UNDER A MULTIPLE USE PLAN.	480.00	194.249
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ACTIVITY DETAIL INFORMATION

NO PLANS

W5-03-008-31-NW					(160.00)	(64.750)
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ROE 156	Active/Disposed	1947/06/27	2999/12/31	DEVON CANADA CORPORATION	13.10	5.301
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ACTIVITY DETAIL INFORMATION

OPTION TO PURCHASE (Y/N): N WITHIN 100M OF WATERBODY (Y/N): PURPOSE: COAL MINING
DIMENSION: IRREGULAR CLIENT FILE NO:

PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)
36584 MS			1989/11/17

W5-04-008-25-10					(13.10)	(5.301)
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Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
ROE 324	Active/Disposed	1951/01/22	2999/12/31	DEVON CANADA CORPORATION	40.00	16.187
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N): N		WITHIN 100M OF WATERBODY (Y/N):		PURPOSE: COAL MINING		
DIMENSION: PARTS OF LSDS		CLIENT FILE NO:				
NO PLANS						
W5-03-009-06-05-NE					(10.00)	(4.047)
W5-03-009-06-05-NW					(10.00)	(4.047)
W5-03-009-06-12-SE					(10.00)	(4.047)
W5-03-009-06-12-SW					(10.00)	(4.047)

ROE 1169	Active/Disposed	1954/03/15	2999/12/31	DEVON CANADA CORPORATION	18.23	7.377
INCLUDES ROAD ALLOWANCE/S: REFER TO FILE						
INCLUDES ROAD ALLOWANCE/S: REFER TO FILE						
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N): N		WITHIN 100M OF WATERBODY (Y/N):		PURPOSE: COAL MINING		
DIMENSION: IRREGULAR		CLIENT FILE NO:				
PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)			
228 F			1858/11/17			
228 F		A	1858/11/17			
W5-03-009-06-04					(0.00)	(0.000)
W5-03-009-06-05					(0.00)	(0.000)
W5-04-009-01-01					(0.00)	(0.000)
W5-04-009-01-08					(0.00)	(0.000)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
ROE 8751	Active/Disposed	1952/09/08	2999/12/31	DEVON CANADA CORPORATION	0.00	0.000

ACTIVITY DETAIL INFORMATION

OPTION TO PURCHASE (Y/N): N WITHIN 100M OF WATERBODY (Y/N): PURPOSE: COAL MINING
 DIMENSION: IRREGULAR CLIENT FILE NO:

PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)
51005 MS			1858/11/17

W5-04-008-25-NE	(0.00)	(0.000)
W5-04-008-36-NE	(0.00)	(0.000)
W5-04-008-36-SE	(0.00)	(0.000)

TFA 134555	Active/Disposed	2013/07/15	2014/07/15	BENGA MINING LTD.
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ACTIVITY DETAIL INFORMATION

OPTION TO PURCHASE (Y/N): WITHIN 100M OF WATERBODY (Y/N): PURPOSE: EDUCATIONAL/RESEARCH
 DIMENSION: CLIENT FILE NO: ACTIVITY

NO PLANS			
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W5-03-009-06-SW	(0.00)	(0.000)
W5-04-008-26-SE	(0.00)	(0.000)
W5-04-008-35-SE	(0.00)	(0.000)
W5-04-009-01-SW	(0.00)	(0.000)
W5-04-009-11-SE	(0.00)	(0.000)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
TFA 144977	Active/Disposed	2014/07/18	2015/07/18	BENGA MINING LTD.		
ACTIVITY DETAIL INFORMATION						
	OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N):	PURPOSE: AER Access Temporary - Industrial		
	DIMENSION:		CLIENT FILE NO:			
NO PLANS						
W5-04-008-36-NE					(0.00)	(0.000)
W5-04-009-01-SE					(0.00)	(0.000)

TFA 145313	Active/Disposed	2014/07/31	2015/07/31	BENGA MINING LTD.		
ACTIVITY DETAIL INFORMATION						
	OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N):	PURPOSE: AER Access Temporary - Industrial		
	DIMENSION:		CLIENT FILE NO:			
NO PLANS						
W5-04-008-26-NE					(0.00)	(0.000)
W5-04-008-26-SE					(0.00)	(0.000)
W5-04-008-35					(646.00)	(261.427)
W5-04-009-01					(640.00)	(259.000)
W5-04-009-02					(640.00)	(259.000)
W5-04-009-11					(640.00)	(259.000)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
TFA 145540	Active/Disposed	2014/08/19	2015/08/19	DEVON CANADA CORPORATION		
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N):		PURPOSE: AER R, M & E-Piezometer		
DIMENSION:		CLIENT FILE NO:				
NO PLANS						
W5-04-009-11-SE					(0.00)	(0.000)

TFA 152808	Active/Disposed	2015/03/26	2015/06/30	PHILIP HANSEN		
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N):		PURPOSE: Access - Temporary Commercial		
DIMENSION:		CLIENT FILE NO:				
NO PLANS						
W5-04-009-01-NW					(0.00)	(0.000)

TFA 154961	Active/Disposed	2015/08/20	2016/08/19	BENGA MINING LTD.		
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N):		PURPOSE: AER Access Temporary - Industrial		
DIMENSION:		CLIENT FILE NO:				
NO PLANS						
W5-03-008-31-NW					(0.00)	(0.000)
W5-03-009-06-NW					(0.00)	(0.000)
W5-03-009-06-SW					(0.00)	(0.000)
W5-04-009-01-SE					(0.00)	(0.000)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
TFA 155858	Active/Disposed	2015/10/20	2016/10/19	BENGA MINING LTD.		
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N):		PURPOSE: AER Access Temporary - Industrial		
DIMENSION:		CLIENT FILE NO:				
NO PLANS						
W5-03-008-31-NW					(0.00)	(0.000)
W5-03-009-06-SW					(0.00)	(0.000)
W5-04-008-35-NE					(0.00)	(0.000)
W5-04-008-35-NW					(0.00)	(0.000)
W5-04-008-35-SE					(0.00)	(0.000)
W5-04-009-01-NW					(0.00)	(0.000)
W5-04-009-01-SW					(0.00)	(0.000)
W5-04-009-02-NE					(0.00)	(0.000)
W5-04-009-02-SE					(0.00)	(0.000)
TFA 162596	Active/Disposed	2016/04/08	2017/04/07	BENGA MINING LTD.		
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N):		PURPOSE: AER Access Temporary - Industrial		
DIMENSION:		CLIENT FILE NO:				
NO PLANS						
W5-03-009-06-NW					(0.00)	(0.000)
W5-04-009-01-NE					(0.00)	(0.000)
W5-04-009-01-SE					(0.00)	(0.000)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
TPA 1677	Active/Disposed	1986/08/29	2017/06/30	TERRY D MICHALSKY	0.00	0.000
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N):		PURPOSE:		
DIMENSION:		CLIENT FILE NO:				
NO PLANS						
W5-03-009-06					(0.00)	(0.000)
W5-04-008-35					(0.00)	(0.000)
W5-04-009-01					(0.00)	(0.000)
W5-04-009-02					(0.00)	(0.000)
W5-04-009-11-01	S/DAISY-GOLD CR DIV				(0.00)	(0.000)
W5-04-009-11-02	S/DAISY-GOLD CR DIV & W/DAISY-VICEROY CR DIV				(0.00)	(0.000)
W5-04-009-12-03	S/DAISY-GOLD CR DIV				(0.00)	(0.000)
W5-04-009-12-04	S/DAISY-GOLD CR DIV				(0.00)	(0.000)
TPA 2426	Active/Disposed	1986/08/19	2016/06/30	JERRY D NEWMAN	0.00	0.000
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N):		PURPOSE:		
DIMENSION:		CLIENT FILE NO:				
NO PLANS						
W5-04-009-11-01	N/DAISY-GOLD CR DIV				(0.00)	(0.000)
W5-04-009-11-02	N/DAISY-GOLD CR DIV & E/DAISY-VICEROY CR DIV				(0.00)	(0.000)
W5-04-009-11-07					(0.00)	(0.000)
W5-04-009-11-08					(0.00)	(0.000)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Total Area	
					Acres	Hectares
W5-04-009-12-03	N/DAISY-GOLD CR DIV				(0.00)	(0.000)
W5-04-009-12-04	N/DAISY-GOLD CR DIV				(0.00)	(0.000)
W5-04-009-12-05					(0.00)	(0.000)
W5-04-009-12-06					(0.00)	(0.000)

Public Land Standing**Client List**

Activity	Client ID	Name / Address	Province	Country	Postal Code
CNT090027	8072051-001	CALGARY OFFICE - FORESTRY AND EMERGENCY RESPONSE DIVISION OF ENVIRONMENT AND SUSTAINABLE RESOURCE DEVELOPM WILDFIRE MANAGEMENT BRANCH CALGARY WILDFIRE MANAGEMENT AREA 8660 BEARSPAW DAM RD NW CALGARY	Alberta	CANADA	T3L 1S4
CNT860041	8059629-001	BLAIRMORE OFFICE - LAND USE AREA - LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV PO BOX 540 BLAIRMORE	Alberta	CANADA	T0K 0E0
CNT980012	8059629-001	BLAIRMORE OFFICE - LAND USE AREA - LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV PO BOX 540 BLAIRMORE	Alberta	CANADA	T0K 0E0
CTPC050124	8029082-001	EGBERT VELDMAN PO BOX 82 HILLCREST MINES	AB	CANADA	T0K 1C0
CTPC050125	8034413-001	HENRY VELDMAN PO BOX 285 HILLCREST MINES	Alberta	CANADA	T0K 1C0
EZE 990090	8062617-001	DEVON CANADA CORPORATION 400 3 AVE SW SUITE 2000 CALGARY	Alberta	CANADA	T2P 4H2
GRL 36801	8042482-001	DON DRIVER PO BOX 279 FORT MACLEOD	AB	CANADA	T0L 0Z0
GRL 960066	8042482-001	DON DRIVER PO BOX 279 FORT MACLEOD	AB	CANADA	T0L 0Z0
GRP 870052	8017779-001	GOLD CREEK GRAZING CO-OP LTD. PO BOX 265			

Public Land Standing

		FORT MACLEOD	Alberta	CANADA	T0L 0Z0
LOC 4111	8062617-001	DEVON CANADA CORPORATION 400 3 AVE SW SUITE 2000 CALGARY	Alberta	CANADA	T2P 4H2
LOC 141938	1008823-002	BENGA MINING LTD. 4300 B ST STE 307 ANCHORAGE	Alaska	UNITED STATES	99503-593
LOC 890772	8090158-001	TAQA NORTH LTD. PO BOX 2350 STN M 308 4 AVE SW SUITE 2100 CALGARY	Alberta	CANADA	T2P 0H7
MSL 12533	8062617-001	DEVON CANADA CORPORATION 400 3 AVE SW SUITE 2000 CALGARY	Alberta	CANADA	T2P 4H2
MSL 011735	8012211-001	CANADIAN NATURAL RESOURCES LIMITED 855 2 ST SW SUITE 2100 CALGARY	Alberta	CANADA	T2P 4J8
MSL 021309	8012211-001	CANADIAN NATURAL RESOURCES LIMITED 855 2 ST SW SUITE 2100 CALGARY	Alberta	CANADA	T2P 4J8
MSL 043285	8062617-001	DEVON CANADA CORPORATION 400 3 AVE SW SUITE 2000 CALGARY	Alberta	CANADA	T2P 4H2
MSL 801502	8062617-001	DEVON CANADA CORPORATION 400 3 AVE SW SUITE 2000 CALGARY	Alberta	CANADA	T2P 4H2
MSL 890948	8090158-001	TAQA NORTH LTD. PO BOX 2350 STN M 308 4 AVE SW SUITE 2100 CALGARY	Alberta	CANADA	T2P 0H7
PIL 050504	8062617-001	DEVON CANADA CORPORATION 400 3 AVE SW SUITE 2000			

Public Land Standing

		CALGARY	Alberta	CANADA	T2P 4H2
PLA 5009	8006366-002	LONLIFE RESOURCES LTD C/O CANADIAN NATURAL RESOURCES LIM 855 2 ST SW SUITE 2500 CALGARY	AB	CANADA	T2P 4J8
PLA 5009	8006368-003	NORCO RESOURCES LIMITED 528 15 AVE SW SUITE 404 CALGARY	Alberta	CANADA	T2R 0R2
PLA 5009	8012211-001	CANADIAN NATURAL RESOURCES LIMITED 855 2 ST SW SUITE 2100 CALGARY	Alberta	CANADA	T2P 4J8
PLA 5009	8014043-001	OPINAC EXPLORATION LIMITED KEN RUTHERFORD CAPTIVA RESOURCES CORPORATION 736 6 AVE SW SUITE 1000 CALGARY	Alberta	CANADA	T2P 3T7
PLA 5796	8062617-001	DEVON CANADA CORPORATION 400 3 AVE SW SUITE 2000 CALGARY	Alberta	CANADA	T2P 4H2
PLA 052764	8062617-001	DEVON CANADA CORPORATION 400 3 AVE SW SUITE 2000 CALGARY	Alberta	CANADA	T2P 4H2
PLA 800692	8006366-001	LONLIFE RESOURCES LTD 521 3 AVE SW FLOOR 12 CALGARY	Alberta	CANADA	T2P 3T3
PLA 800692	8006368-003	NORCO RESOURCES LIMITED 528 15 AVE SW SUITE 404 CALGARY	Alberta	CANADA	T2R 0R2
PLA 800692	8012211-001	CANADIAN NATURAL RESOURCES LIMITED 855 2 ST SW SUITE 2100 CALGARY	Alberta	CANADA	T2P 4J8
PLA 800692	8014043-001	OPINAC EXPLORATION LIMITED			

Public Land Standing

		KEN RUTHERFORD CAPTIVA RESOURCES CORPORATION 736 6 AVE SW SUITE 1000 CALGARY	Alberta	CANADA	T2P 3T7
PLA 800809	8006366-001	LONLIFE RESOURCES LTD 521 3 AVE SW FLOOR 12 CALGARY	Alberta	CANADA	T2P 3T3
PLA 800809	8006368-003	NORCO RESOURCES LIMITED 528 15 AVE SW SUITE 404 CALGARY	Alberta	CANADA	T2R 0R2
PLA 800809	8012211-001	CANADIAN NATURAL RESOURCES LIMITED 855 2 ST SW SUITE 2100 CALGARY	Alberta	CANADA	T2P 4J8
PLA 800809	8014043-001	OPINAC EXPLORATION LIMITED KEN RUTHERFORD CAPTIVA RESOURCES CORPORATION 736 6 AVE SW SUITE 1000 CALGARY	Alberta	CANADA	T2P 3T7
PLA 920136	8062617-001	DEVON CANADA CORPORATION 400 3 AVE SW SUITE 2000 CALGARY	Alberta	CANADA	T2P 4H2
PNT090084	8078165-001	PINCHER CREEK OFFICE - RANGELAND DISTRICT-LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV 782 MAIN ST ROOM 242 PO BOX 1420 PINCHER CREEK	Alberta	CANADA	T0K 1W0
PNT090087	8078165-001	PINCHER CREEK OFFICE - RANGELAND DISTRICT-LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV 782 MAIN ST ROOM 242 PO BOX 1420 PINCHER CREEK	Alberta	CANADA	T0K 1W0
PNT880617	8078165-001	PINCHER CREEK OFFICE - RANGELAND DISTRICT-LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV 782 MAIN ST ROOM 242 PO BOX 1420			

Public Land Standing

		PINCHER CREEK	Alberta	CANADA	T0K 1W0
PNT880618	8078165-001	PINCHER CREEK OFFICE - RANGELAND DISTRICT-LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV 782 MAIN ST ROOM 242 PO BOX 1420			
		PINCHER CREEK	Alberta	CANADA	T0K 1W0
PNT930299	8079006-001	ROCKY MTN FOREST RESERVE SOUTH OFFICE - RANGELAND DISTRICT DEPT. OF SUSTAINABLE RESOURCE DEV 782 MAIN ST ROOM 242 PO BOX 1420			
		PINCHER CREEK	Alberta	CANADA	T0K 1W0
PNT940130	8079006-001	ROCKY MTN FOREST RESERVE SOUTH OFFICE - RANGELAND DISTRICT DEPT. OF SUSTAINABLE RESOURCE DEV 782 MAIN ST ROOM 242 PO BOX 1420			
		PINCHER CREEK	Alberta	CANADA	T0K 1W0
PNT960092	8078165-001	PINCHER CREEK OFFICE - RANGELAND DISTRICT-LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV 782 MAIN ST ROOM 242 PO BOX 1420			
		PINCHER CREEK	Alberta	CANADA	T0K 1W0
ROE 156	8062617-001	DEVON CANADA CORPORATION 400 3 AVE SW SUITE 2000 CALGARY	Alberta	CANADA	T2P 4H2
ROE 324	8062617-001	DEVON CANADA CORPORATION 400 3 AVE SW SUITE 2000 CALGARY	Alberta	CANADA	T2P 4H2
ROE 1169	8062617-001	DEVON CANADA CORPORATION 400 3 AVE SW SUITE 2000 CALGARY	Alberta	CANADA	T2P 4H2
ROE 8751	8062617-001	DEVON CANADA CORPORATION 400 3 AVE SW SUITE 2000 CALGARY	Alberta	CANADA	T2P 4H2
TFA 134555	1008823-002	BENGA MINING LTD.			

Public Land Standing

		4300 B ST STE 307 ANCHORAGE	Alaska	UNITED STATES	99503-593
TFA 144977	1008823-001	BENGA MINING LTD. PO BOX 660 12331 20 AVE BLAIRMORE	Alberta	CANADA	T0K 0E0
TFA 145313	1008823-001	BENGA MINING LTD. PO BOX 660 12331 20 AVE BLAIRMORE	Alberta	CANADA	T0K 0E0
TFA 145540	8062617-001	DEVON CANADA CORPORATION 400 3 AVE SW SUITE 2000 CALGARY	Alberta	CANADA	T2P 4H2
TFA 152808	1013685-001	PHILIP HANSEN 2203 VICTORIA CRES NW CALGARY	Alberta	CANADA	T2M 4E4
TFA 154961	1008823-001	BENGA MINING LTD. PO BOX 660 12331 20 AVE BLAIRMORE	Alberta	CANADA	T0K 0E0
TFA 155858	1008823-001	BENGA MINING LTD. PO BOX 660 12331 20 AVE BLAIRMORE	Alberta	CANADA	T0K 0E0
TFA 162596	1008823-001	BENGA MINING LTD. PO BOX 660 12331 20 AVE BLAIRMORE	Alberta	CANADA	T0K 0E0
TPA 1677	8046800-001	TERRY D MICHALSKY PO BOX 342 COLEMAN	AB	CANADA	T0K 0M0
TPA 2426	1002496-001	JERRY D NEWMAN PO BOX 26			

HILLCREST

AB

CANADA

T0K 1C0

Total Activities: 46

DISCLAIMER

THIS STANDING REPORT IS PROVIDED SUBJECT TO THE CONDITION THAT HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF ALBERTA AND HER EMPLOYEES:

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*** END OF REPORT ***

Selection Criteria

Selected Sections

Geo-Administrative Area:	Y
Requested Lands:	Y
Title Information:	N
Activity Details:	Y
Subdivisions:	NA
Client List:	Y

Selected Activities

Surface Dispositions	Y	Status:	Number Assigned, Application, Letter of Authority, Land Amendment Application, Letter of Authority for Amendment, Active/Disposed, Cancelled - Outstanding Obligation
		Types:	All
Geophysical	NA	Status:	All
		Types:	All
Reservations	Y	Status:	Number Assigned, Application, Letter of Authority, Land Amendment Application, Letter of Authority for Amendment, Active/Disposed, Cancelled - Outstanding Obligation
		Types:	All
Encumbrances	Y	Status:	All
		Types:	All
Land Postings	Y	Status:	Number Assigned, Open, Closed
		Types:	All

Land Keys

W5-04-008-13-NE
W5-04-008-13-NW
W5-04-008-13-SW

Public Land Standing

W5-04-008-14-NE

W5-04-008-14-SE

Public Land Standing

Requested Land

Requested Land	Ownership Status	Administered By	Titled Status	Survey Status	Area in Hectares		Area in Acres		Water
					Land	Title	Land	Title	
W5-04-008-13-SW	Crown	FLW	Untitled	Surveyed	64.750	0.000	160.00	0.00	No Water Coverage
W5-04-008-13-NW	Crown	FLW	Untitled	Surveyed	64.750	0.000	160.00	0.00	No Water Coverage
W5-04-008-13-NE	Crown	FLW	Untitled	Surveyed	64.750	0.000	160.00	0.00	No Water Coverage
W5-04-008-14-SE	Crown	FLW	Untitled	Surveyed	0.000	0.000	0.00	0.00	No Water Coverage
W5-04-008-14-NE	Crown	FLW	Untitled	Surveyed	0.000	0.000	0.00	0.00	No Water Coverage
TOTAL					194.250	0.000	480.00	0.00	

Geo Administrative Areas

ALBERTA ENERGY REGULATOR	SOUTH REGION		Code: AER-S
W5-04-008			
COAL DEVELOPMENT REGION	SETTLED		Code: CDR-1
W5-04-008-13			
W5-04-008-14			
ENVIRONMENT CORPORATE REGION	SOUTHERN		Code: ENV-1
W5-04-008			
ENVIRONMENT CONS. & RECL. DISTRICT	NO. 20		Code: ERD-020
W5-04-008			
EASTERN SLOPE ZONE			Code: ESZ
W5-04-008			
FOREST MANAGEMENT UNIT	SOUTHWEST	CO2 SOUTHERN ROCKIES	Code: FMU-C-52
W5-04-008-13			
W5-04-008-14			
FISH & WILDLIFE ADMIN REGION	SOUTHERN REGION	BLAIRMORE	Code: FWA-1-02
W5-04-008			
FISH AND WILDLIFE DISTRICT	SOUTHERN REGION	BLAIRMORE	Code: FWD-1-09
W5-04-008			
FISH & WILDLIFE REFERRAL LANDS			Code: FWR

Public Land Standing

FISH & WILDLIFE REFERRAL LANDS			Code: FWR
W5-04-008-13			
W5-04-008-14			
GENERAL LANDS CLASSIFICATION	WHITE		Code: GLC-W
W5-04-008-13			
W5-04-008-14			
GRAZING ZONE	A2		Code: GRZ-A2
W5-04-008			
INTEGRATED RESOURCE PLAN	LIVINGSTONE-PORCUPINE HILLS		Code: IRP-L2
W5-04-008-13			
W5-04-008-14			
LAND USE AREA	SOUTHWEST 1	BLAIRMORE	Code: LUA-SW1-2
W5-04-008			
MUNICIPAL DISTRICT	RANCHLAND NO. 66		Code: MD-066
W5-04-008-13			
W5-04-008-14			
OPERATIONAL APPROVAL DISTRICTS	South Saskatchewan Region	South Saskatchewan District	Code: OPD-5-1
W5-04-008			
RANGELAND DISTRICT	SOUTHWEST	PINCHER CREEK	Code: RLD-SW-6
W5-04-008-13			
W5-04-008-14			
REGIONAL PLANNING COMMISSIONS	OLDMAN RIVER		Code: RPC-02
W5-04-008			

End of Geo Administrative Areas

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
CNT090027	Active/Disposed	2009/03/10	2034/03/31		175,167.31	70,887.690

CALGARY OFFICE - FORESTRY AND EMERGENCY RESPONSE DIVISON OF ENVIRONMENT AND SUSTAINABLE RESOURCE DEVELOPM
 0510 : BUFFER
 1 : NO RESTRICTON
 710 : SEE COMMENTS

Agency CommentsFOR EAP APPLICATIONS, SEND EMAIL TO BELOW ADDRESS BASED ON CRITERIA. A TEN DAY REFERRAL WINDOW WILL APPLY AND NOTE OF RECIEPT WILL BE PROVIDED BY EMAIL. IF NO REPLY IS RECEIVED THEN PROCEED WITH APPLICATION. NON-EAP APPLICANTS FOLLOW NORMAL REFERRAL PROTOCOLS. ALL PROPONENTS ARE TO REFER TO THE FIRESMART GUIDEBOOK FOR THE OIL AND GAS INDUSTRY, BEST MANAGEMENT PRACTICES FOR WILDFIRE PREVENTION AND FIRESMART FIELD GUIDE FOR WILDFIRE RISK AND MITIGATION STRATEGIES; LINK TO E-DOCUMENTS HTTP://WILDFIRE.ALBERTA.CA/FIRE-SMART-INDUSTRY/DEFAULT.ASPX FIRESMART CONSULATATIVE NOTATION COMMENTS: TYPES OF ACTIVITES AND DISPOSITIONS THAT REQUIRE REFERRAL; *RECREATION LEASE (REC) *DISPOSTION RESERVATION (DRS)-USE CRITERIA FOR MLL* ,SML AND LOC AS DEFINED BELOW *EASEMENT (EZE) *VEGETATION CONTROL EASEMENT (VCE) *LICENSE OF OCCUPATION (LOC)-HIGH GRADE ROAD OR ACCESS ROAD 20M+ WIDE *MINERAL SURFACE LEASE (MSL), *MISCELLANEOUS LEASE (MLL) *MISCELLANEOUS PERMIT (MLP) *PIPELINE AGREEMENT (PLA)-IF 20M+WIDE *PIPELINE INSTALLATION LEASE (PIL)- IF OVER 5 HECTARES *RURAL ELECTRIC ASSOCIATION EASEMENT (REA) *SURFACE MATERIAL LEASE (SML)- ONLY IF PEATMOSS *ALL AGRICULTURAL DISPOSITIONS REQUIRING FENCE LINE CLEARING/FIELD CLEARING AND DEBRIS DISPOSAL *REGIONAL GRAZING/TIMBER INTRGRATION PLANS . ALL APPLICATIONS MUST BE REFERRED VIA EMAIL TO THE "WILDFIRE PREVENTION OFFICER" AT THE CALGARY FORESTRY OFFICE: ESRD.EDS-CLGR-FIRESMART@GOV.AB.CA TYPES OF ACTIVITES AND DISPOSITIONS NOT REQUIRING REFERRAL *GEOPHYSICAL ACTIVITIES. *AGRICULTURAL DISPOSITIONS WHERE CLEARING IS NOT REQUIRED E.G. HAY PERMIT *HAP), FOREST GRAZING LICENSE (FGL) WITH NO FENCE LINES *TIMBER DISPOSITIONS

ACTIVITY DETAIL INFORMATION

PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)		
5999 RN			2009/02/24		
W5-04-008-13				(640.00)	(259.000)
W5-04-008-14-NE				(0.00)	(0.000)
W5-04-008-14-SE				(0.00)	(0.000)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
DLO 140170	Application	2014/09/09			0.00	0.000

1653488 ALBERTA INC.

ACTIVITY DETAIL INFORMATION

OPTION TO PURCHASE (Y/N): DIMENSION:
 WITHIN 100M OF WATERBODY (Y/N): CLIENT FILE NO:
 PURPOSE: WATER INTAKE

PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)
30817 TL			2015/01/09

W5-04-008-13				(640.00)	(259.000)
W5-04-008-14-NE					
W5-04-008-14-SE					

EZE 830147	Active/Disposed	1984/01/13	2999/12/31		94.13	38.093
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ALTALINK MANAGEMENT LTD.

ACTIVITY DETAIL INFORMATION

OPTION TO PURCHASE (Y/N): N DIMENSION: 50 M(W)
 WITHIN 100M OF WATERBODY (Y/N): CLIENT FILE NO:
 PURPOSE: POWERLINE

PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)
2857 T	8510840		1983/09/12

W5-04-008-13-NW				(1.07)	(0.435)
W5-04-008-14-NE				(11.42)	(4.620)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Total Area	
					Acres	Hectares
GRP 870052	Active/Disposed	1989/01/01	2017/12/31	GOLD CREEK GRAZING CO-OP LTD.	3,427.00	1,386.858
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N):		PURPOSE:		
DIMENSION:		CLIENT FILE NO:				
PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)			
7919 SK			1990/06/01			
W5-04-008-14-01				(39.75)	(16.086)	
W5-04-008-14-08				(39.75)	(16.086)	
W5-04-008-14-09				(39.75)	(16.086)	
W5-04-008-14-16				(39.75)	(16.086)	

LOC 940867	Letter of Authority for Amendment	1999/12/17	2019/06/23	CANADIAN NATURAL RESOURCES LIMITED	5.54	2.243
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N): N		PURPOSE: ACCESS ROAD		
DIMENSION: 15 M		CLIENT FILE NO:1788				
PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)			
45069 MS			2000/02/04			
W5-04-008-14-SE				(4.84)	(1.960)	

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
MLL 1948	Active/Disposed	1962/09/16	2008/09/15		159.00	64.345

DEVON CANADA CORPORATION

ACTIVITY DETAIL INFORMATION

OPTION TO PURCHASE (Y/N): N WITHIN 100M OF WATERBODY (Y/N): PURPOSE: OTHER INDUSTRIAL
 DIMENSION:

CLIENT FILE NO:

PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)
74141 MS			2000/08/10

W5-04-008-14-02	(0.00)	(0.000)
W5-04-008-14-07	(0.00)	(0.000)
W5-04-008-14-10	(0.00)	(0.000)
W5-04-008-14-15	(0.00)	(0.000)

MSL 941235	Letter of Authority for Amendment	1999/12/17	2019/06/23		7.72	3.124
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CANADIAN NATURAL RESOURCES LIMITED

ACTIVITY DETAIL INFORMATION

OPTION TO PURCHASE (Y/N): WITHIN 100M OF WATERBODY (Y/N): N PURPOSE: WELLSITE AND ACCESS ROAD
 DIMENSION: IRREGULAR ; 15 M CLIENT FILE NO:1788

PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)
45069 MS			2000/02/04

Reclamations

RECLAMATION CERTIFICATE NUMBER: SR0-00-169 ISSUE DATE: 2000/10/11 TYPE: Unknown
 RECLAMATION CERTIFICATE NUMBER: SR0-00-169 ISSUE DATE: 2000/10/11 TYPE: Unknown

W5-04-008-14-SE	(7.72)	(3.124)
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Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
PNT090084	Active/Disposed	2011/10/20	2021/10/19		132,888.84	53,778.200

PINCHER CREEK OFFICE - RANGELAND DISTRICT-LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV
 0181 : MULTIPLE RESOURCE CONCERNS
 5 : NO SURFACE SALE DISPOSITIONS
 710 : SEE COMMENTS

THIS LOCATION MAY FALL WITHIN AN AREA OF FOOTHILLS FESCUE GRASSLAND, A VERY VALUABLE NATIVE GRASSLAND TYPE THAT IS LIMITED IN REMAINING AREA. ROUGH FESCUE GRASSLANDS ARE VERY SENSITIVE TO SURFACE DISTURBANCE AND DIFFICULT AND COSTLY TO RECLAIM. PROPONENTS MUST CONSULT INFORMATION LETTER (IL) 2010-02, FESCUE GRASSLANDS -- PRINCIPLES FOR MINIMIZING SURFACE DISTURBANCE AND MAKE EARLY CONTACT WITH ALBERTA ENVIRONMENT & SUSTAINABLE RESOURCE DEVELOPMENT STAFF FOR THE AREA IN QUESTION. THE INFORMATION LETTER ADDRESSES OBLIGATIONS AND SPECIFIC DIRECTION REGARDING ALL POTENTIAL SURFACE DISTURBANCE RELATED ACTIVITY IN FOOTHILLS ROUGH FESCUE GRASSLAND PLANT COMMUNITIES. THIS DIRECTIVE SUPPLEMENTS THE ERCB'S IL 2002-01: PRINCIPLES FOR MINIMIZING SURFACE DISTURBANCE IN NATIVE PRAIRIE AND PARKLAND AREAS. IL 2010-02 MAY BE FOUND AT:
[HTTP://WWW.SRD.ALBERTA.CA/FORMSONLINESERVICES/INFORMATIONLETTERS/LANDSINFORMATIONLETTERS/DOCUMENTS/IL2010-02-FOOTHILLSFESCUEGRASSLANDPRINCIPLESFORMINIMIZINGSURFACEDISTURBANCE-MAR23-2010.PDF](http://www.srd.alberta.ca/formsonlineservices/informationletters/landsinformationletters/documents/il2010-02-foothillsfescuegrasslandprinciplesforminimizingsurfacedisturbance-mar23-2010.pdf) IL 2002-01 MAY BE FOUND AT:
[HTTP://WWW.ALBERTAPCF.ORG/RSU_DOCS/EUB_NATIVE_PRAIRIE.PDF](http://www.albertapcf.org/rsu_docs/eub_native_prairie.pdf)

ACTIVITY DETAIL INFORMATION

PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)
7837 RN			2011/09/09
7837 RN			2013/03/15
W5-04-008-13-NE			
W5-04-008-13-NW			
W5-04-008-14-NE			
W5-04-008-14-SE			

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
PNT880619	Active/Disposed	1988/12/12	2999/12/31		159.00	64.345

PINCHER CREEK OFFICE - RANGELAND DISTRICT-LANDS DIVISION DEPT.
 OF SUSTAINABLE RESOURCE DEV
 0142 : STEEP ROLLING TOPOGRAPHY
 3 : NO AGRICULTURAL DISPOSITION
 110 : UNIMPROVED GRAZING

ACTIVITY DETAIL INFORMATION

NO PLANS

W5-04-008-14-01					(39.75)	(16.086)
W5-04-008-14-08					(39.75)	(16.086)
W5-04-008-14-09					(39.75)	(16.086)
W5-04-008-14-16					(39.75)	(16.086)

TFA 103995	Active/Disposed	2010/09/14	2011/09/14	ALTALINK MANAGEMENT LTD.		
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ACTIVITY DETAIL INFORMATION

OPTION TO PURCHASE (Y/N):
 DIMENSION:
 WITHIN 100M OF WATERBODY (Y/N):
 CLIENT FILE NO: PURPOSE: TEMPORARY ACCESS

NO PLANS

W5-04-008-13-NE					(0.00)	(0.000)
W5-04-008-14-NE					(0.00)	(0.000)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
TFA 134555	Active/Disposed	2013/07/15	2014/07/15	BENGA MINING LTD.		
ACTIVITY DETAIL INFORMATION						
	OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N):	PURPOSE: EDUCATIONAL/RESEARCH ACTIVITY		
	DIMENSION:		CLIENT FILE NO:			
NO PLANS						
W5-04-008-14-SE					(0.00)	(0.000)

TFA 153582	Active/Disposed	2015/06/01	2015/10/31	ALTALINK L.P.		
ACTIVITY DETAIL INFORMATION						
	OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N):	PURPOSE: Waiver-Other Conditions		
	DIMENSION:		CLIENT FILE NO:			
NO PLANS						
W5-04-008-13-NW					(0.00)	(0.000)
W5-04-008-14-NE					(0.00)	(0.000)

TFA 155858	Active/Disposed	2015/10/20	2016/10/19	BENGA MINING LTD.		
ACTIVITY DETAIL INFORMATION						
	OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N):	PURPOSE: AER Access Temporary - Industrial		
	DIMENSION:		CLIENT FILE NO:			
NO PLANS						
W5-04-008-13-NE					(0.00)	(0.000)
W5-04-008-13-NW					(0.00)	(0.000)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Total Area	
					Acres	Hectares
W5-04-008-13-SW					(0.00)	(0.000)
W5-04-008-14-SE					(0.00)	(0.000)

TFA 162911 Active/Disposed 2016/05/10 2016/08/31
 BENGA MINING LTD.

ACTIVITY DETAIL INFORMATION

OPTION TO PURCHASE (Y/N): WITHIN 100M OF WATERBODY (Y/N): PURPOSE: AER Access Temporary - Industrial
 DIMENSION: CLIENT FILE NO:

NO PLANS

W5-04-008-13-NE					(0.00)	(0.000)
W5-04-008-13-NW					(0.00)	(0.000)

Client List

Activity	Client ID	Name / Address	Province	Country	Postal Code
CNT090027	8072051-001	CALGARY OFFICE - FORESTRY AND EMERGENCY RESPONSE DIVISION OF ENVIRONMENT AND SUSTAINABLE RESOURCE DEVELOPM WILDFIRE MANAGEMENT BRANCH CALGARY WILDFIRE MANAGEMENT AREA 8660 BEARSPAW DAM RD NW CALGARY	Alberta	CANADA	T3L 1S4
DLO 140170	1009853-001	1653488 ALBERTA INC. PO BOX 927 BLAIRMORE	Alberta	CANADA	T0K 0E0
EZE 830147	8061279-002	ALTALINK MANAGEMENT LTD. 2611 3 AVE SE CALGARY	Alberta	CANADA	T2A 7W7
GRP 870052	8017779-001	GOLD CREEK GRAZING CO-OP LTD. PO BOX 265 FORT MACLEOD	Alberta	CANADA	T0L 0Z0
LOC 940867	8012211-001	CANADIAN NATURAL RESOURCES LIMITED 855 2 ST SW SUITE 2100 CALGARY	Alberta	CANADA	T2P 4J8
MLL 1948	8062617-001	DEVON CANADA CORPORATION 400 3 AVE SW SUITE 2000 CALGARY	Alberta	CANADA	T2P 4H2
MSL 941235	8012211-001	CANADIAN NATURAL RESOURCES LIMITED 855 2 ST SW SUITE 2100 CALGARY	Alberta	CANADA	T2P 4J8
PNT090084	8078165-001	PINCHER CREEK OFFICE - RANGELAND DISTRICT-LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV 782 MAIN ST ROOM 242 PO BOX 1420 PINCHER CREEK	Alberta	CANADA	T0K 1W0
PNT880619	8078165-001	PINCHER CREEK OFFICE - RANGELAND DISTRICT-LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV			

Public Land Standing

		782 MAIN ST ROOM 242 PO BOX 1420 PINCHER CREEK	Alberta	CANADA	T0K 1W0
TFA 103995	8061279-002	ALTALINK MANAGEMENT LTD. 2611 3 AVE SE CALGARY	Alberta	CANADA	T2A 7W7
TFA 134555	1008823-002	BENGA MINING LTD. 4300 B ST STE 307 ANCHORAGE	Alaska	UNITED STATES	99503-593
TFA 153582	8066568-001	ALTALINK L.P. 2611 3 AVE SE CALGARY	AB	CANADA	T2P 2G9
TFA 155858	1008823-001	BENGA MINING LTD. PO BOX 660 12331 20 AVE BLAIRMORE	Alberta	CANADA	T0K 0E0
TFA 162911	1008823-001	BENGA MINING LTD. PO BOX 660 12331 20 AVE BLAIRMORE	Alberta	CANADA	T0K 0E0

Total Activities: 14

DISCLAIMER

THIS STANDING REPORT IS PROVIDED SUBJECT TO THE CONDITION THAT HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF ALBERTA AND HER EMPLOYEES:

- (1) HEREBY DISCLAIM AND ARE RELEASED FROM ANY AND ALL RESPONSIBILITY FOR THE INFORMATION IN, AND ANY OMISSION OF THE INFORMATION FROM, THIS REPORT;
- (2) SHALL NOT BEAR ANY RESPONSIBILITY FOR ANY LOSS OR DAMAGE OF ANY KIND ARISING FROM OR IN RESPECT OF ANY ABSENCE OF INFORMATION OR ANY ERRORS OR OMISSIONS (WHETHER THE AFORESAID OCCASIONED BY NEGLIGENCE OR OTHERWISE) IN OR AFFECTING THIS REPORT OR THE INFORMATION THEREIN.

THIS REPORT DOES NOT SHOW CAVEATS, BUILDERS' LIENS, OR OTHER INSTRUMENTS, IF ANY, REGISTERED AT LAND TITLES OFFICE IN RESPECT OF ANY LANDS OR INTERESTS THEREIN. PERSONS ARE ADVISED TO ALSO EXAMINE RECORDS AT LAND TITLES OFFICE TO ASCERTAIN WHETHER OTHER INSTRUMENTS THAT MAY CONCERN THE LANDS OR INTERESTS THEREIN HAVE BEEN REGISTERED.

*** END OF REPORT ***



July 29, 2016

Keith Bott
Benga Mining Ltd
PO Box 660
Blairmore, Alberta
T0K 0E0

RE: Timber Disposition CTPC050124
Dated: 10 day of July, 2016

I have a Timber Disposition within the MSL applied for by Benga Mining within sections 1, 2, 11 & 12 of Township 9 Range 4 W5M. Benga Mining is to allow me access to the proposed MSL for the purpose of Timber Permit CTPC050124 and other future permits applied for within the MSL.

I have no objection to their proposed MSL providing the above requirement is met.

Sincerely,



Consent of Occupant - Form B

I/We, [redacted] in the Province of Alberta, IN CONSIDERATION of the sum of \$1.00 and other good and valuable consideration paid to me (us) by the mineral producer (Benga Mining Ltd), receipt of which is hereby acknowledged, and in consideration of the covenants and agreements hereinafter mentioned and on the part of Benga Mining Ltd. to be kept, observed and performed:

I/We, [redacted] DO HEREBY CONSENT to Benga Mining Ltd., its successors and assigns, its contractors, subcontractors, servants and agents the right, license, liberty, privilege and easement to enter upon, over, under and through all those portions of: L15, L14, L13-31-008-03 W5M (the lands described in the lease, license, permit) numbered GRL960066 dated the 19 day of June, 1996 (expired), and GRL36801 dated the 1st day of June, 1962, and made between Her Majesty the Queen in right of the Province as represented by the Regulatory body (Minister of Environment and Sustainable Resource Development or the Alberta Energy Regulator) as Lessor/Grantor and me (us) as Lessee/Grantee at any time and from time to time with vehicles and equipment for the purposes permitted by the Public Lands Administration Regulation and any regulations passed in substitution therefor.

Benga Mining Ltd. HEREBY COVENANTS AND AGREES to compensate me (us) for damage done to my (our) buildings, growing crops, fences and livestock on the said land by reason of the exercise of the rights hereby granted; and Benga Mining Ltd. HEREBY COVENANTS AND AGREES to pay us, in addition to the consideration and compensation hereinbefore mentioned the annual rent of \$ 1.00 dollars, such rent being payable annually in advance on the 1st day of January in each year or portion thereof that the rights hereby granted are exercised, the first of which payments to be made on the 1st day of January, 2017.

If my (our) right to occupy the said land terminates for any reason, this consent and covenants and agreements herein contained shall then and in that event cease and determine.

This consent is given under my (our) hand expressly for the purpose of satisfying the requirements of Section 12 of the Surface Rights Act or any other relevant or applicable legislation.

This consent shall be binding upon and shall enure to the benefit of my (our) heirs, executors, administrators and assigns.

IN WITNESS WHEREOF I/WE, have executed this consent at Fernie, British Columbia in the Province of Alberta, this 10 day of August, 2016.

SIGNED AND DELIVERED
By [redacted]
In the presence of: [redacted]
[redacted] OCCUPANT
[redacted] OCCUPANT
[redacted] WITNESS

This Consent is hereby acknowledged and accepted by Benga Mining Ltd. <Original signed by>

Per: [signature]

Consent of Occupant

We Gold Creek Grazing Co-operative of Fort Macleod in the province of Alberta. IN CONSIDERATION of the sum of \$1.00 and other good and valuable consideration paid to us by the mineral producer (Benga Mining Ltd.), receipt of which is hereby acknowledged, and in consideration of the covenants and agreements hereinafter mentioned and on the part of Benga Mining Ltd. to be kept, observed and performed;

We, Gold Creek Grazing Cooperative DO HEREBY CONSENT to Benga Mining Ltd., its successors and assigns, its contactors, subcontractors, servants and agents the right, license, liberty, privilege and easement to enter upon, over, under and through all those portions of:

Grazing Permit GRP870052

E 1/2 14-008-04 W5M; E 1/2 26-008-04 W5M

Grazing Permits PNT930299 and PNT940130

E 1/2 35-008-04 W5M; NW35-008-04 W5M; 1-009-04 W5M; E1/2 2-009-04 W5M; SW2-009-04 W5M; SE11-009-04 W5M; SW12-009-04 W5M; W1/2 6-009-03 W5M; E1/2 14-008-04; N1/2 13-008-04; SW 13-008-04

And made between Her Majesty the Queen in right of the Province as represented by the Regulatory body (Minister of Environment and Sustainable Resource Development or the Alberta Energy Regulator) as Lessor/Grantor and me (us) as Lessee/Grantee at any time and from time to time with vehicles and equipment for the purpose permitted by the Public Lands Administration Regulation and any regulations passed in substitution therefor.

Benga Mining Ltd. HEREBY COVENANTS AND AGREES to compensate me (us) for damage done to my (our) buildings, growing crops, fences and livestock on the said land by reason of the exercise of the rights hereby granted; and Benga Mining Ltd HEREBY COVENANTS AND AGREES to pay (us), in addition to the consideration and compensation hereinbefore mentioned the annual rent of \$ 1.00 dollar, such rent being payable annually in advance on the 1st day of January in each year or portion thereof that the rights hereby granted are exercised, the first of which payments to be made on the 1st day of January, 2017.

If my (our) right to occupy the said land terminates for any reason, this consent and covenants and agreements herein contained shall then and in that event cease and determine.

This consent is given under my (our) hand expressly for the purpose of satisfying the requirements of Section 12 of the Surface Rights Act or any other relevant or applicable legislation.

This consent shall be binding upon and shall enure all the benefit of my (our) heirs, executors, administrators and assigns.

IN WITNESS WHEREOF I/WE, have executed this consent at Blainville in the province of Alberta, this 9th day of August, 2016.

SIGNED AND DELIVERED BY _____

In the presence of:

<Original signed by>

<Original signed by>

Witness Signature
Becky Housenga

Occupant Signature
<Original signed by>

Occupant Signature

This Consent is hereby acknowledged and accepted by Benga Mining Ltd.
<Original signed by>

Per

Stuart Mallyn

July 21, 2016

Sent via email: Keith.Bott@rivresources.com

Benga Mining Limited
PO Box 660
12331 20th Ave
Blairmore, AB T0K0E0

ATTENTION: KEITH BOTT

RE: Proposed Coal Mine in Proximity to AltaLink 1201 Transmission Line in 23-8-4-W5M, 24-8-4-W5M, and 21-8-4-W5M

AltaLink has been notified of the proposed coal mine at the above mentioned location, in proximity to AltaLink's 500 Kilovolt, 1201 transmission line.

AltaLink has no objections to the proposed facility in proximity to AltaLink's Right of Way/Easement provided that the following conditions are met:

- Benga Mining must apply for, receive, and approve facility crossing, encroachment, or proximity agreements from AltaLink for any access routes or new facilities which cross over, encroach within, or are within less than thirty metres from the edge of AltaLink's transmission line right of way
- Benga Mining is responsible for mitigating any hazards to AltaLink's transmission line which are created or exacerbated by the presence or operation of the mine or associated facilities; including, but not limited to, falling debris, clearance beneath and around the lines, and drainage
- AltaLink must be permitted to access its transmission lines to perform routine or emergency maintenance as needed; and, Benga Mining must coordinate with AltaLink to ensure that the line and its components may be accessed safely by AltaLink personell

If you have any questions or concerns, please do not hesitate to contact the undersigned.

Respectfully,

<Original signed by>

Drew Cunningham, C.E.T.
Transmission Lines Encroachment Technologist
Ph: 403-365-7424
Drew.Cunningham@Altalink.ca



Devon Canada Corporation
2000, 400 - 3rd Avenue S.W.
Calgary, Alberta T2P 4H2

403 232 7100 Phone
403 232 7678 Fax
www.devonenergy.com

Via Courier

July 15, 2016

Benga Mining Limited
P.O. Box 660
12331 – 20th Ave.
Blairmore, AB T0K 0E0

ATTENTION: Anthony Martin
Director

RE: Letter of non-Objection – Coleman Area

Further to our communications on the subject, Devon Canada, on behalf of itself and its affiliates, hereby confirms that it has reviewed the materials forwarded to Devon by Benga Mining Limited ("Benga") on June 20, 2016 and June 27, 2016 relating to Benga's application to the Canadian Environmental Assessment Agency and the Alberta Energy Regulator for a mine permit at its proposed Grassy Mountain site and Devon has no objections to the materials and information presented in such materials.

To the extent there are any material changes to the proposed mining operations and plans, kindly advise us so we may review the same.

If you require further information or wish to discuss, please feel free to contact the writer at 403-232-5014 or via email at Vince.Boden@dvn.com.

**Devon Canada, by its
Managing Partner,
Devon Canada Corporation**
<Original signed by>

Vince Boden
Sr. Supervisor, Surface Land and
Survey

APPENDIX 2 – LOC APPLICATION

Application for Surface Dispositions

<i>Please Print Or Type</i>	EFR attached? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A					File Number:								
	If No, AOA # _____ or					Confirmation Number:								
	Other: _____					FNC Number: Not Issued								
<input type="checkbox"/> Mineral Surface Lease [MSL]		<input checked="" type="checkbox"/> Licence of Occupation [LOC]			<input type="checkbox"/> Pipeline Installation Lease [PIL]			<input type="checkbox"/> R.E.A. Easement [REA]						
<input type="checkbox"/> Pipeline Agreement [PLA]		Project Name: Grassy Coal					<input type="checkbox"/> Easement [EZE]							
Application:							Transmission Line							
<input type="checkbox"/> Class I [INDEX > 2690]							Length _____ km							
<input type="checkbox"/> Class II [INDEX < 2690]							Kilovolts _____							
Does this application include watercourse crossings regulated under the <i>Water Act</i> (Ministerial) Regulations' Code of Practice for Pipelines and Telecommunication Lines Watercourse Crossings? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, the applicable <i>Water Act</i> Notice must be submitted with this application.														
Applicant: Benga Mining Limited					Client ID: 1008823002			Applicant File Number Grassy Mountain Coal Mine						
Address: PO Box 660, 12331 - 20 Avenue								Tel: 403-563-6160						
City/Province: Blairmore Alberta					Postal code: T0K 0E0			Fax:						
Contact person/Agent as above <input checked="" type="checkbox"/> or:								File:						
Address:								Tel:						
City/province:					Postal code:			Fax:						
Attached: <input checked="" type="checkbox"/> Sketch <input type="checkbox"/> Survey Plan <input type="checkbox"/> As Built					Occupant's consent: <input checked="" type="checkbox"/> Attached <input type="checkbox"/> Not Required									
Purpose of application: <input type="checkbox"/> Wellsite <input type="checkbox"/> Access <input type="checkbox"/> Pipeline <input type="checkbox"/> Powerline <input checked="" type="checkbox"/> Other Coal Mine														
Land being applied for [<i>Attach Schedule if insufficient space</i>]														
Name of Subdivision					Subdivision Plan			Block		Lot	Parcel			
Qtr/LS	Sec	Twp	Rge	Mer	Qtr/LS	Sec	Twp	Rge	Mer	Qtr/LS	Sec	Twp	Rge	Mer
See	Table	2-2												
Are you a Canadian citizen? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Have you attained the age of 18 years? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			Are you an employee of the Government of Alberta or member of the Legislative Assembly? <input type="checkbox"/> Yes [<i>Dept/Agency/Board</i>] <input checked="" type="checkbox"/> No									
Signature _____					For Internal Use Only									
Steve Mallyon Print Name					Authorization is hereby granted to enter upon and immediately occupy public land as described on this application and in accordance with the plan/sketch submitted to the issuing regulatory body subject to conditions specified in schedule "A":									
August 12, 2016 Date		\$ _____ Amount Enclosed			_____ Date		_____ Authorizer, <i>Public Lands Act</i>							
Approval from	Lands	Forest	F & W	Trans	Parks									
Referral Date														
Received Date														
Comments:										Dept. Plan:				
										Copies for:				
										Municipal Authority				
										Field Services				
					Forest									
					F & W									
					Other									

Proposed construction date: Q3 2017 to Q4 2018
dd/mm/yyyy

2. Specify associated developments/dispositions that may be required as a result of this disposition.

- Power line
- Pipeline
- Compressor
- Metering Station
- Access
- Other MSL for the mining area and MLL for the construction camp and conveyor/powerline/access road right of way (see Public Lands Act Application)

Land Standing Review

3. A complete Land Standing Review check must be made on the proposed area.

Date Land Standing search was completed: 10/08/2016
dd/mm/yyyy

Reservation/Activity Number	Action required/identify conflicts/contact name and or comments
See Public Lands Act Application Table 3-1.	

- a. Within a Provincial Grazing Reserve? Yes No
If 'Yes', complete the Provincial Grazing Reserve template and attach to the Environmental Field Report. (Refer to Appendix I in the instruction document.)
 - b. Within the Chungo Access Management Area? Yes No
If 'Yes', complete the Chungo Area template (located at the end of IL 2005-01 – Annex to Chungo Creek Industrial Access Management Area Information Letter and attach it to the Environmental Field Report.
 - c. Within a FireSmart Community Zone? Yes No
If 'Yes', contact Forest Protection Division for additional hazard reduction requirements.
 - d. Follow the "Bear Smart" program to reduce bear-human conflicts and increase public stewardship of black and grizzly bears in Alberta by providing strategies, information and education materials to its staff and contractors, see srd.alberta.ca and search for "Alberta BearSmart"
4. Are Permanent/Research Sample Plots/Rangeland Benchmarks located within 100 m of the boundary of the lands under application? Yes No

If 'Yes', indicate the legal land description and GPS coordinates for each plot/benchmark in relation to the disposition boundary (degree, decimal, minutes).

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____

Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____

Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____

Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____

Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____

Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____

Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____

Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____

Latitude _____ Longitude _____ Distance away _____ m

PSP's held by the Regulatory body appear as DRS or PNT reservations on the LSAS report. The forest industry also has sample plots, and if these are registered, they will appear as ISP's on the LSAS report. If the forest industry sample plots are not registered, they will not appear on the LSAS report. The proponent is responsible for determining if there are any PSP's or ISP's on the land under application. PSP's and ISP's must not be disturbed.

Stakeholders, Other Land Users

5. Is there potential impact on or conflict with stakeholders and other land users? Yes No

If "Yes" to either, please list and explain mitigation:

See Section 3.2.2 and 3.2.3 of the PLA Application for details.

6. What actions have been taken to integrate this disposition with other existing/planned activities and resources to minimize the impacts on the land base? (Check appropriate boxes.)

- Not applicable
- Use common corridor
- Parallel existing clearing/right of way
- Use existing clearing/right of way
- Other

Explain: Location of the rail loop was determined based on consultation with stakeholders (see section 3.2.4 of PLA Application).

7. Identify any aesthetic concerns related to the proposed activity (i.e., negative effects on the aesthetic/sensory aspects of the surrounding land including view, smell, noise, etc.).

- Not applicable
 From public access
 From residence
 From recreation facility
 Other Land Users

Explain: Visual impacts due to the rail load-out facility was raised as a concern by stakeholders. See Section 3.2.5 of the PLA Application for aesthetic concerns raised by stakeholders and Bengas response.

8. Are there any conflicts with Access Management Plans, Integrated Resource Plans or policy documents for the area? Yes No

If 'Yes', explain mitigation strategy: Land and resource use planning is discussed further in Section 3.2.6 of the PLA application.

9. Was First Nations (Aboriginal) consultation required by the Regulatory body? Yes No

If "Yes", with whom: See Section 3.2.7 of the PLA Application for a list of First Nations groups who were consulted.

C. Wildlife/Environmental Concerns

1. Within a Key/Critical Wildlife Zone? Yes No

If 'Yes', provide information on mitigation strategies that will be implemented: See Section 3.3.1 of the PLA Application.

2. Wildlife Timing Constraint apply? Yes No

If 'Yes', provide dates of restricted period: From See Section 3.3.2 of the PLA Application To _____ (See Provincial Timing Guidelines or FW referral maps.)

3. Fisheries Timing Constraint apply? Yes No

If 'Yes', provide dates of restricted period: From _____ To See Section 3.3.2 of the PLA Application (See Provincial Watercourse Codes of Practice for restricted periods.)

4. Within a Caribou Area? Yes No. If 'Yes', specify the Caribou Protection Plan number and name.

Species at Risk (Plant/Animals)

5. Is it likely that a species at risk (not including Woodland Caribou in number 4 above) will be found in the area of the proposed development? Yes No

If 'Yes', specify the status and protective strategy for each species: For further details on species at risk within the proposed activity, see Section 3.3.3 of the PLA Application.

<p>Species 1 _____</p> <p><input type="checkbox"/> Endangered</p> <p><input type="checkbox"/> Threatened</p> <p><input type="checkbox"/> Special Concern</p> <p><input type="checkbox"/> At Risk</p> <p><input type="checkbox"/> May Be At Risk</p> <p>Explain any conflict and proposed mitigation</p> <p>_____</p>	<p>Species 2 _____</p> <p><input type="checkbox"/> Endangered</p> <p><input type="checkbox"/> Threatened</p> <p><input type="checkbox"/> Special Concern</p> <p><input type="checkbox"/> At Risk</p> <p><input type="checkbox"/> May Be At Risk</p> <p>Explain any conflict and proposed mitigation</p> <p>_____</p>
--	--

<p>Species 3 _____</p> <p><input type="checkbox"/> Endangered</p> <p><input type="checkbox"/> Threatened</p> <p><input type="checkbox"/> Special Concern</p> <p><input type="checkbox"/> At Risk</p> <p><input type="checkbox"/> May Be At Risk</p> <p>Explain any conflict and proposed mitigation</p> <p>_____</p>	<p>Species 4 _____</p> <p><input type="checkbox"/> Endangered</p> <p><input type="checkbox"/> Threatened</p> <p><input type="checkbox"/> Special Concern</p> <p><input type="checkbox"/> At Risk</p> <p><input type="checkbox"/> May Be At Risk</p> <p>Explain any conflict and proposed mitigation</p> <p>_____</p>
--	--

Alberta Fish and Wildlife Division recommends predevelopment inventory be conducted on all native grasslands habitats within the Grassland Natural Region due to high concentration of Species at Risk and limited site specific information on occurrences.

6. Has a pre-development Species at Risk inventory been completed to alert the applicant of any wildlife concerns related to this project? Yes (copy of inventory attached) No

If 'No', explain: See Section 3.3.3 of the PLA Application

Has the activity been assessed to ensure it does not negatively affect any species at risk? Yes No

If 'No', explain: The project has been assessed to determine its effect on species at risk and mitigation measures have been suggested to reduce adverse effects. Additional details are presented in Section 3.3.3 of the PLA Application.

8. If Access Restrictions apply, include legal land description and explain mitigation measures.

LSD _____ Sec _____ Twp _____ Rge _____ W _____

LSD _____ Sec _____ Twp _____ Rge _____ W _____

Explain mitigation strategy: _____

9. If within or adjacent (within 100 m) to a *Protected Area*, indicate the type of protected area and explain what measures will be taken to avoid conflict with the protected area.

Natural Area Ecological Reserve Park Other Crown reservations as discussed in Section 3.2.1 of the PLA Application.

Name of protected area: _____

Explain mitigation strategy: _____

10. Are there any environmentally *sensitive areas* in the vicinity (within 100 m) of the proposed activity that will require special measures to protect? Yes No

If 'Yes', list and explain: See Section 3.3.1 of the PLA Application for additional details.

11. Is the proposed activity within a permafrost area? Yes No

If 'Yes', specify the Permafrost Protection Plan number and name: _____

D. Historical Resources

Date search completed A Historical Resource Impact Assessment was undertaken as part of the EIA. See Section 3.4 of the PLA Application.

dd/mm/yyyy

What is the Historical Resource Value (HRV) of the affected lands?

Not Listed 1 2 3 4 5

If HRV is 1-5, an 'Application for Historical Resources Act Clearance' must be submitted to the Cultural Facilities and Historical Resource Division (CFHRD) of Alberta Community Development.

Date submitted 05/08/2016

dd/mm/yyyy

Note: Activities on land that has an HRV or 4 or 5 may require a Historical Resources Impact Assessment (HRIA).

E. Vegetation and Timber Cover

Vegetation (check all that apply)

Native grassland

Treed wetland

Deciduous-dominant forest:

- | | | |
|---|--|--|
| <input type="checkbox"/> Tame pasture | <input type="checkbox"/> Shrubby wetland | <input type="checkbox"/> ("D" less than 30% coniferous trees) |
| <input type="checkbox"/> Cropland | <input type="checkbox"/> Grass or grass-like wetland | Coniferous-dominant forest: |
| <input checked="" type="checkbox"/> Sparsely or non-vegetated | <input type="checkbox"/> Native aspen parkland | <input checked="" type="checkbox"/> ("C" more than 70% coniferous trees) |
| <input type="checkbox"/> Cutblock – planted | <input type="checkbox"/> Other (specify) _____ | Mixedwood forest: |
| <input type="checkbox"/> Natural regeneration >2 m | | <input type="checkbox"/> ("CD" 70% to 50% coniferous trees) |
| | | <input type="checkbox"/> ("DC" 50% to 30% coniferous trees) |

Timber Salvage

1. Merchantable timber present? Yes No

Provide a volume inventory as follows:

Coniferous approx. volume 600 m³ or _____ number of loads

Spruce 37% Pine 27% Other 37 %

Deciduous approximate volume 50m³ or _____ number of loads

Aspen 100 % Other 0 %

2. Specify the timber disposition or FMA(s) shown on LSAS.

No disposition (Contact the Regulatory body)

Disposition number of FMA: No FMA, see Table 3-2 of PLA Application for lease and permit holders Section ,
holder name _____

3. Utilization standards:

Coniferous 15 cm stump diameter to a 11 cm top diameter.

Deciduous 15 cm stump diameter to a 11 cm top diameter.

4. Timber salvage waiver requested? Yes No

If 'Yes', provide justification: _____

5. Provide the name of the salvage purchaser See Section 3.5 of the PLA Application, or check one of the following:

Not known at this time

By TM88 (or equivalent)

By Timber permit

6. When will the salvage be removed/hailed from the site to a wood processing plant?

Proposed date start: 01/07/2017
dd/mm/yyyy

Proposed date complete: 01/12/2018
dd/mm/yyyy

Notes: The operator is responsible for moving the salvage to a site that is accessible to ensure all the wood can be removed. This may require forwarding the wood to a site with all-weather access.

A copy of the TM88 or equivalent must be submitted to the the Regulatory body to ensure proper tracking of ownership, transport and manufacturing can occur.

F. Soil and Vegetation Management

Soil salvage, storage, replacement, and handling procedures shall be in keeping with those outlined in *Section 6 “Site Disturbance, Clearing and Soil Management,”* of the *“Public Lands Operational Handbook”*.

Note: Projects on specific areas of public land may require a soil survey. The proponent is to identify such requirements during the planning process.

Are there soil sensitivities (i.e., shallow depth to water table; shallow depth to bedrock; soils are gravely or stony, etc.)? Yes No

Explain: See Section 3.6.1 of the PLA Application for details on soil sensitivities.

Surface expression (i.e., topography). See Section 3.6.1 of the PLA Application for details on project area topography.

Site drainage (i.e., drainage is very poor, poor, imperfect, moderately well, well, rapid, or very rapid)

See Section 3.6.1 of the PLA Application for details on site drainage.

Are there problem vegetation/weeds/invasive species on or near site at time of assessment?

Yes No **Explain** Problem vegetation/weeds/invasive species are discussed further in Section 3.6.2 of the PLA Application.

Identification of species, degree of infestation and approximate amount of area infested per species.

	Species 1	Species 2	Species 3
Trace (rare)		Refer to Section 3.6.2 of the PLA Application.	
Low (occasional)			
Moderate (scattered plants)			
High (fairly dense)			

Is there a risk of weed spread to the site if development proceeds?

High Moderate Low

If any risk, provide details in reclamation and construction sections of supplements.

If high or moderate, show location on the application plan.

G. Incidental Activities

The applicant is to identify and outline on the application plan any incidental activities required for temporary use.

Note: No additional approval is required for incidental activities that are applied for with the disposition and included in the plan.

If the incidental activity is *not approved* under the disposition, a separate approval is required. Incidental activities approved in this manner are for temporary use only and are *not* part of the surface disposition.

1. According to field assessment, will additional incidental clearings be required? Yes No

If 'Yes', indicate the purpose:

- Campsite Borrow Pit Salvage Deck
 Temporary Workspace Backslope Temporary Access
 Other Incidental activities are discussed further in Section 3.7 of the PLA Application

2. Are any additional clearings planned in reforested areas? Yes No

If 'Yes', explain _____

The Core Operating Conditions are standard practices that must be applied to all activities.

H. Core Operating Conditions

Prior to Entry - Confirmation Number

099 The holder shall contact and advise Regulatory body of its intentions:

- prior to entry upon the lands for a stated purpose,
- prior to any additional construction during the term of this authority,
- at the completion of operations or construction, and
- upon abandonment of this activity.

Upon contact prior to initial entry on the land, the Regulatory body shall issue a confirmation number that shall be maintained on file by the holder and be provided to the Regulatory body on request.

<Location & Telephone No.> _____

Adverse Ground Conditions

105 Any activity on the land during adverse ground conditions must be suspended if the activity is likely cause unacceptable damage to vegetation or soil, as may be determined by the holder or the Regulatory body.

Sample Plots

108 No entry is allowed within the boundaries of any research or sample plot.

Reclamation - Interim

127 The holder shall reclaim all disturbed land surfaces within two growing seasons. Interim reclamation, including site and debris clean-up, slope stabilization, recontouring with subsoil, and spreading of topsoil shall be done progressively and concurrently with operations.

Reclamation - Final

128 Final surface reclamation must meet the requirements for the specific activity in place at the time of abandonment.

Noxious Weeds

131 The holder shall cut, keep down and destroy all noxious weeds and restricted weeds as per the *Public Lands Act*.

Waste Material Disposal

135 The holder shall remove all garbage and waste material from this site to the satisfaction of the Regulatory body, in its sole discretion.

Watercourse/Water Body - No Material to be Deposited

148 The holder shall not deposit or push debris, soil or other deleterious materials into or through any watercourse or water body or on the ice of any watercourse/water body.

Erosion Prevention

158 The holder shall take all precautions and safeguards necessary to prevent soil and surface erosion to the satisfaction of the Regulatory body in its sole discretion.

Natural Drainage - No Interruption

161 The holder shall not create any interruptions to natural drainage, including ephemeral draws that may result in blockage of water flow.

If electricity is required at a facility, the **ROW** must be planned to ensure the power line is located on the downwind side. This is required to maximize the tree-free area adjacent to the power lines, thus reducing the potential of falling trees hitting the power line and possibly starting a wildfire, as well as, cutting off power to the facility.

Where a road, pipeline, and power line ROW are required, it is recommended the power line be located between the road and pipeline. This greatly reduces the clearing requirements and keeps the power line safe from falling trees.

B. Topography

1. Mark more than one box to show range:

- Level (0-2%)
- Gentle (3-10%)
- Moderate (11-15%)
- Steep (16-30%)
- Very steep (over 30%)

Explain: Topography within the proposed activity area is presented in Section 5.2 of the PLA Application.

C. Watercourse Crossings

Avoidance, Minimizing and Mitigation/Compensation, in that order, are considerations for watercourse crossings. See the instructions for additional explanation.

1. Will watercourse crossings be installed? Yes No. (If 'No', go to next section).
If 'Yes', number the watercourse crossings on the survey plan and complete the table below.

Note: All licences, authorizations and approvals issued by the Regulatory body under the *Public Lands Act, Forests Act, Environmental Protection and Enhancement Act and Water Act*, should not be taken to mean the proponent (applicant) has complied with federal legislation. Proponents should contact Fisheries and Oceans Canada in the location nearest to them (Peace River, Edmonton, Calgary, Lethbridge) in relation to the application of federal laws, including but not limited to the *Navigable Water Protection Act* and the *Fisheries Act (Canada)*.

Crossing Number	Crossing Method	Culvert/Bridge Size Diameter (mm) x length (m)	Water-course Size Class (1-4)	LSD	Sec	Twp	Rge	Mer	Specify if restricted activity period (dd/mm/yyyy)	Class of Waterbody from COP (A,B,C,D)
1	Initial B	clear span X unknown	3	10	03	008	04	5	From May 1	B
	Final B								To August 15	
	Initial	X							From	
	Final								To	
	Initial	X							From	
	Final								To	

2. Temporary watercourse crossings will be removed by _____
dd/mm/yyyy

Note: Temporary crossings must not be installed or existing ones removed during restricted activity periods unless clean flow can be maintained. Crossings installed during winter work should be removed prior to spring break up.

D. Construction Strategy

Plan attached (include all areas of existing clearing(s) and new clearing(s) to be used, and their dimensions)

1. **Vegetation removal:** Explain: See below.

2. **Brush disposal:** Explain: See below

3. **Topsoil handling/Topsoil stripping width:** (Check the appropriate boxes for initial and final access)

Minimal surface disturbance (no stripping)

Stripping **Single Lift** **Two Lift** **Other** See below

Explain if more than one box has been checked. See below

Additional details: The proposed construction strategy, including vegetation/brush removal and topsoil handling, is discussed in Section 5.4 of the PLA Application. A plan with an air photo indicating areas of existing clearing and new clearings to be used is provided in the PLA Application as Figures 5-1 and 5-2.

E. Reclamation Strategy

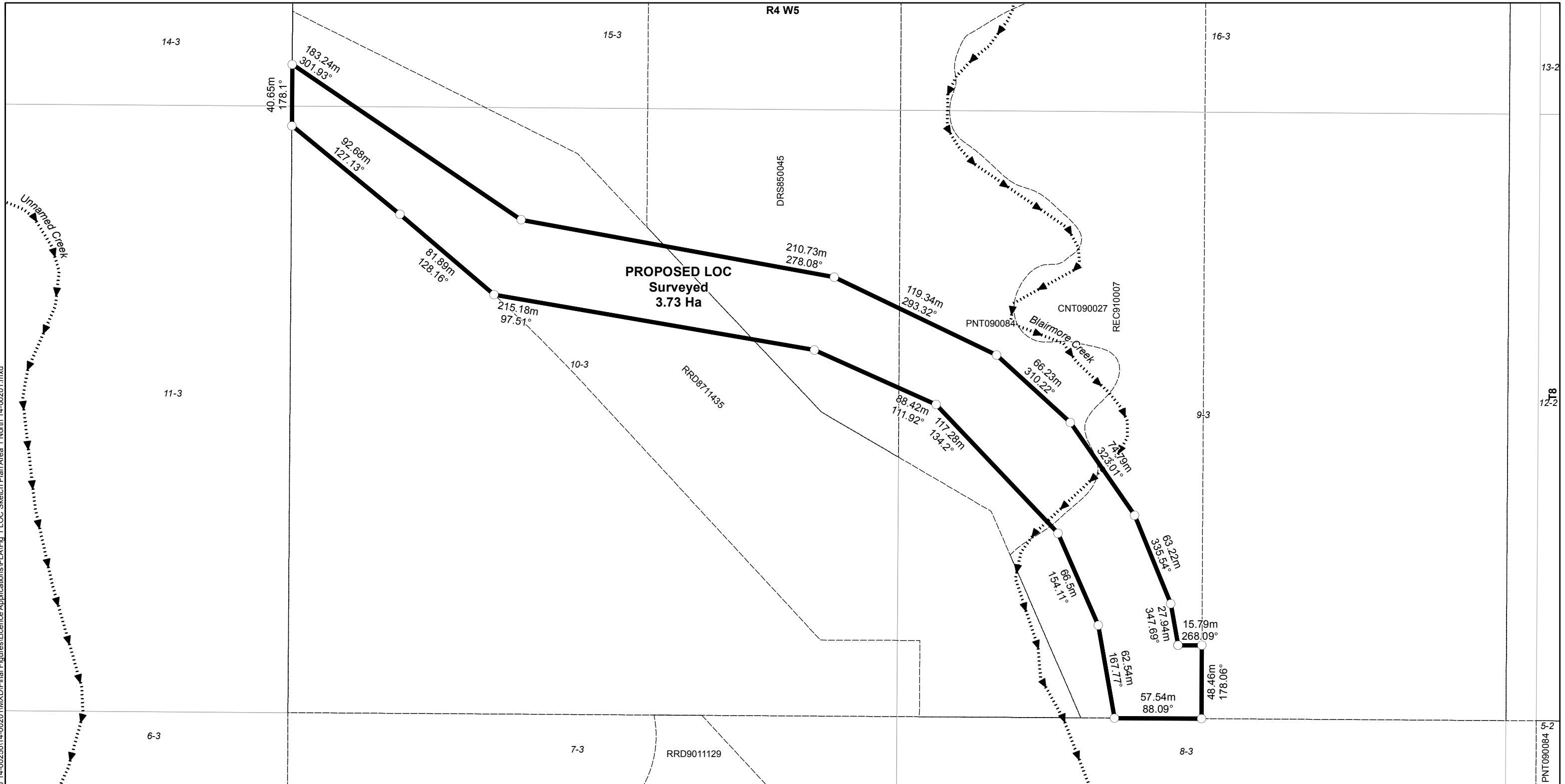
Revegetation strategy: (Check appropriate boxes)

Natural recovery **Native seed** **Non-native seed** **Other** See Section 5.5 of the PLA Application

Interim: The reclamation strategy for the rail loop is discussed in Section 5.5 of the PLA Application.

Production/Operation: The reclamation strategy for the rail loop is discussed in Section 5.5 of the PLA Application.

Document Path: K:\Active Projects\2014\AP 14-00201 to 14-00250\14-00201\MXD\Final_Figures\Licence Applications\PLA\Fig 1 LOC Sketch Plan Area 1 North 14-00201.mxd



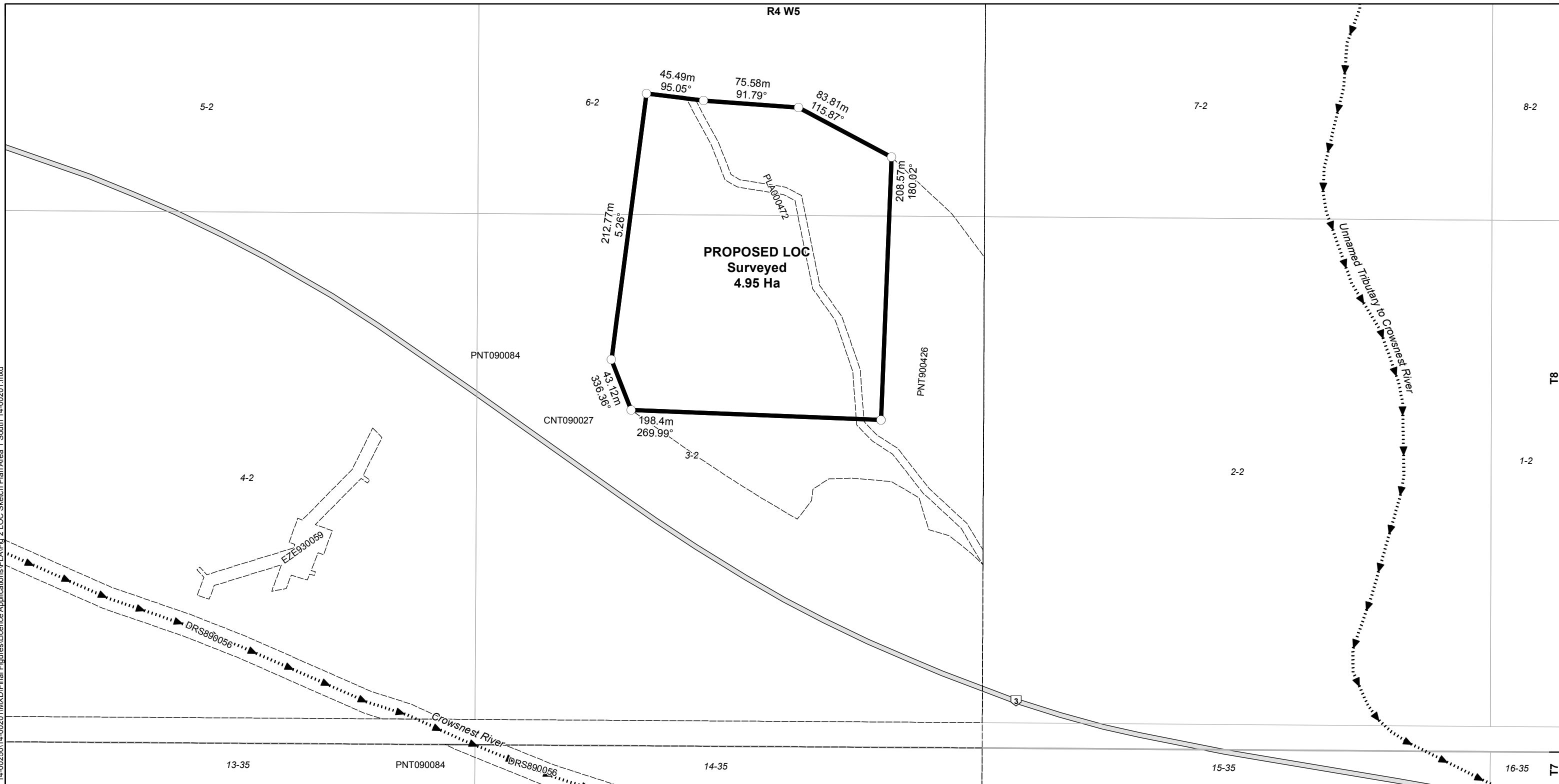
- LEGEND**
- Deflection Point
 - ▶ Creek (Flow Direction)
 - ▬ Proposed LOC Boundary
 - - - Disposition

<p>PROJECT</p> <p>GRASSY MOUNTAIN COAL PROJECT</p>		<p>PROJECT: 14-00201</p> <p>DRAWN BY: JL</p> <p>CHECKED BY: KY</p> <p>DATE: JUNE 27, 2016</p>
<p>TITLE</p> <p>PROPOSED LICENSE OF OCCUPATION (LOC) SKETCH PLAN</p> <p>09/10/15-03-008-04 W5</p>		
<p>NOTES</p> <p>AltaLIS, 2015; MEMS, 2015</p> <p>Datum/Projection: UTM 3TM Nad 83</p>	<p>1:2,500</p>	

<p>FIGURE</p> <p>1 of 2</p>

Disclaimer: This figure was derived from multiple data sources and while we make every effort to assure its' accuracy, Millennium EMS Solutions Ltd. disclaims any representation or warranty and assumes no liability either for any errors, omission or inaccuracies that may occur.

Document Path: K:\Active Projects\2014\AP_14-00201 to 14-00250\14-00201\MXD\Final_Figures\Licence Applications\PLA\Fig 2 LOC Sketch Plan Area 1 South 14-00201.mxd



LEGEND

- Deflection Point
-▶ Creek (Flow Direction)
- ▬ Primary Highway
- ▬ Proposed LOC Boundary
- - - Disposition

PROJECT

GRASSY MOUNTAIN COAL PROJECT

TITLE

PROPOSED LICENSE OF OCCUPATION (LOC) SKETCH PLAN
6-2/3-2-03-008-04 W5

NOTES

AltaLIS, 2015; MEMS, 2015
Datum/Projection: UTM 3TM Nad 83

PROJECT: 14-00201

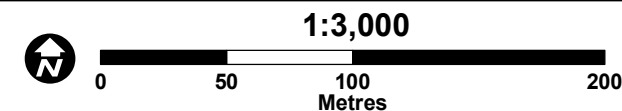
DRAWN BY: JL

CHECKED BY: KY

DATE: JUNE 27, 2016

FIGURE

2 of 2



Public Land Standing

Selection Criteria

Selected Sections

Geo-Administrative Area:	Y
Requested Lands:	Y
Title Information:	N
Activity Details:	Y
Subdivisions:	NA
Client List:	Y

Selected Activities

Surface Dispositions	Y	Status:	Number Assigned, Application, Letter of Authority, Land Amendment Application, Letter of Authority for Amendment, Active/Disposed, Cancelled - Outstanding Obligation
		Types:	All
Geophysical	NA	Status:	All
		Types:	All
Reservations	Y	Status:	Number Assigned, Application, Letter of Authority, Land Amendment Application, Letter of Authority for Amendment, Active/Disposed, Cancelled - Outstanding Obligation
		Types:	All
Encumbrances	Y	Status:	All
		Types:	All
Land Postings	Y	Status:	Number Assigned, Open, Closed
		Types:	All

Land Keys

W5-04-008-02-SW
W5-04-008-03-NE

Public Land Standing

Requested Land

Requested Land	Ownership Status	Administered By	Titled Status	Survey Status	Area in Hectares		Area in Acres		Water	
					Land	Title	Land	Title		
W5-04-008-02-SW	Mixed	FLW-MLT	Titled	Surveyed	46.960	46.519	116.04	114.95	Partly Covered	
<i>Remarks: SUB 24.46 PL 8711401 (4716GEN) BLK 2 FLW 1.09 BALANCE 328IRR (IRR513) RIVER DIVERSION FRHOLD 114.95 BALANCE INCL RDS & RIVER SUB 19.50 PL 8810387 (4725GEN)</i>										
W5-04-008-03-NE	Mixed	FLW-MLT	Titled	Surveyed	40.448	25.819	99.95	63.80	No Water Coverage	
<i>Remarks: SUB 36.66 PL 8711438 (4718GEN) BLK 1 SUB 23.39 PL 8711437 (4703GEN) FLW 36.15 BALANCE N&E/RD FRHOLD 63.80 BALANCE INCL RDS</i>										
TOTAL					87.408	72.338	215.99	178.75		

Geo Administrative Areas

ALBERTA ENERGY REGULATOR	SOUTH REGION	Code: AER-S
W5-04-008		
COAL DEVELOPMENT REGION	SETTLED	Code: CDR-1
W5-04-008-02		
W5-04-008-03		
ENVIRONMENT CORPORATE REGION	SOUTHERN	Code: ENV-1
W5-04-008		
ENVIRONMENT CONS. & RECL. DISTRICT	NO. 20	Code: ERD-020
W5-04-008		
EASTERN SLOPE ZONE		Code: ESZ
W5-04-008		
FOREST MANAGEMENT UNIT	SOUTHWEST	CO1 SOUTHERN ROCKIES
W5-04-008-02-SW		
W5-04-008-03		
FOREST MANAGEMENT UNIT	SOUTHWEST	CO2 SOUTHERN ROCKIES
		Code: FMU-C-52

Public Land Standing

FOREST MANAGEMENT UNIT W5-04-008-02 W5-04-008-03-NE	SOUTHWEST	CO2 SOUTHERN ROCKIES	Code: FMU-C-52
FISH & WILDLIFE ADMIN REGION W5-04-008	SOUTHERN REGION	BLAIRMORE	Code: FWA-1-02
FISH AND WILDLIFE DISTRICT W5-04-008	SOUTHERN REGION	BLAIRMORE	Code: FWD-1-09
FISH & WILDLIFE REFERRAL LANDS W5-04-008-02 W5-04-008-03			Code: FWR
GENERAL LANDS CLASSIFICATION W5-04-008-02 W5-04-008-03	WHITE		Code: GLC-W
GRAZING ZONE W5-04-008	A2		Code: GRZ-A2
INTEGRATED RESOURCE PLAN W5-04-008-02 W5-04-008-03	CROWSNEST CORRIDOR		Code: IRP-C4
LAND USE AREA W5-04-008	SOUTHWEST 1	BLAIRMORE	Code: LUA-SW1-2
OPERATIONAL APPROVAL DISTRICTS W5-04-008	South Saskatchewan Region	South Saskatchewan District	Code: OPD-5-1
RANGELAND DISTRICT W5-04-008-02 W5-04-008-03	SOUTHWEST	PINCHER CREEK	Code: RLD-SW-6
REGIONAL PLANNING COMMISSIONS W5-04-008	OLDMAN RIVER		Code: RPC-02
URBAN MUNICIPALITY W5-04-008-02-SW	TOWN	BLAIRMORE	Code: UBM-T-009
URBAN MUNICIPALITY	TOWN	MUNICIPALITY OF CROWSNEST PASS	Code: UBM-T-113

Public Land Standing

URBAN MUNICIPALITY TOWN MUNICIPALITY OF CROWNEST Code: UBM-T-113
PASS

W5-04-008-02

W5-04-008-03

End of Geo Administrative Areas

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
CNT090027	Active/Disposed	2009/03/10	2034/03/31		175,167.31	70,887.690

CALGARY OFFICE - FORESTRY AND EMERGENCY RESPONSE DIVISON OF ENVIRONMENT AND SUSTAINABLE RESOURCE DEVELOPM
 0510 : BUFFER
 1 : NO RESTRICTON
 710 : SEE COMMENTS

Agency CommentsFOR EAP APPLICATIONS, SEND EMAIL TO BELOW ADDRESS BASED ON CRITERIA. A TEN DAY REFERRAL WINDOW WILL APPLY AND NOTE OF RECIEPT WILL BE PROVIDED BY EMAIL. IF NO REPLY IS RECEIVED THEN PROCEED WITH APPLICATION. NON-EAP APPLICANTS FOLLOW NORMAL REFERRAL PROTOCOLS. ALL PROPONENTS ARE TO REFER TO THE FIRESMART GUIDEBOOK FOR THE OIL AND GAS INDUSTRY, BEST MANAGEMENT PRACTICES FOR WILDFIRE PREVENTION AND FIRESMART FIELD GUIDE FOR WILDFIRE RISK AND MITIGATION STRATEGIES; LINK TO E-DOCUMENTS HTTP://WILDFIRE.ALBERTA.CA/FIRE-SMART-INDUSTRY/DEFAULT.ASPX FIRESMART CONSULATATIVE NOTATION COMMENTS: TYPES OF ACTIVITES AND DISPOSITIONS THAT REQUIRE REFERRAL; *RECREATION LEASE (REC) *DISPOSTION RESERVATION (DRS)-USE CRITERIA FOR MLL* ,SML AND LOC AS DEFINED BELOW *EASEMENT (EZE) *VEGETATION CONTROL EASEMENT (VCE) *LICENSE OF OCCUPATION (LOC)-HIGH GRADE ROAD OR ACCESS ROAD 20M+ WIDE *MINERAL SURFACE LEASE (MSL), *MISCELLANEOUS LEASE (MLL) *MISCELLANEOUS PERMIT (MLP) *PIPELINE AGREEMENT (PLA)-IF 20M+WIDE *PIPELINE INSTALLATION LEASE (PIL)- IF OVER 5 HECTARES *RURAL ELECTRIC ASSOCIATION EASEMENT (REA) *SURFACE MATERIAL LEASE (SML)- ONLY IF PEATMOSS *ALL AGRICULTURAL DISPOSITIONS REQUIRING FENCE LINE CLEARING/FIELD CLEARING AND DEBRIS DISPOSAL *REGIONAL GRAZING/TIMBER INTRGRATION PLANS . ALL APPLICATIONS MUST BE REFERRED VIA EMAIL TO THE "WILDFIRE PREVENTION OFFICER" AT THE CALGARY FORESTRY OFFICE: ESRD.EDS-CLGR-FIRESMART@GOV.AB.CA TYPES OF ACTIVITES AND DISPOSITIONS NOT REQUIRING REFERRAL *GEOPHYSICAL ACTIVITIES. *AGRICULTURAL DISPOSITIONS WHERE CLEARING IS NOT REQUIRED E.G. HAY PERMIT *HAP), FOREST GRAZING LICENSE (FGL) WITH NO FENCE LINES *TIMBER DISPOSITIONS

ACTIVITY DETAIL INFORMATION

PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)		
5999 RN			2009/02/24		
W5-04-008-02-SW				(0.00)	(0.000)
W5-04-008-03-NE				(0.00)	(0.000)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
DRS850045	Active/Disposed	1985/08/08	2015/08/07	BLAIRMORE OFFICE - LAND USE AREA - LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV 0553 : RANGER STATION 710 : SEE COMMENTS BLAIRMORE RANGER STATION.	23.29	9.425

ACTIVITY DETAIL INFORMATION

PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)
123263 MS			1990/08/24

W5-04-008-03-NE WHICH LIES TO THE EAST OF REGISTERED PLAN 8711437 (4703 GEN) TO THE WEST OF REGISTERED PLAN 8711438 (4718 GEN) AND TO THE NORTH OF HIGHWAY # 3. (23.29) (9.425)

DRS890056	Active/Disposed	1989/05/17	2019/05/16	ENVIRONMENT AND WATER, DEPARTMENT OF 0460 : FISHERIES HABITAT PROTECTION AREA	0.00	0.000
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ACTIVITY DETAIL INFORMATION

PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)
113821 MS			1989/04/26

W5-04-008-02-SW BED & SHORE OF THE CROWSNEST RIVER (0.00) (0.000)

EZE 950044	Active/Disposed	1995/05/31	2999/12/31	CROWSNEST PASS GOLF & COUNTRY CLUB	0.05	0.021
------------	-----------------	------------	------------	------------------------------------	------	-------

ACTIVITY DETAIL INFORMATION

OPTION TO PURCHASE (Y/N): WITHIN 100M OF WATERBODY (Y/N): Y PURPOSE: WATER INTAKE
DIMENSION: IRREGULAR CLIENT FILE NO:

PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)
14396 TL			1995/04/04

W5-04-008-03-NE INCLUDES BED & SHORE OF BLAIRMORE CREEK. (0.05) (0.021)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
PLA 000472	Letter of Authority	2000/02/16	2999/12/31	ATCO GAS AND PIPELINES LTD. (SOUTH)	0.69	0.279
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N): N		PURPOSE: PIPELINE		
DIMENSION: 6 M		CLIENT FILE NO:				
PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)			
34006 P			2000/03/24			
W5-04-008-02-SW					(0.69)	(0.279)

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
PNT090084	Active/Disposed	2011/10/20	2021/10/19		132,888.84	53,778.200

PINCHER CREEK OFFICE - RANGELAND DISTRICT-LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV
 0181 : MULTIPLE RESOURCE CONCERNS
 5 : NO SURFACE SALE DISPOSITIONS
 710 : SEE COMMENTS

THIS LOCATION MAY FALL WITHIN AN AREA OF FOOTHILLS FESCUE GRASSLAND, A VERY VALUABLE NATIVE GRASSLAND TYPE THAT IS LIMITED IN REMAINING AREA. ROUGH FESCUE GRASSLANDS ARE VERY SENSITIVE TO SURFACE DISTURBANCE AND DIFFICULT AND COSTLY TO RECLAIM. PROPONENTS MUST CONSULT INFORMATION LETTER (IL) 2010-02, FESCUE GRASSLANDS -- PRINCIPLES FOR MINIMIZING SURFACE DISTURBANCE AND MAKE EARLY CONTACT WITH ALBERTA ENVIRONMENT & SUSTAINABLE RESOURCE DEVELOPMENT STAFF FOR THE AREA IN QUESTION. THE INFORMATION LETTER ADDRESSES OBLIGATIONS AND SPECIFIC DIRECTION REGARDING ALL POTENTIAL SURFACE DISTURBANCE RELATED ACTIVITY IN FOOTHILLS ROUGH FESCUE GRASSLAND PLANT COMMUNITIES. THIS DIRECTIVE SUPPLEMENTS THE ERCB'S IL 2002-01: PRINCIPLES FOR MINIMIZING SURFACE DISTURBANCE IN NATIVE PRAIRIE AND PARKLAND AREAS. IL 2010-02 MAY BE FOUND AT:
[HTTP://WWW.SRD.ALBERTA.CA/FORMSONLINESERVICES/INFORMATIONLETTERS/LANDSINFORMATIONLETTERS/DOCUMENTS/IL2010-02-FOOTHILLSFESCUEGRASSLANDPRINCIPLESFORMINIMIZINGSURFACEDISTURBANCE-MAR23-2010.PDF](http://www.srd.alberta.ca/formsonlineservices/informationletters/landsinformationletters/documents/il2010-02-foothillsfescuegrasslandprinciplesforminimizingsurfacedisturbance-mar23-2010.pdf) IL 2002-01 MAY BE FOUND AT:
[HTTP://WWW.ALBERTAPCF.ORG/RSU_DOCS/EUB_NATIVE_PRAIRIE.PDF](http://www.albertapcf.org/rsu_docs/eub_native_prairie.pdf)

ACTIVITY DETAIL INFORMATION

PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)
7837 RN			2011/09/09
7837 RN			2013/03/15
W5-04-008-02-SW			
W5-04-008-03-NE			

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
RRD8711435	Active/Disposed	1987/11/06	2999/12/31	TRANSPORTATION HWY #3 HWY #3	16.00	6.476
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N):		PURPOSE:		
DIMENSION:		CLIENT FILE NO:				
PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)			
8679 RD	8711435		2002/03/01			
W5-04-008-03-NE					(16.00)	(6.476)

TFA 103358	Active/Disposed	2010/07/14	2011/07/14	MUNICIPALITY OF THE CROWSNEST PASS		
ACTIVITY DETAIL INFORMATION						
OPTION TO PURCHASE (Y/N):		WITHIN 100M OF WATERBODY (Y/N):		PURPOSE: NON-COMMERCIAL RECREATIONAL DEVELOPMENT		
DIMENSION:		CLIENT FILE NO:				
NO PLANS						
W5-04-008-02-SW					(0.00)	(0.000)

Public Land Standing

Client List

Activity	Client ID	Name / Address	Province	Country	Postal Code
CNT090027	8072051-001	CALGARY OFFICE - FORESTRY AND EMERGENCY RESPONSE DIVISION OF ENVIRONMENT AND SUSTAINABLE RESOURCE DEVELOPM WILDFIRE MANAGEMENT BRANCH CALGARY WILDFIRE MANAGEMENT AREA 8660 BEARSPAW DAM RD NW CALGARY	Alberta	CANADA	T3L 1S4
DRS850045	8059629-001	BLAIRMORE OFFICE - LAND USE AREA - LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV PO BOX 540 BLAIRMORE	Alberta	CANADA	T0K 0E0
DRS890056	8000026-009	ENVIRONMENT AND WATER, DEPARTMENT OF REGIONAL SERVICES 200 5 AVE S FLOOR 2 LETHBRIDGE	Alberta	CANADA	T1J 4L1
EZE 950044	8026700-001	CROWSNEST PASS GOLF & COUNTRY CLUB PO BOX 332 10701 24 AVE BLAIRMORE	Alberta	CANADA	T0K 0E0
PLA 000472	0000233-003	ATCO GAS AND PIPELINES LTD. (SOUTH) 410 STAFFORD DR N LETHBRIDGE	Alberta	CANADA	T1H 2A8
PNT090084	8078165-001	PINCHER CREEK OFFICE - RANGELAND DISTRICT-LANDS DIVISION DEPT. OF SUSTAINABLE RESOURCE DEV 782 MAIN ST ROOM 242 PO BOX 1420 PINCHER CREEK	Alberta	CANADA	T0K 1W0
RRD8711435	8061118-006	TRANSPORTATION ALBERTA TRANSPORTATION - LETHBRIDGE 3RD FLOOR ADMIN BUILDING 909 3 AVE N LETHBRIDGE	Alberta	CANADA	T1H 0H5
TFA 103358		MUNICIPALITY OF THE CROWSNEST PASS			

Public Land Standing

P.O. Box 6000
Crownsnest Pass

Alberta

Canada

T0K0E0

Total Activities: 8

DISCLAIMER

THIS STANDING REPORT IS PROVIDED SUBJECT TO THE CONDITION THAT HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF ALBERTA AND HER EMPLOYEES:

- (1) HEREBY DISCLAIM AND ARE RELEASED FROM ANY AND ALL RESPONSIBILITY FOR THE INFORMATION IN, AND ANY OMISSION OF THE INFORMATION FROM, THIS REPORT;
- (2) SHALL NOT BEAR ANY RESPONSIBILITY FOR ANY LOSS OR DAMAGE OF ANY KIND ARISING FROM OR IN RESPECT OF ANY ABSENCE OF INFORMATION OR ANY ERRORS OR OMISSIONS (WHETHER THE AFORESAID OCCASIONED BY NEGLIGENCE OR OTHERWISE) IN OR AFFECTING THIS REPORT OR THE INFORMATION THEREIN.

THIS REPORT DOES NOT SHOW CAVEATS, BUILDERS' LIENS, OR OTHER INSTRUMENTS, IF ANY, REGISTERED AT LAND TITLES OFFICE IN RESPECT OF ANY LANDS OR INTERESTS THEREIN. PERSONS ARE ADVISED TO ALSO EXAMINE RECORDS AT LAND TITLES OFFICE TO ASCERTAIN WHETHER OTHER INSTRUMENTS THAT MAY CONCERN THE LANDS OR INTERESTS THEREIN HAVE BEEN REGISTERED.

*** END OF REPORT ***



June 22, 2016

Keith Bott
Riversdale Resources
PO Box 660
12331 20th Ave
Blairmore, AB T0K 0E0

RE: LOC FOR RAIL LOOP NEAR BLAIRMORE, AB (SECTION 2/3, TOWNSHIP 8, RANGE 4, W5M)

ATCO Gas has facilities within the proposed LOC, under Pipeline Agreement Application (PLA) number 000472. A majority of the gas main within the proposed LOC has been abandoned.

If any portion of the gas main remains in the proposed LOC, ATCO Gas requires the remaining portion of the gas main to be abandoned. This abandonment is done at the developer's expense prior to any surface construction within the proposed LOC. Please contact the Lethbridge Engineering Department at (403) 380-5400 to arrange for a gas main abandonment.

Please contact Alberta One-Call Corporation at 1-800-242-3447 prior to any surface construction.

ATCO Gas has no objection to this proposal providing the above requirements are met.

If you require further information, please contact the undersigned at (403) 380-5426.

Sincerely,

ATCO Gas
<Original signed by>

Michael Leung
Distribution Design EIT, Lethbridge Region Operations
Email: michael.leung@atco.com
Phone: (403) 380-5426

APPENDIX 3 – MLL APPLICATION

Application for Surface Dispositions

<i>Please Print Or Type</i>	EFR attached? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A					File Number:								
	If No, AOA # _____ or					Confirmation Number:								
	Other: _____					FNC Number: Not Issued								
<input type="checkbox"/> Mineral Surface Lease [MSL]		<input type="checkbox"/> Licence of Occupation [LOC]		<input type="checkbox"/> Pipeline Installation Lease [PIL]		<input type="checkbox"/> R.E.A. Easement [REA]								
<input type="checkbox"/> Pipeline Agreement [PLA]		Project Name: Grassy Coal					<input type="checkbox"/> Easement [EZE]							
Application:							Transmission Line							
<input type="checkbox"/> Class I [INDEX > 2690]							Length _____ km							
<input type="checkbox"/> Class II [INDEX < 2690]							Kilovolts							
Does this application include watercourse crossings regulated under the <i>Water Act</i> (Ministerial) Regulations' Code of Practice for Pipelines and Telecommunication Lines Watercourse Crossings? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, the applicable <i>Water Act</i> Notice must be submitted with this application.														
Applicant: Benga Mining Limited					Client ID: 1008823002			Applicant File Number Grassy Mountain Coal Mine						
Address: PO Box 660, 12331 - 20 Avenue							Tel: 403-563-6160							
City/Province: Blairmore Alberta					Postal code: T0K 0E0			Fax:						
Contact person/Agent as above <input checked="" type="checkbox"/> or:							File:							
Address:							Tel:							
City/province:					Postal code:			Fax:						
Attached: <input checked="" type="checkbox"/> Sketch		<input type="checkbox"/> Survey Plan		<input type="checkbox"/> As Built		Occupant's consent: <input type="checkbox"/> Attached		<input checked="" type="checkbox"/> Not Required						
Purpose of application: <input type="checkbox"/> Wellsite		<input type="checkbox"/> Access		<input type="checkbox"/> Pipeline		<input type="checkbox"/> Powerline		<input checked="" type="checkbox"/> Other Coal Mine						
Land being applied for [<i>Attach Schedule if insufficient space</i>]														
Name of Subdivision					Subdivision Plan			Block		Lot		Parcel		
Qtr/LS	Sec	Twp	Rge	Mer	Qtr/LS	Sec	Twp	Rge	Mer	Qtr/LS	Sec	Twp	Rge	Mer
See	Table	2-2												
Are you a Canadian citizen? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Have you attained the age of 18 years? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			Are you an employee of the Government of Alberta or member of the Legislative Assembly? <input type="checkbox"/> Yes [<i>Dept/Agency/Board</i>] <input checked="" type="checkbox"/> No									
Signature _____					For Internal Use Only									
Steve Mallyon Print Name					Authorization is hereby granted to enter upon and immediately occupy public land as described on this application and in accordance with the plan/sketch submitted to the issuing regulatory body subject to conditions specified in schedule "A":									
August 12, 2016 Date		\$ _____ Amount Enclosed			_____ Date		_____ Authorizer, <i>Public Lands Act</i>							
Approval from	Lands	Forest	F & W	Trans	Parks						Dept. Plan:			
Referral Date											Copies for:			
Received Date											Municipal Authority			
Comments:										Field Services				
										Forest				
										F & W				
										Other				

Completion of EFR Cover Document For all Dispositions 2.0 Environmental Field Report (EFR)

The cover document and the appropriate supplement form must be submitted for each surface disposition application. All blanks must either be filled in or 'N/A' noted where applicable.

Failure to fill out the document and form(s) completely will result in the EFR being rejected.

New Revised

Date Submitted 12/08/2016 Department Number _____

dd/mm/yyyy

Site/Project Name: Grassy Mountain Coal Project

A. Communications

1. Applicant: Benga Mining Limited
2. Company contact person for EFR: Steve Mallyon Phone: (403) 563-6160
3. E-mail: Steve.Mallyon@rivresources.com Cell Phone: (____) ____
- 4.
5. Company representative who conducted the onsite assessment for the EFR:
Cal Clark
6. Phone: (403) 753-5160 Cell Phone: (____) ____
7. Fax: (____) ____ E-mail: Cal.Clark@rivresources.com
8. Date of on-site assessment: 2014 to 2016
dd/mm/yyyy

Note: The Regulatory body reserves the option to audit individual EFR's to ensure field visits have been conducted and information supplied is accurate.

B. Surface Location

LSD 03 Sec 14 Twp 008 Rge 04 _____ W 5

To:

LSD 04 Sec 14 Twp 008 Rge 04 _____ W 5

1. Construction is proposed under the following soil conditions (check the box that applies):
 - Frozen
 - Non-Frozen
 - Other (If "Other", explain)

Could be frozen or non-frozen conditions depending on timing of EPEA Approval.

Proposed construction date: Q3 2017 to Q4 2018
dd/mm/yyyy

2. Specify associated developments/dispositions that may be required as a result of this disposition.

- Power line
- Pipeline
- Compressor
- Metering Station
- Access
- Other LOC for the rail line/load-out and MSL for the mining area (see Public Lands Act Application)

Land Standing Review

3. A complete Land Standing Review check must be made on the proposed area.

Date Land Standing search was completed: 10/08/2016
dd/mm/yyyy

Reservation/Activity Number	Action required/identify conflicts/contact name and or comments
See Public Lands Act Application Table 3-1.	

a. Within a Provincial Grazing Reserve? Yes No

If 'Yes', complete the Provincial Grazing Reserve template and attach to the Environmental Field Report. (Refer to Appendix I in the instruction document.)

b. Within the Chungo Access Management Area? Yes No

If 'Yes', complete the Chungo Area template (located at the end of IL 2005-01 – Annex to Chungo Creek Industrial Access Management Area Information Letter and attach it to the Environmental Field Report.

c. Within a FireSmart Community Zone? Yes No

If 'Yes', contact Forest Protection Division for additional hazard reduction requirements.

d. Follow the "Bear Smart" program to reduce bear-human conflicts and increase public stewardship of black and grizzly bears in Alberta by providing strategies, information and education materials to its staff and contractors, see srd.alberta.ca and search for "Alberta BearSmart"

4. Are Permanent/Research Sample Plots/Rangeland Benchmarks located within 100 m of the boundary of the lands under application? Yes No

If 'Yes', indicate the legal land description and GPS coordinates for each plot/benchmark in relation to the disposition boundary (degree, decimal, minutes).

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____
 Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____
 Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____
 Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____
 Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____
 Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____
 Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____
 Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____
 Latitude _____ Longitude _____ Distance away _____ m

Reservation No. _____ PSP/RSP No. _____ LSD _____ Sec _____ Twp _____ Rge _____ W _____
 Latitude _____ Longitude _____ Distance away _____ m

PSP's held by the Regulatory body appear as DRS or PNT reservations on the LSAS report. The forest industry also has sample plots, and if these are registered, they will appear as ISP's on the LSAS report. If the forest industry sample plots are not registered, they will not appear on the LSAS report. The proponent is responsible for determining if there are any PSP's or ISP's on the land under application. PSP's and ISP's must not be disturbed.

Stakeholders, Other Land Users

5. Is there potential impact on or conflict with stakeholders and other land users? Yes No

If "Yes" to either, please list and explain mitigation:

See Section 3.2.2 and 3.2.3 of the PLA Application for details.

6. What actions have been taken to integrate this disposition with other existing/planned activities and resources to minimize the impacts on the land base? (Check appropriate boxes.)

- Not applicable
- Use common corridor
- Parallel existing clearing/right of way
- Use existing clearing/right of way
- Other

Explain: A majority of the MLL is located on an existing clearing.

7. Identify any aesthetic concerns related to the proposed activity (i.e., negative effects on the aesthetic/sensory aspects of the surrounding land including view, smell, noise, etc.).

- Not applicable
- From public access
- From residence
- From recreation facility
- Other _____

Explain: _____

8. Are there any conflicts with Access Management Plans, Integrated Resource Plans or policy documents for the area? Yes No

If 'Yes', explain mitigation strategy: Land and resource use planning is discussed further in Section 3.2.6 of the PLA application.

9. Was First Nations (Aboriginal) consultation required by the Regulatory body? Yes No

If "Yes", with whom: See Section 3.2.7 of the PLA Application for a list of First Nations groups who were consulted.

C. Wildlife/Environmental Concerns

1. Within a Key/Critical Wildlife Zone? Yes No

If 'Yes', provide information on mitigation strategies that will be implemented: See Section 3.3.1 of the PLA Application.

2. Wildlife Timing Constraint apply? Yes No

If 'Yes', provide dates of restricted period: From See Section 3.3.2 of the PLA Application To _____ (See Provincial Timing Guidelines or FW referral maps.)

3. Fisheries Timing Constraint apply? Yes No

If 'Yes', provide dates of restricted period: From _____ To See Section 3.3.2 of the PLA Application (See Provincial Watercourse Codes of Practice for restricted periods.)

4. Within a Caribou Area? Yes No. If 'Yes', specify the Caribou Protection Plan number and name.

Species at Risk (Plant/Animals)

5. Is it likely that a species at risk (not including Woodland Caribou in number 4 above) will be found in the area of the proposed development? Yes No

If 'Yes', specify the status and protective strategy for each species: For further details on species at risk within the proposed activity, see Section 3.3.3 of the PLA Application.

<p>Species 1 _____</p> <p><input type="checkbox"/> Endangered</p> <p><input type="checkbox"/> Threatened</p> <p><input type="checkbox"/> Special Concern</p> <p><input type="checkbox"/> At Risk</p> <p><input type="checkbox"/> May Be At Risk</p> <p>Explain any conflict and proposed mitigation</p> <p>_____</p>	<p>Species 2 _____</p> <p><input type="checkbox"/> Endangered</p> <p><input type="checkbox"/> Threatened</p> <p><input type="checkbox"/> Special Concern</p> <p><input type="checkbox"/> At Risk</p> <p><input type="checkbox"/> May Be At Risk</p> <p>Explain any conflict and proposed mitigation</p> <p>_____</p>
--	--

<p>Species 3 _____</p> <p><input type="checkbox"/> Endangered</p> <p><input type="checkbox"/> Threatened</p> <p><input type="checkbox"/> Special Concern</p> <p><input type="checkbox"/> At Risk</p> <p><input type="checkbox"/> May Be At Risk</p> <p>Explain any conflict and proposed mitigation</p> <p>_____</p>	<p>Species 4 _____</p> <p><input type="checkbox"/> Endangered</p> <p><input type="checkbox"/> Threatened</p> <p><input type="checkbox"/> Special Concern</p> <p><input type="checkbox"/> At Risk</p> <p><input type="checkbox"/> May Be At Risk</p> <p>Explain any conflict and proposed mitigation</p> <p>_____</p>
--	--

Alberta Fish and Wildlife Division recommends predevelopment inventory be conducted on all native grasslands habitats within the Grassland Natural Region due to high concentration of Species at Risk and limited site specific information on occurrences.

6. Has a pre-development Species at Risk inventory been completed to alert the applicant of any wildlife concerns related to this project? Yes (copy of inventory attached) No

If 'No', explain: See Section 3.3.3 of the PLA Application

Has the activity been assessed to ensure it does not negatively affect any species at risk? Yes No

If 'No', explain: The project has been assessed to determine its effect on species at risk and mitigation measures have been suggested to reduce adverse effects. Additional details are presented in Section 3.3.3 of the PLA Application.

8. If Access Restrictions apply, include legal land description and explain mitigation measures.

LSD _____ Sec _____ Twp _____ Rge _____ W _____

LSD _____ Sec _____ Twp _____ Rge _____ W _____

Explain mitigation strategy: _____

9. If within or adjacent (within 100 m) to a *Protected Area*, indicate the type of protected area and explain what measures will be taken to avoid conflict with the protected area.

Natural Area Ecological Reserve Park Other Crown reservations as discussed in Section 3.2.1 of the PLA Application.

Name of protected area: _____

Explain mitigation strategy: _____

10. Are there any environmentally *sensitive areas* in the vicinity (within 100 m) of the proposed activity that will require special measures to protect? Yes No

If 'Yes', list and explain: See Section 3.3.1 of the PLA Application for additional details.

11. Is the proposed activity within a permafrost area? Yes No

If 'Yes', specify the Permafrost Protection Plan number and name: _____

D. Historical Resources

Date search completed A Historical Resource Impact Assessment was undertaken as part of the EIA. See Section 3.4 of the PLA Application.

dd/mm/yyyy

What is the Historical Resource Value (HRV) of the affected lands?

Not Listed 1 2 3 4 5

If HRV is 1-5, an 'Application for Historical Resources Act Clearance' must be submitted to the Cultural Facilities and Historical Resource Division (CFHRD) of Alberta Community Development.

Date submitted 05/08/2016

dd/mm/yyyy

Note: Activities on land that has an HRV or 4 or 5 may require a Historical Resources Impact Assessment (HRIA).

E. Vegetation and Timber Cover

Vegetation (check all that apply)

<input type="checkbox"/> Native grassland	<input checked="" type="checkbox"/> Treed wetland	Deciduous-dominant forest:
<input type="checkbox"/> Tame pasture	<input type="checkbox"/> Shrubby wetland	<input checked="" type="checkbox"/> ("D" less than 30% coniferous trees)
<input type="checkbox"/> Cropland	<input type="checkbox"/> Grass or grass-like wetland	Coniferous-dominant forest:
<input type="checkbox"/> Sparsely or non-vegetated	<input type="checkbox"/> Native aspen parkland	<input checked="" type="checkbox"/> ("C" more than 70% coniferous trees)
<input checked="" type="checkbox"/> Cutblock – planted	<input checked="" type="checkbox"/> Other (specify) <u>Grass Meadow.</u>	Mixedwood forest:

Natural regeneration >2 m

("CD" 70% to 50% coniferous trees)

("DC" 50% to 30% coniferous trees)

Timber Salvage

1. Merchantable timber present? Yes No

Provide a volume inventory as follows:

Coniferous approx. volume m³ or number of loads

Spruce % Pine % Other %

Deciduous approximate volume m³ or number of loads

Aspen % Other %

2. Specify the timber disposition or FMA(s) shown on LSAS.

No disposition (Contact the Regulatory body)

Disposition number of FMA: No FMA, see Table 3-2 of PLA Application for lease and permit holders Section ,
holder name

3. Utilization standards:

Coniferous cm stump diameter to a cm top diameter.

Deciduous cm stump diameter to a cm top diameter.

4. Timber salvage waiver requested? Yes No

If 'Yes', provide justification:

5. Provide the name of the salvage purchaser See Section 3.5 of the PLA Application, or check one of the following:

Not known at this time

By TM88 (or equivalent)

By Timber permit

6. When will the salvage be removed/hailed from the site to a wood processing plant?

Proposed date start: 01/07/2017
dd/mm/yyyy

Proposed date complete: 01/12/2018
dd/mm/yyyy

Notes: The operator is responsible for moving the salvage to a site that is accessible to ensure all the wood can be removed. This may require forwarding the wood to a site with all-weather access.

A copy of the TM88 or equivalent must be submitted to the the Regulatory body to ensure proper tracking of ownership, transport and manufacturing can occur.

F. Soil and Vegetation Management

Soil salvage, storage, replacement, and handling procedures shall be in keeping with those outlined in Section 6 “Site Disturbance, Clearing and Soil Management,” of the “Public Lands Operational Handbook”.

Note: Projects on specific areas of public land may require a soil survey. The proponent is to identify such requirements during the planning process.

Are there soil sensitivities (i.e., shallow depth to water table; shallow depth to bedrock; soils are gravely or stony, etc.)? Yes No

Explain: See Section 3.6.1 of the PLA Application for details on soil sensitivities.

Surface expression (i.e., topography). See Section 3.6.1 of the PLA Application for details on project area topography.

Site drainage (i.e., drainage is very poor, poor, imperfect, moderately well, well, rapid, or very rapid)

See Section 3.6.1 of the PLA Application for details on site drainage.

Are there problem vegetation/weeds/invasive species on or near site at time of assessment?

Yes No **Explain** Problem vegetation/weeds/invasive species are discussed further in Section 3.6.2 of the PLA Application.

Identification of species, degree of infestation and approximate amount of area infested per species.

	Species 1	Species 2	Species 3
Trace (rare)		Refer to Section 3.6.2 of the PLA Application.	
Low (occasional)			
Moderate (scattered plants)			
High (fairly dense)			

Is there a risk of weed spread to the site if development proceeds?

High Moderate Low

If any risk, provide details in reclamation and construction sections of supplements.

If high or moderate, show location on the application plan.

G. Incidental Activities

The applicant is to identify and outline on the application plan any incidental activities required for temporary use.

Note: No additional approval is required for incidental activities that are applied for with the disposition and included in the plan.

If the incidental activity is *not approved* under the disposition, a separate approval is required. Incidental activities approved in this manner are for temporary use only and are *not* part of the surface disposition.

1. According to field assessment, will additional incidental clearings be required? Yes No
If 'Yes', indicate the purpose:

- Campsite Borrow Pit Salvage Deck
 Temporary Workspace Backslope Temporary Access
 Other Incidental activities are discussed further in Section 3.7 of the PLA Application

2. Are any additional clearings planned in reforested areas? Yes No
If 'Yes', explain _____

The Core Operating Conditions are standard practices that must be applied to all activities.

H. Core Operating Conditions

Prior to Entry - Confirmation Number

099 The holder shall contact and advise Regulatory body of its intentions:

- prior to entry upon the lands for a stated purpose,
- prior to any additional construction during the term of this authority,
- at the completion of operations or construction, and
- upon abandonment of this activity.

Upon contact prior to initial entry on the land, the Regulatory body shall issue a confirmation number that shall be maintained on file by the holder and be provided to the Regulatory body on request.

<Location & Telephone No.> _____

Adverse Ground Conditions

105 Any activity on the land during adverse ground conditions must be suspended if the activity is likely cause unacceptable damage to vegetation or soil, as may be determined by the holder or the Regulatory body.

Sample Plots

108 No entry is allowed within the boundaries of any research or sample plot.

Reclamation - Interim

127 The holder shall reclaim all disturbed land surfaces within two growing seasons. Interim reclamation, including site and debris clean-up, slope stabilization, recontouring with subsoil, and spreading of topsoil shall be done progressively and concurrently with operations.

Reclamation - Final

128 Final surface reclamation must meet the requirements for the specific activity in place at the time of abandonment.

Noxious Weeds

131 The holder shall cut, keep down and destroy all noxious weeds and restricted weeds as per the *Public Lands Act*.

Waste Material Disposal

135 The holder shall remove all garbage and waste material from this site to the satisfaction of the Regulatory body, in its sole discretion.

Watercourse/Water Body - No Material to be Deposited

148 The holder shall not deposit or push debris, soil or other deleterious materials into or through any watercourse or water body or on the ice of any watercourse/water body.

Erosion Prevention

158 The holder shall take all precautions and safeguards necessary to prevent soil and surface erosion to the satisfaction of the Regulatory body in its sole discretion.

Natural Drainage - No Interruption

161 The holder shall not create any interruptions to natural drainage, including ephemeral draws that may result in blockage of water flow.

**Miscellaneous Use
7.0 Supplement E
Environmental Field Report (EFR)**

The cover document and the appropriate supplement form must be submitted for each surface disposition application. All blanks must either be filled in or 'N/A' noted where applicable.

Failure to fill out the document and form(s) completely will result in the EFR being rejected.

New Revised

Date Submitted 12/08/2016
dd/mm/yyyy

MLL/MLP Number _____

Legal land description from: LSD 03 Sec 14 Twp 008 Rge 04 W 5
To: LSD 04 Sec 14 Twp 008 Rge 04 W 5

A. Site

Area of existing clearing: 3.52 ha New clearing: 0.05 ha

Is the boundary of the site located within 100 m of a watercourse? Yes No

If 'Yes', specify the type of watercourse Tributary to Blairmore Creek (Class B)
and the distance between the watercourse and the site <100 m.

Provide justification and a mitigation strategy if within 100 m. See Section 6.1 of the PLA Application for justification.

B. Access

Explain the method and routing of access if not under disposition: Access to the proposed construction camp is discussed in Section 6.2 of the PLA Application.

C. Waste Management

Does the proposed use generate any waste or sewage? Yes No

If "Yes" describe the waste disposal method, sewage system, and season of use. The waste management system for the proposed construction camp is discussed in Section 6.3 of the PLA Application.

D. Site Development Strategy

Plan attached (include all areas of existing clearing(s) and new clearing(s) to be used, and their dimensions).

1. Vegetation removal: explain: See below
2. Brush disposal: Explain: See below
3. Topsoil handling/topsoil stripping width: (Check the appropriate boxes for initial and final access).

- Minimal surface disturbance (no stripping)
- Stripping
- Single lift
- Two lift
- Other

Explain if more than one box has been checked above: See below

Additional details: The proposed construction strategy, including vegetation/brush removal and topsoil handling, is discussed in Section 6.4 of the PLA Application. Plan with an air photo indicating areas of existing and new clearing is provided as Figure 6-1 of PLA Application.

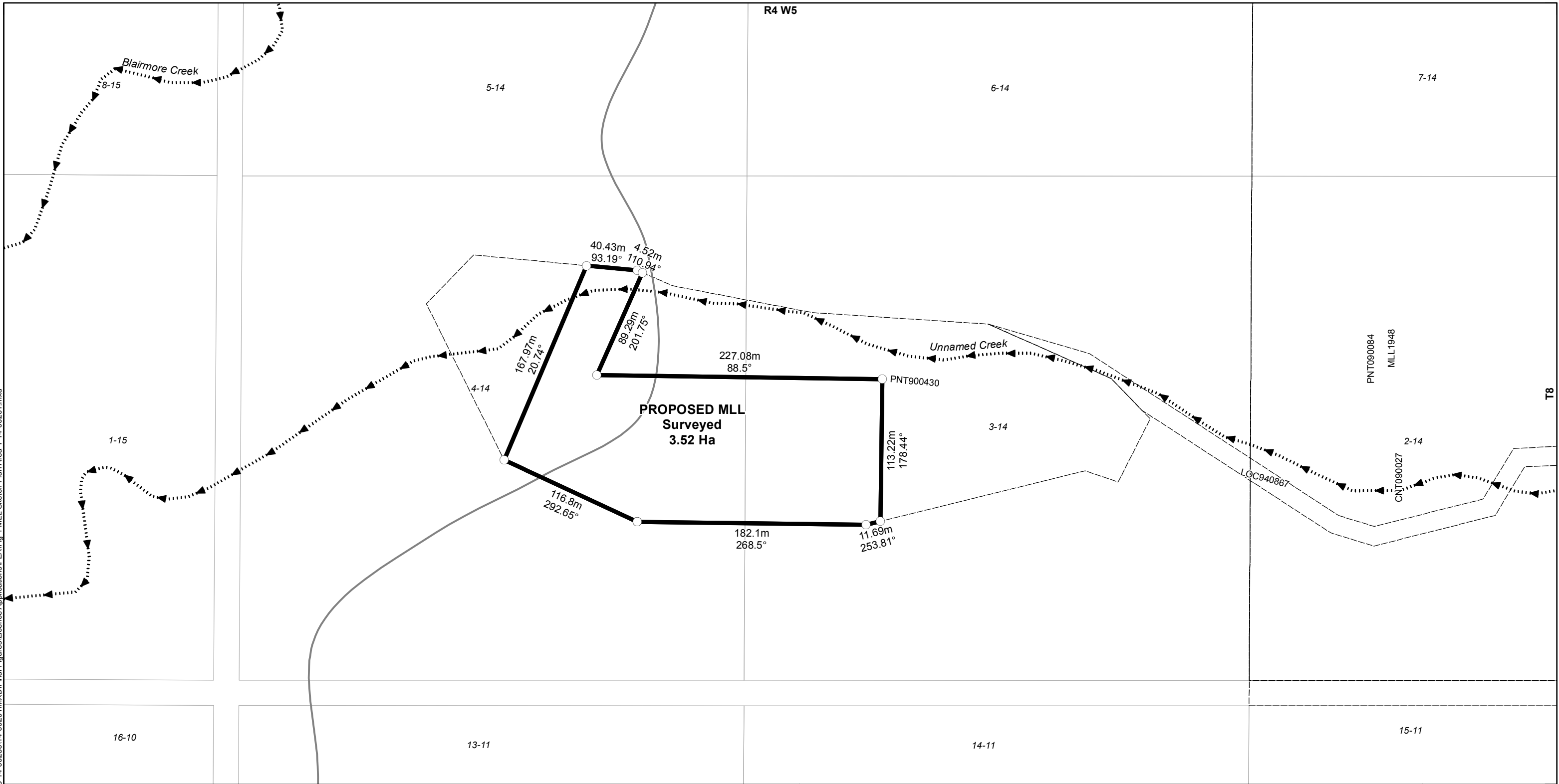
E. Reclamation Strategy

Revegetation Strategy: (check appropriate boxes)

- Natural recovery
- Native Seed
- Non-native seed
- Other** The reclamation strategy for the proposed construction camp is discussed in Section 6.5 of the PLA Application.

Note: It is recommended the local Land Manager/Officer and/or affected disposition holders be consulted, where relevant (e.g., FMA's) to assist in determining the appropriate revegetation strategy.

Document Path: K:\Active Projects\2014\AP 14-00201 to 14-00250\14-00201\MXD\Final_Figures\Licence Applications\PLA\Fig 1 MLL Sketch Plan Area 1 14-00201.mxd

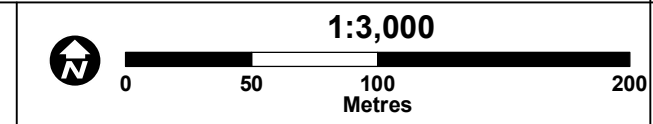


- LEGEND**
- Deflection Point
 - ⋯▶ Creek (Flow Direction)
 - Existing Access Road
 - ▭ Proposed Disposition Boundary
 - ▭ Disposition

PROJECT
GRASSY MOUNTAIN COAL PROJECT

TITLE
PROPOSED MISCELLANEOUS LEASE (MLL) SKETCH PLAN
3/4-14-03-008-04 W5

NOTES
 AltaLIS, 2015; MEMS, 2015
 Datum/Projection: UTM 3TM Nad 83



PROJECT: 14-00201
 DRAWN BY: JL
 CHECKED BY: KY
 DATE: JUNE 27, 2016

FIGURE
1 of 1

Disclaimer: This figure was derived from multiple data sources and while we make every effort to assure its accuracy, Millennium EMS Solutions Ltd. disclaims any representation or warranty and assumes no liability either for any errors, omission or inaccuracies that may occur.

Public Land Standing

Selection Criteria

Selected Sections

Geo-Administrative Area:	Y
Requested Lands:	Y
Title Information:	N
Activity Details:	Y
Subdivisions:	NA
Client List:	Y

Selected Activities

Surface Dispositions	Y	Status:	Number Assigned, Application, Letter of Authority, Land Amendment Application, Letter of Authority for Amendment, Active/Disposed, Cancelled - Outstanding Obligation
		Types:	All
Geophysical	NA	Status:	All
		Types:	All
Reservations	Y	Status:	Number Assigned, Application, Letter of Authority, Land Amendment Application, Letter of Authority for Amendment, Active/Disposed, Cancelled - Outstanding Obligation
		Types:	All
Encumbrances	Y	Status:	All
		Types:	All
Land Postings	Y	Status:	Number Assigned, Open, Closed
		Types:	All

Land Keys

W5-04-008-14-SW

Public Land Standing

Requested Land

Requested Land	Ownership Status	Administered By	Titled Status	Survey Status	Area in Hectares		Area in Acres		Water
					Land	Title	Land	Title	
W5-04-008-14-SW	Freehold	FRH-SUB	Titled	Surveyed	0.000	0.000	0.00	0.00	No Water Coverage
<i>Remarks: SUB 20.53 8910380 (4717GEN) BLK 1</i>									
<i>FRHOLD 0.00 BALANCE</i>									
TOTAL					0.000	0.000	0.00	0.00	

Geo Administrative Areas

ALBERTA ENERGY REGULATOR W5-04-008	SOUTH REGION	Code: AER-S
COAL DEVELOPMENT REGION W5-04-008-14	SETTLED	Code: CDR-1
ENVIRONMENT CORPORATE REGION W5-04-008	SOUTHERN	Code: ENV-1
ENVIRONMENT CONS. & RECL. DISTRICT W5-04-008	NO. 20	Code: ERD-020
EASTERN SLOPE ZONE W5-04-008		Code: ESZ
FOREST MANAGEMENT UNIT W5-04-008-14	SOUTHWEST	CO2 SOUTHERN ROCKIES Code: FMU-C-52
FISH & WILDLIFE ADMIN REGION W5-04-008	SOUTHERN REGION	BLAIRMORE Code: FWA-1-02
FISH AND WILDLIFE DISTRICT W5-04-008	SOUTHERN REGION	BLAIRMORE Code: FWD-1-09
FISH & WILDLIFE REFERRAL LANDS W5-04-008-14		Code: FWR
GENERAL LANDS CLASSIFICATION W5-04-008-14	WHITE	Code: GLC-W

Public Land Standing

GRAZING ZONE W5-04-008	A2		Code: GRZ-A2
INTEGRATED RESOURCE PLAN W5-04-008-14	LIVINGSTONE-PORCUPINE HILLS		Code: IRP-L2
LAND USE AREA W5-04-008	SOUTHWEST 1	BLAIRMORE	Code: LUA-SW1-2
MUNICIPAL DISTRICT W5-04-008-14	RANCHLAND NO. 66		Code: MD-066
OPERATIONAL APPROVAL DISTRICTS W5-04-008	South Saskatchewan Region	South Saskatchewan District	Code: OPD-5-1
RANGELAND DISTRICT W5-04-008-14	SOUTHWEST	PINCHER CREEK	Code: RLD-SW-6
REGIONAL PLANNING COMMISSIONS W5-04-008	OLDMAN RIVER		Code: RPC-02

End of Geo Administrative Areas

Public Land Standing

Activities and Titles

Activity Land	Status/Type	Date	Expiry	Client Metes and Bounds Remarks	Acres	Total Area Hectares
LOC 940867	Letter of Authority for Amendment	1999/12/17	2019/06/23		5.54	2.243

CANADIAN NATURAL RESOURCES LIMITED

ACTIVITY DETAIL INFORMATION

OPTION TO PURCHASE (Y/N): DIMENSION: 15 M
 WITHIN 100M OF WATERBODY (Y/N): N PURPOSE: ACCESS ROAD
 CLIENT FILE NO:1788

PLAN NO	LTO PLAN NO	ITEM	VERSION DATE(S)
45069 MS			2000/02/04

W5-04-008-14-SW (0.70) (0.283)

TFA 134555	Active/Disposed	2013/07/15	2014/07/15
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BENGA MINING LTD.

ACTIVITY DETAIL INFORMATION

OPTION TO PURCHASE (Y/N): DIMENSION:
 WITHIN 100M OF WATERBODY (Y/N): PURPOSE: EDUCATIONAL/RESEARCH ACTIVITY
 CLIENT FILE NO:

NO PLANS			
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W5-04-008-14-SW (0.00) (0.000)

Public Land Standing

Client List

Activity	Client ID	Name / Address	Province	Country	Postal Code
LOC 940867	8012211-001	CANADIAN NATURAL RESOURCES LIMITED 855 2 ST SW SUITE 2100 CALGARY	Alberta	CANADA	T2P 4J8
TFA 134555	1008823-002	BENGA MINING LTD. 4300 B ST STE 307 ANCHORAGE	Alaska	UNITED STATES	99503-593

Total Activities: 2

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*** END OF REPORT ***