

March 21, 2016

By email only

Cal Clark
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**Benga Mining Limited (Benga) – Grassy Mountain Coal Project (Project)
AER Environmental Assessment Major Deficiency Report
AER Application Nos. 1844520 and 1844522
CEAA Reference No. 80101**

Dear Mr. Clark,

During a meeting held with Benga and Alberta Energy Regulator (AER) on March 10, 2016 and further conversations with Kirk Bailey, AER Executive Vice President of Operations, and Steve Mallyon, Managing Director, Riversdale Resources Limited, on March 16, 2016, the AER is providing further information as an addendum to the Major Deficiencies Report (MDR) that was issued to Benga on January 25, 2016.

This direction is intended to provide specific examples of key areas within the EIA report requiring attention and does not address all items of concern within the report. In addition to addressing these major deficiencies, Benga should conduct a thorough review of the EIA report for other missing information, incomplete analysis or inconsistencies prior to resubmission.

AER is committed to facilitate the discussions between the AER, Alberta Environment & Parks and Department of Fisheries and Oceans to obtain the level of information required for the AER environmental impact assessment (EIA) with respect to the fisheries permitting.

Benga is requested to provide a workplan including timelines (completion dates) for each item on the MDR and a commitment to submit an updated EIA that has addressed all the deficiencies.

On the receipt of an updated EIA, the AER will make a decision on commencing the EIA technical review based on the information provided in the update.

Please provide a tentative date for Benga's plan to submit an updated EIA.

Regards,

Deanna Colley
Alberta Energy Regulator
Manager of Environmental Assessment

Enclosure (1): Major Deficiency Report Addendum
cc: Brett Maracle, Canadian Environmental Assessment Agency
Rushang Joshi, AER
Renee Marx, AER
Melanine Daneluk, EA Registrar

AER Major Deficiencies Report Addendum

Further to the determination that the Grassy Mountain Coal Project Environmental Impact Assessment (EIA) report is not complete and requires major deficiencies be addressed, the Alberta Energy Regulator (AER) provides the following clarification statements. This direction is intended to provide specific examples of key areas within the EIA report requiring attention and does not address all items of concern within the report. In addition to addressing these major deficiencies, the proponent should conduct a thorough review of the EIA report for other missing information, incomplete analyses or inconsistencies prior to resubmission.

Deficiency #1: EIA Methodology/Scope of EIA

The EIA methodology outlined in Volume 1, Section D.2.5.3 (specifically Page D-18) was not used in assessing the final impact rating. The definition of significance as per Table D.2.5-2 was also not used consistently across consultant reports e.g. the evaluation of significance as “insignificant” or “significant” was used for most disciplines, while several disciplines added modifiers such as “moderate” or “minor” and no clarifying definitions were provided.

In addition, as required in the Guide to Preparing Environmental Impact Assessment Reports in Alberta (GoA 2013) Section 2.3.2 and 2.3.3, the evaluation of significance lacks a clear rationale to support the conclusions and as such, lacks transparency of process or the ability of a stakeholder or reviewer to follow the assessment logic from baseline data through to final impact rating.

Clarification:

As previously noted, further clarification is required regarding the EIA methodology and definitions of significance used in preparing the EIA. The definition of significance appears to have not been used consistently throughout the assessment, with modifiers being used in the final evaluation of significance for several disciplines. Refer to the Guide to Preparing Environmental Impact Assessment Reports in Alberta (GoA 2013) Section 2.3.2 and 2.3.3 for further direction.

Deficiency #2: ToR 3.2.8 Conservation & Reclamation

Section 3.2.8 of the Terms of Reference (AER, 2015) requires Benga to – “Provide a conceptual conservation and reclamation plan for the project.” Understanding the existing terrestrial and hydrodynamic conditions of the baseline and conceptually how this will translate into a final reclaimed landscape, is critical in understanding the overall feasibility of the mine plan. The conservation and reclamation plan found in Volume 1 Section F does not provide sufficient detail for the review team to assess its viability.

Specific issues and data gaps include: Adequately characterizing the current land use capability, as required in Section 4.9.2 of the Terms of Reference (AER, 2015), an inventory of the pre- and post-disturbance land capability classes for the soils in both the Project Area and the Local Study Area.

Clarification:

The AER acknowledges the lack of a capability rating system for the eastern slopes. The Terms of Reference (ToR) (AER 2015) do not require the *Forest Land Capability Classification System (LCCS) for Forest Ecosystems* (CEMA 2006) to be used in the assessment. However, an inventory of the pre- and post-disturbance land capability classes for the soils in both the Project Area and the Local Study Area (LSA) is required. The integration and assignment of pre- or post-disturbance land capability classes for soils in both the Project Area and the LSA could not be found. Provide land capability classes for soils, as required by the ToR, that incorporate the parameters for both pre- and post-disturbance scenarios. Once identified, indicate the size and location of the land capability classes to be disturbed.

Deficiency #3: ToR 3.2.8 Conservation & Reclamation & 4.9.2 Terrain and Soils

Adequately describing the proposed post-development land use capability including: volumetric analysis of soil quantity and handling processes needed to achieve the final reclaimed landscape and equivalent land capability.

Clarification:

Benga indicates there will be a surplus of available suitably-rated soil salvaged to achieve the final reclaimed landscape and equivalent land capability. The volumetric analysis of soil quantity provided in Section F, Table F.2.2-2 (Annual Disturbance and Reclamation of Mining Areas) of the Conservation and Reclamation Plan, cannot be reconciled with the results of the Terrain and Soils Report (CR #7). Examples of discrepancies between the Terrain and Soils Report (CR #7) and the Conservation and Reclamation Plan (Section F) include:

- Deep Organic depths for Soil Map Units for the study area are provided in Table 4.1-1 (CR #7) along with the statement that organic soils do not contain upland surface soil. Benga does not provide an ‘Estimated Upland Surface Soil Available (Topsoil Lift + B Horizon)’ for the deep organic soils in the table.
- CR #7 contains the statement ‘*The organic deposits within the proposed disturbance areas will be excavated and will form part of the soil balance salvaged for use in the reclamation program*’
- CR #7 reports approximately 25% of the Project Area occurs on slopes too steep to complete soil salvage activities.
- CR #7 reports that 197 ha of the Project Area is currently disturbed and there are no soil resources present within these areas.
- Section F; Table F.2.2-2 shows that the Deep Salvaged Organics account for 273,842 m³ of material in the salvaged topsoil volume total. .

Clarify the volumetric analysis of soil quantity available to achieve the final reclaimed landscape and equivalent land capability to provide support for the conceptual plans.

Deficiency #4: ToR 3.2.8 Conservation & Reclamation

The additional details are also needed of the final self-sustaining drainage characteristics needed to support final revegetation communities, changes in biodiversity, impact on wildlife habitat, and the long term viability of the end-pit lake.

Clarification:

Provide a comprehensive description of how Benga will achieve the 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.

Deficiency #5: ToR 4.8.2 Biodiversity Impact Assessment

Discussion of the contribution of the project to any anticipated changes in regional biodiversity and the potential impact to local and regional ecosystems is not clearly provided. The impact assessment only provides fragmentation analyses, which do not on their own provide an assessment of impacts to local and regional biodiversity.

Clarification:

While a stand-alone biodiversity section is not required by the ToR, the ToR states the proponent will “describe the process and rationale used to select biotic and abiotic indicators for the metric biodiversity within selected taxonomic groups”. The concordance tables in the EIA reference biodiversity has been addressed in multiple disciplines. However, the process (i.e., methods) and rationale used to determine the indicators for calculating the biodiversity potential rating index (Section 2.3.8.2 and Table 2.3-3) have not been further clarified, making it difficult to understand the process used to assess biodiversity potential.

Deficiency #6: ToR 4.1 Air Quality

While it is recognized that the Air Quality Model Guide (GoA 2013a) prescribes the use of CALPUFF for the modelling of an EIA, the suitability of the modelling parameters are not adequately described and as such potential remodelling may be required if the settings cannot be scientifically justified. According to the Guide to Preparing Environmental Impact Assessment Reports in Alberta (Section 2.4) “Proponent must clearly demonstrate that the proposed model is applicable to the circumstance in which it will be used” and “the EIA report must clearly identify the limitations of the models including sources of error and relative accuracy”.

Potential modelling issues include:

- *The terrain (TERRAD = 10) for the modelling domain may not be allowing for topographical variation of the mountainous study area.*
- *Source elevations were modelled at the pre-disturbance height of the mountain and do not account for the final elevation being almost 100 m lower at project end. An assessment and discussion of source elevations would clarify if the model predictions were adequately conservative, assuming they are modelled at 100 m taller than during final phases of the project.*

Assessment of predicted exceedances:

- *The model predicts exceedances of particulate matter. No scientific explanation of these exceedances is provided other than a comment that the model is conservative.*
- *Baseline and background data sources were used from far afield monitoring stations (Nelson and Lethbridge). Assessment and discussion is needed to understand that these stations adequately characterize the background concentrations (specifically particulate matter) used to determine cumulative effects of the project.*

Clarification:

The EIA should demonstrate the TERRAD value of 10 chosen for modelling produced comparable windroses to those that would be generated by selecting a lower TERRAD value of 1 or 2. If the windroses are not comparable, an explanation of results or remodelling may be required.

Regarding source elevations, a similar exercise will demonstrate the reduction in source heights (due to reduced elevation of the mine) will not result in changes to wind patterns and predicted results at off-site locations. If this comparison does not demonstrate comparable wind patterns, remodelling may be required.

These uncertainties in the modelling combined with local baseline data not being available suggests there is a potential for modelled results to be higher than they were currently predicted. There were modelled exceedances of particulate as high as 800% of the AAAQO near the mine site and exceedances of the AAAQO at Special Receptors. The suggested changes to the modelling noted above may increase the frequency, duration or intensity of these predictions.

Deficiency #7: ToR 3.2.6 Water Management & ToR 4.2 Hydrogeology & ToR 4.3 Hydrology

Benga has compiled a regional geologic model and provided technical details in relation to surface water and groundwater and some details on surface water / groundwater interaction. However, Benga has not provided an integrated conceptual water model which would help test hypothetical linkages between surface water, groundwater and receptors as required in the Terms of Reference (AER, 2015) Section 3.2.6. Potentially deficient linkages include:

- *Scientific justification has not been provided to establish the basis for the time required to fill water-containing structures including the raw water pond, saturated backfill zones, and the end pit lake, while considering instream flow needs.*
- *The uncertainty regarding selenium concentrations and selenium attenuation effectiveness, both during operations and post closure, has not been adequately discussed. Scientific justification has not been provided to support Benga's assumption that selenium levels are "about half" that of similar coals in the region. Available literature indicates potential selenium attenuation efficiencies by biochemical reduction would typically be in the range of 85% to 95% (CH2MHill, 2010). Benga's assumption of a 99% reduction efficiency has not been scientifically referenced.*

- *Karst potential beneath the open pit mine (e.g., Worthington, S.R.H. 1991. "Karst Hydrogeology of the Canadian Rocky Mountains." Department of Geography, McMaster University. Hamilton, Ontario. May 1991. and Norris, D.K. 1993. "Geology, Blairmore, (West Half), West of Fifth Meridian, Alberta."; Geological Survey of Canada, "A" Series Map 1831A).*
- *Legacy surface waste rock pile effluent quality and existing impacts to Blairmore and Gold Creeks – missing baseline data.*
- *Legacy subsurface mine workings potential for short circuiting local groundwater transport – see comment below regarding drinking water.*
- *Understanding of groundwater contribution to Blairmore and Gold Creek baseflow specifically during low flow conditions. Steady state calibration of the hydrogeological model and lack of baseline low flow data preclude assessment of potential impacts to baseflow during low flow events – potential impacts to aquatic life from mine dewatering.*

Clarification:

It is common modelling methodology to construct and calibrate a groundwater numerical model based on a comprehensive understanding of the conceptual hydrogeological conditions (recharge, discharge, aquifer connections etc.). If an integrated conceptual model was not used as a basis for the groundwater numerical model then confidence in the numerical model's ability to predict changes in pressure, flux and groundwater residence time must be limited. Hence, groundwater and surface water interactions discussed in the Hydrogeology Consultant Report (CR #3, Section 4.2) should be framed with more discussion about uncertainty. All potential linkages should be acknowledged and discussed in terms of uncertainty. Given the uncertainty, Benga should plan for how these potential linkages will be addressed in its long-term water management plan.

Regarding karst, it is noted karst was not specifically listed as one of the items that must be discussed and suggests karst features are not relevant for the Project due to limited carbonate extent in the LSA and the fact the carbonates are not interpreted to have developed karst features (not discussed or cited in CR#3). However, Section 4.2 of the ToR requires a discussion of major aquifers and hydraulic connection between aquifers.

Norris (1993) notes carbonate units are present everywhere in the LSA at varying depths. Norris (1993) also identifies numerous thrust faults present in the Project area that pass through the Fernie Formation, including the regionally significant Turtle Mountain thrust fault. It appears the evidence being relied on to unequivocally eliminate karst as a potential linkage is the lack of surface exposure in the LSA. The lack of surface exposure and direct drilling evidence does not preclude karstic features from existing nor does it preclude those karstic features from being an important linkage to the Crowsnest River and associated aquifer, given karstic features and thrust fault-associated springs are documented in the area and are important features related to the Crowsnest River. The Crowsnest River is highly dependent on groundwater contributions from bedrock and unconsolidated units as is evidenced by numerous springs and unfrozen sections.

Further understanding about the spatial relationships between the project and carbonate units is needed. Numerous cross sections will be requested as the depth of carbonate units is not static across the Project area. At least one north/south cross-section through the Project area, including Bluff Mountain, will be requested. Cross-sections should illustrate, at a minimum, proposed mine depth, dump extent, faults and carbonate units. Given the cross-sections and possible receptors, The discussion needs to be framed in terms of uncertainty and comment on how these potential linkages and uncertainties will be managed in the long-term.

As noted above, if the numerical model was not constructed and calibrated based on the integrated conceptual model then residence time predictions have considerable uncertainty and may be subject to low confidence. Benga also states the groundwater numerical model integrates the legacy subsurface mines, which it indicates (based on limited boreholes), appears to be completely backfilled. As such, legacy mine workings were modelled as porous media and not open conduits. However, AER notes the groundwater numerical model only incorporates one realization of legacy mine workings even when it is recognized there is considerable uncertainty in mine working extent and possibly character. AER notes tracer test evidence may mitigate some of this uncertainty. AER suggests multiple scenarios at least be considered rather than defending one initial interpretation and that the long term management plans incorporate the uncertainty of impact predictions.

Deficiency #8: ToR 3.2.6 Water Management & ToR 4.10.2 Land Use and Management

The linkage between potential project effects and the Town of Blairmore's drinking water supply has not been addressed. The Town's water wells are located near the confluence of Blairmore Creek and the Crowsnest River. Potential linkages include short circuiting groundwater transport from old mine workings, short circuiting groundwater transport from Karst features and potential surface water/groundwater interactions of Blairmore Creek in proximity to the water wells – potential linkage to human health risk assessment.

Clarification:

The linkage between the Project and the drinking water supply for the Town of Blairmore is dismissed based on the water wells being located on the south side of the Crowsnest River, the belief that karst features do not exist in proximity to the Project, and the assumption that legacy mine workings are well understood and accounted for.

The Town's water supply should not be limited to the water wells on the north side of the Crowsnest River as the aquifer on which the Municipality of Crowsnest Pass relies spans the entire width of the Crowsnest River Valley. There is potential the Municipality may drill future drinking water wells north of the Crowsnest River. The aquifer is known to be at least 30 m deep, while the Crowsnest River is not observed to be any deeper than a few metres. The ToR notes the importance of acknowledging and protecting drinking water sources.

Regarding karst and legacy mine workings, there is considerable uncertainty with respect to these two potential pathways given carbonate units underlie both the Project area and drinking water aquifer. In addition, legacy mine workings connect the Project area to the drinking water aquifer.

The ToR requires discussion on potential recharge zones and sources, areas of groundwater-surface water interaction, the recharge potential for Quaternary aquifers, and interrelationship between groundwater and surface water in terms of water quality and quantity. Surface water and groundwater interactions in the general study area are discussed, including a description of how groundwater discharges to both Gold and Blairmore creeks suggesting these streams are “gaining” streams throughout their length. However, there is no discussion of the potential for either of these creeks to be “losing” streams in areas. One common phenomenon in mountain environments is the “losing” nature of mountain streams when they exit their relatively confined valleys and emerge onto larger, broader valleys. Stream flow can be “lost” to groundwater as the stream reduces gradient and flows over coarse-grained alluvial and kame deposits (i.e., the Crowsnest River valley). Worthington (1991) describes this phenomenon for Crowsnest Creek further to the west. This mechanism is important to understand because negative impacts to surface water quality can potentially impact groundwater quality downstream. In this instance, a potential receptor may be the drinking water aquifer in which the community relies.

AER suggests Benga acknowledge the importance of the drinking water aquifer, potential linkages and implement a plan to manage this important receptor over the long-term. The AER requires discussion of project risks and mitigation, including a linkage to human health from potential changes in groundwater quality.

Deficiency #9: ToR 3.2.3 Socio-Economic – Regional & Cooperative Efforts

Given Benga's proximity to and overlapping labour force with five TECK mines in BC, has there been any discussion on Regional and Cooperative Efforts with TECK.

Clarification:

While some details are included in the EIA, the commitments to cooperating with other operators in the region (i.e., Teck) are not provided or are ambiguous. Evidence or verification of these discussions is required.

Deficiency #10: ToR 3.2.4 Socio-Economic - Transportation

With workforce split 60:40 between CNP and Sparwood (BC), there will be increased traffic on HW3. Involvement of AB Transportation and BC Transportation uncertain. Likely mitigated with shuttles.

Clarification:

Benga should indicate its commitments to communicating its development and operational plans with the appropriate agencies, including Alberta Transportation and British Columbia Transportation and Infrastructure.

Deficiency #11: ToR 4.2.1 Hydrogeology Baseline & ToR 4.3.2 Hydrology Baseline

Interactions of groundwater recharge and specifically, the role of groundwater inputs on thermal regulation of lotic systems.

Clarification:

Information in CR #3, Appendix C, Section 3, related to the Physical Environment and Conceptual hydrogeological model, and Sections 3.1.1.1, 3.1.2.1, 3.2.1.1 and 3.2.2.1, and Sections 5 and 6 indicates groundwater seeps were identified within both the Gold and Blairmore Creek basins. The analysis of groundwater influence on maintaining temperatures within Gold and Blairmore Creek is not provided in any of the identified sections of the EIA. Maintaining current stream temperature profiles is critical to the ongoing sustainability of westslope cutthroat trout populations in these watercourses, and the assessment of potential impacts resulting from reductions in groundwater quantity and quality is a crucial consideration of the EIA review.

CR #3, Appendix C, Page 13 identifies that baseflow for the region was equivalent to 16% of the mean annual precipitation, with the range being between 5% and 30%.. In addition, analysis of the catchment areas against the baseflow for Blairmore and Gold Creeks indicate markedly different baseflow values, suggesting unit flow for Gold Creek may be two to three times higher than Blairmore Creek. This indicates Gold Creek likely receives significantly more baseflow through groundwater than Blairmore Creek, and therefore the influence of temperature regulation on Gold Creek may be more pronounced than in Blairmore Creek.

The uncertainty of project impacts on groundwater quantity (maintaining baseflows during low flows) and temperature regulation, and the resulting impacts on surface water quantity and quality have not met the requirements of the ToR, specifically 4.2.2 [B](a). This lack of detailed baseline and assessment of groundwater influence on surface water quantity and quality is verified in the development of the groundwater model, which states: *Due to inconsistencies in hydraulic response between the hydrographs and the short period of record, this data was not used to calibrate the numerical model. However, the differential response was considered in qualifying estimated impacts.* Therefore, a significant amount of uncertainty remains in how baseflows are influencing hydrology and surface water temperatures in Gold and Blairmore Creeks.

In addition, the comment regarding collection of baseline field data at five long term monitoring stations is misleading, as the continuous collection of data only occurred from Oct 2014 to April 2015, comprising approximately seven months. Not including monitoring of all seasons is not considered long-term baseline collection. The data provided indicates the average groundwater temperature in this period was 3.5 C, but this information was not found in any of the identified sections reviewed. More importantly, the data was not used to provide any assessment of how groundwater may be influencing surface water temperatures.

Deficiency #12: ToR 4.4.2 Surface Water Quality Impact Assessment & 4.5.2 Aquatic Impact Assessment

Project located within an area with Potential Acid Generating (PAG) Rock as identified in the proponent's geological survey. PAG rock can result in acidification of downstream habitats as the rock is exposed to weathering and water. Common issue related to fisheries impacts in Gold/Metal mining. Appropriate mitigation and contingencies need to be presented to ensure significant effects do not impact local/regional fisheries.

Clarification:

The mitigative approaches identified for dealing with acid rock drainage (ARD) are based on experience from British Columbia mines. However, the EIA does not provide specifics on how these mitigative measures will be implemented at the Grassy Mountain mine site or what contingencies will be available should mitigative measures fail to produce adequate results. Given the constraints of space and the proximity to fish habitat of extreme significance for Alberta, it is important that both mitigative and contingency measures are thoroughly described in the EIA.

Deficiency #13: ToR 4.4.2 Surface Water Quality Impact Assessment

Proposed Selenium (Se) management plan unproven. Assertions were made on the concentration of Se in the overburden rock being half the concentration of the same formation found in the Elk Valley of BC (Teck Coal Mining). Process of utilizing a saturated backfill zone to precipitate out Se from the contact/process water would need to be assessed by a specialist. Contingency plans should be provided to support management of contact/process water in the event the saturated backfill areas do not treat Se as predicted. No detailed assessment of the potential impacts of Se on local groundwater sources.

Clarification:

As stated in Appendix 9C, Section 2.3, this approach is based on a conceptual model with only moderate recent experience from other sites. At these sites, Se concentrations were passively reduced by *one to two order-of-magnitude often resulting in discharge concentrations below surface water quality guidelines*. It is not clear which guidelines are being referenced, but the indication is that it does not always result in concentrations below surface water quality guidelines. Thus, passive treatment may still result in a net increase in Se loads to the receiving environment. The proposed contingencies (Section 6, Appendix 9C) consist of a single reference to potential capture and treatment of mine affected waters prior to release. While this would likely be required, the EIA lacks significant details on what this would entail and lacks comment on the limited space available. Again, given the sensitivity of the receiving environment, there is a need for further detail in the EIA.

Deficiency #14: ToR 4.5.1 Aquatics Baseline

Proponent was unable to obtain a Fish Research License to conduct inventory works on Gold Creek from AEP. Currently not meeting the level of detail required in the ToR, as well as the level of detail required to accurately assess the risk of the project to the sustainable populations of SARA listed Cutthroat Trout inhabiting Gold Creek. A reference to a baseline population estimate that was conducted by the ACA in 2010 is out of date and likely doesn't provide an accurate population estimate due to the continuing decline of Cutthroat. For context, the Westslope Cutthroat Trout Recovery plan estimated that the population of pure strain trout declined from 7000 - 5100 individuals between 2006 and 2012, which works out to roughly a 25% decline in population. Considering the information that is being referenced is from 2010, the current population in Gold Creek would likely be significantly reduced if it follows the overall population trends. Therefore, any

results from monitoring conducted would not provide accurate results and could result in an over estimation (inaccurate) of impacts resulting from the project.

The Habitat Protection Order for Westslope Cutthroat Trout will affect the project and it wasn't discussed in the EIA.

Clarification:

1. The EIA does contain sufficient information for both the RSA and LSA regarding species listed as “at Risk, May be at Risk and Sensitive” in the General Status of Alberta Wild Species (Alberta Environment and Sustainable Resource Development), Listed in Schedule 1 of the federal Species at Risk Act, Listed as “at risk” by COSEWIC and traditionally-used species.
 - a. The use of the ACA data for enumeration of fish species in the RSA is relevant to the review and provides supplemental information that supports the EIA. However, due to the declining trend in the overall population, an accurate population assessment is required to assess the risk to this listed species due to the Project and track any changes over the course of mine development, operation and closure.
 - b. The AER notes the EIA was submitted prior to the Habitat Protection Order being issued by DFO. Benga is encouraged to discuss the order with DFO and how it will affect the project moving forward. The AER requires a summary of how the Habitat Protection Order will affect the project and how its requirements will be met (SARA Permits/Federal Authorizations).
 - c. While an assessment of the relative abundance of fish in Blairmore Creek was provided, there was no discussion on the percentage of pure strain >99% CTTR (Westslope Cutthroat trout). Provide a discussion on the pure strain of CTTR.
2. The level of detailed data and analysis required for a project that will have direct and indirect impacts on a listed SARA species is not provided in the EIA. The sensitivity of this species in relation to impacts to habitat and water quality conditions warrants a more detailed assessment than situations where listed species are not present. This species faces the threat of extirpation from the Blairmore and Gold Creek watersheds under current pre-EIA conditions. The nature of population fragmentation exhibited by this species would not allow re-colonization of Blairmore/Gold Creeks as CTTR are already extirpated from the Crowsnest River, into which the Blairmore and Gold creeks discharge. Therefore, the loss of either of these populations from Blairmore or especially Gold Creek would be a significant loss to the provincial population and must be avoided for the project not to result in significant environmental effects. The following conditions have not been adequately assessed and discussed or are absent from the EIA:
 - a. Relative abundance was not collected or assessed for Gold Creek, as the proportion of other species against the most common species (Brook Trout) was not provided. Information was provided stating the CTTR made up 76% of the non-brook trout (BRTR) species, but there

was no numerical context to this statement which would allow the reviewer to understand the overall population density of fish and subsequently the system productivity of Gold Creek.

- b. Species composition for a list of species present was provided, but the overall percentage of each species comprising the community was not provided for Gold Creek.
- c. In relation to the distribution of species within Gold Creek, a generic statement that fish were found or observed throughout the mainstem of Gold Creek was provided. However, without detailed assessment and mapping of species capture locations, the reviewer cannot determine if species within the creek are segregating, intermixed or showing preference to specific areas of the stream which would support habitat utilization inference. Upon review of the available FWMIS data, it did appear some level of segregation or habitat preference was being observed from historical capture data, as CTTR were found in areas independently as well as areas with BRTR, suggesting BRTR may be selecting certain habitats or CTTR were potentially displaying some measure of competitive advantage in certain stream reaches and habitats. Without this detailed information, interpretation of predicted project impacts on the fish populations present and habitat being used cannot be conducted.
- d. Information as required by the ToR regarding species dynamics is also incomplete, as there was no data or assessment of Gold Creek mainstem above Gold Creek Tributary 09, which is a reach of the creek that will see direct impacts resulting from the input of water from the Northeast Sediment Pond (NESP). To assess potential impacts to water quality and chemistry and instream habitat as a result of discharges from the NESP, population sampling and habitat use needs to be conducted.
- e. There was no data collection or assessment of any anecdotal information regarding species composition, distribution, relative abundance, movements and general life history parameters for Green, Morin, or Caudron Creeks, which are direct tributaries to Gold Creek, and although not directly impacted by any proposed project activities, are included in the LSA defined in the EIA. This information should be provided for all fish resources of lakes, rivers, ephemeral waterbodies and other waters within both the proposed RSA and LSA.
- f. No assessment was provided of movement for any species in any of the watersheds in the LSA, as required by the ToR. Information on species movement provides evidence of habitat use throughout the year and at different life stages of species development, which is important for assessing the impacts of project development.
- g. The information being referenced for Gold Creek is approximately 5 years old, indicating uncertainty as to the current state of fish species inhabiting Gold Creek. Within the last 5 years, the system has undergone a significant flood event that may have significantly shifted population dynamics, which does not allow the reviewer to conduct assessments with the level of confidence required when dealing a listed species. The recommendation within the recovery plan suggests population monitoring every 5-10 years depending on population designation and potential impacts to populations from changing land use. The proposed mine would constitute a significant change in land use that has the potential to impact this species.

Therefore, without current data on the above requirements, the reviewer cannot confidently assess the risks associated with various aspects of the development. This is supported by the statement made in the recovery plan in which the estimated Provincial population of CTTR declined from 7000 to 5100 mature individuals between the periods of 2006 to 2010. The state of the population in the period of 2010 to present is a significant information gap that must be addressed to accurately assess the risk to this isolated population of listed species from the development.

- h. The main reason the level of detail in data and assessment of impacts is required for this project is the statement in the recovery plan estimating the size of mature individuals within each of the 51 isolated population's province wide. The recovery plan estimates the average size of each population is 100 mature fish (ranging from 30 - 200 mature individuals). When considering there may only be 100 mature individuals remaining in Gold Creek, the risk associated with losing this isolated population is significant. Therefore, it must be demonstrated with an appropriate level of detail and certainty that the current populations of CTTR in Gold and Blairmore creeks are resilient enough to be exposed to the proposed impacts from the project, in order for the population to be sustained into the future. The increased level of certainty regarding the detailed assessment of the population dynamics of CTTR in Gold and Blairmore Creeks is required to ensure an accurate assessment of risk, and allow accurate monitoring of the project impacts on these populations into the future. This will ensure that the regulator has sufficient information to avoid inadvertently losing this important population of SARA listed species.
- i. Regarding the sampling protocols for the CTTR species, electrofishing was used to conduct fish sampling on Blairmore Creek but no sampling was conducted on Gold Creek and no discussion provided as to why sampling was not conducted or other methods considered, which may have allowed some level of fish population information to be gathered.

Deficiency #15: ToR 4.5.1 Aquatics Baseline & 4.10 Land Use Management

Proponent to conduct detailed habitat assessment in 2016 (Usually done in the fall low flow period). Habitat within Gold Creek designated as Critical Habitat under SARA with a formal Protection Order. Proponent identified in CR#6 that Baseline aquatic habitat conditions were not assessed during the field programs conducted in support of the application. As the reach of Gold Creek designated as critical habitat is within the zone of influence of the proposed mine project resulting from a reduction in watershed size and a predicted 10% reduction in flows, all habitat within this zone of impact would be deemed critical or sensitive areas as defined in the ToR, and therefore should be described and mapped as required in 4.5.1 [B] of the ToR. In addition, habitat that is referenced in the EIA from previous assessments were conducted randomly in consort with a population estimate program conducted in 2002, and is therefore out of date and likely inaccurate due to the recent 2013 flood event that impacted Gold Creek. There is also concern about the 100 m and 30 m setbacks set for Blairmore and Gold creeks, respectively.

Clarification:

1. Additional missing information as required by the EIA:

- a. The detailed delineation of habitat by reach in Gold Creek did provide information of instream habitat present. However, there was no description or mapping for locations of existing critical or sensitive habitat, such as spawning, rearing and overwintering habitats, and link the usage of these habitats to the species present to demonstrate the overall utilization and subsequent productivity of these critical habitats. This information is crucial to the reviewer's ability to accurately assess the risk to these critical habitats from project-related impacts, such as flow reductions, sediment/contaminant inputs, or alterations to flows and erosion throughout the life of the project. Due to the sensitivity of the species present, this detailed information is crucial to understanding the risks of the project-related impacts on CTTR ability to continue to carry out their life history processes. Habitat changes are one of the main identified stressors that have resulted in the significant decline in CTTR populations province-wide. Therefore, understanding this information is crucial to assessing the risk of the project.
- b. The lack of information on the composition of Gold Creek mainstem substrates prevents the reviewer from determining the potential use of these habitats, which is critical to fulfilling the conditions of ToR 4.5.1 [B]. Substrate composition is a major determining factor of spawning and rearing habitats, and needs to be described and mapped.
- c. For the Blairmore Creek watershed, only two habitat assessments were conducted on the Blairmore Creek mainstem with the information collected used to delineate instream habitat availability for approximately 10747 linear metres of stream. This was done by only sampling approximately 600 linear meters of instream habitat.
- d. In addition, there is no description or mapping of locations of existing critical or sensitive habitat in Blairmore Creek, such as spawning, rearing and overwintering habitats. Also, there was no effort made to link habitat use to species present to demonstrate the overall utilization and subsequent productivity of these critical habitats. This information is crucial to the reviewer's ability to accurately assess the risk to these critical habitats from project-related impacts, such as flow reductions, sediment/contaminate inputs or alterations to flows and erosion throughout the life of the project. Due to the sensitivity of the species present, this detailed information is crucial to understanding the risks of the project-related impacts on CTTR ability to continue to carry out their life history processes. Habitat changes are one of the main identified stressors that have resulted in the significant decline in CTTR populations province-wide. Therefore understanding this information is crucial to assessing the risk of the project.
- e. The baseline habitat assessments were not conducted on some unaffected tributaries within the Gold Creek watershed, including the major tributaries of Morin, Green and Caudron Creeks, which have been identified to contain some habitat that is critical to the sustainability of CTTR. As these creeks are within the designated LSA, habitat assessments should have

been conducted on these creeks to determine what habitat is present, and whether any critical habitat as described in the ToR was present. This would provide important information for the reviewer to consider while considering the impacts of the project, as these tributaries may provide important habitat for specific life stages for CTTR.

2. In CR#6, Section 6, future assessments are proposed to supplement the level of detail for a thorough assessment and considerations of risk regarding project impacts. Impact predictions provided in the EIA on the amount and type of habitat were based on information available at the time of the assessment, and do not account for all effects pathways, such as velocity and temperature, variables which are critical to the survival of CTTR. Predictions were based on the relationship between flow and habitat relying on professional judgement and existing baseline information on Gold and Blairmore creeks, rather than specific and particular habitat-flow relationships that exist for the species of interest in Gold and Blairmore creek watersheds.

A methodology for a strengthened assessment based on instream flow needs coupled with other habitat variables including velocity and temperature, is proposed. This strengthened assessment is consistent with Habitat Suitability Indices that are common for large scale projects to accurately determine impacts and offsets. As part of future ongoing assessments the selected IFN model would be coupled with hydrologic model capable of predicting the required changes in flow conditions needed to predict the changes in the amount, type and spatial and temporal distribution of aquatic habitat. Field work would be conducted to make the IFN model specific to the fish species in the Gold and Blairmore creek watersheds and the aquatic habitat conditions that exist in those watersheds. This fieldwork would validate the existing assessments. The field program would be multi-seasonal and would obtain information on:

- a. hydrology
 - b. geomorphology
 - c. water quality
 - d. fish biology
 - i. species (provided), life stages, and fish population status
 - ii. timing of feeding, rearing, spawning, migration, and other life stages
 - iii. location of habitats used by individual life stages
 - iv. abundance
 - e. fish habitat
 - i. habitat unit classification
 - ii. microhabitat characteristics by habitat unit
 - iii. location of barriers (provided)
 - f. lower trophic levels
 - g. stream and riparian ecology.
3. This information is referenced to provide the baseline conditions and options and justification for potential offsets, where the baseline provides the reference conditions to determine whether offsets have been met. While the determination of achieving acceptable offsets is under the jurisdiction of DFO, the determination of the baseline conditions is crucial to assess the project impacts and risk, as well as a reference condition for monitoring requirements to be based on potential changes in

population and habitat conditions that may result from the project. Benga has identified additional fieldwork is required to collect this additional information and validate predictions that are based on the relationship between flows and habitat. Although professional judgement may be acceptable in certain situations, given the sensitivity of this species and the severe restriction of its distribution provincially, this level of detailed assessment must be provided in order to conduct an appropriate review of the project and its associated risks. The information identified as forthcoming through additional fieldwork is the information that is missing and formed the basis of AER's determination that the EIA had major deficiencies regarding information on species and habitat within the LSA/RSA.

4. ToR 4.5.2 [D] requirements to identify plans proposed to offset any loss in the productivity of fish habitat and discuss how environmental protection plans address provincial and federal policies on fish habitat were also not addressed in the EIA.

Deficiency #16: ToR 4.5.2 Aquatics Impact Assessment

Sediment Quality baseline not conducted. Baseline sediment quality required to understand the impacts of the mine release water on downstream sediment quality and subsequent impacts on aquatic communities (periphyton and benthic invertebrates).

While the majority of that information is provided, the company makes no recognition of the fact there is a new federal Habitat Protection Order for the Westslope Cutthroat Trout. The Order effectively prohibits any changes to the watersheds that contribute to and comprise of Blairmore Creek and Gold Creek. Gold Creek is located at the bottom of the eastern slope of Grassy Mountain (the project), and Blairmore Creek is located on the opposite side of Grassy Mountain. It would seem as though nearly 100% of the project would be affected by the Order.

Clarification:

Sediment quality is substrate condition. Sediment quality (physical and chemical properties) can have significant effect on water chemistry (source and sink for chemicals), biota (constraining factor for periphyton and benthic invertebrate communities) and fisheries (spawning and foraging). Sedimentation to the river can result in physical impacts to fisheries, changes in chemistry, and changes in primary and secondary producers. Habitat characteristics are not sufficient to adequately quantify substrate conditions, generally relying on more general descriptors of physical sediment properties only based on field observations, versus lab analyses of chemistry and particle size analysis. Sufficient baseline data must be collected such that mine-related impacts can be quantified and appropriate measures implemented to address these impacts.

Deficiency #17: ToR 4.5.2 Aquatics Impact Assessment

Proponent conducted limited benthic invertebrate sampling. The invertebrate community information is critical in the assessment of impacts to the Fisheries, as local species rely almost solely on invertebrates as food sources. Changes in the invertebrate communities over time through monitoring may indicate changing water quality or sediment quality.

Clarification:

The benthic invertebrate monitoring conducted does not adequately characterize the benthic community in the two creeks of concern (Blairmore and Gold). From CR#6, it appears that benthic invertebrates were sampled one time from three locations on Blairmore (two tributaries and one on the mainstem at the mouth) and one location on Gold Creek (on the mainstem at the mouth). This does not capture either spatial or temporal variability common in benthic communities on either stream. Critical habitat for fisheries has been identified in the upper, more isolated areas of both creeks. Therefore, it is important that the benthic community is adequately characterized in these regions.

Deficiency #18: ToR 4.6.1 Vegetation Baseline

Benga needs to identify and inventory of protected species such as the Foothills Rough Fescue, Whitebark Pine, and Limber Pine and give us an idea on how they intend to address the removal of those species. They simply state that there is a high potential for impact to these species within the mine plan area, and do not address mitigation or re-establishment of the species.

Clarification:

Rough Fescue, a native grass, is a protected species not specifically listed under legislation, but protected under provincial protective notations (PNTs) including those that stipulate “multiple resource concerns.” A PNT is a note placed on public lands to address concern(s) related to previously known sensitivities including, but not limited to, soils, vegetation, species at risk, topography, etc. Failure to recognize fescue grasslands as protected means potential impacts of the project on vegetation (fescue) plant communities are not adequately address and ToR requirements not fulfilled.

Benga also states *Long-term restoration success of native rough fescue communities has yet to be demonstrated and documented on industrial sites subjected to a full range of production and operational disturbance...* The understanding that fescue communities have failed to be restored through natural recovery does not align with statements made in the EIA for potential effects on Rangeland Resources, as provided in the impact ratings (Section 4.3.5) or the Conservation and Reclamation Plan (Section F.3.3) that indicates seed collection or sod salvage will be considered.

Specifically referencing Whitebark Pine and Limber Pine, listed and protected tree species, “clusters” of these species have been identified and their presence in the project area mapped. However, the survey methodology does not appear to support the need to identify individuals. Whether these species exist in clusters or individually, potential impacts cannot be properly discussed without first obtaining an accurate assessment of the species within the proposed mine footprint. There is no survey methodology outlined in the EIA to ensure that these species have been accurately assessed for potential impacts. There are maps indicating locations of the species, but the locations of the species appear to be based on the use of AVI (Alberta Vegetation Inventory) data rather than actual assessments in the field.

Regarding other rare plant species (i.e., ACIMS tracked and watched list) identified during baseline studies (Section 3.2.1, Table 3.2-1), the impact assessment does not appropriately assess potential impacts to these species as a result of their removal from the footprint. Mitigation is only provided for Whitebark Pine and Limber Pine, while the EIA indicates there will be no species specific mitigation for other

tracked or watched species provided in Section 4.2.1, Table 4.2-1. In light of the final impact ratings provided in Section 4.2.7, the provision of no species specific mitigation for species other than Whitebark Pine and Limber Pine, does not support the ratings provided for “Ability for Recovery” or “Significance” as it relates to rare plants and rare plant potential. Combining impacts ratings for individual rare plants with rare plant potential further makes it difficult to understand potential impacts to rare plants, as the impact ratings are lumped in with rare plant potential ratings.

Deficiency #19: ToR 4.7.1 Wildlife Baseline

Proponent identified in the kick-off meeting that they may not have adequate baseline wildlife information and are looking at conducting further wildlife studies this winter (winter track surveys). A cursory review of the wildlife assessment has identified that the wildlife surveys are not adequate, and further field work is required.

Clarification:

While wildlife surveys were conducted, they did not follow the provincial standards and guidelines, and do not allow for an appropriate baseline assessment. Examples of concerns with wildlife baseline data (note this is not a complete list):

- Winter track surveys were not conducted. Benga identifies it made attempts to conduct track surveys in the winter of 2015, but due to unsuitable snow conditions were unable to conduct them and have planned them for 2016. While unsuitable snow conditions prevented conducting a study in 2015, this does not explain why studies were not conducted in a previous season since wildlife study work started in the fall of 2013, giving two seasons to conduct track surveys.
- Amphibian Survey
 - The EIA states “The amphibian survey was conducted to characterize the amphibian community in the WLSA.”
 - According to the techniques described, only acoustic monitoring techniques were used, which would not detect any non-auditory amphibians, such as salamanders.
 - Columbia spotted frogs were identified as a wildlife valued component, yet the amphibian surveys were timed to identify western toads, potentially missing the identification of columbia spotted frogs, which tend to breed earlier in the year.
 - The target species identified for the amphibian survey are listed in Table 2.3-1 as Columbian spotted frog, western toad, long-toed salamander, and northern leopard frog. Only one of these species, the western toad, was actually targeted in the survey methods.
- Breeding Songbird Survey

- The EIA states *the survey was conducted according to the guidelines for surveying boreal and foothills songbirds and woodpeckers as outlined by AEP (Sensitive Species Inventory Guidelines 2013)* and also notes *a breeding songbird survey was conducted in the WLSA from June 24 to June 27, 2014.*
- The Sensitive Species Inventory Guidelines (SSIG) state *two surveys should be completed for each site and repeat surveys should be timed at least 10 days after the first survey.* Based on this requirement, the breeding songbird survey was not conducted according to the SSIG as each station was not re-visited after a 10 day period.
- The lack of adherence to the SSIG methods identifies deficiencies with the breeding songbird survey.
- Owl Survey
 - Short-eared owls are identified in the EIA as a Special Status Wildlife Species, but the SSIG guide for short-eared owl studies was not used. This reduces the possibility that short-eared owls would have been detected in the general owl survey. Reduced detection rates may underestimate the potential impact to this species.
 - While call playback surveys were used in the owl survey, and are useful for long-term monitoring, the owl survey standards in the SSIG, Boreal and Foothills Raptors survey guidelines were not followed. Gaps potentially exist in the data due to the differences in survey methods, but these gaps are not identified or discussed.
- Bat Survey
 - The survey methods do not appear to follow the Alberta standard protocol (Handbook of Inventory Methods and Standard Protocols for Surveying Bats in Alberta, AEP 2006), have a single, short survey window and lack duplication. The Alberta standard bat survey protocols include sampling each location more than once and conducting at least two circuits of the Project area during the sampling season to account for seasonal variation. Only two locations were surveyed once using mist netting techniques, and five (or six) locations were surveyed in a 3 day period using acoustic survey techniques.

Deficiency #20: ToR 4.7.2 Wildlife Impact Assessment (Relocation of the golf course):

Benga has not address the impact of re-locating half the golf course and clubhouse, even though this is a direct result of the proposed mine development.

The rail loading terminal is proposed to overlap the golf course. Some of the lands the golf course is using are Crown lands. While Benga presented a picture that they would simply “swap” lands they presently own with the golf course in order to re-locate 9 holes, they have not addressed the fact that some of those lands are Crown lands at present, held under REC910007. The Alberta Government also has its own Disposition Reservation under DRS850045 immediately adjacent to the REC.

Clarification:

While it is understood the new golf course design has not been finalized and the impacts to the golf course have been discussed in the EIA, the direct and cumulative impacts of the golf course re-development are not addressed specific to wildlife. A detailed course design is not required to determine potential impacts from the golf course re-development on wildlife resources, but should consider interactions with Benga's proposed developments (i.e., conveyor and access road).

The golf course has the potential to have impacts on wildlife through various means (mortality, fragmentation, habitat loss, movement, etc.), and as per ToR 4.7.2[A] (Describe and assess the potential impacts of the project on wildlife populations and wildlife habitats), the EIA needs to include the potential impact of the golf course re-development in the impact analysis as it is a component of the mine proposal.

Deficiency #21: ToR 4.7.2 Wildlife Impact Assessment (relocation of AltaLink Powerline):

Proponent identified in the kick-off meeting that they did not fully address the impact of re-locating the AltaLink power line, even though this is a direct result of the proposed mine development.

Clarification:

The major deficiencies response indicates "the area [powerline] ... was assessed extensively as part of the Wildlife Local Study Area (WLSA)." The AER acknowledges the powerline was included in WLSA, but clarification is required on the wildlife survey locations and how they adequately cover the area captured with the powerline re-route.

Deficiency #22: ToR 4.10.1 Land Use Management Baseline & ToR 4.10.2 Land Use Management Impact Assessment

4.10[B] & 4.10.2[B] - Crown dispositions have been missed on mapping (oil, gas, coal TFAs, golf course and grazing leases), mapping does not accurately reflect land ownership, and there are overlapping issues with dispositions. Overlapping dispositions cannot be approved. There is a lack of detail on how these will be handled and conflicts resolved.

4.10[A] & [B] – There are 14 well sites, 11 pipelines, a powerline, 8 leased roads and a miscellaneous lease within regional study area. However, it is not addressed how the rights of existing lease holders have been or will be handled, and there is no explanation as to how the existing site infrastructure, e.g., well sites, pipelines, will be abandoned or removed.

4.10[A], [B] - Similar concerns with grazing leases.

Clarification:

A timber salvage plan has not been provided and CTL (Coniferous Timber License) holders in the project area, which are to be given first right of refusal for the timber salvage generated by the development of the mine, are not identified. In sections of the EIA, there are references to providing the salvaged timber

to two First Nations groups for tepee poles, which cannot be done without **consideration of** agreements with lease holders.

Deficiency #23: ToR 5 Historic Resources

Historic background documents were not provided with the application package. Therefore, historic resources review will be delayed until this reports are provided.

Multiple historical resources, including the historic Town of Lille (a historically significant site with HRV 1), have already been located within the proposed mine permit boundary. A Historical Resources clearance letter has not been provided from Alberta Culture.

Clarification:

The Historic Resources Impact Assessment (HRIA) and a palaeontological impact assessment are required by Alberta Culture and Tourism (ACT) for the project. **The AER is aware that** ACT has received the HRIA report, which is under review, and is aware Benga is planning to conduct the palaeontological impact assessment when ground conditions permit.

Deficiency #24: ToR 8.1 Socio-Economic Baseline

There are conflicting details regarding worker accommodations, e.g., will a worker camp or other housing options be used. Depending on the selected options, project-related workforce requirements may necessitate investment in new schools, housing, etc. .

Clarification:

Further information is required regarding the anticipated need for housing **and accommodation of workers, and any subsequent demands on social infrastructure that may occur.**

#25: ToR 8.1 Socio-Economic Baseline

The details provided in the Project Description section C.6.17 are sufficient and provide clarity to AER's concern.

Deficiency #26: ToR 8.2 Socio-Economic Impact Assessment (Land Access)

In the review of the Rail Loading Terminal proposal, the track for the terminal will overlap the Recreation Lease (REC910007) for the golf course. It is understood that Benga is prepared to "trade" lands they own for lands they wish to acquire for the purpose of constructing the Rail Loading Terminal on top of lands the golf course presently uses. One thing that Benga has not identified is that a portion of the lands to be "traded" is not owned by the golf course but by the Crown under REC910007.

Clarification:

Oil and gas activities have been identified within the mine boundary footprint, but there is no discussion as to how those impacts on these activities and related infrastructure will be resolved (including undermining the seven well pads drilled within the footprint) other than to say these overlapping land uses will be resolved through “additional consultation”. The same situation exists with the existing grazing lease holder (Don Driver). The presence of the grazing lease is identified, but does not specifically attempt to show how the proposed mine will impact the lessee other than to say this overlapping land use will be resolved through “additional consultation.”

A proposed settling pond located on top of the existing grazing lease has not been captured in the assessment, and portions of Crown lands that will be impacted, such as REC910007, PNT900430 and DRS850045, have not been identified. These missing elements indicate the ToR requirements for identifying features having pre-existing restrictions and legal rights to surface access for overlapping land uses such as the proposed mine have not been met. All existing stakeholders and potential impacts to those stakeholders must be identified.

Deficiency #27: ToR 3.2.8 Conservation and Reclamation

Descriptions of how topsoil will be removed and handled are not consistent with provincial regulatory requirements. For example, in some cases it is indicated that topsoil will be mixed with overburden. However, it must be stored separately.

Clarification:

Storage areas and handling procedures are identified, but not the basic operating requirement to store *topsoil* separately from all other materials. The proposed “blending” of materials such as “coversoil”, woody debris (unmerchantable timber, tree tops, branches, etc.), and subsoil combined with the “blending of PAG and non-PAG coal mine wastes” does not clearly identify the requirement to salvage *topsoil* and where that might be located within the mine boundary footprint area. The requirement to salvage *topsoil* is defined within EPEA.

Deficiency #28: ToR 4.10 Land Use and Management

Descriptions of how and what merchantable and non-merchantable timber will be removed and handled are not consistent with provincial regulatory requirements. For example, there is reference to mixing slash and non-merchantable timber with topsoil, which does address proper handling techniques for topsoil.

Clarification:

Some Crown lands and Crown reservations (PNT900430 and DRS850045) were not identified. The proposal to re-locate the existing powerline through the Historic Town site of Lille was not identified or area mapped as a significant historic site with the highest designation (value) under Alberta Culture including all of the lands that Lille formerly occupied. The proposed re-route of the powerline is through and overlapping the designated and protected lands with an HRV (Historical Resource Value) of 1.

Additional Deficiency #29: ToR 4.10.2[F] Land Use and Management – Impact Assessment

Provide a fire control plan highlighting:

- a. measures taken to ensure continued access for firefighters to adjacent wildland areas;*
- b. forest fire prevention, detection, reporting, and suppression measures, including proposed firefighting equipment;*
- c. measures for determining the clearing width of power line rights-of-way; and*
- d. required mitigative measures for areas adjacent to the project area based on the FireSmart Wildfire Assessment System.*

Clarification:

CR#10, Section 5.1.3 indicates a Wildfire Emergency Response Plan has been developed, but it is not included in the EIA.