

APPENDIX E2 – INDEPENDENT CONSULTANT - TRACKING TABLE

# ID	Issues Raised	Proponent Response	Review Status	Responsible Agency
1	It would be advisable to give First Nations representatives an annual tour of the property to demonstrate that BMP's for SEPSC are both effective and correctly applied.	WCCC is willing to arrange for annual visits to the site.	Response Satisfactory Issue Addressed	EA Commitment.
2	A copy of the Annual Environmental/Reclamation Report should be provided to the First Nations. An annual site visit should be permitted following receipt and review of the report.	WCCC believes it is more appropriate to provide summary information to First Nations and Kelly Lake Communities, rather than all detailed technical reports and Appendices. WCCC will provide annual visits to the mine site.	Response Satisfactory Issue Addressed	EA Commitment.
3	EBA suggests that WCCC monitor the seepage quality throughout the mine's operation. This requirement should be included in the application's section on Acid Rock Drainage and Metal Leaching (Sec 4.5).	WCCC will monitor the seeps generated from waste rock piles and pit sumps as required by the Mine Permit.	Response Satisfactory Permitting Issue	MEMPR
4	Agronomic species known to uptake selenium should be excluded from reclamation seed mixes.	WCCC has a number of concerns related to this type of restriction: (1) To our knowledge, there is no evidence that selenium accumulates in vegetation on reclaimed land in NE BC. In fact, studies on the Bullmoose minesite indicated that vegetation on reclaimed areas was lower in Se than on control areas. WCCC is also aware that some hay produced in the Peace region is enriched with selenium as a dietary supplement to cattle because soils in the area can be selenium deficient. (2) Literature indicates that plants growing in soils with higher clay content (which is the case at Brule) generally exhibit reduced Se concentrations. (3) Many of the plants documented to take up selenium are native (e.g. Astragalus bisulcatus); agronomic species should not be targeted for this concern. If EBA can provide data to support the request, or if reclamation monitoring indicates selenium concentration in plants used in revegetation, WCCC will certainly revisit this issue.	Response Satisfactory Issue Addressed	MEMPR
5	An upland element plan uptake-monitoring program that includes both growth media and foliage sampling for	WCCC will monitor the uptake of metals and selenium in vegetation as part of its Reclamation monitoring program.	Response Satisfactory Permitting Issue	MEMPR

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	selenium should be included as a requirement for the Brule reclamation permit			
6	The results of the aquatic monitoring and adaptive management program for selenium should be incorporated into a regional effects database.	If the Appropriate Regional Authorities (MOE or MEMPR) initiated a Regional Effects Database of this type, WCCC will provide data from its sites.	Response Satisfactory Issue Addressed	MoE
7	WCCC should state clearly a commitment to keep clean-areas clean and to meet ambient air quality objectives beyond the mine site boundary.	By the use of proposed Management Practices, WCCC will control the impacts on air quality to minimize degradation. WCCC will be required to meet air quality objectives at locations designated by the MOE in the Brule Air Permit. WCCC has completed significant improvements to Dillon coal handling, and plans additional improvements prior to commencement of mining at Brule.	Response Satisfactory Issue Addressed	MoE
8	If land clearing occurs at the Falling Creek Loadout within the bird-breeding window, pre-clearing nest surveys should be completed in order to identify if active nests are present.	The current development schedule allows for the site to be cleared outside of the breeding -bird window.	Response Satisfactory Issue Addressed	MoE
9	In designing a wildlife-monitoring program, it is desirable to coordinate the monitoring program in a regional context that involves First Nations representatives and government agencies. The hiring of First Nations people could be considered for such a monitoring program.	WCCC is currently not proposing intensive wildlife monitoring programs. Any future intensive wildlife monitoring programs undertaken by WCCC will consider input from agencies, First Nations and Kelly Lake communities.	Response Satisfactory Issue Addressed	MoE
10	The proposed amount of topsoil lost by burial is of concern; WCCC should review the operational plan to see if more soil could be salvaged and stockpiled for future use.	WCCC will calculate quantities of soil required for final reclamation, and ensure adequate soil is salvaged. If the soil recovered from the pit is inadequate to meet the required quantities, WCCC will salvage as necessary from the Waste Dump areas, as per the Health, Safety & Reclamation Code for Mines in British Columbia.	Response Satisfactory To be addressed at permitting	MEMPR
11	More samples could be collected and analyzed prior to soil stripping and stockpiling	Soil sampling to date has fulfilled requirements for reclamation planning.	Response Satisfactory To be addressed at permitting	MEMPR

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12	Berms could be placed above the main high wall to prevent accidental falls into the pit.	WCCC will maintain a cleared area around the main high wall so that it will be visible. Berms are not ideal as there is loose material associated with their construction which could fall down the high wall causing safety concerns.	Response Satisfactory Issue Addressed	MEMPR
13	Performance criteria should be used to determine the end of post-closure monitoring instead of a fixed time period.	As noted in Sections 4.12.2.4.12 and 4.12.4.4.8 of the Application, WCCC has committed to conducting post-closure reclamation monitoring for the mine site and Falling Creek Flats Loadout until a self-sustaining vegetation cover that meets end land use objectives has been established and documented. Monitoring will be in compliance with the Mine Code.	Response Satisfactory Permitting Issue	MEMPR
14	A well-conceived and integrated monitoring program should be developed to ensure that the long-term interests of First Nations and other stakeholders concerning ecosystems and forest capability are protected.	The Mine Permit reclamation program will include a monitoring program that over time will assess progress toward ecosystem and forest capability objectives. Monitoring programs will be updated and refined as reclamation advances.	Response Satisfactory Issue Addressed	MEMPR
15	More supporting documentation regarding Project impacts, data limitation, and assumptions surrounding the efficacy of mitigation efforts should be provided.	WCCC will review data included in the Bullmoose and Quintette reclamation reports and incorporate as necessary in the Reclamation Plan for the Brule Mine Permit.	EAO requests clarification	MEMPR
16	Duinker and Greig (2006) have identified several problems with the CEA process in Canada that should be described in the introduction to section 6.3. The Application should provide information on how these issues or concerns have been addressed. A more complete description of the CEA methodology (i.e. assumptions, issues, and methods) would be desirable to evaluate the RCE's of the project.	<p><i>Response by Scott Grindal, Axys, on behalf of WCCC:</i></p> <p>Section 6.3 (Cumulative Effects) provides a general introduction to the overall approach of CEA in this Application. Each discipline (e.g., air quality, wildlife, vegetation) has different issues, spatial scales, VECs, etc. As such, more detailed descriptions of discipline specific CEA methods (e.g., assumptions, issues, and limitations) are provided in the relevant sections. For example, spatial data to allow modeling of reasonable foreseeable RCE's was not possible, due to the unavailability of this spatial data. This limitation is stated in section 6.3.2, and reiterated in other discipline specific sections (e.g., 10.1.2.7)</p> <p>Most issues identified by Duinker and Greig (2006) are related to the general absence of a regionally initiated</p>	Response Satisfactory Issued Addressed	

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		<p>approach to CEAs. WCCC appreciates these limitations, and as stated elsewhere, is willing to participate in regional initiatives led by government to better understand cumulative effects.</p> <p>It should be noted that CEAs are not required under the BCEAA. WCCC has gone above and beyond regulatory requirements and proactively conducted a CEA for the Brule Mine application, recognizing the importance of this issue in the region and in the EIA process.</p>		
17	<p>There is a distinct lack of (readily available) figures depicting fisheries sampling locations around mine sites and proposed drainage ditches and sediment ponds. This would have been very useful in providing readers with a better understanding of proposed sediment control measures.</p>	<p>Figures 4.4.3-3 And 4.4.4-1 show the proposed drainage ditches and sediment ponds at the minesite, and loadout respectively. The fisheries sampling locations are described in Section 8 And mapped on figures 4.4.3-1, 8.1.2-1 and 8.1.2-2 WCCC will consider improvements to mapping for future EA Applications.</p>	Response Satisfactory Issue Addressed	MoE DFO
18	<p>The figures sited in the water quality discussion were somewhat difficult to interpret (e.g. existing WQ stations versus historic) with legends not detailing all features presented.</p>	<p>Comments noted. We will consider for future reports.</p>	Response Satisfactory Issue Addressed	MoE
19	<p>Sampling methods were not described adequately in the methodology (e.g. what sampling guidelines were followed; how samples recovered; and were samples for metals analyses filtered?</p>	<p><i>Response by Alan Martin, Lorax, on behalf of WCCC:</i> Agreed that information is lacking in Application with regards to sampling procedures. In general, water quality sampling was consistent with government and peer-reviewed methods. Samples for metals, nutrients and physical parameters were collected in plastic containers with gloved hands. The sampler faced upstream and was careful not to resuspend bottom sediments. Bottles and caps were rinsed 3X with sample water prior to collection and bottles stored in a cooler. Samples for dissolved metals were filtered within a few hours of collection, indoors on a clean lab surface. Samples for non-filtered parameters were preserved in the field.</p>	Response Satisfactory Issue Addressed	MoE

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20	Given that surface water temperature and dissolved oxygen are water quality parameters often influenced by mine activity, these parameters should have been included as field measurements during the assessment.	<i>Response by Alan Martin, Lorax, on behalf of WCCC:</i> Agreed that in situ surface water temperature and dissolved oxygen measurements would have complimented the field program.	Response Satisfactory Permitting Issue	MoE
21	Also, although identified in the report as a constituent of explosives, ammonia concentrations were not reported in the tables or described sufficiently in the baseline discussion.	<i>Response by Alan Martin, Lorax, on behalf of WCCC:</i> Point noted. Ammonia levels should have been better characterized in the report. Most values for ammonia in the Blind and Mink Creek drainages were near or below the DL of 0.02 mg/L.	Response Satisfactory Issue Addressed	MoE
22	It may have been prudent to cite Canadian Council of Ministers of the Environmental (CCME) guidelines in the report tables.	<i>Response by Alan Martin, Lorax, on behalf of WCCC:</i> BC aquatic life guidelines were the focus based on input from MOE.	Response Satisfactory Issue Addressed	MoE
23	Stream-flow monitoring integrated with surface water and sediment quality monitoring would enable the calculation of loadings of various parameters in conjunction with measurements of constituent concentrations. This would enable a more thorough assessment of the ongoing effectiveness of mine water environmental management practices.	<i>Response by Alan Martin, Lorax, on behalf of WCCC:</i> Agreed. Flow data will be collected for both SP1 and SP2, which allow the calculations of chemical loadings to receiving water courses. Loading data from these ponds will provide a direct assessment of the effectiveness of mine water and environmental practices.	Response Satisfactory Issue Addressed	MoE
24	It is unclear how the conclusion is made that although silver, nickel, selenium, arsenic, and cadmium concentrations (within the main sedimentation ponds) exceeded British Columbia water quality guidelines, this would not pose a threat to the environmental quality of Blind Creek, or if mitigation measures have been developed to address such issues	<i>Response by Alan Martin, Lorax, on behalf of WCCC:</i> With the exception of selenium, examination of the total versus dissolved values for these elements demonstrates that the bulk of the total metal inventory can be attributed to particulate-metal phases. In other words, the degree of metal enrichment more strongly reflects sediment-particle associations rather than metal leaching from waste rock. Given that dissolved values for these elements remain below their respective guidelines, there is a low risk to aquatic receptors (See Appendices D1.5 and D2.2 of Brule Post-Application Agency Issue Response Report for a more rigorous examination of MSP water quality).	Response Satisfactory Issue Addressed	MoE

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25	Upon review of water quality data from the main sedimentation pond at the Dillon Mine, confusion arises because it appears that other elements (i.e. total iron, total cadmium, total chromium, and sulphate) occur at much higher concentrations than selenium. Elevated levels of copper are reported, but there is little discussion concerning concentrations or British Columbia water quality guidelines pertaining to acceptable levels.	<i>Response by Alan Martin, Lorax, on behalf of WCCC:</i> As per the response to ID#24, the high values for Fe, Cd and Cr occur in association with elevated TSS levels which characterized the MSP effluents in its early stages of operation. (See Appendices D1.5 and D2.2 of Brule Post-Application Agency Issue Response Report for a more rigorous examination of MSP water quality).	Response Satisfactory Issue Addressed	MoE
26	The origins of polycyclic aromatic hydrocarbons (PAH's) detected in the mine sedimentation pit and Blind Creek are not explained well although the author does attribute this to both mine-generated coal fines and to naturally occurring sources.	<i>Response by Alan Martin, Lorax, on behalf of WCCC:</i> The exact origins of the PAHs is not clear, but certainly relates to the increased exposure and erosion of coal-bearing strata.	Response Satisfactory Issue Addressed	MoE
27	It is unclear what rationale and/or assumptions led the author to conclude that the environmental quality of Blind Creek would not be altered by effluent discharges from the sediment ponds (see Section 8.2.1.7 of the Dillon Monitoring data that deals with the Main Sedimentation Pond Water and Sediment Quality sections. (P 8-113 to 8-146)	<i>Response by Alan Martin, Lorax, on behalf of WCCC:</i> The WQ predictions clearly show an effect to water quality in Blind Creek. However, the residual effects assessment suggests that the risk to aquatic receptors is very low.	Response Satisfactory Issue Addressed	MoE
28	The description of nitrate levels (section 8.2.2.3.2) is somewhat vague. Furthermore, there is little clarification as to what the British Columbia water quality guidelines are for the protection of aquatic life (see page 8-153, paragraph 3)	<i>Response by Alan Martin, Lorax, on behalf of WCCC:</i> Reference to the aquatic life guideline is provided in paragraph 4 of the page indicated.	Response Satisfactory Issue Addressed	MoE

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29	Some sampling methodologies were not described (e.g. was the low-flow sampling techniques used or were samples filtered/preserved, etc.)	<i>Response by Alan Martin, Lorax, on behalf of WCCC:</i> See response to ID#19.	Response Satisfactory Issue Addressed	MoE
30	Baseline groundwater quality results were not compared to any groundwater quality guidelines. There are currently no provincial guidelines for groundwater quality. However, given that groundwater may daylight and enter surface water receptors, it may have been prudent to cite British Columbia Contaminated Sites Regulation groundwater standards for the protection of aquatic life. For the most part, these groundwater guidelines are based on a 10 time factor over surface water quality guidelines.	<i>Response by Alan Martin, Lorax, on behalf of WCCC:</i> Groundwater does enter surface water receptors. However, it is not appropriate to compare the groundwater levels to aquatic life guidelines. The WQ baseline for Blind Creek implicitly considers water inputs from both surface and groundwater sources. During low-flow conditions, surface-flows are controlled predominantly by groundwater recharge, as is illustrated by the higher levels of major ions in streams during these times. The baseline data reflects this contribution of groundwater.	Response Satisfactory Issue Addressed	MoE
31	The results of groundwater monitoring do not adequately address potential fisheries effects upon Blind Creek (Monitoring – Aquatic Resources Section 8.7.1.4). Without determining groundwater flows into Blind Creek, the potential impacts are unclear. Furthermore, it is unclear if there will be an adequate water-quality monitoring program undertaken in this area.	<i>Response by Alan Martin, Lorax, on behalf of WCCC:</i> See response to ID#30. Further, the water balance allows mine-influenced drainages to enter the environment through two pathways: 1) through surface inputs from sedimentation pond discharges; and 2) through groundwater inputs that may enter or bypass the Sedimentation Ponds and enter directly into receiving water courses. Accordingly, potential impacts to aquatic resources implicitly considers groundwater inputs.	Response Satisfactory Issued Addressed for all but the monitoring issue. This requires a response from WCC	MoE
32	The report identified that “effective management of sanitary sewage effluents is critical to the control of phosphorus inputs to receiving water courses.” although phosphorus and other sewage-related nutrient loading to Blind Creek (i.e. ammonia and nitrates) were predicted to be negligible, it may have been prudent to establish baseline concentrations of sewage related	<i>Response by Alan Martin, Lorax, on behalf of WCCC:</i> Disagree. The primary accumulation pathway for P and N in sediments is through the deposition of organic matter (e.g., algal detritus), and not the sorption of ammonia or phosphate. The potential for increased stream productivity will be most effectively assessed through the monitoring of nutrient parameters in surface waters, and chlorophyll a abundance on substrates (i.e., periphyton). Baseline data exist for these components. Further, given that there are no	Response Satisfactory Issue Addressed	MoE

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	nutrients such as ammonia and phosphorous within sediments.	aquatic life guidelines for ammonia and phosphorus in sediments, baseline data for these parameters has little relevance.		
33	Sediments were collected using a long-handle plastic spoon, a questionable sampling technique. Although sediment samples were preferentially collected from depositional zones hosting fine-grained sediments, drawing the sediment through the contaminants are often associated with fines, it is better to use either a coring or a grab sample technique to minimize the loss of fines.	<i>Response by Alan Martin, Lorax, on behalf of WCCC:</i> Agreed that coring is the best method to minimize loss of fines. The plastic spoon technique was, however, effective.	Response Satisfactory Permitting Issue	MoE
34	The data screening section states that chlorophyll <i>a</i> analyses were compared to British Columbia water quality guidelines without stipulating the guidelines for chlorophyll <i>a</i> (see page 8.23)	<i>Response by Barbara Wernick Golder, on behalf of WCCC:</i> The WQG for chlorophyll is provided on page 8-106 of the Application.	Response Satisfactory Issue Addressed	MoE
35	Sampling methods should be presented in a manner that enables reproducibility given that monitoring will continue over time.	<i>Response by Barbara Wernick Golder, on behalf of WCCC:</i> Methodology, including sampling methods is described in section 8.1.2.5.4 of the Application. Protocols are as agreed with MOE.	Response Satisfactory Issue Addressed	MoE
36	The concept of using both Hess and Surber to collect benthic invertebrate samples is unclear given the sample results would be based on different sampling areas (i.e., Hess: 0.086 m ² versus Surber 0.092 m ²). (Page 8.21). Furthermore, although both methods can be used for quantitative benthic invertebrate sampling, the Surber is somewhat limited in deeper, faster waters where this unenclosed sampler does not enable capture of all invertebrates from designated substrate sampling areas.	<i>Response by Barbara Wernick Golder, on behalf of WCCC:</i> The Hess sampler was used preferentially where the substrate allowed for the sampler to be pushed in. The Surber was used in areas where the Hess could not be pushed into the substrate.	Response Satisfactory Issue Addressed	MoE

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37	It is unclear as to where and how many sites were used for sampling (not clearly outlined in the field sampling section). Furthermore, the section in the <i>Application</i> does not state if water quality, benthic invertebrates, and periphyton samples were collected from the same sample locations (see page 8.22).	<p><i>Response by Barbara Wernick Golder, on behalf of WCCC:</i> Table 8.1.2-12 summarizes the types of samples collected at each station. The number of replicates collected at each station is provided in the text following the table.</p> <p>Stations S-1, S-2, BC-01 d/s, and BC-04 have been used as water sampling stations. Benthics-04, -05, and -06 have only been sampled for aquatic organisms.</p>	Response Satisfactory Issue Addressed	MoE
38	With respect to the collection of biomass for chlorophyll <i>a</i> analysis, it is unclear how the assumption is made that some sites would contain one periphyton community while other sites would contain two periphyton communities. Also, it is unclear why the variation between sites resulted in different numbers of replicate samples being collected (see page 8.22).	<p><i>Response by Barbara Wernick Golder, on behalf of WCCC:</i> As discussed with and agreed to by the Ministry of Environment, each station was visually assessed for dominant community types (e.g., filamentous algae, diatomaceous film). The number of replicates (i.e., four replicates from the dominant community and two from the sub-dominant community) was discussed with and agreed to by MoE as a reasonable level of effort for characterizing biomass.</p>	Response Satisfactory Issue Addressed	MoE
39	With respect to selenium analysis of periphyton samples, it is unclear what sample volumes were submitted to the laboratory. It is also unclear if replicate samples were composited, or if random sampling was conducted to obtain the requisite periphyton biomass (page 8-22).	<p><i>Response by Barbara Wernick Golder, on behalf of WCCC:</i> As much periphyton material as possible was collected from the site to provide a sufficiently large sample volume for the analytical laboratory. The volume available was variable from site to site.</p>	Response Satisfactory Issue Addressed All but the questions regarding composited and random samples	MoE
40	The presence of riffle benthic invertebrates and periphyton (Section 8.2.1.5.1 and 8.2.1.5.2) is documented, but the description of habitat preferences of invertebrate groups known to occur in riffle substrate	<p><i>Response by Barbara Wernick Golder, on behalf of WCCC:</i> Photos of sampling locations and details of substrate environments are provided in Appendix L-6</p>	Response Satisfactory Issue Addressed	MoE

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	environments is vague. This has implications in using indicator species for impact analysis.			
41	It was documented that an insufficient periphyton biomass was collected for chemical analyses. The assessment cited unseasonably high flow as the likely cause of riffle and depositional benthic invertebrate displacement. Consequently, it was concluded that the results of the sampling program might not be representative of baseline conditions. This acknowledged shortcoming should be addressed through additional monitoring and analyses.	<i>Response by Barbara Wernick Golder, on behalf of WCCC:</i> Agreed. The baseline monitoring was repeated in 2005.	Response Satisfactory Issue Addressed	MoE
42	The assumption that periphyton community abundance is of greater importance than species presence is questionable. Some species (i.e., <i>Synedra</i>) are sensitive to changes in environmental quality (i.e., increased dissolved nutrient loading) whereas other species (i.e., <i>Gomphonema</i>) respond rapidly to increased sedimentation and dissolved nutrients. Changes in taxa are also indicative of changes in environmental quality of the aquatic system. A well-designed environmental monitoring program is intended to detect changes in biological communities (see page 8.17).	<i>Response by Barbara Wernick Golder, on behalf of WCCC:</i> Samples were collected for taxonomic analysis for the purposes of documenting changes in the periphyton community structure. (Table 8.1.2-10.)The number of replicates for taxonomy was increased to three for the 2005 program.	Response Satisfactory Issue Accepted	MoE
43	It is unclear why the length of fish sampling reaches varied between 100	<i>Response by Brad Culling, Diversified, on behalf of WCCC:</i> The minimum sample site length recommended by RISC Standards is 100m. Sampling	Response Satisfactory Issue Addressed	MoE

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	m and 200 m. The variation in sampling reach length may be due to no fish capture in the first 100 m of a habitat reach, necessitating additional sampling along longer stream reaches. If this is the case, it should be stated (see page 8-27).	conducted during this assessment typically involved 200m site lengths as part of a general practice of exceeding RISC standards. Sample sites are intended to be representative of habitat throughout their respective reaches; the length of a site is typically modified as is necessary to sample the full range of habitat diversity found within the reach.		
44	It is unclear if the collection of fish tissue samples from the Sukunka River will adequately represent the baseline metals and metalloids present in fish in Blind Creek. It was intended that analyses be representative of baseline tissue metal concentrations for fish in the Blind Creek as part of an ongoing aquatic monitoring study (see page 8-23).	<i>Response by Brad Culling, Diversified, on behalf of WCCC:</i> Resident slimy sculpin are absent from Blind Creek due to annual de-watering of the lower reach of the stream. Rainbow trout, the most abundant species present in the stream, were collected and analyzed as an alternative representation of localized to provide selenium baseline information. Bull trout are also sporadically encountered but were not lethally sampled due to their low density and blue-listed status. Slimy sculpin were collected from the Sukunka River within the influence of Blind Creek discharge as a next-best measure and as part of a multi-project regional selenium baseline being assembled by BC Environment.	Response Satisfactory Issue Addressed	MoE
45	The discussion on selenium levels in fish tissue is vague in the Brule Mine Section 8.2.1.5.3 on page 8-103.	<i>Response by Peter Chapman, Golder, on behalf of WCCC:</i> The BC MoE draft interim fish tissue guideline has proven to be overly conservative compared to Se concentrations measured in fish in reference areas - the Se in reference area fish can exceed the guideline value. This value is also approximately 50% lower than the USEPA draft Se fish tissue criterion and, unlike the USEPA value, is not supported by detailed technical justification. Further, published work indicates that the higher USEPA draft Se fish tissue criterion is conservatively protective of rainbow trout in Canadian waters.	Response Satisfactory	MoE
46	Based on a comparison of Blind Creek fish sampling data (see page 8-23) to statements made on page 8-108 (paragraph 4), it is unclear if fish (e.g.,	<i>Response by Brad Culling, Diversified, on behalf of WCCC:</i> As described on page 8-108, there is no evidence to suggest the presence of a resident slimy sculpin population in Blind Creek. Sampling during	Response Satisfactory Issue Addressed	MoE

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	slimy sculpins) are present in Blind Creek.	slimy sculpin tissue collections, referred to on page 8-23, was conducted within wetted portions of the Sukunka River channel at, and immediately downstream of, the mouth of Blind Creek. Because the Sukunka River was at low flow stage at the time of the sampling, the uppermost collections were made in a portion of the channel fed exclusively by Blind Creek discharge. Although this was noted as relevant information at the time of collection, all sculpin were considered part of a Sukunka River localized sub-population as opposed to a resident Blind Creek sub-population (i.e., all slimy capture points lie within the Sukunka River at moderate to high flow stage).		
47	It is not clear how the assumption was made that Mink Creek (Section 8.2.1.6.2) is more important than Blind Creek (see page 8-111) in terms of fish habitat. The author(s) of this sub-section also acknowledge the potential effects of mine operations on surface and groundwater runoff and, therefore, on Mink Creek water quality.	<p><i>Response by Brad Culling, Diversified, on behalf of WCCC:</i> In reviewing Section 8.2.1.6.2 and in particular page 8-111, no direct assertion of the assumption that Mink Creek is more important than Blind Creek was found. However, in comparing the descriptions of Mink Creek and Blind Creek, it is obvious that Mink Creek has much higher fisheries values than Blind Creek. In contrast to Blind Creek, Mink Creek provides approximately 6 times more accessible habitat, contains no impassable barriers, is not subject to channel de-watering, provides over-wintering habitat, supports a resident fish population and provides high quality rearing habitat for the Brazion isolated resident bull trout population.</p> <p>The author of this sub-section acknowledges the absence of predicted (as opposed to potential) effects of mine operations on Mink Creek surface water quality (section 8.2.1.6.2 paragraph 2) due to the absence of surface drainage reporting to Mink Creek from the development footprint.</p>	Response Satisfactory Issue Addressed	MoE DFO
48	The mitigation measures outlined in section 8.2.2.2.2 that discuss the impact prevention plans associated with the discharge of water into Blind	<i>Response by Brad Culling, Diversified, on behalf of WCCC:</i> Fish habitat related concerns for fish species life-history phases are dealt with in greater detail in Section 8.2.2.3.3 including specifics flow conditions expected in Blind Creek.	Response Satisfactory Issue Addressed	MoE DFO

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	Creek do not address adequately habitat-related concerns for fish species life-history phases that were reported earlier in the <i>Application</i> as over-wintering habitat for juvenile rainbow trout (see pages 8-109 – 111).			
49	The proportion of samples established in each of the biogeoclimatic subzones and ecosystem units is useful information that could be provided by WCC. As well, the report could state whether the data has undergone a Quality Assurance/Quality Control (QA/QC) review by a provincial ecologist.	<i>Axys, on behalf of WCCC:</i> A provincial ecologist did not QA/QC the TEM. However, Canfor's PEM underwent a reliability assessment involving 159 plots and received a reliability rating of 84%. <i>WCCC:</i> Based on further discussion with EBA it was indicated that further information on ecosystem units was not needed.	Response Satisfactory Issue Addressed	MoE
50	A map showing the location of the combined sampling points (Canadian Forest Products Limited TEM/PEM Dillon and Brule projects) would be beneficial. The ground inspection (GIFs) and full (FS882) plots marked on the ecosystem map could be numbered. These plots, especially those within the disturbance footprint, provide an important baseline reference for mitigation (reclamation) planning and impact assessment follow-up. The data should be archived as it would in a standard Terrestrial Ecosystem Mapping (TEM) project (i.e., VENUS 5.0 or VPRO XP formats that can be used in the future as mine reclamation reference points).	Agreed WCCC will review this data and incorporate as necessary in the Reclamation Plan for the Brule Mine Permit.	Response Satisfactory Issue Addressed	MEMPR
51	More information that describes the site series and/or ecosystem units could be	Based on further discussion with EBA it was indicated that further information on ecosystem units was not	Response Satisfactory Issue Addressed	MoE

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	provided for each of the LSAs. Ecosystem information is important for comparing pre-disturbance to projected or potential post-mining ecosystems.	needed at this time. Pre-mining ecosystem information will remain in WCCC files.		
52	Biodiversity (species richness and structural diversity) as well as rare plant habitat potential mapping would enhance greatly the baseline portion of the report. A landscape level assessment, when combined with biodiversity mapping and the existing ecosystem mapping, would be a very useful exercise in characterizing the ecological integrity of the area.	<i>Axys, on behalf of WCCC:</i> Biodiversity, including rare plant potential, is addressed to a large degree at the EA level as an inherent element of the description and assessment of the vegetation VECs (old forest, wetlands, and ecological communities of conservation concern). Potential impacts were not judged to be significant. To supplement the baseline information provided, WCCC will conduct additional rare plant inventory work prior to disturbance at all project sites. The ecological integrity of the area is reflected in the EA at the landscape level by the modeling of the three VECs, which represent particularly sensitive elements of vegetation in the region.	Response Satisfactory Issue Addressed	MoE
53	A description of primary and secondary succession could be undertaken to improve the evaluation of RPEs.	<i>Axys, on behalf of WCCC:</i> Principles of primary and secondary succession are incorporated into the EA predictions related to reclamation outcomes (e.g., the contrast between reclamation results on sites that have been cleared only vs. those that have been completely disturbed). <i>WCCC:</i> Based on further discussion with EBA it was indicated that further information on ecosystem units was not needed at this time.	Response Satisfactory Issue Addressed	MoE
54	In order to adequately characterize cumulative effects, it would be useful to consider the landscape changes prior to any development in the area (i.e., the “pristine case” prior to European settlement).	<i>Axys, on behalf of WCCC:</i> Three standard assessment scenarios were used – these scenarios allow the evaluation of pre-Project conditions, and the assessment of incremental Project-related contributions to existing residual cumulative effects. The pristine scenario is typically reserved for areas where the level of existing development is very high, making it necessary to compare the project impacts to pre-development scenarios. In the case of Brule the pristine scenario was not considered necessary.	Response Satisfactory Issue Addressed	MoE

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# ID	Issues Raised	Proponent Response	Review Status	Responsible Agency
55	<p>There is very little detail relating to the field surveys. Some additional information is given in Appendix E. However, it is insufficient to judge the quality and coverage of the field surveys. Perhaps this exists in other reports that have not been appended to the <i>Application</i>.</p>	<p><i>Axys, on behalf of WCCC:</i> Appendix E provides concise summaries of the more detailed field reports completed by Keystone. These reports can be made available to EBA on request.</p>	<p>Response Satisfactory Issue Addressed</p>	<p>MoE</p>
56	<p>Topography Information should be presented that describes the terrain within the study and the significance of the terrain on the modeling. The topography in the study area is mountainous and/or hilly. This has two implications: first, plume heights may be reduced for elevated releases, and second, wind speeds and directions may be strongly influenced by terrain. For this assessment, emission sources may be considered ground level sources; therefore, terrain height adjustments are not important. Terrain influences on meteorology were not considered in this assessment using the ISC mode with CALPUFF. This limits the interpretation of the results to short distances where terrain would not affect direction of wind flows, likely within 5 km of the loading areas.</p>	<p><i>Response by RWDI, on behalf of WCCC:</i> 11.2.1.1 and 11.3.1.1.1. The topography of the region is illustrated in Figure 11.2.1-1. Topography in the loadout study area is discussed in Section G-1.4. Although terrain influences on meteorology were not included in the sense that CALMET was not used to develop 3-D wind fields for every hour of the year, local terrain influences were incorporated by using meteorology representative of the study area (i.e., Pine Valley Coal data) as much as possible. Further, even when CALPUFF is run in ISC mode, the straight-line plume trajectories are adjusted vertically for terrain effects, particularly when using the using the partial plume path adjustment which differs from the treatment of complex terrain that is used in ISC (Section 2.6.2 of CALPUFF Manual, Scire et al, 2000). Based on the Guidelines for Air Quality Dispersion Modeling in BC (Draft), CALPUFF in ISC mode is valid for transport distances up to 50 km</p>	<p>The Independent Consultant noted that the response does not answer the question regarding a description of the topography and the significance of the topographical features on the modelling. The sections referenced (11.2.1.1; 11.3.1.1.1) describe meteorological observations with little consideration of the topography. The topography Figure 11.2.1-1 and section G-1.4 do not describe the significance of the topographical features on modelling predictions. <i>The Independent Consultant concluded this issue is not significant to the conclusion of the report.</i></p>	<p>MoE</p>
57	<p>Meteorology</p>	<p><i>Response by Nicole Vadori, RWDI, on behalf of WCCC:</i></p>	<p>The Independent Consultant response The</p>	

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# ID	Issues Raised	Proponent Response	Review Status	Responsible Agency
	<p>Information should be presented that describes the general climate and specifically the meteorology that will be used to perform the air quality modelling (specifically, wind speeds, directions and atmospheric stability).</p> <p>Climate – precipitation amounts per month have not been tabulated, and their significance has not been outlined as it pertains to natural dust suppression.</p> <p>Meteorology – The terrain is classified as complex; therefore, meteorology at a specific site may not apply to another site. The assessment demonstrates this but does not demonstrate that appropriate data was used.</p> <p>The author(s) noted the meteorology selected for the loading area is poor. They did note that data was not acceptable but used it anyway rather than using a) screening methods to determine worst case air quality, or b) using MM5 or RUCII data for complex terrain assessments.</p>	<p>Precipitation amounts per month are tabulated in Climate, Surface Water hydrology & Groundwater Flows Section (Section 7.2.1.1.3). The monthly precipitation distribution shows that the wettest months are June, July and August and the driest months are February, March, April, May and December. Therefore, natural dust suppression will be greatest during the summer months and least in the spring and winter. However, in winter, snow cover will act as a form of natural dust suppression.</p> <p>Meteorological data for the loadout were not deemed ‘unacceptable’. Rather, it was noted that deficiencies existed in the data records for the three sites closest to the loadout (Section 11.3.1.1). Therefore data from no one station were sufficient for the modeling assessment. It was for this reason that the three data records were combined into a single record for a ‘pseudo station’ that was used for modeling. This process was completed in consultation with the MOE. The method used to combine the record from the three stations is described in Section G-1.2.1 of Appendix G-1 and the derived meteorology was deemed acceptable by the MOE before commenced.</p> <p>With respect to the suggestion of using screening methods to determine worst case air quality, it would not have been possible to model variable hourly emission rates if only screening meteorology had been used. As many of source emission rates are wind-speed dependent, using a single emission rate for all screening meteorology conditions would have resulted in unrealistic model results. For example, using the emission rate resulting from the highest screening wind speed during low wind speed hours would have over-estimated impacts on air quality. Similarly, using an emission rate resulting from lower screening wind speeds during high wind speed hours would have</p>	<p>question was four part:</p> <p>a) Description dispersion meteorology: the response directs the reviewer to the climate section. Dispersion meteorology describes not only wind directions (as presented in Section 11) but also mixing heights and atmospheric stability. These data are not summarized for the report. <i>This issue is not significant to the conclusion of the report.</i></p> <p>b) Climate as it pertains to natural dust suppression: the response notes summer periods where precipitation in terms of rainfall occurs and that in winter snow occurs. Perhaps, the report could summarize observed</p>	

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		<p>greatly underestimated dust concentrations. The only way to realistically combine wind speed dependent emission estimates with associated dispersion conditions was through a more detailed assessment (i.e. a Level 2 assessment).</p> <p>With respect to the suggested use of MM5 or RUCII data, the Guidelines for Air Quality Dispersion in BC (Draft) state that MM5 or other similar options are only suitable when no surface or upper-air observations are available within the model domain. This is clearly not the case as the PVC station is located within the model domain. Further, the only publicly available, model-ready MM5 fields at the time of the assessment were 20-km resolution for the 1995 model year. This resolution is far too coarse to resolve any site-specific effects related to the valley that at most shows a characteristic cross-section scale of about 5 km from peak to basin. The resolution of RUC analyses is similar and would thus be subject to the same issues.</p>	<p>statistics for the number of days between precipitation events and draw references to the significance of these frequencies for natural dust suppression or need for mitigation. <i>This issue is not significant to the conclusion of the report since the proponent will commit to dust suppression as required.</i></p> <p>c) Dispersion meteorology translocation: atmospheric stability and mixing heights vary with complex terrain. No further discussion was provided. BC MOE has approved the meteorology used in the assessment. <i>This issue is not significant to the conclusion of the report.</i></p>	

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# ID	Issues Raised	Proponent Response	Review Status	Responsible Agency
			<p>BC MOE has approved the meteorology used in the assessment. <i>This issue is not significant to the conclusion of the report.</i></p> <p><i>Response Satisfactory</i> <i>Issue Addressed</i></p>	
58	<p>Emissions</p> <p>A complete list of emissions should be tabulated, including amount released. Assumptions were made about the significance of emissions and impacts without completing a list of emissions and demonstrating that the emission rates are insignificant. Principally, the omitted emissions are crustal particulate emissions and diesel exhaust (including NO_x and whole effluent diesel emission). Sieve analyses that demonstrate the size ranges of crustal and pulverized coal sources have not been adequately presented. Mobile sources have been grossly and inappropriately left out of the analysis.</p>	<p><i>Response by, RWDI, on behalf of WCCC:</i></p> <p>The approved terms of reference for the Brule Mine Application requires an assessment of all emissions. It does not specifically require a complete list of amounts of emissions released.</p> <p>All potential sources and types of air quality emissions from the Project are discussed in Section 11.1.4.2. RWDI did not make assumptions regarding the significance of emissions. Rather, as is common practice in BC, the method of assessment of the various emissions was discussed with the MOE prior to commencing the assessment. Based on those discussions, it was agreed that fugitive coal dust emissions would be assessed quantitatively at both the minesite and the loadout but that crustal dust emissions and mobile source emissions would be assessed qualitatively.</p> <p>A quantitative assessment of crustal dust emissions was not required due to the uncertainty in available emission factors. Instead, crustal dust emissions will be managed using best practices as outlined in the air quality and dust control plan (Section 4.10).</p> <p>A quantitative assessment of air contaminants from mobile sources was not required since these emissions are typically short in duration, intermittent and localized.</p> <p>For air quality assessments, information on particle size ranges less than 75 microns is of interest. A sieve analysis of this size range was not available.</p>	<p>The Independent Consultant reported that: No emissions estimates were provided for the mine fleet, other mobile emissions, or crustal component of particulate emissions. BC MOE approved the emissions sources to be assessed quantitatively in the air quality assessment and approved the qualitative assessment of air quality impacts from the above emissions without determining the magnitude of the emissions. The primary issue with the proposed development will be related to particulates, therefore, <i>this issue is not significant to the conclusion of the report</i></p> <p><i>Response Satisfactory</i> <i>Issue Addressed.</i></p>	MoE

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# ID	Issues Raised	Proponent Response	Review Status	Responsible Agency
59	<p>Significance of Emissions</p> <p>Available objectives for each endpoint must be tabulated along with the receptors the objectives are designed to protect.</p> <p>The significance of emissions is not described or related to sensitive receptors (e.g., aquatic, wildlife, vegetation, or humans). The authors assumed that the entire assessment would focus on coal dust without due consideration of impacts or receptors. Coal contains many contaminants such as mercury and other heavy metals. While many are bound in the coal, the coal being pulverized makes the emission potentially more mobile within the environment and its fate within the environment or human host must be carefully considered. Like whole effluent diesel particulate emissions, coal particulates are also low-soluble and may have some similarities toxicologically.</p>	<p><i>Response by Nicole Vadori, RWDI, on behalf of WCCC:</i></p> <p>Ambient air quality criteria are presented in Section 11.1.5.1.</p> <p>The potential significance of air emissions from the Project is described and related to sensitive receptors in Section 11.1.1.</p> <p>As discussed above, RWDI did not simply make assumptions regarding the focus of the assessment. Rather, RWDI consulted with the MOE regarding scope and approach of the assessment.</p> <p>Metals tend to be bound tightly within coal particles both large and small. We are in full agreement regarding the low solubility of coal particulates, which mediates against toxicity in the environment from any contaminants the coal may contain.</p> <p><i>WCCC:</i> Note that the term “pulverized” in relation to the coal being mined relates to the type of coal (i.e. coal that will be pulverized by our customers for injection into blast furnaces). The coal is not pulverized at the minesite.</p>	<p>Significance of emissions: Since only the coal particulate component of the project emissions were considered in the assessment and were considered only for their toxicology relative to their intrinsic particulate concentration, no other consideration of significance was included in the report.</p> <p>See # 71</p> <p>Response Satisfactory Issued Addressed</p>	MoE
60	<p>Selection of Study Area</p> <p>The authors appear to have made pre-determined assumptions regarding emissions and impacts in the selection of sub-study areas. The project is not clearly outlined in the way of maps nor is the adequacy of the study demonstrated with respect to the air quality assessment impacts. Land use surrounding the development areas is not shown nor described.</p>	<p><i>Response by Nicole Vadori, RWDI, on behalf of WCCC:</i></p> <p>The study areas were selected in consultation with the MOE. Results of dispersion modeling (e.g., Figure 11.3.2-1) indicate that the study area for the loadout was sufficiently large since maximum predicted particulate matter concentrations are much less than associated guidelines at the study area boundaries. The surrounding environment and sensitive receptors in the area are discussed in Sections 11.2.1.3, 11.2.1.4, 11.3.1.3, and 11.3.1.4. Land use surrounding the development areas is described in Section 13.</p> <p>Issues raised by the public and First Nations and Kelly Lake Communities in relation to their land uses are</p>	<p>The Independent Consultant response: Selection of Study Area: BC MOE approved the study area in the air quality assessment. Required information can be determined from the sources provided. <i>This issue is not significant to the conclusion of the report.</i></p> <p><i>Response Satisfactory</i></p>	MoE

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# ID	Issues Raised	Proponent Response	Review Status	Responsible Agency
		summarized in Section 2.1.5, 13 and 14.2.2.3.3.	<i>Issue Addressed</i>	
61	<p>Calculation Methods</p> <p>The proposed number of vehicles, speeds, horse-power ratings, driving surfaces, haul loads, crushing rates, and vehicle movement within the property are not tabulated, so a reader cannot follow or check the assumptions. Site plans clearly marking activities and sources are also not provided.</p>	<p><i>Response by RWDI, on behalf of WCCC:</i></p> <p>Information regarding the number of vehicles, speeds, horse-power ratings, driving surfaces, and vehicle movement were not required since mobile and crustal dust emissions were not calculated. Haul loads and crushing rates are identified on process flow diagrams referred to in Section 11. Specifically, the process flow diagrams (Figures 3.4.3-2 and 3.2.4-4) for the loadout and plant site contain the information used in the emission rate calculations. Figure 3.4.3-1 shows the layout of the loadout and Figure 3.2.4-2 shows the layout of the plant site.</p>	<p>Calculation Methods: BC MOE has approved the non-inclusion of crustal particulate (including spilled coal particulate) in the assessment. Other activities included in the assessment are described within the report. <i>This issue is not significant to the conclusion of the report.</i></p> <p><i>Response Satisfactory</i></p> <p><i>Issue Addressed</i></p>	
62	<p>Predicted Air Quality</p> <p>Air quality should be predicted using appropriate models. The <i>Application</i> includes some reasoning for selecting the air quality dispersion model. The model selected is a good model. The <i>Application</i> does not include information on how it was configured; therefore, it cannot be ascertained whether the model was used appropriately.</p>	<p><i>Response by, RWDI, on behalf of WCCC:</i></p> <p>We agree that the CALPUFF model, which was selected for this study, is a good model. Some information regarding model configuration is included in Appendix G.1. In addition, model files were supplied to the MOE for their review and can be made available to this reviewer.</p>	<p>The Independent Consultant response:</p> <p>Air Quality Model Configuration: BC MOE has approved modelling inputs and configuration. Sources of additional information were identified within the report. <i>This issue is not significant to the conclusion of the report</i></p> <p><i>Response Satisfactory</i></p> <p><i>Issued Addressed.</i></p>	MoE
63	<p>Discussion of Results.</p> <p>The <i>Application</i> loses the reader in lengthy discussions of pre-mitigative and post-mitigative emission scenarios. The <i>Application</i> appears to support the acceptance of non-compliance with regards to predicted particulate concentrations as long as there is not a</p>	<p><i>Response by, RWDI, on behalf of WCCC:</i></p> <p>Evaluation of project effects without mitigation measures is a requirement of the BCEAA process. Residual effects of the Project once mitigation measures are implemented are assessed separately. The <i>Application</i> follows the BCEAA methodology. The <i>Application</i> does not support the acceptance of non-compliance with regards to particulate matter</p>	<p>Discussion of Results:</p> <p>There are no residences at the locations where exceedances are predicted. Further, the First Nations primary activities and residences are somewhat removed</p>	MoE

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	<p>resident nearby. Since the <i>Application</i> does not include all of the particulate emissions (missing crustal components and other noted components) and has not considered other human nor environmental health outcomes (e.g., dustfall to vegetation or aquatic sources and uptake through ingestion of food, water or sediments), the fact that off-site particulate levels are predicted to exceed objectives requires more careful assessment or mitigative measures</p>	<p>objectives. Rather, it assesses the significance of predicted exceedances of PM₁₀ and PM_{2.5} objectives. Since these objectives are designed to protect human health, it is relevant that there are no residences at the locations where exceedances are predicted. It is of note that when mitigation measures are included in the assessment, the dustfall objective is not exceeded beyond the property line.</p> <p>Section 8.4.2.3 provides discussion of the impact of dustfall on aquatic resources, and quantifies impacts at the loadout, the area of greatest concern. In summary the results show that worst-case dust inputs could induce TSS levels of 0.048 and 0.019 mg/L for Falling/Beaudette Creeks and the Pine River, respectively. Such levels are well below the maximum allowable TSS inducement of 5mg/L for clear-flow periods. Accordingly, dust inputs emanating from the loadout facility are not predicted to influence the health of aquatic resources in neighbouring water courses.</p>	<p>from the site (greater than 10km). <i>This issue is not significant to the conclusion of the report</i> <i>Response Satisfactory</i> <i>Issued Addressed.</i></p>	
64	<p>Limitations of Assessment. The <i>Application</i> does outline some of the limitations of the assessment, some of which make the assessment incomplete.</p>	<p><i>Response by, RWDI, on behalf of WCCC:</i> It is not clear which limitations the reviewer believes make the assessment incomplete. We believe that the Application meets the requirements of the Approved Terms of Reference and addresses the key issues of concern for this project.</p>	<p>Independent Consultant response: Limitations of the Assessment: The perceived limitations of the assessment noted above and namely: discussion of topography in regards to its affect on the modelling results; meteorological information used in the assessment; emissions from crustal (including spilled coal) source not included assessment; study area selection; crustal dust emission calculations; configuration of the air quality model; have been either acceptable to BC</p>	MoE

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			<p>MOE or are not significant to the conclusion of the report because the primary activities and residence are somewhat removed from the site (greater than 10km). Further limitations as noted in the assessment, regarding qualitative assessment of haul road operations and emissions; and crustal dust emissions will have insignificant impact on First Nations activities if not in the local area.</p> <p>The only outstanding issue to be addressed is the relative toxicity of coal particulates and whether coal particulates should be assessed separately from thresholds set for non-specific (but largely combustion related) particulates.</p> <p>EAO See #71.</p>	
65	<p>Conclusions There are no conclusions in the report. The reader is forced to make his/her own interpretation of the EIA-style impact tables.</p>	<p><i>Response by Nicole Vadori, RWDI, on behalf of WCCC:</i> The residual project effects (RPE) and residual cumulative effects (RCE) tables are discussed at length in Sections 11.4 and 11.5. The overall conclusion of the assessment is that the Project contribution to residual cumulative effects on air quality is not significant.</p>	<p>Independent consultant response: Conclusions: The First Nations primary activities and residences are somewhat removed from the site (greater than 10km). At these locations, air quality predictions (qualitative and</p>	MoE

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			quantitative) suggest that particulate concentrations in the air and dustfall will be at acceptable levels.	
66	The report does not mention the land use within the study area. Therefore, the First Nation’s interests are not clearly described.	WCCC: First Nations land use is described in Sections 13 and 14.	Independent Counsultant response: First Nations Landuse: The First Nations use of the lands within the study area is for “hunting, trapping, fishing, berry-picking and other traditional uses.” Mapping within the EA does not provide specific areas where these activities occur. The qualitative air quality assessment of haul road dust and criteria pollutants indicates that impacts would be limited – near the roadways (100m was used as the qualitative study area). The air quality resulting from emissions of the Brule Mine itself were not assessed, in agreement by BC MOE and will operate under best management practices. <i>Therefore, as long as First Nations use of lands (including hunting, trapping, fishing, berry-picking and other traditional uses) does not include lands within 100m of the haul roadways or immediately adjacent to</i>	MoE

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			<p><i>the Brule Mine (a distance not quantified in the assessment), this issue is not significant to the conclusion of the report. (See also #73). Issue regarding use of resources within 100m of the haul road requires a response from the Proponent.</i></p>	
67	<p>The emissions have not been adequately assessed. It appears the authors have focused efforts on coal particulates as nuisance dust. Therefore, the report appears to trivialize the significance of particulate emissions in the region and the predicted exceedences near the facility fence line.</p>	<p><i>Response by RWDI, on behalf of WCCC:</i> As discussed in response #58, the methodology used to assess emissions (quantitatively vs. qualitatively) was determined in consultation with the MOE. The focus of the assessment was on fine particulate matter due to its potential human health effects. It is for this reason that additional objectives were developed to evaluate PM₁₀ and PM_{2.5} levels at the nearest residences to the Loadout (page 11-2). We disagree that the report trivializes the significance of particulate emissions.</p>	<p>Independent consultant response: Emissions: BC MOE has accepted the scope of the air quality assessment and focused upon the primary emissions of the proposed activities (particulates). The First Nations primary activities and residences are somewhat removed from the site (greater than 10km). At these locations, air quality predictions (qualitative and quantitative) suggest that particulate concentrations in the air and dustfall will be at acceptable levels. This issue is not significant to the conclusion of the report. Response Satisfactory Issue Addressed</p>	
68	<p>There are no clearly labelled maps that highlight activities and projected impacted areas. The report assesses</p>	<p><i>Response by RWDI, on behalf of WCCC:</i> Figures 3.4.3-1 and 3.2.4-2 highlight the locations of activities at the loadout and plant site, respectively. The areas impacted by emissions from the Loadout are</p>	<p>Response Satisfactory Issue Addressed</p>	MoE

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	<p>components of the project but does not consider the project as a whole. The study area is poorly defined.</p>	<p>clearly illustrated in numerous figures in Section 11.3. These figures show that the impact of emissions will be localized and do not extend beyond the Loadout study area. Figure 11.2.1-1 illustrates the relative locations of the two main Project components – the Minesite and the Loadout. These are located sufficiently far apart that there will be no overlap of their emission impact areas.</p> <p>The study area for the Minesite is clearly defined in Section 11.1.3.1 as a circular area with a radius of 10 km centred on the Minesite. The study area for the Loadout is clearly defined in Section 11.1.3.2 as a 20 km by 20 km square centred on the Loadout.</p>		
69	<p>Proper measures to cover haul trucks reduce greatly the effects of truck hauling emissions.</p> <p>Therefore, the company must commit to adequate dust suppression of crustal particulates on haul roads and monitoring.</p>	<p>The haul trucks will be covered during the duration of the haul. Furthermore the problematic areas of the haul route will be watered to maintain dust suppression on an as needed basis.</p>	<p>See #73.</p> <p>Response Satisfactory Issue Addressed</p>	MoE
70	<p>Mobile sources may represent a significant source of contaminants to the environment or human health receptors, especially for heavy-duty diesel operations that operate year round, 24 hours a day, 7 days a week. Principal emissions are nitrogen oxides (NO_x) and whole effluent diesel. The former may pose significant environmental issues near the mine site while the latter is an important and growing concern as noted in recent United States Environmental Protection Agency (EPA) reports in California.</p>	<p><i>Response by RWDI, on behalf of WCCC:</i></p> <p>Emissions from mobile sources are considered by the MOE to be low-risk because they are intermittent and localized. Therefore a quantitative assessment of their emissions was not required. While heavy-duty diesel equipment will be operated 24 hours a day, 7 days a week at the Minesite, they will be more intermittent at the Loadout. Heavy duty diesel equipment at the loadout will include 2 bulldozers, 1 excavator and 1 front end loader. Coal reclaiming and handling activities by mobile equipment will be governed by the train and truck schedules. Haul trucks and trains are also sources of emissions. Under normal operations, 1 train every two days is expected and under expanded operations, the loadout could anticipate 3 trains every two days. Approximately 52 haul trucks per day are</p>	<p>Independent consultant response: BC MOE has accepted the scope of the air quality assessment and focused upon the primary emissions of the proposed activities (particulates).</p> <p>Response Satisfactory Issue Addressed</p>	MoE

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		expected.		
71	Potential environmental and human health risks to pulverized coal have not been included.	Evidence for greater risk from coal dust is either not available or has not been found to be significant.	Response Satisfactory Issue Addressed	MoE
72	Pine Valley Coal meteorology is inadequate for use in assessing the impacts at Falling Creek Flats Loadout, especially in the way it was applied. It results in rotated predicted patterns for 24-hour and annual averages/dustfall.	<p><i>Response by RWDI, on behalf of WCCC:</i></p> <p>As discussed in response #57, the data gaps in the Pine Valley Coal meteorology were filled using data from the two other nearby sites to develop a meteorological time series that was acceptable to the MOE.</p> <p>The predicted concentration patterns are rotated relative to the valley by only 20 to 30 degrees. Rotating the wind rose would not result in an order of magnitude increase of maximum predicted PM_{2.5} and PM₁₀ concentrations at residences. Hence, this refinement would not alter the conclusions of the assessment.</p>	<p>Independent Consultant response: Meteorology Rotated: The meteorology used in the assessment is not site specific to the location within the valley of the study area. It therefore appears rotated approximately 20 to 30 degrees to the orientation of the valley. This results in an underprediction of the air quality concentrations at residence locations distant from the load out area. However, the correct predicted concentrations at these residences would remain lower than the predictions at the unoccupied cabins, where the air quality predictions are acceptable. The First Nations primary activities and residences are somewhat removed from the site (greater than 10km). <i>This issue is not significant to the conclusion of the report.</i></p> <p><i>Response Satisfactory Issue Addressed</i></p>	MoE

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73	Collect and analyze dust samples at an appropriate location along the haul road;	<i>Response by RWDI, on behalf of WCCC:</i> Proposed monitoring sites B3 and FC5 are located near the haul route.	The Independent consultant response: The proposed monitoring sites B3 and FC5, designed to monitor haul road dust levels, are located approximately 1.75km and 300-400m, respectively from the haul roads and/or mine activities. Section 20 of the EA summarizing commitments has not included the statement in Section 13.6.1.3.2 <i>“In response to First Nations concerns regarding the effects of coal haul and other traffic on the Sukunka FSR, WCC will ensure that dust control measures for coal haul traffic are adequate and properly implemented.”</i> Response Satisfactory Issue Addressed Permitting Issue	MoE
74	The meaning of the following sentence is unclear. “The status of Kelly Lake First Nations is not known by WCC.” (p. 14-18). “...traditional land-use information is not included in the AIA report” (p.14.3). Is this to prevent the location of archaeological sites from being made public?	WCCC is aware that the KLFN is not a recognized Treaty 8 signatory. WCCC is not aware of any alternate official status held by the Kelly Lake First Nations, and not informed with respect to activities, if any, to secure official status. Section 12 of the Brule EA Application examines in detail the Traditional Land Use Studies that were conducted with the First Nations and Kelly Lake Communities.	Response Satisfactory Issue Addressed	N/A

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# ID	Issues Raised	Proponent Response	Review Status	Responsible Agency
	Although the list of participation of First Nations in the Traditional Land Use Studies (TLUS) is extensive, the text that describes the results of the TLUS is not.	The TLUS report was written to a level of detail consistent with the objective of protecting information related to TLU and TLU sites.		
75	WCCC should state precisely the setback distances that will be used for the various traditional land-use sites in the <i>Application</i> .	WCCC will determine the distance of set backs for traditional land-use site by consultation with First Nations and Kelly Lake Communities.	Response Satisfactory	MTSA for sites under the <i>Heritage and Conservation Act</i> .