Assigned ID#	Status	Reviewing Agency / Group	Discipline / Topic	Chapter / Appendix	Section / Subsection Number or Appendix Number	Context and Rationale	Advice to Proponent	Comment Date	Proponent Response	Link	Date
NRCan-01	Open	NRCan	Geology/Geochemistry	Chapter 3	Table 3.7-7	The volumes provided in Table 3.7-7 of Chapter 3 allow for the volumes across the 3 principal formations to be evaluated as 2,173 kbcm for the Morrisey Formation, 15,481 kbcm for the Fernie Formation, and 251,585 kbcm (sum of the lithologies presented) for the Mist Mountain Formation. Data for 5 samples from the Fernie Formation are presented in Table 5-3 of Appendix 11C and 12 samples for the Morrissey Formation and 214 samples for the Mist Mountain Formation. Since the Fernie Formation has a tonnage 7x larger than the Morrissey Formation and the Fernie Formation is expected to have more heterogeneity based on the stratigraphy presented in Fig. 2-1 (Appendix 11C), MENDreport 1.20.1 (Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials, 2009)MEND guidelines suggests increasing the number of samples from the Fernie Formation proportionally.	NRCan suggests that the Proponent consider additional samples from the Fernie Formation taken from the drillholes passing through the Fernie Formation within the proposed pit locations for the North, East, and South blocks.	29-Apr-24			
NRCan-02	Open	NRCan	Geology/Geochemistry	Chapter 33	Section 33.5.1.6.11	Section 33.5.1.6.11 of the EIS describes a test dump to be constructed using the same "Layer Cake" technique as the Mine Rock Storage Facility (MRSF). The purpose of the test dump is to provide performance data for the MRSF. The EIS reports that the test dump will be initiated at the onset of mining. Initiation of the test dump and its monitoring is essential for the evaluation of the effectiveness of the "Layer Cake" design in mitigating oxidation and mobilization of selenium, nitrate, and other metals.	NRCan recommends that the test dump construction and monitoring be initiated as soon as possible. The test dump leachate should be predicted using a geochemical model and used to identify Key performance indicators (KPIs) and action triggers. During monitoring of the test dump, leachate at the toe of the test pile should be collected using lysimeters or other means necessary or practicable and regularly compared to the KPIs and used to validate or correct the geochemical model. Exceedance of action triggers should initiate alternative mitigation measures.	29-Apr-24			
NRCan-03	Open	NRCan	s. 19 Factors to be Considered	Chapter 1	Table 1.41 Applicable Federal Permitting and Approval Requirements	Natural Resources Canada has been named incorrectly as the Regulatory Authority for an applicable project activity or component relating to the authorization for nuclear devices such as slurry flow meters. With the information provided, Natural Resources Canada understands the Canadian Nuclear Safety Commission is the Regulatory Authority for the issuing of permits to use nuclear devices.	Natural Resources Canada suggests the proponent contact the Nuclear Substances and Radiation Devices Licensing Division (NSRDLD) of the Canadian Nuclear Safety Commission at Licence-Permis@cnscccsn.gc.ca for further information on obtaining a license to operate nuclear devices.	29-Apr-24			
NRCan-IR-04	Open	NRCan	s. 19 Factors to be Considered	Chapter 20	Section 20.4.2.2, P. 18	The proponent states: "Buildings at the site will be constructed such that they are compliant with the National Building Code of Canada (National Research Council Canada, 2015)".	Please clarify that the latest National Building Code of Canada (NBCC) will be considered in design. Note that there is now a 2020 NBCC. https://earthquakescanada.nrcan.gc.ca/hazard-alea/zoningzonage/NBCC2020maps-en.php	29-Apr-24			
NRCan-IR-07	Open	NRCan	s. 19 Factors to be Considered	Chapter 3	Section 3.7.3.3 Geotechnical considerations. p. 3-50.	The proponent states p. 3-50: "NWP acknowledges that while the Layer Cake method is becoming more common, limited publicly available data currently exists." P. 3-51 "The design criteria are adopted from the Guidelines for Mine Waste Dump and Stockpile Design (Hawley and Cunning, 2017) and consistent with the British Columbia regulatory guidance, including the Interim Guidelines for Mine Waste Rock (BCMWRPRC, 1991, as cited in Stantec, 2020)."	Have the cited design criteria (p. 3-51) been used before for the Layer Cake Method?	29-Apr-24			
NRCan-IR-13	Open	NRCan	5(1)(a)(i) Fish and Fish Habitat	Chapter 11	Tables 4-1, 4-3, 5-2 in Appendix 11C	Tables 4-1 and 4-3 in Appendix 11C indicate 9 samples taken from the Morrissey Formation. The results of 12 samples from the Morrissey Formation are presented in Table 5-2 of the same Appendix. Tables 4-1 and 4-3 in Appendix 11C indicate 221 samples collected from the Mist Mountain Fm. Table 5-2 of the same Appendix presents data for 214 samples.	Verify the accuracy of the values provided in Tables 4-1 and 4-3 in Appendix 11C and provide any necessary corrections to the tables.	29-Apr-24			

NRCan-IR-20	Open	NRCan	5(1)(a)(i) Fish and Fish Habitat	Chapter 3	Appendix A3 Downhole Test Data of Appendix 3B; Appendix A1 Static Test Data of Appendix 3B	The NP/AP values presented in Appendix A3 Downhole Test Data of Appendix 3B do not appear to be consistent with the values presented in Appendix A1 Static Test Data of Appendix 3B.	Verify values reported in Appendix A3 of Appendix 3B and those reported in Appendix A1 of Appendix 3B for consistency and provide any adjustments as needed.	29-Apr-24	
ECCC-IR-16	Open	ECCC	s.79 SARA	Chapter 15	15.5.2.3.1 Carnivore Community – Existing Conditions – Modelling	A high number (i.e., 40-60) of environmental predictor variables were used in predictive habitat suitability modelling for the carnivore VCs. ECCC notes that complicated models with too many variables can be difficult to interpret and may perform poorly.	ECCC recommends that the EIS/A include a description of the sample size that was used to run these habitat suitability models, as well as evidence that would rule out the possibility of overfitting or spurious correlations.	29-Apr-24	
ECCC-IR-30	Open	ECCC	5(1)(a)(iii) Migratory Birds s.79 SARA	Chapter 13	Section 13.6.7 – Project Effects on Wetland Ecosystems	ECCC notes that there appears to be some inconsistencies in the totals provided for loss of wetland habitat in the text of Section 13.6.7 and the information contained in Table 13.6-17. For example, Section 13.6.7 states, “A total of 0.69 ha of wetlands will be removed, consisting of 0.41 ha of marsh wetland (Wm01 and Wm16 site associations) and 0.52 ha of shallow water wetland (Ww and Ww Yellow pond-lily Type; Table 13.6-17)”.	ECCC recommends reviewing and revising the totals for loss of wetland habitat and confirming the total areas of wetland habitat predicted to be impacted by the Project.	29-Apr-24	
ECCC-IR-32	Open	ECCC	s.79 SARA	Chapter 33	33.4.1.13.6 Wildlife Management and Monitoring Plan Table 33.4-44	ECCC notes that the guidelines and buffers listed in Table 33.4-44 are not referenced in the relevant sections of the EIS/A/A (i.e., Chapter 15). If these guidelines are intended to be mitigation measures for particular VCs, they should be included in relevant mitigation measures tables and text in the EIS/A/A, as applicable.	ECCC recommends that the EIS/A/A describe how the guidelines and buffers listed in Table 33.4-44 are considered in the effects assessment for the Project. If they are intended to be implemented as mitigation measures, the mitigation measures tables for relevant VCs should be updated accordingly.	29-Apr-24	
ECCC-IR-55	Open	ECCC	5(1)(a)(i) Fish and Fish Habitat	Chapter 9 Groundwater Assessment	Appendix 9D Characterization of Groundwater - Surface Water Interactions	Impacts to groundwater from surface water may be underestimated due to uncertainty regarding the geographic extent (characterized in the EIS/A as “local”) and magnitude (characterized in the EIS/A as “low”) of the residual effect “Changes to Groundwater Quality due to Infiltration of Contact Water (i.e., Surface Water and Mine Site Drainage) to Groundwater”. For example: a) The spatial boundaries for the groundwater LSA do not include all areas potentially impacted by the Project that might contribute contact surface water to groundwater (Figure 9.2-1). For example, there are Project components located outside of the LSA, including the site access road, rail loop, clean coal stockpile and truck dump, and rail loadout road. b) Groundwater modelling suggests near surface seepage would not extend beyond 500 m down-gradient of MRSF within 100 years (with deeper bedrock seepage travelling a maximum of 1000m in the same time period; page 9-121). Table 9.4-11 indicates hydraulic horizontal conductivity ranging from 4 x 10-2 to 9 m/day, meaning it is likely that groundwater seepage could travel further than 500 to 1000 m in 100 years. The furthest downstream well (GW-1-A/B) in the Alexander Creek drainage is just 4 km downstream of the toe of the MRSF dam and spillway, in an area of groundwater recharge (Figure 9.4-15). It is possible that groundwater seepage could discharge to surface water further than 4km downstream due to stated hydraulic horizontal conductivities (Table 9.4-11).	ECCC recommends the installation of an additional downstream well in the Alexander Creek drainage to monitor whether groundwater discharges in areas further downstream in Alexander Creek. See also related comment in IR WATER-06-g.	29-Apr-24	
ECCC-IR-90	Open	ECCC	5(1)(a)(i) Fish and Fish Habitat		Appendix 20 Climate Change Impact Assessment	Appendix 20B presents a table that lists the identified climate risks for the Project. ECCC notes that some risks described in Appendix 20A are not included in the table in Appendix 20B. Additionally, the list of recommended adaptation measures in Appendix 20C does not provide measures for all risks identified for the Project.	ECCC recommends that the Proponent update Appendix 20B to include all risks associated with climate change that are identified in Appendix 20A. ECCC also recommends that Appendix 20C include recommended adaptation measures for each of the risks highlighted in Appendix 20B.	29-Apr-24	

ECCC-93	Open	ECCC	s.79 SARA	Chapter 15	15.6.2.2 Bat Community – Baseline Programs	Acoustic and live capture sites are strongly biased to little brown myotis detections. The Mammal Report (Appendix 15 B Baseline Survey Report Mammals) acknowledges the targeting of live capture to little brown Myotis is an important data gap, but does not acknowledge this information gap for acoustic sampling. This bias becomes problematic when acoustic data results are interpreted as northern myotis and red bats being present in relatively low abundances. Although there is a relationship between echolocation activity and abundance,this relationship is dependent on a number of factors (e.g., species-specific detection probabilities, site type being sampled such as open areas vs. forest interior, etc.) such that bat population abundance should not be inferred from acoustic activity levels alone, particularly when making inferences that these two species are present in low abundance at a site. With northern myotis being detected, additional acoustic sampling to assess presence of northern myotis (or other species) is recommended in the strata of forest stands identified as ESSFdk1. This Biogeoclimatic Ecosystem Classification variant of forest stands composes the majority of the Project footprint and would be lost to mining operations (see ECCC-94 below about flexibility in forest stand use across the species range in discussion of modelling). Further, acoustic sampling occurred at sites ranging from one to 18 nights, primarily in one summer season with a few additional nights in autumn/winter. This represents a low effort overall in relation to making recommendations on habitat use and seasonal patterns in activity and habitat use. It is recommended to have sampling occur year-round (e.g., minimum of one full year) to effectively assess seasonal patterns of activity.	ECCC recommends that the Proponent consider increased and alternative sampling protocols for assessing the presence and abundance of species other than little brown myotis, or otherwise account for potential underestimation of the abundance of other at-risk bat species.	29-Apr-24
ECCC-94	Open	ECCC	s.79 SARA	Chapter 15	Appendix 15 C, Section 1.2.5.14 Bat Modeling	Using little brown myotis data to assess at-risk bat habitat needs, availability, and loss for Northern myotis introduces uncertainty into the assessment. Northern myotis maternity colonies are typically smaller in size, meaning they may be able to use different forest stands that contain different tree species, trees with smaller overall diameter at breast heights, or trees in lower decays classes than little brown myotis. They also occupy northern boreal forests in other parts of their range where stands may be dominated by smaller sized coniferous species in more open canopy stands, which could be analogous to higher elevation forest stands at more southerly latitudes.ECCC notes that the Project footprint has high forest cover of “Medium” ranked habitat, which could be habitat for northern myotis that will be lost to mining operations. The habitat assessment may produce different results if metrics included the rating scheme habitat ranked as “Medium” (2), in addition to “High” (1).	ECCC recommends that the Proponent consider alternative classifications for habitat rankings given the uncertainty around Northern myotis habitat use in this area of BC.	29-Apr-24
ECCC-95	Open	ECCC	s.79 SARA	Chapter 15	15.6 Bat Community	Silver-haired, hoary and eastern red bats have been assessed by COSEWIC as endangered (2023) and are currently under consideration for addition on Schedule 1 (listing as endangered) under SARA. Acoustic surveys detected these species at the Project site, and hoary and silver-haired bats were also confirmed through live capture. Silver-haired bats were detected in autumn/winter acoustic surveys. and recent work (de Freitas 2023, Lausen et al. 2022) has described silver-haired bat winter hibernacula as including several species of trees,in addition to underground sites, in southern British Columbia. Current considerations for winter hibernacula in the assessment are biased to underground sites only (rock; primarily for little brown myotis). References: de Freitas, E. 2023. Winter roosting ecology of silver-haired bats (Lasionycteris noctivagans) in southern British Columbia. doi: https://doi.org/10.24124/2023/59414Lausen, C. L. L., D. W. Nagorsen, R. M. Brigham, and J. Hobbs. 2022. Bats of British Columbia, 2nd Edition. Royal Museum of British Columbia, Victoria, British Columbia, Canada.	ECCC recommends that the Proponent consider the potential for Project effects on tree-based hibernacula for silver-haired, hoary and eastern red bats.	29-Apr-24
ECCC-96	Open	ECCC	s.79 SARA	Chapter 15	Appendix 15 C, Section 1.2.5.14 Bat Modeling	The karst layer of the Digital Elevation Model (DEM) may omit rocky outcrops that are of different rock types (e.g., non-karst) and thus be biased to cave structures. Further, it is possible rocky substrates may be missed in the DEM by applying the filter of >= 0.3 high terrain ruggedness. Rock hibernation sites are only recently being described for little brown and northern myotis in western North America, but in some cases appear in more gently sloped areas (depending on the rock substrate type) and are not restricted to only large talus or scree fields associated with highly steep terrain.	ECCC recommends that the Proponent consider the potential suitability of other rock hibernation sites for at-risk bat species	29-Apr-24

ECCC-97	Open	ECCC	5(1)(a)(iii) Migratory Birds s.79 SARA	Chapter 15	15.7.2 Bird Community – Existing Conditions	Methods presented in the EIS/A may not accurately estimate known occurrences and abundance of migratory birds. ECCC notes the following: • In western North America, birds make regular post-breeding movements from lower elevation to high elevation areas to take advantage of later pulses of food availability. Surveys were not conducted to evaluate avian use of the Project area during this period, therefore effects on lower elevation breeding birds are unknown. • There is high within-season variability in migratory movements, so surveys conducted during fall migration are insufficient to evaluate abundance and distribution of birds using the Project area for fall migratory stopovers. High mountain ridges and valleys funnel bird migratory movements and therefore large numbers of avian migrants may also fly over or near the Project site. • Nocturnal passage migrants are highly vulnerable to light attraction, disorientation and collisions with structures due to floodlighting during nighttime mining operations. • Traditional point count surveys and transects do a poor job of surveying Black Swifts, because of low detectability. This species requires specialized surveys (Levesque et al. 2023, Rock et al. 2021) and therefore their presence is likely underestimated. References: Levesque, P.G., Feldman, R.E., Rock, C.A. and Gross, W.E., 2023. Optimizing survey timing for detecting a declining aerial insectivore, the Black Swift (Cypseloides niger borealis). Avian Conservation and Ecology, 18(2). Rock, C., P. G. Levesque, and W. E. Gross. 2021. Black swift survey protocols in Canada: site occupancy, nest searching, and site habitat. Environment Canada, Canadian Wildlife Service, Delta, British Columbia, Canada. https://doi.org/10.13140/RG.2.2.21197.36322/1	ECCC recommends that the Proponent consider shortcomings in the methods used to estimate known occurrence and abundance of migratory birds, and account for these uncertainties in the assessment of Project effects. For Black Swifts specifically, ECCC recommends the Proponent to consider specialized survey protocols (Levesque et al. 2023, Rock et al. 2021).	29-Apr-24
ECCC-98	Open	ECCC	5(1)(a)(iii) Migratory Birds s.79 SARA	Chapter 15	15.7.2.3 Bird Community - Modeling	The EIS/A indicates that Barn Swallows are not expected to be affected by disturbance, as the species will likely not occur near the Project footprint due to a lack of "barns, houses or garages". However, bridges and culverts are present, and these can be quickly colonized by one or more pairs. Equipment and other structures are likely to also be present within the Project footprint and the LSA that could attract nesting Barn Swallows.	ECCC recommends that the Proponent consider the possibility of barn swallow presence, including barn swallow nests, in the LSA and potential impacts of disturbance on barn swallow habitat.	29-Apr-24
ECCC-99	Open	ECCC	5(1)(a)(iii) Migratory Birds s.79 SARA	Chapter 15	15.7.3.2 Bird Community – Project Effects	The risk of feather soiling and drowning by migrant waterfowl in sedimentation ponds is not addressed as a possible source of mortality. ECCC notes that measures to exclude waterfowl from contaminated open ponds are challenging to successfully implement.	ECCC recommends that the Proponent consider feather soiling and drowning in sedimentation ponds as a possible source of mortality from the Project.	29-Apr-24
ECCC-100	Open	ECCC	5(1)(a)(iii) Migratory Birds s.79 SARA	Chapter 15	15.7.2 Bird Community – Existing Conditions	Occurrence records of species at risk, such as Olive-sided Flycatcher, indicate high local suitability of habitat both within the Project footprint and surrounding Local Study Area. These patterns of habitat use do not seem to be well captured by the habitat occupancy model used by the Proponent that is the basis of their effects assessment. For example, according to Appendix 15-E Figure 3-2 there are a high number of observations of Olive-sided Flycatcher immediately north of Gaff Peak, however this area is classified as Low and Moderate habitat suitability in Figure 15.7-17.	ECCC recommends that the Proponent provide further information related to the performance of habitat occupancy models for Olive-sided Flycatcher, including explanations for why areas with multiple observations are not classified as high suitability habitat.	29-Apr-24
ECCC-101	Open	ECCC	s.79 SARA	Chapter 15	15.5.1.1.3 Carnivore Community – Regulatory and Policy Considerations – American Badger	The EIS/A references the Recovery Strategy for the American Badger in British Columbia (2016) developed by the Province of BC in Section 15.5.1, and not the more recently published federal Recovery Strategy for the American Badger jeffersonii subspecies (Taxidea taxus jeffersonii) Western population and Eastern population in Canada (ECCC 2021). Reference: Environment and Climate Change Canada. 2021. Recovery Strategy for the American Badger jeffersonii subspecies (Taxidea taxus jeffersonii) Western population and Eastern population in Canada [Proposed]. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. 2 parts, 20 pp. + 36 pp. Available at: https://www.canada.ca/en/environment-climatechange/services/species-risk-public-registry/recovery-strategies/american-badger-west-east-proposed-2021.html#toc1	ECCC recommends that the EIS/A reference the more recent federal Recovery Strategy for the American Badger jeffersonii subspecies (Taxidea taxus jeffersonii) Western population and Eastern population in Canada (ECCC 2021). This document should also be consulted to confirm whether the data, methods, and objectives set out in the EIS/A are consistent with the Recovery Strategy	29-Apr-24

ECCC-102	Open	ECCC	s.79 SARA	Chapter 15	15.5.2.2.1 Carnivore Community – Baseline Programs – Summary of Methods	Table 15.5-8 of the EIS/A states that badger burrow surveys were conducted in July and August and that hair snagging surveys were conducted between January and May. The EIS/A also references Resources Information Standards Committee (RISC) survey standards from 1999. These methods do not reflect updated RISC standards for badgers (RISC 2007), which states that the probability of detecting badger burrows is highest in early spring when snow has melted, and vegetation has not grown to obscure the burrow. It also recommends that the most appropriate season to snag hair is from mid-spring to late summer when badgers shed their winter hair and their movements between burrows are more frequent. ECCC notes the EIS/A states "there were no active or recently used burrows, or burrows indicative of maternal denning found within the Project footprint", however results in Table 15.5-14 indicate that 10 active burrows and 73 inactive burrows were observed in the LSA. Additional surveys for American method using RISC 2007 methods would provide a more accurate understanding of the American badger presence and use of the Project footprint and LSA. Reference: Ministry of Environment Ecosystems Branch for the Resources Information Standards Committee. 2007. Inventory Methods for Medium sized Territorial Carnivores: Badger. Standards for Components of British Columbia's Biodiversity No. 25a. Available at: https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/nr-laws-policy/risc/badger.pdf	ECCC recommends that survey methods follow guidance outlined in the most recent version of RISC standards for badger published in 2007. ECCC recommends additional American badger surveys be conducted (according to the methods outlined in RISC 2007) to verify the finding that no active or recently used burrows, or burrows indicative of maternal denning, were found within the Project footprint.	29-Apr-24
ECCC-103	Open	ECCC	s.79 SARA	Chapter 15	15.5.3.1 Carnivore Community – Project Effects Assessment – Thresholds for Determining Significance of Residual Effects	Page 15-204 of the EIS/A states "a significant adverse residual environmental effect on the carnivore community is one where the Project: • Causes the non-permitted contravention of any of the prohibitions stated in Sections 32 to 36 of the Species at Risk Act including injury, harassment, or mortality of a carnivore species at risk; • Results in the non-permitted loss of critical habitat for carnivore species at risk; or • Causes a decline in abundance or change in distribution of carnivore populations such that the populations will not be sustainable in the Terrestrial or Grizzly Bear RSA." ECCC notes that the Project footprint overlaps with Final Critical Habitat for American badger jeffersonii subspecies (ECCC 2021), and these impacts should be considered in the significance determination for residual adverse environmental effects. Reference: Environment and Climate Change Canada. 2021. Recovery Strategy for the American Badger jeffersonii subspecies (Taxidea taxus jeffersonii) Western population and Eastern population in Canada [Proposed]. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. 2 parts, 20 pp. + 36 pp. Available at: https://www.canada.ca/en/environment-climate change/services/species-risk-public-registry/recovery-strategies/american-badger-west-east-proposed-2021.html#toc1	ECCC recommends that the significance determination for American badger consider the loss of Critical Habitat as identified in the Recovery Strategy (ECCC 2021).	29-Apr-24
ECCC-104	Open	ECCC	s.79 SARA	Chapter 15	15.5.3.2.1 Carnivore Community – Project Effects Assessment – Project Interactions	Page 15-205 the EIS/A states, "the key interactions resulting in potential significant adverse effect or significant concern (indicated as level III in Table 15.5-25) are primarily those involving habitat loss or alteration." Activities related to transportation and ground disturbance are not included as level lll in Table 15.5-25, however ECCC notes that grizzly bears are at risk of increased mortality and decreased habitat connectivity from increases in mine-related traffic throughout the life of the mine. Also, activities involving ground disturbance and excavation increases the risk of mortality for American badger and wolverine, and their prey, and will result in habitat loss.	ECCC recommends that activities related to transportation, road construction, and ground disturbance be considered a significant concern (level lll) in Table 15.5-25 for carnivores adversely impacted by: • traffic (e.g. grizzly bear and American badger); and • ground disturbances including, but not limited to, excavation (e.g. American badger and wolverine).	29-Apr-24

ECCC-105	Open	ECCC	s.79 SARA	Chapter 15	15.5.3.2.3 Carnivore Community – Project Effects Assessment – Discussion of Potential Effects	Page 15-216 of the EIS/A states, “tall and steep snowbanks from snow clearing along access roads may be a barrier to carnivore VCs in the winter.” ECCC notes that mitigation measures such as clearing gaps in snow banks to allow wildlife to cross at identified wildlife corridors can prevent changes in movement and loss of habitat connectivity for carnivore VCs.	ECCC recommends that additional mitigation measures be implemented to reduce barriers to carnivore VCs resulting from snowbanks, such as clearing gaps to allow wildlife to cross at identified wildlife corridors.	29-Apr-24
ECCC-106	Open	ECCC	s.79 SARA	Chapter 15	15.5.3.2.3 Carnivore Community – Project Effects Assessment – Discussion of Potential Effects	Page 15-217 of the EIS/A states, “public access along Grave Creek Road will be maintained during all Project phases and after closure. This may provide increased access to hunters.”	ECCC recommends that the Proponent consider additional measures (e.g. signage, gates, road blocks, etc.) to mitigate Project effects to grizzly bears resulting from human-grizzly bear interactions and hunting.	29-Apr-24
ECCC-107	Open	ECCC	s.79 SARA	Chapter 15	15.5.3.3.1 Carnivore Community – Project Effects Assessment – Mitigation Measures for Habitat Loss and Degradation	Page 15-219 of the EIS/A states, “the mitigation measures described above will contribute to minimizing the effects of habitat loss and degradation on carnivore VCs with moderate effectiveness. These measures will not eliminate all effects and there will be a residual effect of habitat loss and degradation on carnivore VCs as a result of the Project.” Habitat offsetting can be implemented for residual effects to habitat loss and degradation. The Operational Framework for the Use of Conservation Allowances (Environment Canada 2012; hereafter the Framework) sets the parameters, based on existing legislated authorities, practice and policy, for how and when conservation allowances (offsets) should be used or recommended by ECCC. The Framework states that the choice of ratio for each offset proposal is case-specific and should be at least 2:1 and “there will be instances where much higher ratios are appropriate”. ECCC typically recommends a minimum offset multiplier of 4:1 (offset outcome:residual impact). This is a benchmark ratio applied to a project that is in the lower end of the risk spectrum; for example, for a project with a low severity impact adversely affecting a low vulnerability ecological component. In general, the minimum 4:1 multiplier accounts for timelags to restoration, uncertainty in outcomes, a precautionary approach, and the adverse impact itself in its specific context. Offset multipliers are variable and determined by project-specific circumstances and associated risks and uncertainties. Note that American badger is listed as Endangered under SARA and therefore all offsetting actions should be consistent with the species’ Recovery Strategy. References: Environment Canada. 2012. Operational Framework for Use of Conservation Allowances. Available at: https://publications.gc.ca/site/eng/9.696852/publication.html	ECCC recommends that, in addition to existing mitigation measures, habitat offsetting be implemented for grizzly bear and American badger habitat loss and degradation.	29-Apr-24
ECCC-108	Open	ECCC	s.79 SARA	Chapter 15	15.5.3.3.4 Carnivore Community – Project Effects Assessment – Mitigation Measures for Increased Mortality Risk	Page 15-222 of the EIS/A states “prior to blasting at pits, the blast area will be searched for the presence and wildlife and cleared from the area, if necessary;” as a measure to mitigate the impact of increased mortality risk on carnivore VCs.	ECCC recommends that all wildlife surveys be conducted by a qualified environmental professional with the relevant experience in a field related to the species being surveyed.	29-Apr-24
ECCC-109	Open	ECCC	s.79 SARA	Chapter 15	15.5.5.3 Carnivore Community – Follow-Up Strategy	Tables 15.5-2, 15.5-3, 15.5-4, and 15.5-5 of the EIS/A include recommended guidelines for management of grizzly bear, wolverine, and American badger, based on various land use plans for the region, best management practices, and government guidance documents. However, several of these recommendations have not been included in the mitigation measures described in Section 15.5.3.3	ECCC recommends all feasible best practices and mitigation measures outlined in Tables 15.5-2, 15.5-3, 15.5-4, and 15.5-5 be included in Section 15.5.3.3 of the EIS/A, or a rationale provided for their exclusion.	29-Apr-24

ECCC-110	Open	ECCC	s.79 SARA	Chapter 15	15.5.3.4.2 Carnivore Community – Characterization of Residual Effects, Significance, Likelihood, and Confidence – Grizzly Bear	On page 15-230 of the EIS/A, the magnitude of the residual effect of habitat loss and degradation on grizzly bear is stated as “low, there will be up [to] 3.7% loss of high-quality grizzly bear habitat (fall) in the Terrestrial LSA.” ECCC notes that the assessment of magnitude has only taken into consideration impacts to fall habitat, though there are additional losses to spring and summer habitat up to 3.3% and 2.2% respectively (Table 15.5-28).	ECCC recommends that the characterization of residual effects to grizzly bear from habitat loss and degradation consider Project effects on all habitat types.	29-Apr-24
ECCC-111	Open	ECCC	s.79 SARA	Chapter 15	15.5.3.4.2 Carnivore Community – Characterization of Residual Effects, Significance, Likelihood, and Confidence – Grizzly Bear	Page 15-230 of the EIS/A states that the geographic extent of the effects to grizzly bear from habitat loss were categorized as “discrete, as the effect of habitat loss will be within the Project footprint only.” ECCC notes that the Project footprint itself is large and encompasses an entire drainage basin over 1000 ha (1282 ha). In addition, there may be indirect effects of loss of habitat that extend beyond the Project footprint into the LSA. These effects could be considered “local” in their extent, given local effects are defined as, “the effect will extend outside the Project footprint but within the Terrestrial LSA”	ECCC recommends the characterization of geographic extent for loss of grizzly bear habitat consider the potential for Project effects occurring beyond the Project footprint and into the Terrestrial LSA.	29-Apr-24
ECCC-112	Open	ECCC	s.79 SARA	Chapter 15	15.5.3.4.2 Carnivore Community – Characterization of Residual Effects, Significance, Likelihood, and Confidence – Grizzly Bear	Page 15-235 of the EIS/A states: “The Terrestrial LSA has approximately 317.9 km of existing roads. This includes 2.4 km of highway, 1.8 km of paved, and 313 km of gravel roads. This is a road density of 1.31 km/ km2… The total amount of new linear disturbance is therefore 5.9 km. This represents 1.9% of additional linear disturbance in the Terrestrial LSA.” The magnitude of the residual effect to grizzly bear from disruption to movement is then characterized as “Moderate, given the semi-permeable nature of the linear infrastructure.” ECCC notes that existing linear feature density in the Elk Valley is already over the threshold for grizzly bear requirements, and that anadditional 1.9% of new linear disturbance will cumulatively impact movement and habitat connectivity. As stated in Section 15.5.2.1.1 on page 15-160 of the EIS/A, “A road density threshold of 0.6 km/km2 is the established maximum value that should not be exceeded to maintain grizzly bear habitat values (including security and movement; Proctor et al., 2018). The majority of sub-basin watersheds in the central and southern portions of the Elk Valley exceed a road density of 1.2 km/km2 (Mowat et al., 2018).” Construction of new roads, conveyor belts, and transmission lines, as proposed, may adversely impact the habitat connectivity for grizzly bears specifically between areas of very high habitat suitability on the north and south sides of the proposed Grave Creek Road.	ECCC recommends that the characterization of magnitude of residual effects to grizzly bear from disruption to movement consider the maximum recommended road density threshold of 0.6 km/km2.	29-Apr-24

ECCC-113	Open	ECCC	s.79 SARA	Chapter 15	15.5.3.4.4 Carnivore Community – Characterization of Residual Effects, Significance, Likelihood, and Confidence – American Badger	ECCC notes the following discrepancy in the EIS/A regarding American badger habitat use: • Page 15-249: "American badger generally avoid areas with high road density." • Page 15-165: "American badgers use roadsides because these habitats offer friable soils for burrowing and quality forage (grass) that their prey are attracted to (Weir et al., 2004; COSEWIC, 2012b; Klafki, 2014). Roads facilitate movements and cut banks expose soil deposits that are readily used for burrowing (COSEWIC, 2012b; Klafki, 2014). Since American badgers frequently use roadsides for denning and foraging, it increases the vehicle collision morality risk to individuals when roads are built in their habitat." ECCC notes that American badgers are known to occur near roadways due to the favourable soil conditions, prey availability, and exposed cut banks, as noted on page 15-165 of the EIS/A and in the Recovery Strategy for American badger (ECCC 2021). American badger have also been observed in the Project footprint along Grave Creek Road. Reference: Environment and Climate Change Canada. 2021. Recovery Strategy for the American Badger jeffersonii subspecies (Taxidea taxus jeffersonii) Western population and Eastern population in Canada [Proposed]. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. 2 [arts, 20 pp. +36pp. Available at: https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/recovery-strategies/american-badger-west-east-proposed-2021.html#toc1	ECCC recommends that the characterization of residual effects to American badger from disruption of movement and mortality risk from vehicle collision consider badger use of new and existing roadsides for denning, finding prey, and movement.	29-Apr-24
ECCC-114	Open	ECCC	s.79 SARA	Chapter 15	15.5.4.2 Carnivore Community – Cumulative Effects Assessment – Temporal Boundaries 14.7.3 Cumulative Effects Assessment – Identifying Past, Present, and Reasonably Foreseeable Projects and/or Activities	Page 15-274 of the EIS/A states: "As noted in Chapter 5, Section 5.3.5.3, the following projects were considered as past, present, or reasonably foreseeable future projects or activities in the cumulative effects assessment but were not included: • Coal Mountain Phase 2, as the environmental assessment was placed on hold by Teck Coal Limited in 2016; • Mount Brussilof (Baymag Mine) by Baymag, due to no temporal overlap; • Barnes Lake Phosphate Exploration Project by Fertoz International Inc., given that the project is in exploration phase and noproject has been proposed; and • Cabin Ridge Coal by Warburton Group is in exploration and no project has been proposed." Page 14-88 of the EIS/A references includes a similar statement. ECCC notes that projects that are proposed, under review, or are foreseen to be proposed may have undertaken activities during the exploration phase that could be harmful to vegetation and wildlife VCs, such as clearing or blasting of test sites, and may contribute to cumulative effects. For example, the Baymag Mine appears to have been recently or currently operational, and given the time required for restoration activities for this Project, ECCC is of the view that the Baymag Mine should be considered a past or current project that may contribute to cumulative effects on both the wildlife and vegetation VCs.	ECCC recommends that the cumulative effects assessments for vegetation and wildlife VC's consider activities undertaken by past, present, or reasonably foreseeable future projects that may contribute to cumulative effects for these VCs.	29-Apr-24

ECCC-115	Open	ECCC	s.79 SARA	Chapter 15	15.5.4.4.2 Carnivore Community – Cumulative Effects Assessment – Grizzly Bear	In the Proponent's characterization of residual cumulative effects to grizzly bear from disruption to movement, page 15-286 of the EIS/Astates "while each of the existing and reasonably foreseeable future projects and activities may block movements to varying degrees, they are geographically separated from the Crown Mountain Coking Coal Project such that additive barriers with the Project are limited". ECCC notes, and as stated in Section 15.5.2.1.1 of the EIS/A, the linear feature density in the Elk Valley is already twice the recommended maximum road density threshold of 0.6 km/km2required to maintain grizzly bear habitat values (including security and movement;Proctor et al., 2018). The majority of sub-basin watersheds in the central and southern portions of the Elk Valley exceed a road density of 1.2 km/km2(Mowat et al., 2018). ECCC is of the view that any additional linear features will be additive. Furthermore, Figure 15.5-34 demonstrates that several mines are oriented in a north/south direction with small gaps in between. The addition of the Project may reduce size of the central most gap in this series of mines, increasing the likelihood that grizzly bear will avoid this area and possibly limit east to west movement across the region.	ECCC recommends the Proponent consider the Project's additive impact to linear feature density as well as the geographical addition of the Project in relation to other mines in the region, with respect to characterizing residual cumulative effects to grizzly bear from disruption to movement. In considering this, ECCC recommends the Proponentdescribe if/how the characterization of residual cumulative effects changes, and if there is any change to the significance determination for grizzly bear.	29-Apr-24
ECCC-116	Open	ECCC	s. 19 Factors to be Considered	Chapter 21	21.4.2.2 Release of Hazardous Materials – Mitigation Measures 21.4.2.3.6 Characterization of Residual Effects – Terrestrial Ecosystems and Vegetation 21.4.2.3.7 Characterization of Residual Effects – Wildlife	Page 21-11 of the EIS/A states that an accidental release of hazardous materials within and outside the Project footprint may occur and interact with wildlife through direct contact, alteration of habitat and food availability, and sensory disturbance during the subsequent spill response and restoration activities and that vegetation and terrestrial ecosystems may be affected.	ECCC recommends that prevention and mitigation measures to limit or minimize potential effects from an accidental release of hazardous materials should reference and incorporate relevant existing provincial and federal legislation, policy and guidelines, including into the proposed plans listed in Section 21.4.2.2 of the EIS/A, where relevant. ECCC also recommends that emergency response plans incorporate elements outlined in the Government of Canada's Wildlife Emergency Response Framework, available at: https://www.canada.ca/en/services/environment/wildlife-plantsspecies/national-wildlife-emergency-framework.html.	29-Apr-24
ECCC-117	Open	ECCC	s. 19 Factors to be Considered	Chapter 21	21.4.2.3.7 Release of Hazardous Materials – Characterization of Residual Effects – Wildlife	Page 21-16 of the EIS/A states "Many wildlife species are mobile and are expected to avoid an area affected by a spill, while other species, such as invertebrates or small rodents, may not be able to effectively avoid an affected area." ECCC notes there are other species groups that may have limited mobility to avoid an area affected by a spill, including those with seasonal or location-specific site fidelity as well as those in less mobile life stages (e.g., breeding locations, larval/pre-fledgling individuals, etc.)	ECCC recommends that this section account for all relevant species groups that may have limited mobility to avoid an area affected by a spill when assessing Project effects and identifying mitigation measures.	29-Apr-24
ECCC-118	Open	ECCC	s. 19 Factors to be Considered s.79 SARA	Chapter 21	21.4.7.2 Effects Assessment of Accidents or Malfunctions –Wildlife Encounter – Mitigation Measures	With respect to the list of mitigation measures to reduce or eliminate the potential for a wildlife encounter on page 21-41 of the EIS/A, ECCC recommends the addition of a mitigation measure regarding the potential for repeated problematic wildlife encounters.	ECCC recommends that this list be updated to include the following measure: • If repeated problematic wildlife encounters occur, non-invasive deterrence measures may be developed and implemented in consultation with the appropriate federal, provincial, and Indigenous governments.	29-Apr-24
ECCC-119	Open	ECCC	s.79 SARA	Chapter 15	15.8.2.3.1 Amphibian Community – Existing Conditions – Modelling Methods	ECCC notes that the EIS/A only includes habitat suitability models for the spring-summer distribution of Western Toad and Columbia Spotted Frog and overwintering/hibernation habitat requirements are not included. Therefore, it is possible these activities could be occurring in higher quality habitat than what has been estimated. Furthermore, amphibians are inconspicuous during hibernation/overwintering, further increasing the risk of mortality during this period.	ECCC recommends the Proponent include an assessment of overwintering/hibernating habitat for Western Toad and Columbia Spotted Frog, including the design of mitigation measures to address seasonal sensitivities.	29-Apr-24

ECCC-120	Open	ECCC	s.79 SARA	Chapter 15	15.8.3.2.1 Amphibian Community – Project Effects Assessment – Project Interactions Table 15.8-5	ECCC notes that several of the Project components listed in Table 15.8-5 are categorized as having no or negligible effect and are not carried forward in the assessment. Activities such as transportation, clearing and grubbing, the widening and upgrading of roads, and installation of the powerline and natural gas line, may increase both habitat loss and the risk of mortality to amphibians.	ECCC recommends the following: a) The Proponent evaluate all Project activities that may have adverse effects on amphibians, including but not limited to, transportation, clearing and grubbing, widening and upgrading of roads, and installation of the powerline and natural gas line. The rankings in Table 15.8-5 should be updated accordingly. b) Mortality risk to amphibians be carried forward, including, but not limited to, the assessment of effects due to transportation, clearing and grubbing, the widening and upgrading of roads, and installation of the powerline and natural gas line.	29-Apr-24
ECCC-121	Open	ECCC	s.79 SARA	Chapter 15	15.8.3.2.3 Amphibian Community – Project Effects Assessment – Discussion of Potential Effects	Habitat suitability models predict very low habitat suitability for both Western Toad and Columbia Spotted Frog in the majority of the mine site footprint (Table 15.8-3 and Table 15.8-4). ECCC advises that, due to the lack of inclusion of overwintering habitat for these species, it is possible that these models underestimate habitat suitability (and thus Project interactions and effects may also be underestimated). While some of the habitat in the Project footprint was rated low for Western Toad, several adults and a toadlet were found within these boundaries, indicating that amphibians are found in this area and there is a potential risk of mortality from Project activities.	ECCC recommends that the Proponent: a) include overwintering habitat for Western Toad and Columbia Spotted Frog in their habitat suitability models; b) consider confirmed occurrences of Western toad in the Project footprint when characterizing existing conditions and habitat usefor the site; and c) update modelling and the characterization of Project effects accordingly.	29-Apr-24
ECCC-122	Open	ECCC	s.79 SARA	Chapter 15	15.8.3.4.1 Amphibian Community – Characterization of Residual Effects, Significance, Likelihood, and Confidence – Methods 15.5.3.4.1 Carnivore Community – Characterization of Residual Effects, Significance, Likelihood, and Confidence – Methods - Grizzly Bear	Page 15-520 of the EIS/A states that habitat loss and degradation was measured by calculating the loss of high-quality spring-summer habitat for Western Toad and Columbia Spotted Frog. Page 15-223 states habitat loss and degradation was measured by calculating the loss of high-quality habitat within the Project Footprint, defined as areas with high and very high habitat suitability for grizzly bear. ECCC notes it is likely that moderate-rated habitat meets the biological needs of amphibians and grizzly bear, and contributes to their survivalas well; however this habitat type was not considered in estimations of habitat loss and degradation.	ECCC recommends the Proponent include moderate-rated habitat in the effects assessment for habitat loss and degradation for Western Toad, Columbia Spotted Frog and grizzly bear, and update the effects characterization accordingly.	29-Apr-24
ECCC-123	Open	ECCC	s.79 SARA	Chapter 15	15.8.3.4.2 Amphibian Community – Characterization of Residual Effects, Significance, Likelihood, and Confidence – Potential Residual Effects Assessment 15.8.3.3 Amphibian Community – Project Effects Assessment – Mitigation Measures	The EIS/A states that pre-disturbance surveys in suitable habitat within the Project footprint will occur (page 15-522); however, this is not reflected in Table 15.8-7 (Summary of Proposed Mitigation Measures Related to Amphibian VCs). ECCC notes that other mitigation measures from Section 15.8 are also not captured in Table 15.8-7.	ECCC recommends that Table 15.8-7 be updated to include all proposed mitigation measures (i.e., pre-disturbance surveys, salvage, buffers,etc.).	29-Apr-24

ECCC-124	Open	ECCC	s. 19 Factors to be Considered	Chapter 13	13.6.1.1 Thresholds for Determining Significance of Residual Effects – Avalanche Chutes	The significance thresholds identified for effects to avalanche chute ecosystems on page 13-76 of the EIS/A are higher than those used for other environmental assessments of proposed coal mines in the Elk Valley (e.g., Baldy Ridge Expansion and Line Creek Operations (LCO) Phase II), as described on pages 13-75 to 13-76. For example, for LCO Phase II, a high magnitude effect was defined as the loss of avalanche chute ecosystems greater than 20%. The EIS/A concludes that the Project footprint will result in the loss of between 12% and 25% (as a reasonably conservative upper limit) of the avalanche ecosystems in the Landscapes and Ecosystems LSA and characterizes the magnitude of this effect as "moderate". ECCC notes that if the LCO Phase II thresholds were used, this effect would be considered "high". The choice of thresholds used for the characterization of effects may have implications for the determination of significance of effects to avalanche chute ecosystems.	ECCC recommends the Proponent consider revising thresholds for avalanche chute ecosystems to align with other projects in the Elk Valley, or provide a rationale as to why the thresholds identified for the Project are higher than those of other projects.	29-Apr-24
ECCC-125	Open	ECCC	5(1)(a)(iii) Migratory Birds s.79 SARA	Chapter 13		The Proponent is proposing to address loss of wetland habitats through the Ecological Restoration Plan (Chapter 33, Section 33.4.1.4), which is intended to restore habitat within the Project area once mining operations are complete. ECCC notes that wetland offset measures can help to avoid loss of wetland functions and reduce impacts to SARA-listed species and migratory birds. For example, the creation of a small wetland may be beneficial to western toad and Columbia spotted frog and help to align the proposed measures with the Best Management Practices for Amphibian and Reptile Salvages in British Columbia (FLNRO 2016) and the Operational Framework for the use of Conservation Allowances (Environment Canada 2012). References: Ministry of Forests, Lands, and Natural Resource Operations (FLNRO). 2016. Best Management Practices for Amphibian and Reptile Salvages in British Columbia. Version 1.0., June 2, 2016. Available at: https://a100.gov.bc.ca/pub/eirs/finishDownloadDocument.do;jsessionid=002843C688DC5505CABF721F26207E36?subdocumentId=10351 Environment Canada. 2012. Operational Framework for Use of Conservation Allowances. Available at: https://publications.gc.ca/site/eng/9.696852/publication.html	ECCC recommends the Proponent consider: a) wetland offset measures to avoid temporary and long-term loss of wetland functions during construction and operations; and b) wetland offsets in the context of reducing impacts to SARA listed species and migratory birds.	29-Apr-24
ECCC-126	Open	ECCC	5(1)(a)(iii) Migratory Birds s.79 SARA	Chapter 13	13.6.6.3.3 Project Effects on Old Growth and Mature Forests – Characterization of Residual Effects Table 13.6-15 33.4.1.3 Management and Monitoring Plans – Ecological Restoration Plan	SARA-listed species, including bats and grizzly bears, and migratory birds rely on forested habitats, such old growth ecosystems, and may be negatively impacted by the loss of this habitat. The EIS/A concludes that residual effects on old growth and mature forest aresignificant (Table 13.6-15, page 13-155) and the Proponent is proposing to address loss of forested habitats through the Ecological Restoration Plan (Chapter 33, Section 33.4.1.3), which is intended to restore habitat within the Project area once mining operations are complete. However, as noted in Section 13.6.6.3.3 of the EIS/A, only 484 ha of forest is estimated to be restored, while a total of 917 ha of forest (of which 547 ha is old growth) is estimated to be cleared. The EIS/A also notes that these impacts are irreversible as the timescale within which it will take for old growth to re-establish is 140 years and 100 years for mature forest.	Given these conclusions, ECCC recommends that the Proponent consider: a) additional measures to reduce impacts to forested habitats, in particular old growth ecosystems, during construction and through to completion of the restoration program; b) measures to reduce the Project's residual effects on old growth ecosystems in the context of SARA-listed species (such as bat species at risk and grizzly bear) and migratory birds that rely on them; and c) the Operational Framework for the use of Conservation Allowance (Environment Canada 2012) in the design of mitigation and offset measures, as well as any available scientific literature, recovery strategies, and best management practices specific to any SARA-listed species or migratory birds that will be impacted by the loss of this habitat. Reference: Environment Canada. 2012. Operational Framework for Use of Conservation Allowances. Available at: https://publications.gc.ca/site/eng/9.696852/publication.html	29-Apr-24

ECCC-127	Open	ECCC	s.79 SARA	Chapter 15, Chapter 33	15.6.3.3.3 Bat Community – Projects Effects Assessment - Mitigation Measures for Increased Mortality Risk 33.4.1.13 Management and Monitoring Plans – Wildlife Management and Monitoring Plan	Page 15-333 of the EIS/A states, “pre-clearing bat roost and hibernaculum surveys will be conducted in areas considered to have high potential for roosting or hibernation.” ECCC notes that pre-clearing surveys may not be adequate to identify all features indicative of potential roosts or hibernacula.	To identify features of bat roosts and hibernacula, ECCC recommends pairing pre-clearing surveys with a suite of surveys targeting specific species and habitat types. Surveys should be conducted far enough in advance of construction activities to design and implement appropriate adaptive management measures to address impacts to any features identified. Additionally, ECCC recommends that these mitigation measures be incorporated into the Wildlife Management and Monitoring Plan.	29-Apr-24
ECCC-128	Open	ECCC	s.79 SARA	Chapter 15	15.6.2.2.1 Bat Community – Existing Conditions – Baseline Programs	The reference to the Resources Information Standards Committee (RISC) inventory methods for bats referenced on page 15-312 of the EIS/A is from 1999. ECCC notes that a more recent RISC inventory for bats has been published (RISC 2022). Reference: Resources Information Standards Committee (RISC). 2022. Inventory Methods for Bats, Standards for Components of British Columbia’s Biodiversity No. 20. Version 3.0. B.C. Ministry of Land, Water and Resource Stewardship, Ecosystems Branch, Victoria, B.C.	ECCC recommends that the Proponent consult the guidelines and ensure the EIS/A, and methods therein used to establish existing conditions, is consistent with the contents of the more recent document.	29-Apr-24
ECCC-129	Open	ECCC	s.79 SARA	Chapter 15	15.6.3.3.2 Bat Community – Project Effects Assessment – Mitigation Measures for Sensory Disturbance	Section 15.6.3.3.2 of the EIS/A does not mention lighting as a sensory disturbance to bats	ECCC recommends that the Proponent update the EIS/A to include lighting as a sensory disturbance to bats, and provide information on potential Project-related effects of this disturbance as well as any measures proposed to mitigate any potential adverse effects.	29-Apr-24
ECCC-130	Open	ECCC	s.79 SARA	Chapter 15	15.6.3.3.3 Bat Community – Project Effects Assessment – Mitigation Measures for Increased Mortality Risk	Section 15.6.3.3.3 of the EIS/A does not refer to guidelines for reducing spread of White-nose Syndrome (WNS). Given the recent discovery of White Nose Syndrome (WNS) in bat guano in West Kootenay, ECCC advises that decontamination protocols for WNS be adhered to. Decontamination of all clothing and gear between any site that may have bats or guano is required to avoid and reduce potential spread of WNS. Please see decontamination guidelines here: http://www.cwhc-rcsf.ca/bat_health_resources.php.	ECCC recommends the EIS/A refer to WNS decontamination guidelines in Section 15 of the EIS/A, as well as incorporate them into the education and reporting procedures described in Chapter 33, Section 33.4.1.13.6, to align with the provincial “Best Management Practices Guidelines for Bats in British Columbia: Chapter 2 Mine Developments and Inactive Mine Habitats”.	29-Apr-24
ECCC-131	Open	ECCC	5(1)(a)(iii) Migratory Birds	Chapter 15	15.7.1.1 Bird Community – Regulatory and Policy Considerations Table 15.7-1	ECCC notes that Table 15.7-1 in the EIS/A includes information on federal and provincial legislation and guidance documents relevant to birds, however it does not include information about the recent update to the Migratory Birds Convention Act (MBCA) and its regulations in 2022. The MBCA and its regulations protect migratory birds and their eggs and prohibit disturbance, damage, destruction, or removal of migratory bird nests. Migratory birds are protected at all times; all migratory bird nests are protected when they contain a live bird or viable egg; and the nests of 18 species listed in Schedule 1 of the Migratory Birds Regulations, 2022 are protected year-round (including Pileated Woodpecker nesting cavities). These general prohibitions apply to all lands and waters in Canada, regardless of ownership. More information can be found here: https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/reduce-risk-migratory-birds.html https://www.canada.ca/en/environment-climate-change/services/migratory-bird-permits/faq-migratory-birds-regulations2022.html#toc3	ECCC recommends that Table 15.7-1 of the EIS/A be updated to include information about the recent update to the Migratory Birds Convention Act (MBCA) and its regulations in 2022.	29-Apr-24

ECCC-132	Open	ECCC	5(1)(a)(iii) Migratory Birds s.79 SARA	Chapter 15	15.7.1.1 Bird Community – Regulatory and Policy Considerations Table 15.7-1	ECCC notes that the recovery strategy listed for Lewis's Woodpecker in Table 15.7-1 on page 15-353 of the EIS/A is an outdated version. A final recovery strategy for Lewis's Woodpecker was published in 2017 (ECCC 2017). Reference: Environment and Climate Change Canada. 2017. Recovery Strategy for the Lewis's Woodpecker (Melanerpes lewis) in Canada. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. vi + 40 pp.	ECCC recommends the Proponent update Table 15.7-1 with the final recovery strategy.	29-Apr-24
ECCC-133	Open	ECCC	5(1)(a)(iii) Migratory Birds	Chapter 33	33.4.1.13 Management and Monitoring Plans – Wildlife Management and Monitoring Plan Table 33.4-41	ECCC notes that Table 33.4-41 (starting on page 33-206 of the EIS/A) includes information on guidelines and guidance documents relevant to wildlife and wildlife habitat VCs but does not reference Canada's Guidelines to avoid harm to migratory birds. These guidelines are available online at: https://www.canada.ca/en/environment?climate?change/services/avoiding?harm?migratory?birds/reduce?risk?migratory?birds.html	ECCC recommends adding the Guidelines to avoid harm to migratory birds to Table 33.4?41.	29-Apr-24
ECCC-134	Open	ECCC	s.79 SARA	Chapter 14	14.5.1.3.1 Vegetation Assessment – Existing Conditions – Whitebark Pine Habitat Availability and Distribution	Page 14-18 of the EIS/A describes reclamation methods in reference to Teck, 2008 as "reclamation of forested sites at Fording River utilized lodgepole pine, Engelmann spruce, and subalpine fir at stocking rates of 1,000 to 1,800 stems per ha (Teck, 2008)."ECCC notes the Teck 2008 reference is outdated regarding how restoration has been occurring in the Elk Valley. More recent practices have been undertaken in the Elk Valley and surrounding areas in recent years, including by Teck (e.g., as presented at the Whitebark Pine Ecosystem Foundation Meetings in October 2023), and as described in the following resources: Best Management Practices for Whitebark Pine (Pinus albicaulis). 2021. Available online: https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/best-management-practices/whitebark_pine_bmp.pdf Tomback et al. 2022. Tamm review: Current and recommended management practices for the restoration of whitebark pine (Pinus albicaulis Engelm.), an imperiled high-elevation Western North American forest tree. Forest Ecology and Management. Vol 522: 119929. Jenkins et al. 2022. Restoring a forest keystone species: A plan for the restoration of whitebark pine (Pinus albicaulis Engelm.) in the Crown of the Continent Ecosystem. Forest Ecology and Management. Vol 522: 119929	ECCC recommends that the Proponent update the reclamation methods for Whitebark pine to align with more recent practices.	29-Apr-24

ECCC-135	Open	ECCC	s.79 SARA	Chapter 14 Chapter 33	14.6.5.2.1 Vegetation Assessment – Potential Effects on Whitebark Pine – Mitigation Measures for Mortality and/or Loss of Habitat 33.4.1.11 Management and Monitoring Plans – Vegetation and Ecosystems Management and Monitoring Plan Table 33.4-8 Table 14.5-10	On page 14-75 of the EIS/A, under the Ecological Restoration Plan, the Proponent states whitebark pine "critical habitat (both types) area is to be replaced at a 1:1 ratio (i.e., area lost:area replaced), which can include improvement of existing areas of marginal condition for whitebark pine, or reclamation/restoration of disturbed areas", as well as, "determination of a compensation ratio for replacement of whitebark pine (i.e., the number of trees planted relative to the number removed) that considers: • Total number of trees removed; • Relative efficacy of collection/testing/propagation and revegetation methods using whitebark pine; and • Rates of self-thinning and background loss of whitebark pine due to white pine blister rust". In Section 33.4.1.11 of the EIS/A, the Vegetation and Ecosystems Management and Monitoring Plan identifies that only 790 ha of restoration is planned in total for all ecosystem types including; high elevation forests, grasslands, whitebark pine dominated forests, low elevation forests, sparsely vegetated talus, riparian habitat, and wetland ecosystems. Table 33.4-8 indicates that only 148 ha of restored area will account for open whitebark pine forest, which will take up to 100 years to achieve; however, Table 14.5-10: Potential Extent of whitebark Pine Critical Habitat by Site Type shows that a total of at least 802 ha of critical habitat occur in the Project footprint. The Operational Framework for the Use of Conservation Allowances (Environment Canada 2012; hereafter the Framework) sets the parameters, based on existing legislated authorities, practice and policy, for how and when conservation allowances (offsets) should be used or recommended by ECCC. The Framework states that the choice of ratio for each offset proposal is case-specific and should be at least 2:1 and "there will be instances where much higher ratios are appropriate". ECCC typically recommends a minimum offset multiplier of 4:1 (offset outcome:residual impact). This is a benchmark	ECCC recommends the EIS/A be updated to include the following for whitebark pine: a) A minimum offset multiplier of 4:1 (offset outcome:residual impact) to be consistent with the species' Recovery Strategy. b) The Vegetation and Ecosystems Management and Monitoring Plan (33.4.1.11) and the Ecological Restoration Plan (33.4.1.3) be updated with the appropriate quantity of areas to be restored considering the minimum offset multiplier of 4:1. Please refer to ECCC comments related to offsetting for species at risk habitat and wetlands (ECCC-103, ECCC-121, and ECCC-122).	29-Apr-24
ECCC-136	Open	ECCC	s.79 SARA	Chapter 14	14.6.5.3.3 Vegetation Assessment – Potential Effects on Whitebark Pine – Characterization of Residual Effects	ECCC notes that the Proponent has determined the residual effect of the Project on mortality and/or loss of whitebark pine habitat is "not significant", despite characterizing the residual effects as permanent, regional, and with low resiliency (page 14-84 of the EIS/A) and the uncertainty around mitigation and restoration effectiveness (page 14-77 and 14-78 of the EIS/A). Page 14-84 also states, "The level of confidence of the significance prediction on mortality of whitebark pine and/or loss of habitat is considered to be low, given uncertainty in the confirmed extent of whitebark pine in the Landscapes and Ecosystems LSA and Project footprint, the background loss of whitebarkpine due to white pine blister rust (among other sources of mortality), and the success of whitebark pine restoration programs."	ECCC recommends that the Proponent provide further rationale for its determination of "not significant" for residual effects of mortality and/or loss of whitebark pine, including an explanation as to how the characterization of the residual effects as permanent, regional, low resiliency, and the uncertainty around mitigation and restoration effectiveness, have been considered in its determination.	29-Apr-24
ECCC-138	Open	ECCC	Greenhouse Gases	Chapter 33	33.4.1.1.6 Management and Monitoring Plans – Air Quality and Greenhouse Gas Management Plan – Environmental Protection Measures	The Proponent indicates that air quality and exceedance prevention measures include the use of low emissions equipment, ensuringregular inspection and maintenance of all equipment and vehicles used in Project construction, and limiting vehicle and equipment idling.	In addition to these measures, ECCC recommends the Proponent commit to the use of Tier 4 engines. Currently, Tier 4 is the most stringent emission standard, reducing emissions of PM and NOx by 90% relative to older emission standards.	29-Apr-24
ECCC-139	Open	ECCC	Greenhouse Gases	Chapter 33	33.4.1.1.8 Management and Monitoring Plans – Air Quality and Greenhouse Gas Management Plan – Greenhouse Gas Mitigation Measures	The Proponent has indicated that to reduce the potential for GHG emissions, the Project may use construction equipment that will meet Tier 2 emission standards for non-road diesel engines at a minimum. ECCC supports the use of low-emissions technology but notes that the Tier 2 emission standards limit criteria air contaminants (CACs) rather than GHGs.	ECCC recommends that the Proponent corrects the statement.	29-Apr-24
ECCC-140	Open	ECCC	Greenhouse Gases	Chapter 6	Appendix 6C, Table M.1.1b	The Proponent has indicated that a CAT 6050/Komatsu PC5500 (Excavator) certified to the Tier 2 emission standard will be used for the Project. ECCC notes that Tier 4 is the most stringent emission standard at this time, reducing emissions of PM and NOx by 90% relative to older emission standards, and should be used where possible.	ECCC recommends the Proponent use an excavator certified to the Tier 4 emission standard.	29-Apr-24

ECCC-141	Open	ECCC	Greenhouse Gases	Chapter 33	33.4.1.10.7 Management and Monitoring Plans – Spill Prevention, Control, and Countermeasures Plan p.33-183 Table 33.4-33, p.33-179; Table 33.4-47, p.33-230	The Proponent does not describe the full extent of the hazardous substances anticipated to be stored on site during all phases of the Project. The Proponent states in Section 33.4.1.10.7 of the EIS/A: "An inventory of all hazardous or dangerous materials stored on-site will be maintained, and their use on-site will be monitored", without providing further details. In addition, the Proponent identifies the 2003 version of the Environmental Emergency Regulations (E2 Regulations) in table 33.4-47, whereas the latest iteration is the Environmental Emergency Regulations, 2019 (E2 Regulations). ECCC notes that the E2 Regulations apply to any person or company that owns or has the charge, management or control of any hazardous substances listed in Schedule 1, in quantity above or equal to the value identified in column 4, of the E2 Regulations. The E2 Regulations under the Canadian Environmental Protection Act, 1999 are one of the instruments used by the Government of Canada to protect Canadians and the environment. They are designed to reduce the frequency and impacts of environmental emergencies involving accidental releases of hazardous substances, such as oil and chemical spills, from facilities in Canada.	ECCC recommends the Proponent update the year for the E2 Regulations in Table 33.4-47, to the latest iteration of the Regulations (i.e., Environmental Emergency Regulations, 2019). Additionally, ECCC recommends that the Proponent also make this update to Table 33.4-33, under federal legislation, since the E2 Regulations could apply depending on the hazardous substances and quantities stored on site.	29-Apr-24
ECCC-142	Open	ECCC	s. 19 Factors to be Considered	Chapter 21	21.6 Accidents and Malfunctions Assessment – Summary and Conclusions Table 21.6-1, p.21-52	ECCC notes a discrepancy in the EIS/A's assessment of effects of accidents and malfunctions: Page 21-52 of the EIS/A states: "In summary, the significance of environmental effects of accidents and malfunctions on all potentially affected VCs and the likelihood of occurrence is presented in Table 21.6-1 below. The effects of accidents and malfunctions on affected VCs were mostly rated significant with a high level of confidence; where significant effects were predicted, they were determined to be unlikely to occur." However, Table 21.6-1 predominantly identifies non significant effects on various Valued Components from accidents and malfunctions. It is unclear from the information provided whether effects from accidents and malfunctions will be significant or not.	ECCC recommends that the Proponent revise the EIS/A to accurately reflect their conclusions on the significance of effects of accidents and malfunctions. The conclusions should be described consistently in the EIS/A, including on Page 21-52 and in Table 21.6-1.	29-Apr-24
ECCC-143	Open	ECCC	Atmospheric Environment	Chapter 6	Appendix 6C Air Quality & Greenhouse Gas Assessment Table 30, Table 31 p. 100.	The comparison with Canadian Ambient Air Quality Standards (CAAQS) and the BC Air Quality Objectives (AQO) should be part of the determination of the nature and severity of the Project's impact on air quality. As a result, NWP has identified exceedances and frequencies of exceedances for the Project emissions alone and for Project emissions added to existing background concentrations. Exceedances occur for PM2.5, NO2 and SO2 when comparing to the BC AQO and CAAQs 2025 air quality objectives. Further, based on the most recent published air zone report for the Southern Interior Air Zone, the air zone is assigned a "red" management level for PM2.5 and SO2, "orange" management level for NO2, and "yellow" management level for ozone. The Southern Interior Air Zone did not achieve the 2020 CAAQS for PM2.5 and SO2 (Southern Interior Air Zone Report (2018_to_2020).pdf). Under the Canadian Council of Ministers of the Environment (CCME) Air Zone Management Framework, required/recommended actions become progressively more rigorous as air quality deteriorates from the green to the red management level. While this occurs at the air zone level, at a project level, an adaptive management plan should also consider thresholds or action levels that, if exceeded, would trigger additional mitigation or management actions to bring air pollutant concentrations below the thresholds for PM2.5, No2 and SO2.	The Proponent has provided a general approach to developing an Environmental Management System and monitoring plan in Chapter 33. In light of the predicted exceedances of the 2025 CAAQS for PM2.5 and NO2, ECCC recommends that the Proponent develop a trigger action response plan for air quality, similar to what was developed for Fish and Fish Habitat Management (see Figure 33.4-4: Trigger Action Response for Fish and Fish Habitat Management))	29-Apr-24

ECCC-144	Open	ECCC	Atmospheric Environment	Chapter 6 Chapter 33	Appendix 6C Air Quality & Greenhouse Gas Assessment Chapter 33 Management and Monitoring Plans	Dust issues are a common public concern and road dust is a large source of fugitive emissions from mining operations. The use of a 75% control efficiency for fugitive dust in the dispersion modelling assessment requires that this be the minimum level of mitigation that can be consistently achieved throughout the year and may not be adequately conservative given the PM2.5 exceedances(Project and background) noted in comment ECCC-143. Further, the control efficiency could vary both above and below this average throughout the year. ECCC notes that in each year, there may be numerous hours during which mitigation could fall below 75% and this can coincide with warm, dry, and windy conditions that lead to more haul-road dust emissions. In addition, the Air Quality and Greenhouse Gas Management Plan should outline specific steps to minimize dust emissions from the Project. The Proponent has identified actions in the event of an air quality exceedance or air quality complaint (page 33-12 of the EIS/A), however the type and level of response should be based on thresholds or action levels that, if exceeded, would automatically trigger mitigation or management actions to bring air pollutant concentrations below the thresholds. This approach should mirror the structured approach in Figure 33.4-4 (Trigger Action Response Plan for Fish and Fish Habitat Management) but adapted for air quality purposes.	ECCC recommends the following: a) The Proponent demonstrate that the use of a 75% average control efficiency is achievable and adequately conservative for air dispersion modelling. b) The Air Quality and Greenhouse Gas Management Plan outline specific steps to minimize dust emissions, including the type and level of response to be based on thresholds or action levels that, if exceeded, automatically trigger mitigation or management actions.	29-Apr-24
ECCC-145	Open	ECCC	5(1)(a)(i) Fish and Fish Habitat	N/A		ECCC is developing Coal Mining Effluent Regulations (CMER) under the federal Fisheries Act, which will manage threats to fish, fish habitat, and the use of fish by humans, by setting limits on harmful substances in coal mining effluent. The CMER's proposed approach will include the establishment of national effluent quality standards for deleterious substances of concern including selenium, nitrate, and suspended solids, as well as requirements for monitoring, reporting and record keeping. The proposed Regulations are targeted for publications in the Canada Gazette, Part I in Fall 2024, for a 60-day consultation period, with final regulations following about a year later.	The Proponent is encouraged to consider the proposed Regulations with respect to the proposed Project.	29-Apr-24
ECCC-146	Open	ECCC	5(1)(a)(i) Fish and Fish Habitat	Chapter 10		ECCC notes methods used for the baseline hydrometric program are not always consistent with the Water Survey of Canada (WSC) Standard Operating Procedures.	ECCC recommends that the Proponent refer to the WSC Standard Operating Procedures for guidance on establishing and maintaining hydrometric stations, as well as developing rating curves.	29-Apr-24
ECCC-147	Open	ECCC	5(1)(a)(i) Fish and Fish Habitat	Chapter 10		The Water Survey of Canada (WSC) may be able to provide additional information on hydrometric stations in the Grave Creek watershed, including WSC station 08NK019 which is nearby, but has been discontinued. Clarification from WSC on any technical issues that may have occurred with this station could help the Proponent re-establish a successful station in a similar location.	ECCC recommends that the Proponent consult WSC for information on establishing a hydrometric station at Grave Creek above Harmer Creek.	29-Apr-24
HC-IR-15	Open	Health Canada	5(1)(c)(i) Aboriginal Peoples Health/ socioeconomic conditions	Chapter 9	9.4.3.4.3 Other Elements of Interest PDF p. 66	It is possible that selenium exceedances have not been captured. Section 9.4.3.4.3 (PDF p. 66) states: “Monitoring wells that exceed selenium are also located below the confluence between West Alexander and Alexander creeks and are clearly explained by a regional groundwater signature." However, the selenium exceedance is not reflected in Table 9.4-12 - Summary of Groundwater Quality Exceedances of the British Columbia Guidelines and EVWQP WQT (PDF pp. 63-65).	HC recommends the following: Clarify if this statement is in reference to existing local water quality data that were reviewed as part of the desktop assessment of background information (described on PDF p. 30)	29-Apr-24
HC-IR-21	Open	Health Canada	5(1)(c)(i) Aboriginal Peoples Health/ socioeconomic conditions	Chapter 22	Appendix 22-A: DQERA 2.1 Study Objectives PDF p. 20	Sediment was omitted from the Key Question respecting potential impacts to the VCs of human and ecological health. The HHERA indicates that dermal contact with sediment will be considered as an exposure route for human health (PDF p. 65); however, this was not included in the key question and Figure 2-1 (PDF p. 20).	HC recommends the following: Include sediment in the key question and Figure 2-1.	29-Apr-24
HC-IR-22	Open	Health Canada	5(1)(c)(i) Aboriginal Peoples Health/ socioeconomic conditions	Chapter 22	Appendix 22-A: DQERA 2.1 Study Objectives PDF p. 20	Insufficient rationale is provided for using the operations phase as the worst case scenario. The description of Figure 2-1 states “[i]t was assumed that potential health risk associated with optimal production during the mine Operation phase would be more significant than the Construction and Closure phases, hence the HHERA focused on Operational scenarios”. However, little rationale was provided for this assumption.	HC recommends the following: Strengthen the rationale for assuming the operation phase represents the most conservative exposure scenario. For example, in addition to the volume of emissions, provide a discussion on whether the operation phase has the same emissions inventory and sources as the other project phases.	29-Apr-24

HC-IR-23	Open	Health Canada	5(1)(c)(i) Aboriginal Peoples Health/ socioeconomic conditions	Chapter 22	Appendix 22-A: DQERA 2.4.3 Cumulative Case PDF p. 25	Section 2.4.3 does not indicate which projects were considered for cumulative effects or where a list of projects can be found.	HC recommends the following: Provide a list of the current and reasonably foreseeable projects that have been considered in the cumulative case.	29-Apr-24
HC-IR-30	Open	Health Canada	5(1)(c)(i) Aboriginal Peoples Health/ socioeconomic conditions	Chapter 22	Appendix 22-A: DQERA Appendix F Multimedia Contaminant Screening PDF pp. 123-126	Tables 1 to 4 have not been fully explained.	HC recommends the following: a) include units of measurement b) define acronyms (e.g., NA, NV, NP, AC, GC, etc.). c) define special symbols such as asterisks, and formatting such as indentation, bolding, shading	29-Apr-24
DFO-001	Open	DFO	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.1 12.1.1 (Regulatory and Policy Setting); Table 12.1-1 Regulatory Considerations and Guidance Documents Relevant to Fish and Fish Habitat and Aquatic Resources		Update Table 12.1-1 to include the *Management Plan for the Westslope Cutthroat Trout (Oncorhynchus clarkii lewisi), British Columbia Population, in Canada* (DFO 2017), which establishes goals and objectives for management of the species. The overarching management goal is the long-term persistence of the species within its native range. The management objectives include: to maintain the native distribution and genetic diversity of populations; to maintain wild populations at abundance levels that prevent at-risk status assessment; and to maintain, or rehabilitate, the capacity of natural habitat to meet abundance targets for populations. Westslope cutthroat trout, British Columbia population was designated as Special Concern due to concerns regarding the introduced species (hybridization and competition), habitat loss and degradation, and increasing exploitation.	29-Apr-24
DFO-002	Open	DFO	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.2 12.2.1.1 (Fish Valued Components) re: Kokanee	"Federally, 24 DU of sockeye salmon were assessed under SARA (2002), with eight subpopulations listed as Endangered, two as Threatened, five as Special Concern, and eight as Not at Risk; however, the Kokanee ecotype was not assessed due to its unique lifecycle (COSEWIC, 2017)."	Update the sentence to reflect that there are nine Designatable Units (DUs) in the Fraser River Drainage Basin that are listed as Not at Risk (COSEWIC 2017). We also note that COSEWIC (2017) does not provide an explicit reason why Kokanee was not assessed, only that the Kokanee ecotype was not considered in the assessment.	29-Apr-24
DFO-003	Open	DFO	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.1 12.4.1.1 (Regional and Local Environment); Figure 12.4-2 (Fish and Fish Habitat VC Distribution in the Fish and Fish Habiat LSA		Update Figure 12.4-2 using different colours to distinguish between fish observations from the BC provincial fish database and baseline survey site locations. According to the map legend, orange circles represent observations of Westslope cutthroat trout recorded in the BC provincial fish database; however, it appears that the orange circles in the inset of the map are intended to represent Fish and Fish Habitat Survey Sites, not WCT observations. In addition, provide a higher resolution map of West Alexander Creek to facilitate review. Currently, in order to follow along with the text in understanding fish distributions in West Alexander Creek, reviewers are relying on an LSA-wide map with a small inset showing only a portion of the creek. DFO expects that the scale of the final fish habitat map will align with the scale recommended within the fish habitat inventory methodology that the QEP is applying (i.e., Fish Stream ID Guidebook).	29-Apr-24
DFO-014	Open	DFO	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.2 12.4.2.2 Results; 12.4.2.2.1 Alexander and West Alexander Creeks; Calcite Assessment	"Low amounts of calcite was observed in ALE7, ALE8, and ALE9, and no calcite was observed at the remainder of the sample sites (Table 12.4-8)."	Clarify the statement given that Table 12.4-8 indicates calcite was also observed at ALE1 and ALE2. Provide the qualifications and experience of the QEP that completed the calcite assessment and confirm that they have adequate experience and training to complete this assessment.	29-Apr-24

DFO-017	Open	DFO	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.2 12.4.2.2 Results; 12.4.2.2.1 Alexander and West Alexander Creeks; Key Observations and Findings of the Population Study	"There appears to be two populations or sub-populations of Westslope Cutthroat Trout in Alexander Creek: • Smaller bodied "fluvial resident" fish that hold, feed, overwinter, and spawn in Upper Alexander Creek and West Alexander Creek. Note that movement of these fish between Upper Alexander and West Alexander was not recorded. A portion of these fish are believed to overwinter in interstitial spaces fed by groundwater, but additional data are needed to confirm/strengthen this observation; and • Larger bodied "fluvial migratory" fish that leave Alexander Creek in the fall (September/October) to overwinter in the Elk River and return to Alexander Creek in the spring (May/June), likely to spawn. Spawning occurs in Reach 1 of West Alexander Creek: • Spawning may occur in other reaches, but continued assessment would be required to confirm this; • The fluvial migratory Westslope Cutthroat Trout likely spawn in Alexander Creek. Additional studies are required to confirm this observation; and • Fluvial resident fish likely spawn in Upper Alexander Creek. Additional studies are required to confirm."	Until evidence shows otherwise, DFO considers the WCT in West Alexander Creek a genetically-pure population. The tagging and spawning surveys have been very helpful for understanding the life history strategy of the Westslope Cutthroat Trout in the headwaters of Alexander Creek. Such isolated resident populations of this Special Concern species have a very high conservation value. In Alberta, the habitat of similar isolated populations have been designated a Critical Habitat under the Federal Species at Risk Act. DFO recommends that the Province's ongoing genetic studies of this species in the Upper Kootenay watershed be expanded to include West Alexander and Upper Alexander Creeks.	29-Apr-24
DFO-020	Open	DFO	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.5.2 Section 12.5.2.2 Discussion of Potential Effects	"The potential effects identified in Table 12.5-2 are discussed in the context of each Project phase (Construction and Pre-Production, Operations, Reclamation and Closure, and Post-Closure) in the following subsections."	Provide a figure that is representative of each Project phase showing the mine footprint interaction with fish and Fish Habitat VCs, to facilitate review and assessment. For example, it would be useful to know where the interim sediment pond is located.	29-Apr-24
DFO-021	Open	DFO	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.5.2 Section 12.5.2.2.6 Change in Fish and Fish Habitat Due to Blasting		DFO requires the proponent to implement the best available mitigation measures and standards. Note that *Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters* (Wright and Hopky 1998) is over 20 years old, and some of the recommendations may be outdated. For example, the detonation technology that was assessed by Wright and Hopky (1998) may differ from the technology that will be applied by the proponent.	29-Apr-24
DFO-023	Open	DFO	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.5.3 Section 12.5.3.1.9 Measures to Offset Direct and Indirect Habitat Loss	"Offsetting measures should support available fisheries management objectives and local restoration priorities and be conducted in a manner consistent with DFO's offsetting policy (DFO, 2019b)."	DFO recommends that the proponent become familiar with the *Management Plan for the Westslope Cutthroat Trout (Oncorhynchus clarkii lewisi), British Columbia Population, in Canada* (DFO 2017), which establishes goals and objectives for management of the species. Regarding local restoration priorities, we recommend that the proponent engage with Indigenous peoples potentially affected by the offsetting plan. In preparing an offsetting plan, the *Policy for Applying Measures to Offset Adverse Effects on Fish and Fish Habitat Under the Fisheries Act* (DFO 2019) highlights the importance, and good practice, for proponents to engage Indigenous peoples early in the planning phase of the offsetting plan. Indigenous peoples and the knowledge of the Indigenous peoples of Canada can inform the design of measures to offset residual effects on fish and fish habitat.	29-Apr-24
KNC-03	Open	Ktunaxa Nation Council	5(1)(c)(i) Aboriginal Peoples Health/ socioeconomic conditions	Chapter 22	22.4		The "*Second Revised Final Human Health Risk Assessment* " report, completed by Teck, was released October 2023. Please include this report in relevant chapters where applicable, including Chapter 23 and Chapter 22. Latest information from the revised report should be included and reflected in the existing conditions and information base used to assess project impacts to human and ecological health. The BC ENV *"Summary of the Elk Valley and Koocanusa Reservoir Human Health Risk Assessment"* should also be considered and reflected in relevant applciation documents, in particular within Chapter 22 & Chapter 23. Relevant links here: https://elkvalleywaterquality.gov.bc.ca/pages/hhra-summary https://nrs.objectstore.gov.bc.ca/xedyjn/Projects/ElkValley/Elk%20Valley%20Human%20Health%20Risk%20Assessment.pdf	29-Apr-24

KNC-05	Open	Ktunaxa Nation Council	Data Quality	Entire EIS/A		Considering the new, extensive and long-term impacts proposed by the Project, and the uniquely sensitive cultural and ecological values at risk in areas that will be impacted or destroyed should the Project proceed, we expect that the information provided in this application meet the highest technical standards of quality and reliability to support confident informed decision making. In a number of places in the current application, the proponent appears to rely on old data and field surveys (e.g. Table 5.3-4 Gillette's Checkerspot, one survey done in 2014). In order to assess the impacts of the project, current and up-to-date information must be used in the application. Where information is collected by the proponent, KNC expects the application must be based on at least 2 years of field-verified data collected immediately prior to application submission.	29-Apr-24
KNC-23	Open	Ktunaxa Nation Council	5(1)(a)(i) Fish and Fish Habitat			KNC feels that correcting existing impacts, such as culverts, should not be considered an offset. That is a corrective measure.	29-Apr-24
KNC-87	Open	Ktunaxa Nation Council	5(1)(c)(i) Aboriginal Peoples Health/ socioeconomic conditions	Chapter 22		NWP relied on information from KNC to model exposure (excellent) from water, air soil and food on ecological and human health. Ktunaxa citizens have deep relationships of reliance, belonging, and responsibility for ʔamakʔis Ktunaxa. It is key to define Indigenous thresholds for 'too much' and Indigenous determinants of risk (cultural tainting, perceptions of what create risks -contaminant tainting, taste tainting). Health risk is experienced, not only in the parts per million. This HHERA needs to be considered as one component of a place-based Indigenous Health Impact/Risk Assessment (IHRA). Because of the relationship between Ktunaxa and land, it is critical that Ktunaxa perspectives regarding the limitations of HHRA and EHRA are recognized, and basic Ktunaxa expectations are followed. The public interest needs to include protection of traditional food systems. The HHERA focus does not include: -Understanding health impacts from changes to the landscape and ability to harvest on culture, nutrition, food security. -Nor does the current impacted consumption rate reflect the 100 + years of disenfranchisement. -Studies (such as FNFNES) confirms increasing traditional food has positive food security, health and nutrition benefits. This HHERA should also evaluate the impact of removing this area on traditional food security, nutrition, and psychosocial health. Already the high rates of food insecurity make Ktunaxa more vulnerable to industrial contaminants given the poorer diet relative to non-Indigenous canadians. See further informaiton on gaps in health between FN and non-FN in Canada via the Medical Heallth Officer reports and publications associated with fnfnes.ca	29-Apr-24
KNC-89	Open	Ktunaxa Nation Council	5(1)(c)(i) Aboriginal Peoples Health/ socioeconomic conditions	Chapter 23	23.6	Ktunaxa baseline conditions include information on food insecurity but other measures are not provided. Recommend that authors look to medical health officers reports, FNHA reports to provide some greater details on differences in wellbeing and health statistics between Indigenous and non-Indigenous popualtion in BC.	29-Apr-24
KNC-94	Open	Ktunaxa Nation Council	5(1)(c)(i) Aboriginal Peoples Health/ socioeconomic conditions	Chapter 23	23.7.1.4.2	Further impacts on diet are relevant to understand but so is the larger picture of health and well-being that can be drawn as well from various heath differenes between FN and non-FN in BC as needed along with food insecurity data. It is valuable to see better picture of differences in health on a variety of indicators (See Provincial Medical Health Officer reports for example). As well, there needs to be additional acknowledgement that already there has been overwhelming levels of impact on health. There is no acknowledgement here about the potential level of impact on health from irreparably destroying these sacred areas.	29-Apr-24

KNC-96	Open	Ktunaxa Nation Council	5(1)(c)(i) Aboriginal Peoples Health/ socioeconomic conditions	Chapter 23	28.3	NWP includes stats in this chapter that 44% are food insecure and include CWB scores from 2016 to show differences between Ktunaxa Nation and other communities in the RDEK. They describe sector goals and the Teck impact management benefits agreement. NWP identifies potential impacts on Ktunaxa Nation's rights and interests in relation to economic conditions may potentially be impacted as a result of Project-related effects to the reduction of access to country foods and increased food security concerns, and the reduction or elimination of potential commercial activities (e.g., tourism, activities related to cultural knowledge transfer, commcerial harvesting). However, overall they find project impacts to be minimal. Please clarify how the Project has such minimal impact on a population that is already highly vulnerable and who has said that thresholds have been surpassed (ie very high rates of food insecurity, inadequate levels of traditional food)	29-Apr-24
KNC-100	Open	Ktunaxa Nation Council	5(1)(c)(i) Aboriginal Peoples Health/ socioeconomic conditions	Chapter 23	23.8.2.2.4	Overall, it appears that there is a limited recognition of the profound effects on well-being from the continued potential erosion of sacred ceremonial, cultural places directly from industrial destruction combined with increased use from non-Indigenous recreationalists/population. The authors do not take into account how the very nature of the project is contributing to pyschosocial impacts. There is little to no mention of health considerations beyond confidence in eating traditional food. This application would benefit from a more detailed description of the psychosocial impacts of mines and how coal mines can contribute to poorer mental and spiritual well-being. There is included some of this within the Ktunaxa perspective NWP would do well to draw attention to the impacts of eco distress or solastalgia (the negative affects from environmental change and the feeling of 'lack of effective control' or power to stop the change) on Ktunaxa.	29-Apr-24
KNC-102	Open	Ktunaxa Nation Council	5(1)(c)(i) Aboriginal Peoples Health/ socioeconomic conditions	Chapter 23	23.8.3.4	State effects on human health are likely to be not significant. Incorrect. By virtue of removing habitat, accessible harvesting areas, the Project impacts Ktunaxa Nation citizens who are already very vulnerable to poorer health compared to the non-Indigenous population, given legacies of colonialism, poverty, reduced harvesting areas, extreme losses of culturally important species at preferred levels, and high rates of food insecurity compared to the rest of the population. Suggest that the authors review Li et al. 2016 from BCCDC which outline the effects of chronic food insecurity on acute and chronic disease. The project will have significant further impacts on Ktunaxa well-being through loss of places, harm to non-humans, harm to water, further deprivation of nutrition and food security through habitat loss.	29-Apr-24
KNC-104	Open	Ktunaxa Nation Council	5(1)(c)(i) Aboriginal Peoples Health/ socioeconomic conditions	Chapter 23	23.11.2.1.4	The authors state that the Project is not expected to result in signficant adverse effects to Indigenous persons. Specific to the assessment of the impacts on rights (p 23-291), that Ktunaxa Nation information that was included from other applications to define the degree of severity on impacts to health conditions, referred to the overall health of Ktunaxa citizens having improved as a result of increased access to health services, but lagging well behind non-Ktunaxa in the region. Please clarify sources (gray, anecdotal, key informant) and how this influenced your assessment. Available provincial level information (no health data is available at individual FN level) as per Medical Health Officer reports on Indigenous health highlight persistent large gaps on priority health indicators (life expectancy, age standardized mortality rate, youth suicide, diabetes) between Indigenous and non-Indigenous population in BC.	29-Apr-24
KNC-110	Open	Ktunaxa Nation Council	5(1)(a)(i) Fish and Fish Habitat	Executive Summary		• Section E.10 (Management and Monitoring Plans): It would be greatly beneficial to provide more details on the management and monitoring plans for groundwater and surface water, as well as other subjects. • Section E.11 (Summary and Conclusions): Table E.11-1: It shows no cumulative effect was done for groundwater quantity and quality. Again this should be done as part of the assessment, as groundwater interacts with surface water and affects aquatic life and even human health. Also again, it is not clear if any pit lakes would be formed as residual effect of the mine and would affect groundwater for a long term.	29-Apr-24

KNC-124	Open	Ktunaxa Nation Council	Geology/Geochemistry	Chapter 9	Appendices 9B (2018 Hydrogeological Field Data Report), 9C (Baseline Groundwater Investigation Results), 9D (Characterization of Groundwater - Surface Water Interactions)	• Appendix 9-B: (1) It was stated on Page 2 that "All the deep boreholes were planned to be advanced 3 -10 m into bedrock. Given the limited drill rig capabilities (50 m max drilling depth), some of the wells in the Alexander Creek valley never intercepted bedrock." The drill rig limited the shallow depths in bedrock. In many similar mine projects in BC and across Canada, wells (single, or even in the Westbay multiple wells) in much deeper bedrock are often drilled and installed. As commented previously, the tested K data is limited < 40 m deep in bedrock, more tested data in greater depths of bedrock is required, to support the hydrogeological / groundwater baseline, modeling and effect assessment. (2) All the K values were estimated from a limited number of slug tests (for overburden and bedrock) and one pumping test (for overburden), and no packer tests were done in any bedrock wells. This is considered as a major gap for the bedrock permeability characterization. KNC would highly recommend installing deeper wells in bedrock and packer testing for K values to allow profiling the bedrock K over depths and lithology, which is the common approach that have been adopted at many other mine projects. The future testing on the bedrock permeability should be focused more on the karst potential, coal seams, and faults, because these would mostly be the preferential groundwater flow and transport pathways. Without these information, the baseline, the modeling and the predicted effects would be considered to be insufficient and not to be at a high level of confidence. (3) KNC would highly recommend a geophysical survey of the overburden for better accuracy, because the results would improve the modeling and the confidence level on the predicted effects. • Appendix 9-C: It is good to see the 5 monitoring wells were drilled and installed by Norwest into the relatively deep bedrock (up to 126 mbgs) under the north and south pits footprints, however, no packer tests were done to estimate the bedrock permeability along various depths and lithologies, but only slug tests were performed (Page 4-5).	29-Apr-24
KNC-134	Open	Ktunaxa Nation Council	Geology/Geochemistry 5(1)(a)(i) Fish and Fish Habitat	Chapter 33 - Management and Monitoring Plans		• Section 33.4.1.8.7 (Approach to Water Management), Figure 33.4-13, on Page 33-100: As commented early with the recommendation to extend the groundwater model domain to include Harmer Creek, depending on the results to demonstrate if seepage from the mine (e.g., WRD) could potentially migrate towards Harmer Creek, long-term monitoring well locations for residual effects might need to be adjusted. Deeper groundwater including to characterize the karst potential bedrock could also be required. • Section 33.4.1.8.9 (Individual Management Plans) - Contact and Non-Contact Waters, on Page 33-126: It is good to see that "NWP's approach to mitigating groundwater ingress into the mine rock dump is to create a granular rock drain at the base of the slope and up along the west side of the mine rock dump." Implementation of the rock drains including on the base of the WRD would facilitate collection of contact water seepage.	29-Apr-24

KNC-136	Open	Ktunaxa Nation Council	Geology/Geochemistry 5(1)(a)(i) Fish and Fish Habitat					KNC would highly recommend the groundwater model domain in the west be extended to include Harmer Creek and simulate forward particle-tracking to demonstrate whether seepage from the mine site (e.g., the WRSF) would potentially migrate towards Harmer Creek, because: (1) this creek is a few hundred meters lower than West Alexander Creek and Alexander main creek (please see the Tab: Cross-section); (2) this creek is located along the pathways from the project site to Elk River; (3) karst potential bedrock (e.g., dolomite, limestone) exists between West Alexander Creek and Harmer Creek as shown on the geological map (Figure 9.3-2 Crown Mountain Bedrock Geology in Chapter 9, Section 9.3.4 Bedrock Geology). The geological information shows that > 50% soluble bedrock (with karst potential) exists in between the WRSF and Harmer Creek. (4) The current groundwater model domain boundary in the west looks too close (< 1km) to the WRSF and lack of sufficient space, and the no-flow boundary assumed could have potential boundary effects of preventing flow and solute transport towards this creek. (5) The current model simulated the plume of contact water seepage would extend to depths of approximately 300 m bgs. Harmer Creek is around 300 m lower than the WRSF (West Alexander Creek). (6) We need the scientifically defensible model results to predict if any mine seepage would potentially affect this creek. Developing the outcome, the conceptual groundwater model, the conceptual water balance and quality model, the numerical groundwater and water balance / quality model, the residual and cumulative effects assessment of both groundwater and surface water quantity and quality might need to be updated accordingly.	29-Apr-24
KNC-137	Open	Ktunaxa Nation Council	Geology/Geochemistry					All the groundwater monitoring wells were installed at depths < 40 m into the bedrock. Wells at greater depths (e.g., > 50 - 100 m) would be required to characterize and test hydraulic properties (e.g., permeability) of the bedrock, especially karst potential bedrock. The existing data for the bedrock and its permeability was all from slug tests (no packer tests), and the data is very limited (within the depths of < 40 m) and does not support a trend analysis (e.g. permeability vs depths and lithology). No well or any data was collected to assess the karstic rocks and faults. The karst rocks and faults could provide preferential flow pathways.	29-Apr-24
KNC-138	Open	Ktunaxa Nation Council	5(1)(a)(i) Fish and Fish Habitat					KNC would recommend collecting surface water quality samples in Harmer Creek. The effects were assessed with no sampling data from this creek but using the data from Grave Creek instead. As Harmer Creek water quality is affected by other mining activities in the area, the water quality data from Grave Creek won't be representative of Harmer Creek. Groundwater seepage could also potentially migrate from the project (e.g., the WRD in West Alexander valley) toward Harmer Creek.	29-Apr-24
KNC-139	Open	Ktunaxa Nation Council	Geology/Geochemistry 5(1)(a)(i) Fish and Fish Habitat					KNC would recommend basal rock drains to be installed at the base of the WRSF and diversion ditches around the WRSF to facilitate the drainage and collection of seepage and reduce clean runoff from the valley slopes into the WRSF. As the sediment ponds are designed to be lined (with geomembrane liners) after 4 years in Operations, seepage from the WRSF would bypass and not be collected by the sediment ponds, and therefore we would recommend additional mitigation measures (including a secondary seepage collection pond and monitoring wells) at the downgradient of the currently planned ultimate sediment pond and before the confluence into Alexander Creek. KNC would recommend the sediment ponds are designed with the capacities to store mine contact water under the extreme storm precipitation events.	29-Apr-24
KNC-141	Open	Ktunaxa Nation Council	Geology/Geochemistry					KNC would recommend geophysical survey to be conducted to map the overburden soil distribution to ensure there would be enough topsoil available for the mine reclamation.	29-Apr-24
KNC-142	Open	Ktunaxa Nation Council	Geology/Geochemistry					KNC would recommend collecting more geochemistry data to support characterization of the ML/ARD. The current data looks limited.	29-Apr-24
KNC-169	Open	Ktunaxa Nation Council	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	General		Lake Koocanusa	Please refrain from using Lake Koocanusa and refer to the waterbody as Koocanusa Reservoir. It is important to KNC that it is described accurately as a reservoir.	29-Apr-24

KNC-171	Open	Ktunaxa Nation Council	5(1)(a)(i) Fish and Fish Habitat 5(1)(c)(i) Aboriginal Peoples Health/ socioeconomic conditions	Chapter 12	12.8	Further consultation with DFO and Indigenous stakeholders are required to assess the feasibility of an offsetting strategy.	The project predicts the loss of an estimated 35,165 m^2 of instream habitat that supports westslope cutthroat trout. The authors also conclude that limited offsetting opportunities exist in the LSA, though are availabile in the RSA. Finally, the authors conclude that further consultation with DFO and Indigenous communities is needed to assess the feasibility of an offsetting strategy. It is premature to approve a project without greater certainty in feasible offsetting measures considering the extent to which this high value habitat is expected to be lost; this is especially important considering the degree to which tributary habitats in Qukin ʔamakʔis have been degraded. During development of the valley-wide permit (PE-107517), it was recognized that further degradation of tributaries within Qukin ʔamakʔis should be avoided, and that rehabilitation of impacted tributaries and protection of unimpacted tributaries should be a management goal. Accordingly, PE107517 includes a requirement for tributary management, in recognition of the high proportion of already impacted tributaries in Qukin ʔamakʔis, that "tributaries that are not impacted by mining activities, that provide relatively high habitat value, and/or support ongoing habitat use by fish and sensitive aquatic dependent wildlife (i.e., directly or indirectly through food production) shall be identified as the highest priority for permanent protection". KNC knowledge holders also identified that protection of Alexander Creek was critically important considering the presence of rare undisturbed ecosystems; it is my understanding that offsetting like for like is not feasible.	29-Apr-24
KNC-172	Open	Ktunaxa Nation Council	5(1)(a)(i) Fish and Fish Habitat	Chapter 22	Appendix 22-B Addendum to HHERA: Supplementary Assessment of Selenium		KNC recommends that the authors incorporate the most recent bioaccumulation model (2020) to predict selenium in invertebrate tissues, and then model WCT egg concentrations using the EVWQP (2014) invertebrate to WCT egg tissue model. The use of the three-step model from the EVWQP is not supported.	29-Apr-24
KNC-186	Open	Ktunaxa Nation Council	s.79 SARA	Addendum B	B.5.3.9.2	Paragraph 3	There is a lot of published information regarding the grizzly bear population in the Elk Valley, and specifically information on grizzly bear use of the LSA. It has been demonstrated that the Elk Valley is a sink population for grizzly bears and that road mortality and conflict is a significant source of bear mortality. This Project will increase traffic in an important wildlife corridor with very few mitigations in place to account for this increased disturbance. There is sufficient information available for NWP to assess impacts to bear populations and KNC would like to see how removal of high quality secure habitat and impediments to movement corridors from this Project will impact grizzly bear populations.	29-Apr-24
KNC-196	Open	Ktunaxa Nation Council	5(1)(a)(i) Fish and Fish Habitat	Chapter 10	Appendix 10B Hydrology Baseline Report January2024 5.2.1.5 Regression Analysis	Correlations to WSC stations.	The correlations in Figures 28 to 33 are not particularly strong. Has the author considered Empirical Frequency Paring as a means to improve confidence in the relationships? In any case, these will likely need to be revisited after the RISC review.	29-Apr-24
KNC-209	Open	Ktunaxa Nation Council	5(1)(a)(i) Fish and Fish Habitat	Chapter 6		"backup reservoir in Grave Creek as a secondary source of process make-up water."	Quantity and quality assessments are lacking. Please include.	29-Apr-24
KNC-211	Open	Ktunaxa Nation Council	5(1)(a)(i) Fish and Fish Habitat	Chapter 6	Appendix 6B		Additional level of detail presented in Appendix 6B is minimal compared to the information already presented in the report body. Additional details of methodologies used in regression analyses, as well as selection and concurrency of dates would be useful.	29-Apr-24

KNC-221	Open	Ktunaxa Nation Council	s.19 Factors to be Considered	Chapter 20	20.3.2	Air temperature data were collected at the Crown Mountain climate station between January 2014 and May 2016. During this monitoring period, the mean monthly air temperatures ranged from -8.1°C in December to 14.9°C in July, with an annual average of 1.2°C. The extreme minimum temperature at the Crown Mountain climate station was -32.3°C on March 1, 2014 and the extreme maximum temperature was 35.2°C on June 7, 2015 (Chapter 6, Appendix 6-B). Extreme warm temperatures events are often described using a 20 year return period, or an annual probability of 5% occurrence. However, what are currently 1-in-20-year extreme warm temperature events are predicted to occur much more frequently in the coming decades, and extreme cold events will likely become less frequent. Therefore, characterizing different probability patterns for extreme temperatures events was not further considered in this assessment as return periods for extreme events are anticipated to change during the Project life. An assessment of climate change on the Project is provided in Section 20.6.	This section presents mean monthly temperature data as opposed to the extreme temperature data, both would be usfeul.	29-Apr-24
KNC-222	Open	Ktunaxa Nation Council	s.19 Factors to be Considered	Chapter 20	20.3.3	For the purpose of the Project, a threshold of 125 km/h wind gusts was determined based on a combination of wind speed ranges described in the Enhanced-Fujita Scale for estimating wind speeds based on damage (ECCC, 2013). Another supporting resource that informed this choice was the preliminary analysis conducted by the National Research Council (Schriever, 1977) on the wind sensitivity of single- and double-wide mobile homes and associated anchor requirements to prevent overturning. A second threshold of 95 km/h 10-min wind was extracted from CAN/CSA-C22.3 No.60826-10 Design Criteria of Overhead Transmission Lines (Canadian Standards Association [CSA], 2010). This threshold is representative of an estimated 50-year return period for the area, and is used as the design threshold load for electrical transmission lines of standard reliability. Table 20.3-2 presents historic probabilities for the wind events described above	Return periods and extreme values assessed for wind, additional detail selection of threshold data would be useful. Unclear if the data is based on Sparwood or the Crown Mountain Climate station.	29-Apr-24
KNC-224	Open	Ktunaxa Nation Council	s.19 Factors to be Considered	Chapter 20	20.6.2	Climate data from the Climate Atlas of Canada (2019) were collected for the Fording River meteorological station, which Dillon confirmed to be the most representative station for the Crown Mountain Project site following a correlation analysis on the site meteorological station, which compared the Crown Mountain station to other nearby stations. Observed historical climate data were compiled for the period 1981 to 2010. The historical data are summarized alongside the projection data in Sections 20.6.3.1 to 20.6.3.10	Potentially inconsistent with other sections that select Sparwood, for reference: 6.4.1.1 Meteorology	29-Apr-24
KNC-228	Open	Ktunaxa Nation Council	s.19 Factors to be Considered	Chapter 3			From the application, it is understood that the mining equipment includes two diesel powered hydraulic shovels and one front end loader, a single fleet of up to twenty 227 t mine trucks, as well as support equipment, and that the majority of the equipment will be diesel powered. 2.5.1.6 Mine Equipment Selection indicated that “The primary Project decision for mine equipment focuses on how the shovels and drills are powered.” and that: “other mines in the Elk Valley operate electric shovels as their primary mine rock loading machines…” “NWP will look to evaluate new technologies for incorporation in the Project as this evolves” “electrifying Crown Mountain’s pits to support electric drills and shovel would require additional power sourced from B.C. Hydro. There is limited additional electrical capacity in the Elk Valley sourced from B.C. Hydro. NWP understands that there is insufficient capacity in the regional system to support mine equipment electrification currently. Therefore, electrically powered mine equipment is not considered technically feasible.” “If grid power from B.C. Hydro was available to support electrification, the mine plan would have to be altered….” Given BC Hydro’s announced plans for expansion of electrical supply in the Elk Valley (per previous comment), is NWP reconsidering the use of electric shovels for the Crown project?	29-Apr-24

KNC-230	Open	Ktunaxa Nation Council	s.19 Factors to be Considered	Chapter 3	The Project is estimated to require an annual natural gas load of approximately 355,000 GJ per year, the most significant portion of which is for coal drying with Hyperbaric disc filter @ 232,000 GJ/year. The hyperbaric disc filter uses 40% of the natural gas compared to a conventional fluidized bed dryer, but it is still a significant amount of natural gas. Teck has indicated that they plan to "Begin transition to zero-emission coal drying" by 2027 per https://www.teck.com/sustainability/sustainability-topics/climate-change/ KNC has understood from Teck that they will use electrical power to "mechanically dry" the coal, and alternative power sources for final drying. Please clarify the potential alternative for zero-emission coal drying as part of the project.	29-Apr-24
KNC-231	Open	Ktunaxa Nation Council	s.19 Factors to be Considered	Chapter 3	Table 2.5-8: indicates that "Alternative sources of energy such as solar and wind power struggle to provide a constant supply of base load power, and typically require energy storage solutions or alternative back up power sources to supply stable energy when wind and solar are not producing. The site topography limits solar exposure and sustained wind speeds. Wind and solar have been ruled out as a primary power source due to technical challenges." A paper on Integrating renewable energy in post-mining land uses was presented at the 2023 BC Mining Reclamation symposium which argues "that renewable energy development is a superior choice when compared to traditional approaches like ecological rehabilitation because it is faster to mature, has greater certainty of success, provides revenue following mine closure, and offers additional value in achieving net zero targets." Has NWP considered developing Solar and Wind on reclamation sites over the longer term?	29-Apr-24
KNC-232	Open	Ktunaxa Nation Council	Atmospheric Environment	Chapter 6	Although the Layer Cake approach may help create suboxic zones for water quality mitigation, there could be increased concerns for dust generation from the interim handling and placement of dry tailings/reject (i.e. fine material) over the large waste rock areas, that is likely to be more susceptible to wind events and fugitive dust generation. However the placement of rejects on the MRSFs does not appear to be considered as an emission source in Appendix 6C Section 6.1 (only the drop stockpiling of rejects appears to be considered). Please clarify.	29-Apr-24
KNC-233	Open	Ktunaxa Nation Council	Atmospheric Environment	Chapter 6	KNC understands that Emissions are expected to be greatest in the 11th year of mine operation. While tabulated data is available, KNCs reviewer was not able to find a concentration contour figure(s) that provide a visual illustration of the spatial distribution of the projected air quality. Please provide or point to where the figures are located, as this information is necessary to understand the spatial extent of the predicted air quality concentrations.	29-Apr-24
KNC-240	Open	Ktunaxa Nation Council	Data Quality	Chapter 4 Chapter 23	It is noted that many portions of this application were written quite awhile prior to submission and acceptance into the review by the provincial and federal regulators. However, as information and engagement continued to evolve, chapters needed to be updated to reflect the most up to date information. For example, in Table 4.4-4 and page 23-27 both discuss site tours and dates by KNC and which is now missing data and information. Both chapters should be updated to reflect up to date information and more recent engagement.	29-Apr-24
KNC-243	Open	Ktunaxa Nation Council	5(1)(a)(i) Fish and Fish Habitat	Chapter 11	KNC has previously shared that a site specific selenium objective of 0.85 ug/L needs to be met in Koocanusa in order to protect Ktunaxa cultural values and all living things (http://lakekoocanusaconservation.pbworks.com/w/file/fetch/147718992/MRC%20Nov%2018%202021%20Meeting%20Summary.pdf). This objective aligns with the standard of 0.8 ug/L for dissolved selenium in the water column that was approved by the U.S. Environmental Protection Agency in February 2021. Since that time, selenium has exceeded this criteria at the International Boundary – which has resulted in violations of the international 1909 Boundary Waters Treaty and the US federal Clean Water Act. Given these violations, there is no assimilative capacity for selenium loading. Please provide the section where this is addressed, or follow up information on how will NWP demonstrate that there will be no selenium load released from the proposed coal mine development?	29-Apr-24

KNC-248	Open	Ktunaxa Nation Council	s.19 Factors to be Considered s.79 SARA 5(1)(a)(i) Fish and Fish Habitat	Chapter 20	Appendix 20A	As mostly acknowledged in Chapter 20/Appendix 20A, climate change predictions include increasing summer temperatures, more prolonged summer drought conditions, more frequent and/or severe damaging wildfires, increased year-round flooding and terrain instability, erosion and avalanches, landslides, higher forest insect and disease incidence and tree mortality with increased fire susceptibility. These events are also known to reduce regeneration success; there is reduced tree and vegetation regeneration potential. This impacts the assumption that listed ecosystems and/or ecosystems in severe deficit (e.g., grasslands, brushlands, floodplains, wetlands, old and mature forests) can be restored/reclaimed as climate change accelerates. The application describes ecosystem restoration/reclamation at closure, but provides no documented evidence that restoration/reclamation of rare and sensitive ecosystems is even possible now, let alone with future predicted extremes. KNC has concerns with the expectation that listed ecosystems (e.g.,grasslands, brushlands, floodplains, wetlands, riparian, forests, etc.) and/or ecosystems in severe deficit based on cumulative effects analysis (e.g., old and mature forests) can be restored/reclaimed in a climate change context. This risk is not assessed in Chapter 20, nor elsewhere in the application. This risk in not being able to achieve prescribed ecosystem endpoints in the context of climate change needs to be fully acknowledged and assessed.	29-Apr-24
KNC-252	Open	Ktunaxa Nation Council	s.79 SARA	Appedix 14-B	Methods	For Appendices 14-B; Appendices 14-C; and Appendices 14-C; CDC search was originally undertaken in 2014 and again in 2018 - this data was then relied on to complete further vegetation assessments. This information is now almost 6 years old; many of the listed plants and ecosystems have been reviewed and updated. The age of data is concern and should be updated across all Chapter 14 appendices, and updated in the relevant assessments.	29-Apr-24
KNC-253	Open	Ktunaxa Nation Council	s.79 SARA	Chapter 14	14.5	For each vegetation VC, please provide summary tables by speices that summarize the following information: BC Conservation Status, SARA status, known occurance in footprint/LSA;/SA; potential to occur in footprint/LSA/RSA; NWP survey effort (including by year).	29-Apr-24
KNC-255	Open	Ktunaxa Nation Council	s.79 SARA	Chapter 14	Table 14.5-2	Field survey data collection for listed and sensitive plant communities is inadequate. It appears that field surveys for specific species were only conducted in 2014 (from Appendix 14B). The Appendix 14B states "The presence of at-risk ecological communities was searched for in the field, during field work for the TEM and listed plant species surveys." although does not say when the TEM plots were conducted. It appears majority of field surveys for sensitive and listed species were conducted in 2014; and may be skewed by influence of TEM plots, rather than for potential to occur. This information needs to be updated to reflect up-to-date survey information as the age of this data is a concern, as well as the methods used to gather information. Additionally, there are a number of high elevation grassland ecosystems with potential to occur in the area that have not been considered (e.g. Gg16).	29-Apr-24
KNC-256	Open	Ktunaxa Nation Council	s.79 SARA	Chapter 14	14.5.2.2.4; 4.5.2.2.3	It appears that depending when the limber and whitebark pine data were gathered (relative to the sequence of logging impacts), it may be impacted by the extent of current logging in the valley. Were the areas sampled partially logged (or previously mined/logged) or impacted by mine-related activities. If so, this would call into question their use for baseline/existing condtions. It is suggested to include a summary table that outlilnes existing disturbance separated by footprint/LSA/RSA based on type of distrubance (logged, roads, cutblocks <20 years, cutblocks > 20 years)	29-Apr-24

KNC-261	Open	Ktunaxa Nation Council	s.79 SARA	Chapter 14	14.5.2.2.4		Results are difficult to interpret, in particular Table 14.5-7 which is separated by site type - this appears to dilute the impacts of the project on habitat. Please provide clear summary tables that delineate whitebark pine habitat results for area/footprint/LSA/RSA by potential habitat by BEC zone rather than site series. OR provide BEC zone analysis AND site series analysis. This table does not adequately report whitebark pine potential habitat and skews results. Further, please provide a clear summary table that separates results for whitebark pine CRITICAL habitat for area/footprint/LSA/RSA by BEC zone rather than site series. OR provide BEC zone analysis AND site series analysis. This table does not adequately report whitebark pine critical habitat and skews results.	29-Apr-24	
YQT-25	Open	Yaq ì̓t ʔa·knuqƛ̓i'it	s.79 SARA	Chapter 15			This chapter summarises the results of wildlife baseline surveys, and evaluates habitat supply for selected VCs within the project footprint, local study area and regional study area. VCs encompassed ungulates (elk, moose, bighorn sheep and mountain goat), carnivores (lynx, wolverine, marten, badger, and grizzly bear), bats, birds, amphibians (Western toad, Columbia spotted frog), and an insect (Gillette's checkerspot). Wildlife surveys in the LSA occurred between 2014-2020 and included a variety of methods depending on the species (audio point counts, sound detections, ground transects, aerial transects, remote cameras, burrow surveys, hair-snagging traps, GPS collars, eDNA sampling). Habitat models were developed for each VC based on a combination of data sets (vegetation resource inventory, terrestrial ecosystem mapping. streams, roads, wetlands, and remote sensing datasets). The Grizzly bear model included a berry mode, and the ungulate models including a wolf model. Three types of models were used depending on data available: ● Occupancy models were developed for ungulates, carnivores, birds, bads and western toad. Occupancy models are a measure of the probability of occupancy of a species in a unit space (a 1km x 1 km cell). ● Habitat suitability indices were developed for Olive-sided flycatcher, woodpeckers, and Northern goshawk. HIS models are based on the known habitat associations of the species and are a measure of habitat supply. ● Resource selection functions were developed for Grizzly bear and Columbia spotted frog. These are a more robust measure of important habitat types and are able to identify selection or avoidance of certain habitat types by the selected species. The effects assessment for each species discussed habitat loss for all VC's, sensory disturbance for most VC's (except amphibians, insects), movement (ungulates, carnivores), increased mortality risks (ungulates, carnivores), and health (amphibians). Effects due to habitat loss and sensory disturbance were largely based on the amount of habitat ranked 'high' or 'very high' affected by the project (direct disturbance or within a distance where	29-Apr-24	
Piikani-13	Open	Piikani Nation	s.79 SARA	Chapter 14	3.3.4.2	Paragraph 1	The proponent has indicated that a complete inventory of all whitebark pine is not feasible during early phases of development. We would like clarification of why this is the case. We are of the opinion that a species of such importance and legal protection warrants a comprehensive inventory in the early stages of project development to ensure that protection measures are not overlooked.	29-Apr-24	
Piikani-14	Open	Piikani Nation	s.79 SARA	Chapter 14	6.5.2.1	Ecological Restoration Plan	The proponent outlines an Ecological Restoration Plan that involves the cultivation and replanting of Whitebark Pine in the reclamation phase of the Project. The initial clearing of individual plants and critial habitat is highly concerning to our nation as the proponent has acknowledged ECCC's conclusion that long term viability of Whitebark Pine in Canada depends on the conservation of critical habitat, including seed dispersal. While an Ecological Restoraton Plan theoretically sounds appealing, an obvious concern of the plan is that the ecosystem will not be the same after replanting. For example, Whitebark Pine plantings may survive into maturity, but species that are relied on for seed dispersal such as Clark's Nutcracker may no longer be present in the environment due to the initial clearing of the pine. How will the proponent account for this? Will the proponent also incorporate a confined breeding program for Clark's Nutcracker and other seed dispersers into the Ecological Restoration Plan?	29-Apr-24	

Piikani-19	Open	Piikani Nation	5(1)(a)(i) Fish and Fish Habitat	Chapter 3	3.7.3	Piikani aknowledges the design and plan by NWP to backfill the North and East Pits to reduce the size of the Mine Rock Storage Facility. However, given the major impacts to fish habitat, and the serious potential for cumulative effects, we request that the Proponent make substantive additional efforts and/or changes to mine design to increase backfilling of the mined out pits, if possible. This should also include sequencing the development of the south pit, to allow increased backfilling. This would help reduce the size of the main Waste Dump. Particular efforts should be made to avoid overprinting of the southern portion of West Alexander Creek.	29-Apr-24
Piikani-22	Open	Piikani Nation	5(1)(a)(i) Fish and Fish Habitat	Chapter 12 and Appendix 12-E	12.5.3.2	The Relative Habitat Values (RHV) assigned to the lost habitat in West Alexander Creek is 1.0 while some of the offsetting habitats, are as high as 3.0, giving them triple count for each square metre of habitat offset. This is an unjustifiable approach, which doesn't account for the value of these high order, alpine environments. Nor is it appropriate in the sense of prioritizing the offsetting or enhancement of similar habitats. The loss of the entire West Alexander Creek aquatic ecosystem is not supported by Piikani. Secondly, Piikani does not support the use of the RHVs in calculating offsets in this instance, as productivity of a habitat is not the only important metric. However, if the Project is to advance, substantial additional offsetting must be included, with a focus on at least some offsetting measures targeting similar habitats to what is being lost.	29-Apr-24
Piikani-23	Open	Piikani Nation	5(1)(a)(i) Fish and Fish Habitat	Chapter 3	3.7.5	The addition of selenium from leaching and runoff is anticipated to increase concentrations found in water and sediment of Alexander Creek. This selenium can then enter WCT and bull trout through a variety of exposure routes, but dietary pathways, by consumption of benthic invertebrates is of highest risk. The Proponent plans to mitigate effects of selenium concentration with two primary design features. The first is to use a "layer cake" design for the Mine Rock Storage Facility, an unproven approach for which the weaknesses may not become apparent until years into the future when it is too late to change. The second is the development of sediment ponds to retain water, allowing for deposition of solids. Given the high-level of concern associates with selenium pollution and existing loads of selenium within the Elk River watershed, a more robust and proven approach for selenium management must be implemented.	29-Apr-24
Piikani-28	Open	Piikani Nation	5(1)(a)(i) Fish and Fish Habitat	Chapter 33	33.4.1.5.7	The Aquatic Effects Monitoring Program (AEMP) identifies those proposed monitoring sites for community assessment, habitat use, and spawning (Table 33.4-15) and water quality, tissue, and sediment (Table 33.4-16). The nearest proposed monitoring site on Alexander Creek, dowstream of the Project is ALE7. This area has input from at least 7 additional tributaries that will dilute the effluent from the Main Sediment Pond, limiting the detection of effects. The Proponent must include additional monitoring site on Alexander Creek, nearer to the confluence with West Alexander Creek. Additionally, the Proponent, should include a monitoring site upstream of the confluence with West Alexander Creek that can provide a reference location to help distinguish between background changes. ALE9 would be a suitable location for this purpose.	29-Apr-24

Piikani-29	Open	Piikani Nation	5(1)(c)(i) Aboriginal Peoples Health/ socioeconomic conditions 5(1)(a)(i) Fish and Fish Habitat	Chapter 33	33.4.1.5.7		There is no discussion on how Indigenous communities, such as Piikani, will be included in environmental management, emergency management, monitoring, and remediation. This includes issues related to ongoing permitting, selenium management, or specific remediation such as in the case of an accident or malfunction. To support Piikani's ongoing participation in monitoring and oversight of the Project, we request the establishment of an Environmental Committee or similar oversight mechanism. The purpose of the committee will be to review monitoring data and monitoring reports produced during the life-of-mine to ensure that environmental protection is sufficient for all VCs. The committee can also participate in permitting throughout the life-of-mine for all relevant applications (e.g. Fisheries Act authorizations, water permits, Closure Plan updates etc.) and provide input to management plans (e.g. EPPs, AEMP, Site Water Management Plan, Environmental Monitoring Plans, etc.). The specific details of such a committee can be developed through consultation with Piikani and must be formalized through a Piikani-NWP Project Agreement.	29-Apr-24
Piikani-30	Open	Piikani Nation	Atmospheric Environment	Chapter 6		Air Dispersion Model	Please provide the detailed report of all project specific air disperion modelling conducted by NWP.	29-Apr-24
Piikani-33	Open	Piikani Nation	Atmospheric Environment	Chapter 6	6.5.4.3		NWP does not specify the methodology or equipment that will be used to monitor for TSP, PM10 or PM 2.5. NWP commits to using United States Environmental Protection Agency reference methods or equivalent methods, but no further detail is provided. NWP should provide additional details on the methodology and equipment that will be used to monitor TSP, PM10, and PM2.5.	29-Apr-24
Piikani-34	Open	Piikani Nation	Greenhouse Gases	Chapter 6	6.5.3.1	Air Quality and Greenhouse Gas Management Plan	NWP states the number and location of ambient air monitoring stations will be developed during permitting. Additional details or a conceptual plan for the location of monitoring stations would provide greater clarity to Piikani Nation on the adequacy of the AQGGMP. NWP must provide Piikani a map of the locations of potential ambient air quality monitoring stations. In addition, a detailed list of all contaminants NWP plans to sample as part of NWP's Air Quality and Greenhouse Gas Management Plan (AQGGMP).	29-Apr-24
Piikani-40	Open	Piikani Nation	Atmospheric Environment	Chapter 6	6.6.6.1.4	Cumulative Effects	NWP states "the residual cumulative effects of the Project in combination with those of other past, present, or reasonably foreseeable future projects or activities on ambient criteria air contaminant concentrations during all Project phases are considered not significant." And that "given the technical boundaries and limitations discussed above, notably the lack of information on emissions and ambient air quality from other operating or proposed mines in the area, the characterization of residual cumulative effects shall be qualitative." Any proper cumulative effects assessment of air quality should be rooted in qualitative data. The RSA already experiences regular exceedances for particulates and ozone; and generally poor air quality when compared to most of Canada. NWP will only exacerbate these conditions; and therefore must acknowledge the Project's contribution to cumulative air quality impacts.	29-Apr-24
Piikani-41	Open	Piikani Nation	Atmospheric Environment	Chapter 6	6.5.1.1	VOCs and Metals	NWP did not include VOCs and metals in dustfall in the residual effects assessment on air quality as ambient air quality objectives for these parameters do not yet exist. However, in other jurisdictions (e.g. Ontario, CCME) there are ambient air standards for metals and VOCs. It is common in EA practice, that where a standard does not exist provincially, the practitioner should use equivalent standards for comparison/reference. NWP must include metals and VOCs in the residual effects assessment and provide air dispersion modeling results compared to other comparable air quality standards.	29-Apr-24

SB-44	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 11	11.5.3.6. Mitigation Measures for Change in Surface Water Quality from Sediment Pond Discharge Page 11-58, first paragraph	Contamination of non-contact water	Create a water treatment plan that does not create residual effects on surface water quality from sediment pond discharge.	29-Apr-24
SB-52	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 11	Section 11.6.6	Cumulative Effects	Cumulative effects should be determined for the LSA and the RSA. Effects would be found to be far more significant and impactful in the LSA than the RSA due to less dilution.	29-Apr-24
SB-53	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat 5(1)(c)(i) Aboriginal Peoples Health/ socioeconomic conditions	Chapter 12	12.5.2.2.2 Page 12-90, second to last paragraph	Removal of most of West Alexander Creek	This section states that "While Indigenous fisheries and harvesting have not been identified in West Alexander Creek or Alexander Creek, Indigenous peoples could potentially exercise their Aboriginal and Treaty rights to fish within these systems in the future. How can they fish in West Alexander Creek in the future if the mine is removing almost all of it?	29-Apr-24
SB-54	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.3	Impacts on Classified Water	This section states that there is high recreational fishing pressure in the area and the Elk River and its tributaries are designated as Classified Water, including Alexander Creek which occurs east of the Project and within the coal licence areas. Since the likelihood of negative impacts in Alexander Creek on fish are high due to mining operations, why should this location be considered an ideal place for this activity?	29-Apr-24
SB-55	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.5.3.1.9 Page 12 -118 and Table 12.5-9	Offsetting Plan	A version of the offsetting plan for fish habitat is not provided beyond Table 12.5-9. Even though the offsetting plan has not been approved by DFO, it is important to include at least a draft version so the Shuswap Indian Band can comment on a proposed plan. Where will the side channel improvements occur? What type of fish will be introduced to Brule Creek and where will they be introduced along the creek? Where will the creek crossing replacements occur and what will they be replaced with? Where will the side channels be created on the Elk River? Where and what is the Inham Channel? Is there a figure to accompany Table 12.5-9?	29-Apr-24
SB-57	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.1.1 Paragraph after Table 12.1-1		This section states that the EV-CEMF chose riparian ecosystems and Westslope Cutthroat Trout as valued components but did not choose the other fish and benthic invertebrates listed as VC's later in the document. Why?	29-Apr-24
SB-58	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.2.3, Table 12.2-2, first row	Risk of bioaccumulation	If there is a risk of bioaccumulation of toxic metals in aquatic biota due to mining operations, why should mining at that location be allowed?	29-Apr-24
SB-59	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.1.1, Second Paragraph, Page 12-24	Baseline fish tissue information from regional area	It is reported that baseline selenium levels in WCT in Dry Creek were 34 mg/kg dw in 2015. This level exceeds the federal guideline of 24 mg/kg dw, however that it is not stated. It is unclear where Dry Creek is in reference to the LSA or RSA. The location of Dry Creek is not provided in a figure nor is the location of Teck's Elkview Operation. The only location description is that Dry Creek is 'in the vicinity of' Teck's Elkview Operation. Why wouldn't the baseline study occur within the actual Project Footprint? Wouldn't collecting baseline data from the area where fish tissue are already contaminated with selenium give inaccurate baseline conditions?	29-Apr-24
SB-60	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.1.1, Second Paragraph, Page 12-25	Baseline invertebrate information from regional area	This section states that Benthic invertebrate baseline studies were completed by Lotic Environmental (2015) in the vicinity of Teck's Elkview Operations. Where is this shown on a map? Again, why weren't baseline benthic sampled within the Project Footprint?	29-Apr-24
SB-61	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.1.1, Second to last Paragraph, Page 12-25	Existing Conditions	Doesn't the Cope study (loss of spawning habitat for WCT) and the recent devastation caused by extremely high selenium in the Elk River as a result of mining activities point to less mining occurring in the Elk Valley? Doesn't it makes sense to dig deeper in exiting mines rather than destroy pristine habitat like that in the proposed project footprint?	29-Apr-24
SB-62	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Figure 12-4-1	Fish Tissue Sampling	Does Figure 12-4-1 indicate that no fish sampling done within the project footprint? There are only two fish sample sites immediately adjacent to the project area in Alexander Creek even though several tributaries that will be permanently impacted feed into that creek. Why so few? Access issues? Figure 12.4-2 indicates fish presence and Figure 12.4-3 seems to indicate that fish sampling occurred at stream crossings along West Alexander Creek so this is confusing.	29-Apr-24

SB-63	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Page 12-29, last paragraph	Average selenium concentrations in fish tissue criterion in the US	Average selenium concentrations in Westslope Cutthroat Trout muscle This section states that fish tissue were above the B.C. tissue guidelines in samples collected from just north of the mouth and at the mouth of the Elk River, but all were lower than the U.S. Environmental Protection Agency (EPA) criterion and EVWQP Level 1 benchmark of 13 mg/kg. Why is it important to mention that average selenium concentrations in fish tissue were below criterion in another country?	29-Apr-24
SB-66	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.2.1.1.	Fish bearing status	This section states that fish inventories were not completed on reaches with prior knowledge of fish bearing status in the provincial Habitat Wizard Fish and Fish Habitat Database. Since changes have occurred in the watershed as a result of mine start up and closure, why weren't fish inventories in the field completed?	29-Apr-24
SB-67	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.2.1.1.	Fish bearing status	The FHAP surveys for WAL1, WAL2, and ALE8 to ALE10 occurred in August 2014. The FHAP survey for ALE7 was completed in October 2017. Is one survey occurrence sufficient for these sites?	29-Apr-24
SB-68	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.2.1.1.	fish habitat data	It is surprising that habitat data collection did not include instream water quality parameters like temperature, turbidity, dissolved oxygen and electrical conductivity. Was this completed only at water quality sampling sites?	29-Apr-24
SB-71	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.2.1.1. Aquatic Health, Page 12-40	Sample Collection Timing	Table 12.4-4 indicates that samples were not collected at any of the sites more than 1 year. However the p[paragraph above states that samples were collected in 2017 and 2019. Isn't more than one year of sampling required? Why were no triplicate samples collected at sites ALE! and ALE2?	29-Apr-24
SB-72	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.2.1.1. Fish Tissue, Page 12-41	Sample Collection Timing	Table 12.4-4 does not indicate that 8 replicate samples of fish were collected as required by the Water and Air Baseline Monitoring Guidance Document for Mine Proponents and Operators (B.C. Ministry of Environment, 2016) which recommends targeting eight replicates per site to describe both within-site and between-site variability.	29-Apr-24
SB-73	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat 5(1)(b)(iii) Another country	Chapter 12	Section 12.4.2.1.1. Fish Tissue, Page 12-41	Selenium Guidelines	This section states that the U.S. EPA selenium guidelines are 8.5 mg/kg dw for whole bodies, 15.1 mg/kg dw for eggs or ovaries, and 11.3 mg/kg dw for muscle (U.S. EPA, 2016).Is this mentioned because the BC guideline is only 4 mg/kg or because of the proximity of the US to the project site? Why are the US standards mentioned if the project is in Canada?	29-Apr-24
SB-74	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.2.1.1. Aquatic Health and Benthic Tissue, Page 12-39 and Page 12-41	CABIN protocol	Benthic sampling protocol on page 12-39 for aquatic health indicates a dip net was used. On page 12-41 kick nets are described as being used for benthic tissue sampling. Aren't kick nets the correct nets used when following CABIN protocol?	29-Apr-24
SB-76	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.2.1.1. Page 12-45	Benthic invertebrate collection in wetlands	How was the represented area chosen in the wetlands for benthic invertebrate collection? What protocol was used?	29-Apr-24
SB-77	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.2.2.	Photographic Documentation	Are there any pictures of the tributaries and creeks?	29-Apr-24
SB-79	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.2.2. Page 12-46, last paragraph	Description of fish habitat in creek reaches	For Alexander Creek, Reach ALE1 and ALE11 are discussed but not Reaches AE2-AE10. Is there a reason for this?	29-Apr-24
SB-80	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.2.2. Table 12.4-7	Description of morphology creek reaches	Why is there missing information on the morphology of 10 out of the 16 creek / tributary reaches? Reach length and bankful depth and water depth are also missing for some of the reaches but there is no explanation provided below the table. Wetted width is provided for every reach so wouldn't this imply a depth measurement be available? Also, some of the descriptions of the reaches indicate they dewater. Does this mean that the wetted widths and all the measurements are averages? If so, when were they measured and how many measurements were taken over time?	29-Apr-24
SB-82	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.2.2.	Fish presence in West Alexander Creek tributaries	The section states that "all of the unnamed tributaries to West Alexander Creek (considered non-fish bearing) were noted to contain either gradients that are not conducive to fish passage, or waterfalls". Were all of these same tributaries electrofished to confirm non-fish presence?	29-Apr-24
SB-83	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.2.2.	Tagged fish population study results	What reaches make up Upper, Middle, Lower Alexander Creek , and West/Upper and Middle/Lower West Alexander Creek?	29-Apr-24
SB-85	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.2.2.	Spawning surveys	The introduction to Table 12.4-10 states that the "surveyed reaches considered to be fish bearing included ALE1 to ALE10, WAL1, and WAL2. Fish were captured in all fish bearing reaches except ALE8 and ALE10." There is no information for reaches ALE1-ALE6 in the table, why is that? Do sites ALE3 - ALE6 exist at all? They could not be found in the figures in Chapter 12.	29-Apr-24

SB-86	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.2.2. page 12-57, last paragraph	Rearing	This paragraph states that WCT were abundant throughout the Alexander Creek watershed and were found to have the highest site-specific density of all species present, with the exception of ALE1, which was dominated by Eastern Brook Trout. Does this mean that these fish were found in reaches previously determined to be free of fish?	29-Apr-24
SB-87	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.2.2. page 12-67, first two paragraphs	Selenium in benthic and periphyton tissue	Minnow Environmental (2014) suggested 6.7 mg/kg dw as a benthic invertebrate tissue selenium reference and a periphyton tissue selenium range of 0.87 to 4.60 mg/g dw for reference streams in the Elk Valley. What is the rational for this?	29-Apr-24
SB-88	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	Section 12.4.2.2. page 12-67, second to last paragraph	sediment contamination	It is stated that "the Alexander Creek sites had acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, and benzo(a)pyrene sediment concentrations that were between the lower and upper WSQG guideline values. If this is the case, please give rational why it makes sense to impact the creek sediments further by building a mine that will very likely increase those concentrations?	29-Apr-24
SB-90	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.5.2.2.1	Impacts on fish habitat during mining operation	Mine operations result in a lot of dust that can negatively impact fish habitat and water quality. This should be added under "Operations"	29-Apr-24
SB-91	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.5.2.2.3	Fisheries Act Authorization	Has a federal Fisheries Act Authorization been received for this project?	29-Apr-24
SB-92	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.5.2.2.4	Fish mortality	How are fish within the project footprint going to be managed? Will they be removed by electrofishing before the creeks are impacted?	29-Apr-24
SB-95	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.5.2.2.8 Page 12-106 and 107, Functional Riparian Disturbance	Riparian loss	How will the permanent loss of riparian habitat be completely compensated for if successful implementation of ecological restoration only partially reverses the loss of riparian habitats in the Project footprint? is there a figure than shows what progressive reclamation will look like? Will new vegetation be watered?	29-Apr-24
SB-96	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.5.3.2 Table 12.5-10 Summary of Proposed mitigation measures.	Fish Salvage	The table states that "the approval for work is often accompanied by the recommendation of an on-site Environmental Monitor to be present to do a fish salvage, monitor turbidity, and isolate fish accordingly throughout the work being conducted". An extensive and on-going fish salvage will be required to remove all the fish from harm that involves more than one monitor. Is this described somewhere?	29-Apr-24
SB-98	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.5.4.2.1 Page 12-127	Food Web Impact	It is stated that "as drift-feeding fish further downstream of West Alexander will likely continue to rely on more local sources of invertebrates, the potential impact on the aquatic food web and productivity is predicted to be minor." Since West Alexander Creek is being almost entirely removed, the impact on its food web is extreme. The impact on the food web of the large watershed is less.	29-Apr-24
SB-99	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.5.4.2.2 Page 12-133	Impacts on fish from changes in hydrology	Results from the hydrological model (Chapter 10) predicts that the flows that remain in West Alexander Creek below the Main Sediment Pond will not meet the monthly thresholds required to maintain fish and fish habitat during low flow periods. In addition, due to reduced flows exceeding the thresholds during already naturally low flow periods on the hydrograph (November to March) and during summer low flows (July to September), overwintering and rearing potential of habitat below the Main Sediment Pond will be lost. Isn't his justification to remove all of the fish out of West Alexander Creek where it flows within the project footprint?	29-Apr-24
SB-100	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.5.4.3.1. Determination of Significance Page 12-139	Significance of Offsetting Measures	This section states that "offsetting measures will need to ensure the Project's effect on fish and fish habitat in West Alexander Creek, due to HADD, results in no net loss of available habitat to both fish and benthic invertebrate communities. Thus, resulting in no net loss of instream habitat due to the Project renders the significance of the effect of direct habitat loss due to mine design and development as not significant since offsetting will result in no residual effect." The project results in significant habitat loss. An appropriate Offsetting plan will compensate for the loss but does not mean the loss is insignificant.	29-Apr-24
SB-101	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.5.4.3.1. Determination of Significance Page 12-141	Water Quality Assessment Uncertainty	There are several sources of uncertainty listed pertaining to the surface water quality assessment in Chapter 10. With such uncertainty, how can appropriate mitigation and water quality treatment measures be designed accurately?	29-Apr-24
SB-102	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.5.4.3.3 Changes in Water Quality Page 12-142	Changes in Surface Water Quality	Changes to surface water quality are noted to be neutral because fish can handle short term toxicity. Earlier in the document, it is stated that impacts on water quality are expected to continue after the mine is closed. How is this considered short term?	29-Apr-24
SB-103	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.5.4.3.3 Page 12-143	Likelihood and Confidence	When determining likelihood and confidence it seems counter intuitive that an effect can be deemed 'not significant' if the confidence level is anything but high. Please explain.	29-Apr-24

SB-104	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.5.4.3.3 Page 12-143	Likelihood and Confidence	All of the effects are extremely significant if only West Alexander Creek is considered. This should be discussed. The effects are less significant in the RSA. Please include a section that describes the significance of impacts on West Alexander Creek alone. Also, why wasn't the LSA used instead of the RSA for the determination of significance? Was the RSA used because significance in the LSA is so high?	29-Apr-24
SB-105	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.6.1 Residual Effects Page 12-151	Overview of Residual Effects	This section states that a net loss of habitat is not expected in the Aquatic RSA due to reasonably foreseeable future projects and activities. Therefore, no effect on the persistence of Westslope Cutthroat Trout is expected. How can this be the case considering the amount of active mines and proposed mines in the area? Describe why WCT habitat and population loss are not assigned as being residual effects when there is a discreet population of WCT in West Alexander Creek being displaced and much of the creek is being permanently removed?	29-Apr-24
SB-117	Open	Shuswap Band	Geology/Geochemistry	Chapter 13	13.3	VCs and Measurement Indicators	Clarify how avalanche chutes as a VC are linked with groundwater quality effects pathway.	29-Apr-24
SB-130	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 13	13.6.5		No consideration to changes in groundwater or surface water hydraulics and the impacts on riparian structure and composition? No commitment to what the setback distance would be and what is being considered when establishing the setback? What is this distance and why? No consideration of climate change and other regional changes out of the control of the proponent? How can permanent loss or disruption of riparian habitats with no hope of return to baseline or recovery within 140 years not be considered significant residual effects?	29-Apr-24
SB-139	Open	Shuswap Band	s.79 SARA	Chapter 14	14.3; 14.3.3.1		Why are there four spatial boundaries in Chpt 13, and only three in chpt 14 particularly when you are considering plant communities in both assessments, and whitebark pine / limber pine success is more strongly linked to ecosystem type?	29-Apr-24
SB-140	Open	Shuswap Band	Regulatory	Chapter 14	14.3.3.3		It is unclear how Provincial / Federal rankings and land management plans tie into the administrative boundaries - this requires explanation and linkage.	29-Apr-24
SB-143	Open	Shuswap Band	s.79 SARA	Chapter 14	14.5.2.2.2	Habitat discussions	Significant overlap with Chpt 13 and it is unclear why these sections are not considered together. The integrity of an ecosystem is strongly linked with the success and persistence of rare and endangered plants and should be considered together in an effects assessment - there is the perception that assessing the effects independently will result in a lesser effect which misrepresents reality.	29-Apr-24
SB-193	Open	Shuswap Band	s.19 Factors to be Considered	Chapter 21	22.5	general comment	A common theme of each listed potential accident or environmental impact is that the residual environmental effects are all deemed not significant due to mitigation. Many of the mitigation options are assumptions and not proven, thus Shuswap does not agree to this assessment.	29-Apr-24
SB-195	Open	Shuswap Band	5(1)(c)(i) Aboriginal Peoples Health/ socioeconomic conditions 5(1)(a)(i) Fish and Fish Habitat	Chapter 22	22.5.2.1	Project interactions that may give rise to impacts to the receptor VCs of human and wildlife health are those activities which release substances (either controlled or fugitive) to various environmental media (intermediate VCs) such as air, soil, water, sediment, groundwater, and food (biological tissues), and ultimately influence the exposure scenarios of the human and ecological receptors.	Please advise how project effects that impact human and wildlife health, such as the destruction of food sources are considered?	29-Apr-24
SB-305	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 24	24.7.3.2.1	"Development of the mine site will result in the removal of approximately 5.5 km of West Alexander Creek, which may be used for traditional activities ..."	AS per the CHA, Alexander Creek is a fish habitat for Westslope Cutthroat trout, Eastern brook trout, Rainbow trout, and Rocky Mountain whitefish. Located in the LSA, Alexander and Grave Creeks and their supporting fish habitats are threatened by potential impacts from the proposed mining activities. Since the proposed Project is located uphill from Elk River and Michel Creek, the proposed mining activity has significant potential to transmit contaminants, such as selenium, to the watershed." Please incorporate this information.	29-Apr-24
SB-307	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 24	24.7.3.2.1	"No potential adverse effects to fish and fish habitat are anticipated during Reclamation and Closure ..."	Shuswap Band has not seen any data to prove these statements. They are sweeping statements that carry no weight. Can NWP provide evidence?	29-Apr-24
SB-396	Open	Shuswap Band	Regulatory	Chapter 24	24.1.2.2.3	The Project is located within the designated area of the Elk Valley Area Based Management Plan, also known as the Elk Valley Water Quality Plan (EVWQP). The EVWQP is a plan to manage the cumulative effects of coal mining on water quality and was developed by Teck in response to a Ministerial Order issued in April 2013 under the Environmental Management Act (EMA), 2003.	Environment and Climate Change Canada new policy/regulation on Coal Mine Effluent should be included here. Recognizing that this policy/regulation is currently in development, specific's might not be attainable, however, the purpose and objectives are clear and should be outlined. This will be a significant requirement for any future mine development.	29-Apr-24

SB-425	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 24	24.6.6.1.1	The Secwépemc territory provided an abundance of Salmon to the historic Secwépemc. The primary species fished along the interior rivers were Chinook and Sockeye. Before contact, Chinook salmon was the most plentiful salmon resource to the Secwépemc, the population began to decline in the early twentieth century, at which time, Sockeye salmon became the more abundant. Coho and Pink salmon were also fished, though less desirable. (SNTC, 2016).	This is good context, from a broad perspective. However, it should be focused on Shuswap Band and the Upper Columbia River Basin.	29-Apr-24
SB-426	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 24	24.6.6.1.2	Fishing continues to be an important subsistence activity within Shuswap Band's caretaker area with Trout, Lingcod, Char, and Whitefish harvested in various waterways (IAAC, 2022a).	Replace lingcod with burbot.	29-Apr-24
SB-427	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 24	24.6.6.1.2	The Secwépemc Fisheries Commission is the First Nations fisheries body that works within the mandate of Shuswap Nation Tribal Council communities and Tribal Chiefs. As part of the SNTC's larger initiative to establish self-government, the SFC advocates for First Nations rights and title with respect to fisheries interests.	SFC has minimum involvement in the Columbia Region outside of the Columbia River Salmon Restoration Initiative. Far greater context on Shuswap fisheries programs, projects, and initiatives can be provided by the Band and should be included in this section.	29-Apr-24
SB-439	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 24	24.7.3.2.1	Impacts to fish habitat, such as the loss of instream habitat, will be compensated for through the Fish and Fish Habitat Management Plan, and other than those identified within the Project footprint, no permanent losses to the ability to fish Kokanee, Mountain Whitefish, Westslope Cutthroat Trout, and Longnose Sucker are anticipated within the ATRI LSA. The Fish and Fish Habitat Management Plan will compensate the loss of available habitat to fish and benthic invertebrate communities in the Fish and Fish Habitat LSA and Aquatic RSA or for different uses as required for their life histories, thus resulting in no net loss of instream habitat as a result of the Project.	The conclusion of no net loss of in-stream habitat does not correlate directly to no net loss of fisheries productivity in the Project area. Moreover, this conclusion needs to be demonstrated as it is currently a prediction. Past predictions involving impacts to fisheries in the Elk Valley were flawed and resulted in significant impacts, albeit unexpected. The same caution should be applied here.	29-Apr-24
SB-459	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 24	24.2.5	A long bedrock falls was considered to be a barrier to fish migration.	Is this confirmed or assumed?	29-Apr-24
SB-462	Open	Shuswap Band	s.79 SARA	Chapter 24	24.2.8	As of May 2021, the B.C. CDC has documented historical observations of 39 listed plants and 11 listed plant communities in the Landscapes and Ecosystems RSA (B.C. CDC, n.d.). Within the Landscapes and Ecosystems LSA, 8 Red-listed and 15 Blue-listed plants have been documented by B.C. CDC. Limber pine and whitebark pine are both considered Endangered by COSEWIC with whitebark pine additionally being listed as Threatened under SARA (2002).	Clarify how these species will be protected or replaced.	29-Apr-24
SB-463	Open	Shuswap Band	5(1)(a)(i) Fish and Fish Habitat	Chapter 24	24.4.7.1.3	Changes in water quality as a result of the Project will be mitigated through Project design and Project- effects and are not anticipated to extend beyond the Fish and Fish Habitat LSA. Changes in water quality as a result of the Project were found to be a localized effect; therefore, no potential ATRI RSA-scale interaction with fish and fish habitat is anticipated to occur.	Have we not learned from past experiences here? Shuswap does not agree that water quality impacts can be limited to 'localized effects' as proven by the current status of fish health (Westslope cutthroat trout) in the Elk Valley due to impacts to water quality from mine constituents.	29-Apr-24
SB-465	Open	Shuswap Band	s.79 SARA	Chapter 24	24.7.3.2.2	Habitat loss will have a continuous adverse effect until progressive reclamation begins in Year 10 of Operations. With progressive reclamation between Years 10 and 15 and continued reclamation in the Reclamation and Closure phase, the effect of habitat loss will begin to decline.	Later text states: "While grizzly bears have been found to access reclaimed mines to forage on vegetation and prey on ungulates (Cristescu et al., 2011) mine reclamation areas have generally not been found to support high value forage used by grizzly bears (Teck Coal Limited, 2014b; Mowat et al., 2018)" which indicated that the 'decline' in effects from habitat loss will be negligible. As well, will the land that is slated to be progressively reclaimed starting at 10 years be connected to habitat that is not impacted by mining, or will it be isolated?	29-Apr-24
SB-466	Open	Shuswap Band	s.79 SARA	Chapter 24	24.7.3.2.2	Grizzly bears make daily movements between habitats that provide food, security, and thermal protection, and seasonal movements that track food availability. The Project has the potential to block both daily and seasonal movements. Disruption to movement may be particularly high when Project activities and components are within restricted terrain features including narrow valleys or canyons. When the Project is at its largest extent and prior to any large areas of reclamation (around Year 10 of Operations), the mine site footprint will occupy a large portion of the West Alexander Creek valley and will be an impermeable barrier in the area that it occupies. The upper slopes of the west side of the valley will remain intact but will be degraded by sensory disturbance and use for connectivity between daily or seasonal habitats may be reduced.	What is the total area of grizzly bear habitat (including the area impacted by sensory disruption - 8.9%) that will be affected by the project?	29-Apr-24
SB-467	Open	Shuswap Band	s.79 SARA	Chapter 24	24.7.3.2.2	Based on the characterization of the residual effects and recent trends in local grizzly bear population levels, the Project is unlikely to contribute to limiting the ability of grizzly bear to recover from past declines and maintain a stable population in the Terrestrial LSA. The combined residual effects of habitat loss and degradation, sensory disturbance, disruption to movement, and increased mortality risk on grizzly bear are therefore considered not significant.	The entire section speaks to habitat loss and degradation from mining activities, however the end results is that the impact of the project on Grizzly population is considered not significant. This is based on many assumptions, successful reclamation - unproven at this point, being one of them. Shuswap does not agree with this determination.	29-Apr-24

SB-471	Open	Shuswap Band	Atmospheric Environment	Chapter 24	24.2.1	Ambient air concentrations for the selected contaminants of concern all fell below their corresponding B.C. Ambient Air Quality Objectives (AAQOs) for each of their respective averaging periods. Provincial monitoring locations in the Southern Interior Air Zone generally did not exceed the B.C. AAQOs and Canadian Ambient Air Quality Standards (CAAQS) except when influenced by wildfires between 2015 and 2017 (ENV, n.d.).	Selected contaminants of concern should be referenced here, in addition to the noted exceedances. On the surface, air quality in the Elk Valley is perceived as poor during high wind periods?	29-Apr-24
Kainai 10	Open	Blood Tribe/Kainai Nation		Executive Summary			Seeking clarity on what Projects the Proponent includes in the list of 'reasonably foreseeable future projects or activities'.	29-Apr-24
Kainai 17	Open	Blood Tribe/Kainai Nation	5(1)(a)(i) Fish and Fish Habitat	Executive Summary	E.7.7.2		There is significant fish habitat loss projected as a direct result of this Project, including: "all fish bearing habitat in West Alexander Creek". Further there is a "suspected resident population of WCT home range in West Alexander Creek" and there is currently no plan in place to avoid the wholesale destruction of their habitat. This is a significant concern for Kainai. Please identify how the Project can proceed with this level of impact on a species protected under SARA without any feasible mitigation proposed.	29-Apr-24
Kainai 18	Open	Blood Tribe/Kainai Nation	5(1)(a)(i) Fish and Fish Habitat	Executive Summary	E.7.7.2		The Proponent states that "The potential of the Project to result in fish mortality was found to be not significant. This is due to the ability of the Project to mitigate all potential mortality pathways around aquatic habitats during all Project phases. The primary mitigation measure will be the salvage of fish from all directly impacted areas. In addition, a permanent fish barrier be designed and installed at the confluence of West Alexander and Alexander Creeks." This statement is not yet accurate as there is no offseting plan or feasible location identified for the movement of westslope cutthroat trout in Alexander Creek - where their habitat is set to be destroyed.	29-Apr-24
Kainai 19	Open	Blood Tribe/Kainai Nation	5(1)(a)(i) Fish and Fish Habitat	Executive Summary	E.7.7.2		The Proponent cannot rely on a yet-to-be-developed offseting plan for the destruction of westslope cuthroat trout to make the determination that there will be no cumulative effects on fish and fish habitat.	29-Apr-24
Kainai 20	Open	Blood Tribe/Kainai Nation	s.19 Factors to be Considered	Executive Summary	E.7.8.2	Paragraph 2	Please provide more detail on the mitigation of sediment and dust through "standard industry practice".	29-Apr-24
Kainai 22	Open	Blood Tribe/Kainai Nation	5(1)(c)(i) Aboriginal Peoples Health/ socioeconomic conditions s.79 SARA	Executive Summary	E.7.9.2		Whitebark pine is a critical species for Blackfoot Aboriginal rights. Adverse impacts to that species will have an adverse effect on Kainai's Aboriginal rights.	29-Apr-24
Kainai 35	Open	Blood Tribe/Kainai Nation	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	General		Please identify how BC plans to protect fish and fish habitat, including that of Westslope Cuthroat Trout, from non-compliance and ineffective mitigation measures.	29-Apr-24
Kainai 36	Open	Blood Tribe/Kainai Nation	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.6.8		Disagree with this assessment as no measure is in place to offset impact to fish habitat in West Alexander Creek.	29-Apr-24
Kainai 37	Open	Blood Tribe/Kainai Nation	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.4		It is understood that the fish habitat in the Elk Valley is significantly disturbed. BC and Canada should be undertaking efforts to increase habitat protections and support water quality improvements. This Application notes, arguably, that the residual effects on fish and fish habitat will be neutral. Even if this is accurate, do we understand how effective these mitigation measures will be and how much change the ecosystem can take.	29-Apr-24
Siksika 16	Open	Siksika Nation	5(1)(a)(i) Fish and Fish Habitat	Executive Summary	E.7.7.2		There is significant fish habitat loss projected as a direct result of this Project, including: "all fish bearing habitat in West Alexander Creek". Further there is a "suspected resident population of WCT home range in West Alexander Creek" and there is currently no plan in place to avoid the wholesale destruction of their habitat. This is a significant concern for Siksika. Please identify how the Project can proceed with this level of impact on a species protected under SARA without any feasible mitigation proposed.	29-Apr-24

Siksika 17	Open	Siksika Nation	5(1)(a)(i) Fish and Fish Habitat	Executive Summary	E.7.7.2	The Proponent states that "The potential of the Project to result in fish mortality was found to be not significant. This is due to the ability of the Project to mitigate all potential mortality pathways around aquatic habitats during all Project phases. The primary mitigation measure will be the salvage of fish from all directly impacted areas. In addition, a permanent fish barrier be designed and installed at the confluence of West Alexander and Alexander Creeks."	This statement is not yet accurate as there is no offseting plan or feasible location identified for the movement of westslope cutthroat trout in Alexander Creek - where their habitat is set to be destroyed.	29-Apr-24
Siksika 18	Open	Siksika Nation	5(1)(a)(i) Fish and Fish Habitat	Executive Summary	E.7.7.2		The Proponent cannot rely on a yet-to-be-developed offseting plan for the destruction of westslope cuthroat trout to make the determination that there will be no cumulative effects on fish and fish habitat.	29-Apr-24
Siksika 19	Open	Siksika Nation	s.19 Factors to be Considered	Executive Summary	E.7.8.2	Paragraph 2	Please provide more detail on the mitigation of sediment and dust through "standard industry practice".	29-Apr-24
Siksika 34	Open	Siksika Nation	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	General		Please identify how BC plans to protect fish and fish habitat, including that of Westslope Cuthroat Trout, from non-compliance and ineffective mitigation measures.	29-Apr-24
Siksika 35	Open	Siksika Nation	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.6.8		Disagree with this assessment as no measure is in place to offset impact to fish habitat in West Alexander Creek.	29-Apr-24
Siksika 36	Open	Siksika Nation	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	12.4		It is understood that the fish habitat in the Elk Valley is significantly disturbed. BC and Canada should be undertaking efforts to increase habitat protections and support water quality improvements. This Application notes, arguably, that the residual effects on fish and fish habitat will be neutral. Even if this is accurate, do we understand how effective these mitigation measures will be and how much change the ecosystem can take.	29-Apr-24
EVMN-04	Open	Elk Valley Metis Nation	Atmospheric Environement				2.1 Air 2.1.1 Air Quality Emissions into the air are a key concern for the EVMN Members. Air and water pollutants contribute to members concerns regarding their overall health. NWP also has the potential to affect wildlife health, aquatic health. Dust from Coal mines, in particular, is a pollutant of concern for the EVMN members. Increased mining activities, more trucks on the roads, and more rail cars taking coal to the west coast, all contribute to the existing dust issues in the Elk Valley. Sensory disturbances from industrial developments are a concern for EVMN. As mentioned previously, the area around the NWP Project is well used by Elk Valley Métis Nation members, as well as by non-aboriginal land users. Part of what makes this particular area so unique, is the low levels of industrial pollutants and sensory disturbances. Forestry is periodically active in the area, but the EVMN members noted that the area along Grave Creek Road and all the branch roads are great for traditional use, as they are still relatively untouched and peaceful. The NWP Project would substantively change this current situation and result in sensory disturbance. EVMN members noted that some animals will adapt to the noise but the experience of being in the area is diminished and results in yet another piece of EVMN traditional territory being impacted by industry. EVMN citizens are concerned with the cumulative effects assessment, as it appears to have limitations in both scope and data availability, particularly regarding future projects and operations in the Atmospheric Regional Study Area (RSA). The low level of confidence assigned to the significance determination for future cumulative effects suggests that the potential for additive or synergistic impacts with other currentor foreseeable developments may not be fully understood or accounted for. While the dispersion model predictions indicate localized elevated levels of ambient criteria air contaminants near sensitive receptors, the assessment of how these exceedances might specifically impact human health, wildlife, and vegetation at these	29-Apr-24

EVMN-09	Open	Elk Valley Metis Nation	5(1)(a)(i) Fish and Fish Habitat		2.2.4 Surface Water Quality In relation to surface water quality the EVMN recognizes the list of Mitigation Measures NWP will implement to reduce impacts, however we also note the assessments confidence ranking as “moderate”. Given the life span of the project and reclamation work, and the potential for cumulative impacts over time, the EVMN would like to be involved in the monitoring and management plans for surface water. As discussed in the groundwater section, changes in surface water quality from surface water – groundwater interactions could have broader ecological impacts, affecting not only aquatic life but also terrestrial ecosystems and species that depend on these water sources. The EVMN are concerned about how these interactions are modeled and mitigated, particularly in areas of steep topography and complex hydrogeology. Similar to the comments in the section on Terrain, the challenging topography of the project site makes these mitigation measures more difficult from EVMN perspective. The EIS also notes seasonal variability in the concentrations of certain parameters (cadmium, cobalt and selenium), with higher concentrations in winter. The EVMN have concerns about the project's impact on surface water quality during extreme weather events, such as heavy rainfall or rapid snowmelt, which could exacerbate runoff and pollutant loading. The EIS includes a description of diverting clean, non-contact water away from sediment ponds and using impermeable liners to minimize seepage. EVMN has concerns regarding the long-term integrity of these ponds, their capacity to handle storm events, and the potential for overflow or failure, leading to significant water quality impacts. Response 3: EVMN would like to have further discussion with NWP to understand how they modeled these extreme events, the integrity of the ponds and the impact on these parameters? Agreement 5: EVMN would like to be engaged in the design and implementation of water	29-Apr-24
EVMN-10	Open	Elk Valley Metis Nation	5(1)(a)(i) Fish and Fish Habitat	Chapter 12	2.2.5 Fish and Fish Habitat The information on impacts to fish and fish habitat due to the Crown Mountain Coal Mine project provides a view of the potential adverse effects and interactions across different project phases. The EVMN have concerns in a few areas such as unplanned spills, equipment malfunctions, and accidents. NWP has proposed a good plan for management of unplanned events, such as spills and equipment malfunctions, but it does underscore the importance of emergency response plans and risk mitigation strategies and the EVMN want to be involved in those processes, especially as many of our members actively harvest around the project site. The EIS has a detailed description of phases of project interactions revealing both direct (e.g., construction of sediment ponds within West Alexander Creek) and indirect (e.g., changes in water quantity affecting habitat availability) habitat losses. The EVMN would like additional discussion with NWP on offsetting and restoration plans and specifically to have some input on how these losses will be compensated and what measures will be taken to ensure the long-term viability of affected fish populations. The EIS anticipates significant instream habitat loss in West Alexander Creek due to mine design and changes in water quantity. Despite the proposal for offsetting measures, EVMN have concerns about the feasibility and effectiveness of these measures to fully compensate for the loss of a critical habitat for species like the Westslope Cutthroat Trout (WCT), which holds cultural significance. EVMN is concerned about the appropriateness of offsetting to compensate for the complete removal of WCT home range in West Alexander Creek and notes the limited offsetting opportunities in the local area and the requirement for further consultation with DFO and Indigenous groups to assess feasibility. The impact on fish habitat highlights the importance for EVMN involvement in the Fish and Fish Management Plan and in working with Federal and Provincial governments to fully engage and integrate EVMN into regional aquatic monitoring programs (See Regulatory #5).	29-Apr-24

EVMN-20	Open	Elk Valley Metis Nation	Human and Ecological Health				The potential for chemical contaminants to be released into the environment, affecting air, water, soil, and food quality, is a concern for EVMN. Even with moderate to high confidence levels in the assessments, EVMN are worried about the long-term exposure risks and cumulative impacts on health, especially considering traditional lifestyles and subsistence practices. EVMN would like to work with NWP on a community-based health monitoring program for community members who use the lands around the Project. The EIS states no significant cumulative health effects, EVMN is concerned about the broader impacts of not just this project but also other developments in the area. The EVMN would like to work with the Federal Government on a regional Indigenous Land Users Health Study. Even though the EIS predict no significant health impacts, EVMN members do not have confidence in these statements, as they have experienced over the years, that projects will often make statements like this when the apply for approvals, even thought impacts are definitely felt by the Metis members. The regional health studies with the federal government would help address these concerns. Beyond the health assessment, EVMN are concerned about how changes in the environment will affect the Metis social fabric and cultural practices of our members. This includes potential impacts on cultural use areas, community health and cohesion, and the transmission of traditional knowledge. The cultural impacts of the Project would be mitigated within the long-term benefits agreement with NWP.	29-Apr-24			
GHG-02	Open	IAAC / ECCC	Greenhouse Gases			Reference to EIS Guidelines: 3.2.2	As required by the EIS Guidelines, provide a description of each of the Project's main sources of GHG emissions and their estimated annual GHG emissions over the lifetime of the Project. This will help place the project in a regional context when compared to other similar projects.	29-Apr-24			
Alternatives_03	Open	ECCC-IR-86, 87 KNC 229	s.19 Factors to be Considered 5(1)(b)(i), (ii), (iii)	Chapter 2 Chapter 33	2.5.1.6 33.4.1.1.8	The EIS/A indicates the mine equipment selection process looked at the equipment fleets at other coal mines in the Elk Valley in addition to coal mines in northeast B.C. The primary Project decision for mine equipment focused on how the shovels and drills are powered. Mobile fleet emissions represent the largest source (60%) of GHG emissions associated with the Project. ECCC considers electrification of mobile fleets to be an important pathway to decarbonization that should be considered by the Proponent to mitigate Project effects. However, the assessment of alternative means of carrying out the Project does not consider alternative mobile fleet decarbonization technologies that are economically and technically feasible, such as battery-electric vehicles, low-carbon fuels such as biodiesel or LNG blended engines, and trolley-assist technology. The EIS/A chapter on air quality and GHG management and monitoring programs indicates the Proponent will investigate the possibility of using zero-emission electric vehicles and low emission vehicles as part of its fleet; however, these technologies were not considered in the assessment of alternative means of carrying out the Project. A zero-emission truck fleet is not considered in 2.5.1.6 Mine Equipment Selection. Has NWP considered a zero-emission truck fleets, such as Teck is proposing? Why has NWP chosen a conventional fleet instead of investing in zero-emissions? What are the opportunities to transition to a zero emission fleet during the course of the project (i.e. what is the replacement schedule for the haul trucks?) How much additional electrical power will be required for a zero-emission fleet?	Describe as part of the assessment of alternative means of carrying out the Project: -an evaluation of mobile fleet decarbonization technologies, including those available for haul trucks; -how, when, and which technologies the Proponent will consider in their investigation of zero-emission electric vehicles and low emission vehicles as part of their fleet.	29-Apr-24			
EPA	Open	US Environmental Agency	5(1)(a)(i) Fish and Fish Habitat 5(1)(b)(iii) Another country	Chapter 32	32.3.3.2.7		US EPA questioned why a cumulative effects assessment was not completed for effects into Koocanusa Reservoir. Consider adding rationale for the extent of the aquatic cumulative effects assessment. Original comment: "The text states that effects to fish and fish habitat are expected to be minimal within Lake Koocanusa. This document does not appear to evaluate cumulative effects of this mine and other mines contributions to surface water impacts within Lake Koocanusa. EPA recommends that this document include a cumulative effects analysis."	29-Apr-24			
EPA	Open	US Environmental Agency	5(1)(a)(i) Fish and Fish Habitat	Chapter 11	11.5.4.3.1	The text states "The proposed engineered mine rock layering design is the Best Achievable Control Technology (BACT) to reduce selenium and nitrate leaching from the Mine Rock Storage Facility and is anticipated to be at least an order of magnitude more effective than other technologies currently being implemented in the Elk Valley." Table 11.5-3 however notes that the effectiveness of the layering design in protecting surface water quality is unknown (page 11-61).	EPA therefore recommends prioritizing the implementation of treatment technologies such as active water treatment which have substantial scientific evidence supporting their effectiveness at reducing selenium and nitrate concentrations in affected mine waters over technologies which have yet to be broadly tested and proven effective over the long-term in this application.	29-Apr-24			

EPA	Open	US Environmental Agency	5(1)(a)(i) Fish and Fish Habitat	Chapter 11	11.5.3.4	Paragraph 1	The column testing report cited is in Appendix 3C, not Appendix 3-B	29-Apr-24			
EPA	Open	US Environmental Agency	Regulatory	Chapter 11	11.1.1	Paragraph 3	The document references the Lake Koocanusa Monitoring and Research Working Group in several places, including in this Section, Paragraph 3. Per a letter dated 12/11/23, BC ENV and MT DEQ stated that the working group has reached its conclusion and will no longer continue. Any references to the future of the working group should be removed from the document.	29-Apr-24			
EPA	Open	US Environmental Agency	5(1)(a)(i) Fish and Fish Habitat	Appendix 11C	5.1.6	Figure 5.35	This plot of pH versus Se should be plotted with selenium concentrations on a logarithmic scale (similar to the plots for the other metals) so that the concentrations clustered at the lower range can be distinguished and compared to lower concentration comparison criteria that might be relevant.	29-Apr-24			
EPA	Open	US Environmental Agency	5(1)(b)(iii) Another country	Chapter 32	32.3.3.2.6	Paragraph 1	The text states that changes to surface water quality is predicted to be minimal, including transboundary effects into the U.S.A. This document does not appear to evaluate cumulative effects of this mine and other mines contributions to surface water impacts within Koocanusa Reservoir. EPA recommends that this document include a cumulative effects analysis.	29-Apr-24			
EPA	Open	US Environmental Agency	5(1)(a)(i) Fish and Fish Habitat	Chapter 3	3.7.5.1	Paragraph 1	The text states that non-contact water diversion channel construction is unfeasible due to a number of reasons and that non-contact water (i.e. snow melt and runoff) would be managed along with surface runoff from mine disturbed areas. Diversion of clean water around all or a portion of mining operations is a commonly applied best practice at modern mining operations and the document does not adequately describe why it is unfeasible. Diversions are critically important pollution prevention best practices to reduce the amount of water coming into contact with mined materials and ultimately needing treatment before discharge - especially for situations such as here where treatment would be costly and could be needed over the very long term. In addition, EPA notes that the January 2022 Proposed Coal Mine Effluent Regulations (CMER) by Environment and Climate Change Canada (ECCC) introduces a prohibition on dilution for new mines and that this would not be allowed under that regulation. EPA recommends that non-contact water diversions be utilized and ECCC's prohibition on dilution for new mines be evaluated as a condition in this environmental assessment.	29-Apr-24			
EPA	Open	US Environmental Agency	5(1)(a)(i) Fish and Fish Habitat 5(1)(b)(iii) Another country	Chapter 33			The document gives an overview of post-operational activities and states that "The Landform Design and Reclamation Plan is designed to meet British Columbia reclamation and closure regulations that require that the owner prepare a reclamation and closure plan showing specific end-land uses and that it be updated at regular intervals (five years) over the life of mine" (Exec Summary). Our review did not find a description of post-operational monitoring. We recommend the document include post-operational monitoring to ensure downstream waters are protected even after mining operations are completed. Provide information related to closure and post-closure in the document, including: infrastructure maintenance and monitoring requirements and emergency planning; how water that comes into contact with the open pits, waste rock, and tailings will be managed and if long-term water treatment will be needed; and, how and where the waterbodies would be monitored to demonstrate protection of water quality and aquatic resources (e.g., meeting Idaho and Montana water quality standards).	29-Apr-24			