Table C-1.1: First Mining Gold Responses to Impact Assessment Agency of Canada Comments on the Baseline Study Reports for the Springpole Gold Project

ID	Specific Reference	Initial Comments & Rationale	FMG Response	Where Addressed
IAAC-BL-001		It is noted that some baseline reports and upcoming work plans have taken into account the recent project update, which included relocation of the tailings management facility and a partial shift of the project footprint into the Birch Lake watershed. The Agency expects that all relevant baseline reports will be updated to address the relocation and shift in footprint, whether or not the required updates have been identified in these comments. Please review all baseline data collection programs and ensure sufficient information is acquired to inform a complete assessment of effects of the new co-disposal facility.	Baseline studies for the Springpole Gold Project have been ongoing since 2011. Where necessary, additional studies to support the effect assessment or on-going monitoring for future permitting have been identified to supplement the existing baseline data. An overview of the baseline studies has been provided to regulatory agencies and also being presented in the draft EIS/EA. Data collection will be ongoing throughout the Project in support of permitting and long-term monitoring.	Appendix G to S
IAAC-BL-002		It is noted that baseline information about human land use and other valued components in the human environment are not yet available. Additional comments about the biophysical data collection program may arise once the human context is considered, to inform the effects assessment. For example, the review of groundwater quality monitoring locations may be updated once any groundwater drinking sources are identified. Additional comments about the biophysical data collection program may arise once the human context is considered.	Acknowledged. For context there are no groundwater drinking sources given the remote nature of the Project. FMG has been collecting socio-economic baseline data and expects to receive additional land use information throughout the process. Updated information is being included in the draft EIS/EA which will again be updated for a final EIS/EA as appropriate should additional information be available. No additional comments at this time.	Appendix G to S
IAAC-BL-003	Part 1, Section 4.4 - Presentation and organization of the environmental impact statement (all documents).	The EIS Guidelines state (pg.12): “The proponent will provide copies of the EIS and its summary for distribution, including paper and electronic version in an unlocked, searchable (e.g. bookmarked) PDF format, as directed by the Agency”. Several of the baseline reports are in a locked format. The Agency requests that the proponent provide all future material related to this environmental assessment (including the EIS, appendices and any other baseline reports) in an unlocked PDF format as described in the EIS Guidelines.	Noted.	The final EIS/EA is an unlocked PDF format.
IAAC-BL-004	Hydrology Baseline Report (2021) SW Quality Baseline Report (2011-2020) - Section 2.3.4, p.8	Baseline levels of contaminants in groundwater, which may be used as a source of drinking water by Indigenous and non-Indigenous receptors, are not provided for review in the study reports. Additionally, the criteria used to assess baseline surface water quality (i.e. Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life, Provincial Water Quality Objectives for Ontario) may not be protective of human health. Provide baseline groundwater quality data from monitoring locations representative of drinking water sources that may be used by Indigenous and non-Indigenous peoples. Compare baseline surface and groundwater quality to the most stringent health-based water quality guidelines and standards, as applicable. For guidance on the assessment of baseline drinking and recreational water quality, refer to the applicable guidance document linked in Comment 59.	Baseline groundwater quality is being summarized in the draft EIS/EA. No potable groundwater wells have been identified within the study area for groundwater, nor have any springs identified as a source of drinking water. Traditional knowledge/land use studies are progressing with local Indigenous communities and should a spring used for drinking water be identified, monitoring needs can be considered. The scope of the water quality baseline studies and effects assessment considers the most sensitive designated water users (e.g., aquatic life, wildlife water supply, drinking water) and uses the applicable health-based water quality guidelines. For example, for surface waters, baseline study programs and the effects assessment access working and/or approved water quality guidelines for freshwater aquatic life (including 30-day average and maximum guidelines). By accessing applicable water quality guidelines for the most sensitive designated water user, other water users by definition will be protected. Note health-based drinking water guidelines are not protective of aquatic life for most parameters. Further, the draft EIS/EA includes a Human and Ecological Health Risk Assessment, in consideration of the Health Canada Guidance documents on drinking water.	EIS Section 6.5.2.3, 6.5.6.2

Table C-1.1: First Mining Gold Responses to Impact Assessment Agency of Canada Comments on the Baseline Study Reports for the Springpole Gold Project

ID	Specific Reference	Initial Comments & Rationale	FMG Response	Where Addressed
IAAC-BL-005	Surface Water Quality Baseline Report, Cumulative (2011-2020) - Section 2.3.4, pg.8; Section 3.0, pg.15-20; Tables 3.1a-3.2, pg.21-35, Section 4.0, pg.35	The report states (Sec. 2.3.4, pg.8) "Analytical results from all sampling programs were compared to available Provincial Water Quality Objectives for Ontario (PWQO) or interim PWQO (iPWQO) for the protection of aquatic life. Where PWQO were not available, Canadian Water Quality Guidelines (CWQG) for the protection of aquatic life were used." The proponent should use the most stringent water quality guideline between the CWQG, PWQO, and iPWQO as this affords the greatest level of protection to aquatic life. For example, the surface water quality baseline study identifies that there were five parameters with concentrations greater than the guidelines (pH, total aluminium, phosphorous, total iron and total copper). When Table 3-1a is examined, the CWQG value for total aluminium is 0.005 mg/L versus the iPWQO value of 0.075 mg/L and in the case of total copper the CWQG value is 0.002 mg/L whereas the PWQO value is 0.005 mg/L. By choosing to use the PWQO number (the higher value) as opposed to using the more stringent CWQG values for total aluminium and total copper, it is uncertain what effects might be missed. The analytical results from all surface water quality baseline sampling programs should be compared to the most stringent water quality guideline (between CWQG, PWQO and iPWQO) as this is a joint federal and provincial environmental assessment and this approach is the most protective of aquatic life. If the most stringent guideline value between the federal and two provincial values is not used, then it is recommended that the proponent provide the justification for each parameter in each instance where it applies. It is important that this distinction be made during the baseline study, as this methodology will be carried forward and affect the environmental impact statement and specifically the effects assessment, associated mitigation measures and conclusions.	The water quality parameters for each site were compared to the CWQG as seen in Table 3-1 to Table 3-2. However, the comparison of baseline focuses on the PWQO and iPWQO guideline. Analytical results for surface water quality conditions are being compared to both provincial and CWQG, where applicable, and will be included in the draft EIS/EA.	EIS Section 6.6.5, Table 6.6-6 Appendix N-1 Table 3-3

Table C-1.1: First Mining Gold Responses to Impact Assessment Agency of Canada Comments on the Baseline Study Reports for the Springpole Gold Project

ID	Specific Reference	Initial Comments & Rationale	FMG Response	Where Addressed
IAAC-BL-006	Surface Water Quality Baseline Report, Cumulative (2011-2020) - Figure 2.1, pg.14; Figure 3.1, pg.31; Section 3.0, pg.15-20; Section 4.0, pg.35 Hydrology Baseline Report (2021) - Section 4.4, pg.22	a. The EIS Guidelines (pg.23-25) require the proponent to provide for "each affected water body, the total surface area, bathymetry, maximum and mean depths, water level fluctuations and type of substrate". The guidelines also require that "seasonal surface water quality, including analytical results (e.g. water temperature, turbidity, pH, dissolved oxygen profiles, metals, major ions, and nutrients) and interpretation for representative tributaries and water bodies including all sites to receive mine effluents or runoff". The proponent does not provide mean monthly, extreme high, or extreme low flows for the smaller watersheds on the project site (pit, waste rock pile and tailings area). These watersheds will be partially or fully overprinted by project activities. The baseline monthly mean, high, and low flows will be needed to quantify the effects on flow, and by extension fish habitat. It should be noted that under the Fisheries Act's Metal and Diamond Mine Effluent Regulations, mine seepage is included in the term mine effluents. Based on Figure 2.1 (pg.14), which shows the existing natural features, and the file presented to the Crown titled "Springpole Environmental Baseline Water & Fish (July 19 2021).pdf", which shows the latest proposed Site Plan, it appears that a number of smaller lakes and ponds were not sampled for water quality. These include Lakes 2, 4, 6, 18, and 19, as well as the small lake between 18 and 3, the two small ponds west of Lake 4, and the small pond west of Lake 16. It appears that all of these water bodies will be affected and/or have potential to receive mine effluents, seepage effluent, and runoff. If there are other lakes or water bodies not mentioned above that could receive mine effluents, seepage effluent, and runoff, then they should be sampled as well. Some of the surface water sampling was undertaken at a number of smaller lakes (namely Lakes 1, 3, 5, and 16). However, it is unclear where the bathymetry, depth, water level fluctuation data, and type of substrate results are located for those aforementioned lakes. Provide the missing data (including total surface area, bathymetry, maximum and mean depths, water level fluctuations, type of substrate, seasonal surface water quality including analytical results, and interpretation) for the Lakes 2, 4, 6, 18 (as well as the smaller lakes between 18 and 3) and 19, the two small ponds west of Lake 4, and the small pond west of Lake 16. Provide the remaining data (namely the bathymetry, depth, water level fluctuation data, and type of substrate) for Lakes 1, 3, 5 and 16. For watersheds identified as fish-bearing, provide mean monthly, extreme high and extreme low flow estimates for the watersheds affected by the Project, including the small ones. It would be helpful to have a map of the proposed project layout in the Surface Water Quality Baseline Report (similar to how there is one in the hydrogeology report), so that reviewers do not have to cross-reference with other documents.	a/b. Small inland lakes and tributaries were characterized as part of the Fish and Aquatic Habitat baseline studies; results for total surface area, bathymetry etc., are available in the 2018 Existing Conditions Report: Fish Community and Habitat. Further, the 2021 sampling program includes additional surface water quality for small-inland lake systems that may be affected by Project development. The 2021 sampling programs includes additional samples to be collected with the following inland waterbodies, including L-1, L-16, L-18, and L-19 (as presented in the 2021 Technical Workplans provided for review). The sampling program included various inland waterbodies and the small inland waterbodies within the Project area have very similar characteristics. The current water quality results from the small inland waterbodies provide a reliable representation of baseline conditions for all the small inland waterbodies within the Project area. The ongoing hydrology field monitoring program includes lake level monitoring of Birch Lake, as well as a number of the small inland lakes (Lake 1, Lake 19, Dole Lake) anticipated to be affected as a result of the Project. Monitoring stations have been established where they can provide long term data for the Project. The majority of the inland water bodies that have been flagged in this comment (Lakes 2, 3, 4, 5, 6, 16, 18) are to be overprinted. These waterbodies will be compensated for through the Fisheries Act, therefore little value is gained by establishing new monitoring stations at these lakes prior to development. The ongoing monitoring program also includes flow monitoring within smaller watersheds on the Project site which may be used to help characterize monthly/seasonal and extreme flows for the Project site. Field data collected by the ongoing field monitoring program is planned to be included in the draft EIS/EA. c. The predicted impacts to fish and fish habitat include direct overprinting (loss) of Lakes 3, 4, 5, 6, 17 and 18, which will also support assessment of the indirect impacts to fish and fish habitat (flow reductions) downstream. Lake 1 is not anticipated to receive mine effluents, and Lake 2 is expected to be indirectly impacted due to flow reductions but is not planned to be overprinted or receive mine effluents. Bathymetry, fish community and habitat data for Lakes 1, 2, 3, 4, 5, 6 and 16 are provided in the 2018 Existing Conditions Report: Fish Community and Habitat. Additional fish community and habitat surveys were conducted in 2021 that include assessments within Lakes 18 and 19. The baseline fish and fish habitat data from the various inland waterbodies will be used to characterize other unsampled inland waterbodies (e.g., small ponds) and are included in the draft EIS/EA. d. As discussed in Section 2.2, scope of water quality monitoring programs has varied slightly from year to year, reflecting site accessibility and updates in proposed Project design. The current geographic extent of the surface water quality study is inclusive of watercourses that could be potentially affected by mine development and were further selected to coincide with the sampling locations of related Value Components; a map of the proposed Project layout relative to monitoring stations for surface water quality, hydrology, and groundwater is included in the draft EIS/EA.	EIS Sections 6.6; 6.7; 6.8; 6.9.2, Figures 6.9-1 and 6.9-2; 6.10 Appendix F, N-1 Section 3; M-1 Section 5; O-1 Section 3

Table C-1.1: First Mining Gold Responses to Impact Assessment Agency of Canada Comments on the Baseline Study Reports for the Springpole Gold Project

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IAAC-BL-007	Hydrology Baseline Study (2021) - Section 2.0, pg.2-1	The EIS Guidelines (pg.23-25) requires the proponent to provide: "the delineation of drainage basins, at appropriate scales (water bodies and watercourses), including intermittent streams, flood risk areas and wetlands, boundaries of the watershed and subwatersheds, overlaid by key project components". One potential area of flooding was identified in the baseline report, but was not delineated on the maps. Update maps of drainage basins to indicate flood risk areas in the EIS.	Potential effects to watercourses and water bodies as a result of the Project are being assessed in the draft EIS/EA. No flood risk areas are currently anticipated. Key Project components, such as the proposed cofferdams within the north basin of Springpole Lake will not impede the lake's hydraulic flow path. Flows reporting to the north basin will continue to naturally outlet towards Springpole Lake southeast arm.	Appendix M-1 Section 3.3.1.2, Table 3-6, Figure 3-4
IAAC-BL-008	Hydrology Baseline Report (2021) Section 3.3.1, pg.7	The proponent's approach to select a nearby weather station would typically be representative of the project area. However, there is a 250mm difference in mean annual precipitation comparing with the surrounding Meteorological Service of Canada (MSC) stations. Provide more QA/QC information of the station's instrument/data to explain the difference in mean annual precipitation in the surrounding chosen MSC stations.	QA/QC information of the nearby Casummit Lake weather station or former on-site Springpole weather station from 2011 are not available. Site specific data collection will continue from the new 2020 Springpole weather station to build a climate database. As the database is developed, findings are compared to other data sets, such as the surrounding MSC stations (referred to as ECCC stations in the Hydrology Baseline Report). While this database is being developed, the long-term data sets from MSC (ECCC) are being used and have been collected with standardized methodology and undergone rigorous QA/QC protocols.	Appendix M-1 Section 3.2
IAAC-BL-009	Hydrology Baseline Report (2021) Section 3.3, pg.7	It is noted that evaporation data were used from a 1970s report instead of using reports that are more recent. Given the current context of climate change, it is preferable to use the most current data available for evaporation. Use the most current reports available when incorporating evaporation data.	Site specific evaporation data continues to be collected from the Springpole weather station to build a climate database as the Project progresses. As the database is developed, findings are compared to other data sets, such as the Environment and Climate Change Canada (ECCC) climate stations and the Hydrological Atlas of Canada, an industry standard reference document. While this database is being developed, the Hydrological Atlas of Canada will be relied on. Rationale is provided in Section 3 of the Hydrology Baseline Report.	Appendix M-1 Section 3
IAAC-BL-010	Hydrology Baseline Report (2021) Section 4.4, pg.22	The use of the Water Survey of Canada (WSC) station for characterization of site water quantity was justified by matching monthly runoff values to those measured onsite; however, the monthly comparison may mask short-term response. Provide additional support for the choice of representative WSC station (e.g. daily flow rate cumulative mass curve, regression between chosen station and onsite data).	A monthly comparison to Water Survey of Canada (WSC) flows is reasonable given the size of the Springpole Lake watershed (almost 1,300 km²), and there are limited WSC stations in the area that could be considered. The purpose of selecting a representative station is to utilize the flow statistics to assess the impacts of mine development on the receiving environment, not to replicate short term response of the natural environment.	Appendix M-1 Section 4
IAAC-BL-011	Hydrology Baseline Report (2021) - Section 4.4, pg.22; Table 4.4, pg.27;	In Table 4-4 (pg.27), the proponent lists the 5th and 95th percentile runoff as calculated by prorating the monthly flows by a ratio of annual flows (see section 4.4 of the Hydrology Baseline Report for full explanation). The proponent acknowledges that these values are not representative of monthly high or low flows, but does not specify why these values were calculated. This method does not take into account how the flow distribution changes across seasons and thus will overestimate the low flows and underestimate the high flows. Consider another approach to estimate the high and low monthly water quantity, as well as shorter duration high flows (e.g. use the time series from 05QE008 to get return period high flows).	The 5th and 95th percentile runoff annual flows were developed to represent a relatively extreme wet or dry year in the natural environment. The monthly flow statistics is being used to assess the impact of mine development on the receiving environment. It is agreed that the method likely overestimates the low flows and underestimate the high flows, however this provides a good conservative basis for the impact assessment during wet and dry years. It is also noted that extreme low flows have been calculated for shorter durations (i.e. 7Q20).	Appendix M-1 Section 4
IAAC-BL-012	Hydrology Baseline Report (2021) - Table 4.3, pg.25	An appropriate design level for the cofferdams in the north part of Springpole Lake will ensure the viability of the pit mine. The proponent only mentions water levels from the 2020 field season. According to the data presented in Table 4-3, the year 2020 was a dry year for this region and there is potential for water levels to be much higher. Relying on this single year of data could lead to severe underestimation of the dam height required. Noting the potential data limitations. We expect First Mining will ensure the cofferdams are designed in accordance with the Lakes and Rivers Improvement Act, and take into account sufficient hydrologic data.	Acknowledged. The cofferdams are being designed in accordance with the Lakes and Rivers Improvement Act and take into account sufficient hydrologic data.	EIS Section 5.7.1.1, Appendix V-2

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IAAC-BL-013	Hydrology Baseline Report (2021) Surface Water Baseline Report, Cumulative (2011-2020/2021 Hydrogeological Technical Workplan - Figure 1, p.2; Figure 2, p.3 2021 Surface Water Technical Workplan - Figure 1, p.2	The study reports made available for review do not identify potential drinking water sources and recreational waterbodies for Indigenous and non-Indigenous receptors. Acknowledging this information will likely come in a future report of human land use, we have the following comment. The baseline groundwater and surface water quality program established 23 monitoring wells (Figures 1 and 2, 2021 Hydrogeological Technical Work Plan) and 28 surface water monitoring locations (Figure 1, 2021 Surface Water Technical Work Plan). However, it is unclear whether these locations are representative of potential drinking or recreational water sources for Indigenous and non-Indigenous receptors, including during traditional land and resource use activities. For example, residents of cottages and cabins (on permanent, seasonal, periodic or temporary basis) may use groundwater and surface water sources that have potential to be impacted by the Project, and Indigenous and non-Indigenous traditional land and resource users near the project sites may consume spring water and surface water outside of their residence. Provide detailed information on recreational waterbodies and surface and groundwater drinking water sources. Clarify whether the existing groundwater and surface water quality monitoring locations are representative of these sources. Add more monitoring locations, as necessary, to ensure these sources are represented by monitoring locations. For guidance on the assessment of baseline drinking and recreational water quality, refer to the applicable guidance document linked in Comment 59. As noted in the preamble, all feedback on biophysical baseline study reports is subject to change once information is available about the human context.	Baseline groundwater quality is being summarized in the draft EIS/EA. No potable groundwater wells have been identified within the study area for groundwater, nor have any springs identified as a source of drinking water. Traditional knowledge/land use studies are progressing with local Indigenous communities and should a spring used for drinking water be identified, monitoring needs can be considered. The scope of the water quality baseline studies and effects assessment considers the most sensitive designated water users (e.g., aquatic life, wildlife water supply, drinking water) and uses the applicable health-based water quality guidelines. For example, for surface waters, baseline study programs and the effects assessment access working and/or approved water quality guidelines for freshwater aquatic life (including 30-day average and maximum guidelines). By accessing applicable water quality guidelines for the most sensitive designated water user, other water users by definition will be protected. Note health-based drinking water guidelines are not protective of aquatic life for most parameters. Further, the draft EIS/EA includes a Human and Ecological Health Risk Assessment, in consideration of the Health Canada Guidance documents on drinking water.	EIS Section 6.5.2.3, 6.5.6.2 Appendix N-1, L-1, R
IAAC-BL-014	Surface Water Quality Baseline Report, Cumulative (2011-2020) - Section 2.4.2, pg.9	The Surface Water Baseline Report identified that the results for ammonia, chromium and mercury from the 2015-2018 time period is associated with a degree of uncertainty due to lab error. First Mining proposed monitoring programs in 2021 to validate chromium and mercury baseline results; however, there is no indication that ammonia levels would also be validated during the 2021 monitoring. Provide rationale for excluding ammonia from the 2021 monitoring program or include it to validate uncertainty due to lab error.	The water quality results for mercury and chromium between 2011 and 2013 are incorrect. Maxxam Laboratories determined that chromium and mercury exceedances between 2011 and 2013 reflect contamination by an external source through laboratory handling and laboratory error. The determination of laboratory error causing contamination of these samples is further substantiated by results of subsequent years of baseline sampling programs. Mercury and chromium concentrations measured between 2013 through 2021 at same monitoring locations are all below the Canadian Water Quality Guidelines. Thus, the historical results for these parameters are not representative of baseline conditions. In 2021 ultra-low detection of total mercury and methyl mercury was added to the baseline monitoring program. Results range from 0.0000025 mg/L to 0.0000238 mg/L, which is below the Canadian Water Quality Guideline value of 0.000026 mg/L for total mercury and confirm that mercury is very low. As described in Section 2.4.2, the water quality results between 2015 and 2018 for ammonia have a degree of uncertainty. This is due to the analysis of the duplicate samples collected during the same time period having higher relative percent difference (RPD) calculations (presented in Appendix B). Ammonia continues to be monitored as part of the ongoing sampling efforts and these data are included in the draft EIS/EA.	Appendix N-1 Section 2.4.2
IAAC-BL-015	Hydrogeology Baseline Report (2021) - Section 5, pg.22	The EIS Guidelines (pg.23-25) require the proponent to provide: “physical properties of the hydrogeological units (e.g. hydraulic conductivity, transmissivity, saturated thickness, storativity, porosity, specific yield)”. Physical properties not located in the baseline report include saturated thickness and specific yield. Provide rationale for excluding saturated thickness and specific yield or include these physical properties in the EIS.	Groundwater levels at site are typically within 3 m of ground surface and bedrock is typically, therefore, fully saturated. Overburden is typically quite thin on-land and does not constitute a significant aquifer at site. Conceptually, the local hydrogeologic flow system is likely characterized as a confined bedrock flow system whereby the primary water bearing fractures/faults are bound by a relatively impermeable rock matrix. The overall storativity of the confined bedrock flow system was estimated as 2×10-6 based on measurements in monitoring well BL-0102 during the SPW20-001 pumping test (Appendix A). This represents a low storativity value which suggests confined conditions. Assuming an aquifer thickness equal to the length of the borehole this equates to a specific storage of approximately 5.4×10-9 m-1, as such, the specific yield likely is not applicable to this case due to the prevailing aquifer conditions. Additional discussion on bedrock aquifer storage at site is included in the draft EIS/EA.	EIS Sections 6.5.1, 6.5.2, Appendix L-1 Section 7 and Attachments A, B

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IAAC-BL-016	Hydrogeology Baseline Report (2021) - Section 3.1, pg.7, and Figure 3.2	Sediment (overburden) thickness is mapped on the land (Figure 3.2) but not in the lakes. It is reported to be up to 40 m under the lakes. Thick, continuous, low permeability sediments beneath lakes could influence shallow groundwater flow or the hydraulic connection with deeper, more permeable bedrock. Include sediment thickness in lake areas in Figure 3.2 where data are available, and describe the general distribution of sediment thickness in the lakes (e.g. is it thicker in the deeper lake basins?).	Inferred lake sediment thicknesses are shown graphically on Figure 3.1. Generally, the thickest lake sediment measurements correspond to the zone of weakness associated with the ore zone (Portage Zone) and fill an apparent bedrock valley that runs roughly northwestward through the northern section of Springpole Lake. Additional spatial mapping and discussion of sediment thickness within Springpole Lake is included in the draft EIS/EA.	EIS Section 3.4.4.3, Appendix M-1 Attachment B, Section 6
IAAC-BL-017	Hydrogeology Baseline Report (2021) - Sections 3.3 and 3.4, pg.9-10	The EIS Guidelines (pg.23-25) require the proponent to provide: “hydrogeological maps and cross-sections for the mine area to outline the extent of aquifers and aquitards, including bedrock fracture and fault zones, locations and depths of wells and strainers, groundwater types springs, surface waters, and project facilities”. Although the geology, faults, and weakness zones have been mapped and modelled in 3D (Figure 3.5), the report does not provide the reader with suitable geological cross-sections to visualize the distribution and interconnections of various geological units and structures near the proposed open pit. It would also be useful to have cross-sections intersecting pumping well SPW20-001 for interpretation of the pump test results. Prepare cross-sections with geologic and structural information and groundwater levels. These should include the location of the proposed pit walls in the cross-sections. In addition, draw cross-sections along and transverse to the main axis of the pit and the Tailings Management Facility (TMF). Describe their significance to the site hydrogeology and the pump test results.	Detailed 3D geological modelling for site is currently being conducted as additional site data are acquired. Additional hydrogeological cross-sections are included in the draft EIS/EA.	EIS Section 6.5.1.2, Figure 6.5-6, Appendix L-1 Figures 5-4 and 5-5
IAAC-BL-018	Hydrogeology Baseline Report (2021) - Section 3.3, pg.9; Section 5.2.3, pg.25	The Portage Zone intrusive porphyry rocks are mapped at the surface (Figure 3.4). It is unclear if they extend continuously to the deposit zone and if they are hydraulically connected from surface to depth. Discuss the continuity of geological units from surface to the deposit zone and discuss the potential for hydraulic connection in the intrusive zone rocks from surface to high hydraulic conductivity zones at depth and its implications. Use cross-sections (see Comment 17) to illustrate any potential connections or barriers to flow.	Investigations are currently underway to further delineate the extents of the Portage Zone at site. Results from field investigations are being incorporated into a 3D geological model of site. The current conceptualization is that the porphyry zone extends continuously to the deposit from surface and is hydraulically well-connected. For groundwater modelling purposes, the numerical model will employ the Equivalent Porous Media (EPM) approach where the entire bedrock matrix for the portage zone is assigned based on the inferred hydraulic conductivity values that have been estimated from the site field data. This will effectively assume that the Portage is continuous/hydraulically connected from top to bottom in the model, which represents the conservative case with respect to impact assessments. Cross-sections through the proposed open pit, showing the major hydrostratigraphic zones, is included in the draft EIS/EA.	Appendix L-1 Section 5.2 and Table 5-1
IAAC-BL-019	Hydrogeology Baseline Report (2021) - Section 3.4, Appendix A – Table 3.4	Fracture frequencies for 2020 boreholes (Appendix A, Table 3.4) appear to be calculated as fractures/m but reported as fractures/3m. Verify fracture frequency reporting. If necessary, re-examine reporting, interpretations, and conclusions based on fracture frequencies.	Column header in Table 3.4 indicating ‘Fracture Frequency per 3 m’ is a typographical error and should read ‘Fracture Frequency per m’. The data in the table is correct.	Appendix L-1 Section 3.2.2
IAAC-BL-020	Hydrogeology Baseline Report (2021) - Section 5.12, pg.22-23	The EIS Guidelines (pg.23-25) require the proponent to provide: “graphs or tables indicating the seasonal variations in groundwater levels, flow regime, and quality”. There are no reported groundwater hydrographs, demonstrating the seasonal magnitude of water level fluctuations. These data would help support interpretations of recharge, discharge and baseflow in sub-catchments. Hydrographs in deeper piezometers would help demonstrate the nature of the hydraulic connections to the shallow groundwater system. Provide time series of available groundwater monitoring data.	Installation of automated datalogging of groundwater levels at site are currently underway to supplement data from previously installed dataloggers.	Appendix L-1 Section 5.3

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ID	Specific Reference	Initial Comments & Rationale	FMG Response	Where Addressed
IAAC-BL-021	Hydrogeology Baseline Report (2021) - Section 5.2.3, pg.25; Section 5.2.4, pg.26-27	a. The overall extent of the zone of higher hydraulic conductivity (K) is not delineated or estimated. The extent of this zone outside of the proposed pit may influence groundwater flow into the pit during and following mining. Although zones of higher K are related to the porphyry intrusive rock (Figure 5.6), it also appears that metavolcanic and metasedimentary rocks also can have low RQD values and higher K values at depth (Figure 5.7). Discuss the anticipated extent of higher bedrock hydraulic conductivity (K). Specify the extent of bedrock with higher K relative to the extent of the proposed pit. Does the high K zone extend farther beneath Springpole or Birch Lakes and beneath the proposed pit? Describe the extent of high K in relation to porphyry intrusive rocks and metavolcanic and metasedimentary rocks.	Based on the current understanding of site conditions it is inferred that the high K zone is coincident with the porphyry intrusive rock only and that the metasedimentary and metavolcanic bedrock that hosts the porphyry intrusive rock is more typical of the crystalline bedrock found in Northern Ontario, i.e., is lower hydraulic conductivity, however the extent of the Portage Zone is still being assessed as part of ongoing investigations at site, and extents of higher hydraulic conductivity zones are being refined. To account for some of the uncertainty with respect to the ultimate extents of the higher hydraulic conductivity zone, the groundwater flow model for the site assumes two different cases: 1) the Portage Zone extents are coincident with the targeted locations of exploration holes (i.e., similar to the extent of the open pit), and 2) the Portage Zone is coincident with the deep sections of the bathymetry of the northern section of Springpole Lake (effectively assuming that the Portage Zone coincides with the deeper portions of the norther section of Springpole Lake, the inference being that deeper portions of the lake may be the result of weathering of zones of weaker bedrock which has resulted in the increased bedrock depths within the lake).	Appendix L Section 3.2
IAAC-BL-022	Hydrogeology baseline report (2021) - Appendix A, Section 2.5, pg.2-6	The deeper groundwater flow system is considered to be “relatively stagnant” with low hydraulic gradients (<0.0001) and groundwater velocities (<0.00001 m/d). “Stagnant” gives the reader the impression that the groundwater is not moving. Low flow in deep bedrock is likely due to a combination of relatively low K and low gradients. The assumed low hydraulic gradient (estimated at < 0.0001) in the deep groundwater flow system is not supported by data or modelling and seems unlikely. Horizontal hydraulic gradients in the deep bedrock should mimic those at the base of the shallow bedrock. Equipotentials should be nearly vertical in the deep bedrock unless there is a higher K zone at depth. Only a portion of the hydraulic head from the hillslopes will be dissipated vertically in the sediments and shallow bedrock. The low assumed hydraulic gradients in the deep bedrock would require hydraulic heads beneath the uplands to be nearly equal to the level of Springpole Lake. Suitable baseline characterization of hydraulic gradients and groundwater flow in deeper bedrock is warranted because the proposed pit may greatly change hydraulic gradients in the deeper groundwater system. Avoid descriptions of “stagnant” groundwater. Base descriptions of baseline hydraulic gradients and groundwater velocities in deep bedrock on measured data or baseline hydrogeological modelling results.	The on-going site investigation program includes the installation of several deep multi-level vibrating wire piezometers equipped with dataloggers. Water level data from the deep vibrating wire piezometers provide the opportunity to further assess/substantiate hydraulic gradients in the deeper bedrock groundwater flow system.	Appendix L-1 Section 5
IAAC-BL-023	Hydrogeology baseline report (2021) - Section 5.2.6, pg.27-28	The geological units and structural elements intersecting and influencing the pumping well SPW20-001 are not sufficiently described and related to the hydraulic conductivity profile (Appendix A, Figure 6.1). It is stated that it likely intercepted one or more structural features identified by SRK (2013), yet it does not appear to intersect any major structural elements from Figure 5.8. Section 5.2.6 states that “the well draw water largely from the porphyry bedrock”. Well SPW20-001 hydraulic conductivity results are plotted in Fig 5.7 (metavolcanics and metasedimentary bedrock) but not in Figure 5.6 (trachyte porphyry intrusive bedrock) suggesting the pumping well may not be considered part of the porphyry intrusive bedrock. Most of the water in SPW20-001 was drawn from 65.6 to 203.6 m depth, well above the highly fractured low RQD zone at depth (Appendix A, Figure 6.1). Describe in greater detail the geology of pumping well SPW20-001 and the intersection with structural elements (e.g. SRK (2013) and fractures from AT). Discuss its hydraulic conductivity profile in the context of broader scale geological and structural elements and fractures. Are pumping test results from SPW20-001 representative of the high K portion of the deposit? Was most of the water pumped from SPW20-001 drawn from the porphyry bedrock?	The geologic model shown on Figure 5.8 was developed prior to the installation of well SPW20-001 and the inference that SPW20-001 may intersect one of the structural elements identified by SRK (2013) was made based on the zones of low RQD encountered from 356m to 371m along the borehole within sections of trachyte. Hydraulic conductivity zones shown on Figure 6.1 of Appendix A are based on overlapping packer testing intervals which each straddle different types of bedrock units. For example, packer tested interval from 204m to 401m is composed of roughly equal portions of andesite (metavolcanic) and trachyte (porphyry intrusive) while packer tested interval from 278m to 356m is composed of mostly (about 70% of its length) trachyte (porphyry intrusive). Deriving a single hydraulic conductivity for each zone and applying it across multiple bedrock units can also be problematic as the delineation of the zones is largely a function of the selected intervals rather than the actual hydrostratigraphy. This also makes grouping the packer test results by bedrock type, as per Figure 5.6 and 5.7, difficult. More targeted (shorter interval) hydraulic packer testing is being conducted currently and these results along with updated interpretations are included in the draft EIS/EA. More detailed description of the pumping test results at SPW20-001 is included in the draft EIS/EA.	Appendix L-1 Section 5.2.2

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ID	Specific Reference	Initial Comments & Rationale	FMG Response	Where Addressed
IAAC-BL-024	Hydrogeology Baseline Report (2021) - Appendix A	The pump test response in BL-263 appears to be low despite its proximity to the pumping well (Appendix A, Figure 6.9). Furthermore, there are water level fluctuations in BL-263 that are not observed in the pumping well or other monitoring wells (Appendix A, Figure 6.7). Discuss the minimal pumping test response in BL-263 despite its proximity to the pumping well. Were there potential well interferences in BL-263 (Appendix A, Figure 6.7)?	The lack of response of BL-263 to pumping from SPW20-001 is likely due to a lack of hydraulic connectivity between the two wells (i.e., the primary water-bearing fractures in SPW20-001 are not well connected to those that intersect BL-263). This lack of connection becomes apparent when plotting the long-term drawdowns from the monitoring wells against radial distance from the pumping well on a semi-log plot (i.e., distance-drawdown plot), which shows that the response in BL-263 is unexpectedly low compared to other wells. Further discussion and inferences of hydraulic connectivity of bedrock is included in the draft EIS/EA.	EIS Section 6.5.2.2, Appendix L-1 Section 5.2.2.1
IAAC-BL-025	Hydrogeology Baseline Report (2021) - Section 7.0, pg.47-48; Appendix A, Section 7.3, pg.7-2	The isotopic data clearly indicates that the lake water did not contribute significantly to the well during the pump test. However, given the drawdown cone and storativity, the total volume of water pumped during the test could have originated from groundwater storage beneath land without inducing significant recharge from the lake. Therefore, the pump test would not necessarily be a good test of whether the porphyry zone was hydraulically connected to the lake. Reconsider the conclusion that the fracture networks within the Portage Zone porphyry rock “may not be hydraulically connected to either Birch Lake or Springpole Lake” (Section 7.0).	Due to the small storativity value measured during the SPW20-001 pumping test (2.1×10-6 in BL-102), it is not expected that the bedrock matrix itself would produce significant storage release (i.e., flow is primarily produced by transmission through conductive fractures connected to more permeable media and/or hydraulic boundaries). It is agreed, however, that the overall pumped volume may nonetheless represent a relatively small volume at this scale of investigation.	EIS Section 6.5.1.2 Appendix L-1 Section 5.2.2.1
IAAC-BL-026	Hydrogeology Baseline Report (2021) - Entire report	The EIS Guidelines (pg.23-25) require the proponent to provide: “an appropriate hydrogeologic model for the project area, which discusses the hydrostratigraphy and groundwater flow systems; a sensitivity analysis will be performed to test model sensitivity to climatic variations (e.g. recharge) and hydrogeologic parameters (e.g. hydraulic conductivity)”. The current document does not include a hydrogeological model of the baseline conditions. Once provided, federal expert advisers will review the model and its outputs to determine whether there are any areas of uncertainty or gaps. The baseline conditions should be included in the hydrogeological modelling when changes to the physical environment are assessed in the EIS. As a reminder, ensure you have sufficient baseline data to appropriately characterize the hydrogeology in relevant areas, including in the Birch Lake watershed where the tailings management facility has been relocated. If there is any question about whether additional baseline data are required to be able to predict potential seepage pathways with confidence, please submit questions or information for review. Federal expert advisors can review the model and its outputs, when available, and provide any additional feedback, with sufficient notice.	The groundwater model utilizes previously acquired site data and new data acquired from the ongoing site investigation program. Sufficient baseline data to appropriately characterize the hydrogeology in relevant areas, including in the Birch Lake watershed is being incorporated. Description of the construction, calibration, predictive simulations, and sensitivity analysis of the model is included in the draft EIS/EA.	Appendix L-2 Sections 4.1, 5, 7.
IAAC-BL-027	Geochemical characterization program update (2021) - Entire report	Natural Resources Canada has reviewed the geochemical characterization program update. No comments or concerns on the geochemical characterization program at this time.	Acknowledged.	N/A

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ID	Specific Reference	Initial Comments & Rationale	FMG Response	Where Addressed
IAAC-BL-028	Existing Conditions Report - Fish Community and Habitat (2018) – Section 3.1.3, pg.27-30; Section 3.2.2, pg.84; Section 3.3.2, pg.90; Appendices 1, 2, 3 2019-2020 Aquatic Resources Assessment - Section 3.4.4, pg.26; Section 3.5.2, pg.27	The EIS Guidelines (pg.25) require: "a description of primary and secondary productivity of aquatic resources (e.g. benthic communities, feeder species, aquatic plants) in terms of abundance and distribution in affected water bodies with a characterisation of season variability". The existing baseline studies provide information on benthic community and aquatic plant abundance and distribution, but do not provide information on seasonal variability. Provide rationale for excluding information on the seasonal variability of benthic communities and aquatic plants within affected waterbodies or provide clarification that seasonal variability of aquatic plants will be addressed in the EIS.	Primary production assessments for phytoplankton and zooplankton included sampling in 2021 at six locations within Springpole Lake and two locations in Birch Lake. Benthic invertebrate sampling also occurred in the fall of 2021 at the same locations, as well as inland waterbodies that were previously unsampled. The 2018 to 2021 aquatic assessments sampled benthic invertebrates in the fall, consistent with federal and provincial biomonitoring study programs (e.g., CABIN, BC MOE, FIRNNO, MMEEM) which recognizes late summer and fall as the best period for sampling for the following reasons: - Most taxa in the benthic community are in an aquatic life stage during the fall; - Many taxa are at a stage in their life cycle that is advanced enough to be collected by standard equipment and identified to levels of appropriate taxonomic resolution; - Stream flows are lowest of the year (allows for safe sample collection); and - The low water levels mean that the substrate below the wetted stream channel is stable habitat and not the result of peak flow rates (e.g., spring) that create ephemeral aquatic habitats in areas that become stream banks during low flow periods. As such, seasonal collection and variability of benthic invertebrates is not planned for this Project; however, the robust data set collected in the late summer and fall period will allow for the assessment of changes to the benthic invertebrate community associated with potential mine-related impacts. Another metric of lower trophic level aquatic assessments includes forage fish species, which were sampled in Springpole and Birch Lakes, as well as the inland waterbodies in 2021 for contaminants in tissue; thereby adding to the dataset provided in the 2018 Existing Conditions Report and the 2019-2020 Aquatic Resources Assessment Report. During the fish community and fish habitat program, surveys of aquatic vegetation were conducted during the spring, summer and fall of 2021.	Appendix O-1 Sections 3.1.6, 3.2.6.
IAAC-BL-029	Existing Conditions Report – Fish Community and Habitat (2018) - Section 3.1.2, pg.19	Dissolved mercury levels exceeding PWQO were recorded at multiple stations in Springpole lake. The proponent stated that dissolved mercury levels were highly variable, but indicated these exceedances were due to lab error or contamination. Provide a clear rationale for assuming these exceedances were due to error. Consider further sampling to increase confidence in the data.	As noted in the response to comment #14, the water quality results for mercury between 2011 and 2013 are incorrect. Maxxam Laboratories determined that mercury exceedances between 2011 to 2013 reflect contamination by an external source through laboratory handling and laboratory error. The determination of laboratory error causing contamination of these samples is further substantiated by results of subsequent years of baseline sampling programs. Mercury concentrations measured between 2013 and 2021 at same monitoring locations are all below the Canadian Water Quality Guidelines. Thus, the historical results for these parameters are not representative of baseline conditions. In 2021 ultra-low detection of total mercury and methyl mercury was added to the baseline monitoring program. Results range from 0.0000025 mg/L to 0.0000238 mg/L, which is below the Canadian Water Quality Guideline value of 0.000026 mg/L for total mercury and confirm that mercury is very low.	Appendix N-1 Sections 2.4.1, 3.

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ID	Specific Reference	Initial Comments & Rationale	FMG Response	Where Addressed
IAAC-BL-030	Existing Conditions Report – Fish Community and Habitat (2018) - Section 3.1.4.1, pg.33	The EIS Guidelines (pg.25) require: "For potentially affected surface waters, a characterization of fish populations on the basis of species and life stage, abundance, distribution, and movements, including information on the surveys carried out and the source of data available (e.g. location of sampling stations, catch methods, date of catches, species, catch-per-unit effort)". Two standardized community index netting surveys were conducted in Springpole Lake in 2011 (FWIN) and 2012 (Broadscale) to collect baseline information on fish communities. However, neither protocol was followed appropriately to achieve an accurate estimate of abundance for target species and future comparisons. For a lake the size of Springpole Lake (~2400 Ha) a FWIN (Morgan 2002) survey requires a minimum of 22 net sets (baseline n = 2) and the Broadscale (Sandstrom et al. 2013) method would require 21 (baseline report n = 11). Plan and properly conduct at least one fulsome standardized community netting protocol in Springpole Lake to accurately estimate the abundance of key species in order to establish a defensible baseline and allow accurate monitoring and verification of predicted effects. For additional value, the proponent may consider conducting the same for both Birch Lake and Seagrave Lake to provide regional comparisons. Sampling can be augmented with complementary fish capture methods (i.e. beach seine, electrofishing) for fish species with low gill net catchability. Provide information on study design (i.e., site selection rationale, stratification, analyses, etc.) to validate the approach.	The baseline studies utilized net mesh sizes specific to the Fall Walleye Index Netting (FWIN) and Broadscale Monitoring (BsM) protocols that inherently targeted different fish sizes. These studies did not propose or complete formal BsM or FWIN surveys. The comparison presents the difference in catch relative to protocol-specific gear and helps to characterize the fish community. The three cycles of MNDMNRF BsM data from Birch Lake (2009, 2014, 2019) has been reviewed and will be included as a summary in the draft EIS/EA. Additional fish population studies in Birch Lake are not currently proposed as the existing data supports regional comparisons. Seagrave Lake is positioned upstream and not near the Project footprint, therefore data from Birch Lake will be utilized for regional comparisons and no sampling is proposed for Seagrave Lake.	EIS Sections 6.10.2.1, 6.10.2.2, Appendix O-1 Sections 1,3, 2, 3.
IAAC-BL-031	Existing Conditions Report - Fish Community and Habitat (2018) - Section 3.1.4.2, pg.42	The EIS Guidelines (pg.25) require: "a list of any fish or invertebrate species at risk that are known to be present". Lake Sturgeon are listed as a species at risk and were studied by the proponent. The Existing Conditions Report concluded that Lake Sturgeon are not considered to be present in Springpole Lake. During the water/aquatic discipline meeting held on July 19, 2021, the province (MDMNRF) noted records of Lake Sturgeon from the area, including Birch Lake, which raised uncertainty with the adequacy of the catch methods. Further, the 2018 Project Description (Table 6-3) indicated that Slate Fall First Nation had previously commented on Lake Sturgeon being present in Gull Lake and the Springpole Arm. Provide further rationale and detail on the adequacy of methods used for netting Lake Sturgeon or do additional Lake Sturgeon studies using an alternative catch method.	As noted in the Existing Conditions Report (2018), the 2012 and 2013 baseline fish community surveys specifically targeted Lake Sturgeon in Springpole Lake and did not detect any individuals. Further, three cycles of MNDMNRF BsM data have been reviewed from Birch Lake (2009, 2014, 2019) and no Lake Sturgeon were detected in these studies either. As such, this infers a low likelihood of Lake Sturgeon presence within Springpole Lake, and as such additional Lake Sturgeon surveys were not conducted. It is acknowledged that Lake Sturgeon may be present within the Birch Lake watershed, albeit in low abundance.	EIS Sections 6.10.2.1, Appendix O-1 Sections 2.3.1, 2.3.2, 3.1.2.1 and 3.2.2.2.

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ID	Specific Reference	Initial Comments & Rationale	FMG Response	Where Addressed
IAAC-BL-032	Existing Conditions Report – Fish Community and Habitat (2018) - Section 3.1.6, pg.52; Section 3.1.6.3, pg.59; Section 3.1.6.4, pg.62; Section 3.1.7, pg.65-81	The EIS Guidelines (pg.25) require: "maps, at a suitable scale, indicating the surface area of potential or confirmed fish habitat for spawning, rearing, nursery, feeding, overwintering, migration routes, etc. Where appropriate, this information should be linked to water depths (bathymetry) to identify the extent of a water body's littoral zone." The maps provided in the Existing Conditions Report – Fish Community and Habitat (2018) report do not adequately illustrate potential or confirmed habitat for Lake Trout, Northern Pike or Lake Whitefish. Lake Trout spawning habitat is defined in the baseline report as 'shallow areas with clean large boulders or rubble substrate in close proximity to deep water habitat' and in water 'less than 5 m deep'; however, the surface area for confirmed or potential spawning habitat has not been quantified or displayed on a map. Only confirmed observation point data is represented. Similarly, Northern Pike spawning habitat is defined as 'shallow waters with dense aquatic vegetation' and one observation confirmed the presence of Northern Pike spawning within the proposed affected area; however, there is no quantification or visual representation of other potential spawning habitat locations within Springpole Lake. Further, Lake Whitefish spawning habitat is defined as 'shallow areas with hard rocky or sandy bottom substrates' and 18 locations surveyed confirmed the presence of Lake Whitefish in the northern portion of Springpole Lake; however, quantification of confirmed and potential spawning locations of Lake Whitefish has not been properly documented or visually represented. Using a combination of the Detailed Substrate Maps (pg.158) and Springpole Bathymetry data (pg.16), quantify potential Lake Trout, Northern Pike and Lake Whitefish spawning habitat and confirmed habitat (validated with observation data) and provide a map or maps showing the extent of these areas within Springpole Lake. The same exercise can be undertaken to define the extent of the littoral zone in Springpole Lake as per 7.1.6 of the EIS Guidelines.	Updated figures to illustrate suitable spawning habitat and confirmed habitat for the noted fish species are included in the draft EIS/EA.	Appendix O-1 Attachment A.

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ID	Specific Reference	Initial Comments & Rationale	FMG Response	Where Addressed
IAAC-BL-033	Hydrology Baseline Report (2021) - Section 4.6, pg.23 Existing Conditions Report - Fish Community and Habitat (2018)	The EIS Guidelines (pg.25) require that baseline data is collected linking water depths (bathymetry) to surface area of potential or confirmed fish habitat for spawning, rearing, nursery, feeding, overwintering, migration routes, etc. in maps at a suitable scale to identify the extent of a water body's littoral zone. The EIS Guidelines (pg.32) further require the consideration of "the modifications of hydrological and hydrometric conditions on fish habitat and on the fish species' life cycle activities (e.g. reproduction, fry-rearing, movements)" in the identification of any potential adverse effects. There appears to be bathymetric and lake level data available for Springpole Lake, but the variability in lake level has not been analyzed, nor how that is linked to fish habitat and supporting life cycle processes (e.g. spawning habitat for Lake Trout in areas less than five metres in depth with boulder, cobble substrate). Establishing these baseline conditions will be important in predicting how changes in lake level as a result of pit dewatering may alter fish habitat and fish species' life cycle activities. Provide maps linking potential or confirmed fish habitat supporting key life cycle processes to lake levels for key species as outlined in Comment 32. This would include but not be limited to potential and confirmed spawning habitat for Lake Trout, Northern Pike, Walleye, and Lake Whitefish. The future effects assessment should include a similar map showing predicted changes in habitat as a result of any predicted changes in lake levels.	Level loggers have been installed in Springpole Lake to measure seasonal variability. The information is being used to assess the potential effects to fish habitat due to changes in water levels from pit dewatering in Springpole Lake. The assessment is included in the draft EIS/EA.	EIS Section 6.7.1.1, Appendix M-1 Section 4.3.1, and Appendix O-1 Attachment A.
IAAC-BL-034	Existing Conditions Report – Fish Community and Habitat (2018) - Section 3.1.6.3, pg.59	The EIS Guidelines (pg.25) require: "maps, at a suitable scale, indicating the surface area of potential or confirmed fish habitat for spawning, rearing, nursery, feeding". Given the proximity of the Lake 1 and Lake 2 complex to confirmed Northern Pike spawning habitat in Springpole Lake noted in section 3.1.6.3 of the 2018 baseline report, fish survey information is lacking for early spring to confirm whether Northern Pike use Lakes 1 or 2 for spawning and rearing habitat. Provide an analysis using supporting literature, existing data collected on Lakes 1 and 2, and the precautionary approach to determine if Lakes 1 and 2 have the potential to support Northern Pike spawning, rearing, nursery, and feeding. If information is insufficient to complete an analysis, conduct an early spring assessment on Lakes 1 and 2 to determine if Northern Pike use these lakes for spawning, rearing, and nursery habitat.	The 2018 Existing Conditions Report (Table 25, pg. 95) indicates juvenile Northern Pike were caught ranging in size from 140 to 200 mm in Lake 1 showing this waterbody provides rearing habitat and forage. The connection between Lake 1 and Lake 2 is limited in some reaches due to beaver activity (dams) and a shallow connecting channel. It is unknown if adult Northern Pike could access Lake 1 during the spring high water period to support spawning activity. The 2018 Existing Conditions Report (Table 27, pg. 100) and 2019-2020 Aquatic Resources Assessment report (Table A1.6, pg. A10) indicate juvenile Northern Pike were caught within Lake 2 and the outlet stream of Lake 2 showing this waterbody provides rearing and forage habitat. These assessment results also noted fish passage between Springpole Lake and Lake 2 is free of obstructions. As such, it is assumed adult Northern Pike can access Lake 2 for potential spawning.	EIS Section 3.4.8.1, Appendix O-1 Sections 2.4, 3.1.2.5, 3.4.2, 3.5.2.

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IAAC-BL-035	Existing Conditions Report – Fish Community and Habitat (2018) - Section 3.1.7.3, pg.70; Section 3.1.7.4, pg.75	The EIS Guidelines (pg.25) require: "a characterization of fish populations on the basis of species and life stage, abundance, distribution, and movements,...". The utility of the telemetry data for both Walleye and Lake Trout migration and residency information is unclear. Locations of fish captured for these studies is not specific and it is difficult to visualize the movement and residency of both Walleye and Lake Trout in Summer and Winter using the tables and maps as presented in the baseline report. Additionally, it is unclear if the tagged fish were representative of the entire Springpole Lake population. Conduct a home range analysis (e.g. minimum convex polygon or kernel analysis) and provide a detailed map of both Walleye and Lake Trout movement and residency patterns in Springpole Lake. For illustrative purposes, include the proposed dewatered area in the map for ease of interpretation. Provide a map of initial tagging locations and provide an estimate of the proportion of Walleye and Lake Trout in Springpole Lake that use each deep water basin for summer refuge and spawning as outlined in Table 21. Provide a rationale for why the tagged Walleye and Lake Trout in this study are representative of the Springpole Lake population. A detailed study design of the telemetry study outlining rationale for sample size determination and receiver site location selection would also be helpful in interpreting the utility of this dataset.	The acoustic telemetry results provided in Section 3.1.7 of the 2018 Existing Conditions Report (2018 Report) describes the tagged fish movement during the monitoring period. In addition, the following responses are included to address specific comments (a to d): A description of Walleye and Lake Trout movement and residency patterns in Springpole Lake, along with an illustrative map, are being provided in the draft EIS/EA. As noted in the 2018 Report (Section 3.1.7.1, pg. 68) transmitters were implanted into fish that were caught by angling from throughout north-west arm of Springpole Lake. Table 23 provides the number of fish utilizing summer refuge in various basins within Springpole Lake. The 2018 Report (Section 3.1.7.2; Table 17, pg. 70) shows the number of individuals tagged including size ranges. These data show all fish were adult specimens of spawning age and are considered representative of the mature population within Springpole Lake. The acoustic telemetry study objective was to determine adult fish movement; therefore, juvenile fish were not tagged. The study design is provided within the 2018 Report (Section 3.1.7, pg. 65). Sample size was based on providing a representative number of tags for each location. Site selection for the location of receivers targeted narrow sections of the lake where migratory routes could be easily monitored, and across the lake to provide adequate coverage.	EIS Section 3.4.8.1, Appendix O-1 Section 3.1,
IAAC-BL-036	Existing Conditions Report – Fish Community and Habitat (2018) - Section 3.1.4.3, pg.44	The EIS Guidelines (pg.25) require: "a characterization of fish populations on the basis of species and life stage, abundance, distribution, and movements, including information on the surveys carried out and the source of data available (e.g. location of sampling stations, catch methods, date of catches, species, catch-per-unit effort)." It is unclear how sampling effort and site locations were determined for small-bodied fish sampling in Springpole Lake (i.e. how locations sampled were chosen and if that is representative of all habitats supporting all life stages of small-bodied fish species). Provide rationale and study design information for the small-bodied fish sampling efforts on Springpole Lake. Include justification for number of sites selected for each methodology and why the locations selected are representative of Springpole Lake.	Small-bodied fish sampling was conducted to provide a general assessment of fish species presence within various habitats and locations of Springpole Lake. These surveys did not follow a specific protocol or randomized sampling study design; however, the sampling objective was to qualitatively characterize the forage fish and early life stage fish community in nearshore habitats. These data, in addition to the subsequent studies completed in 2019 to 2021provide sufficient data to characterize the fish community in various habitat types. In preparation for the federal MDMER environmental effects monitoring studies, further fish community and fish tissue studies will be collected (where needed) and will follow a rigorous study design. These studies may utilize small bodied species with home ranges smaller than large-bodied, upper-trophic species, and are designed to measure changes in various health and condition metrics as compared to baseline and/or reference condition.	Appendix O-1 Sections 3.1.2, 3.2.2, 3.4.2.

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IAAC-BL-037	Existing Conditions Report – Fish Community and Habitat (2018) - Section 3.1.7.3, pg.70	The interpretations regarding Walleye spawning migrations are inconsistent and incomplete. The baseline report states that 'in the spring of 2014 and 2015 nearly all of the tagged Walleye migrated into the Birch River in late April or early May and returned to Springpole Lake in late May or early June'; however, Table 19 indicates only 57% and 43% of the total tagged Walleye moved passed SPR1 in 2014 and 2015, respectively. In addition, SPR12, one of only two fixed receiver stations located in the potential dewatered area, was operational for only 1 day in 2012. Since only a very small portion of the potential dewatered area had transmitter detection coverage, interpretations of fish migrations are difficult. For example, possible migrations of Walleye into the northern most inlet (leading to Lake 2) of Springpole Lake would have went undetected with the fixed receiver dataset. Provide a detailed description of the limitations of the telemetry study in the potential dewatered area and how that may influence the interpretations presented in the baseline report and the consequent effects assessment. Based on these limitations, provide a rationale using supporting literature and/or technical reports for how a precautionary approach to assessing baseline fish populations and the effects assessment can still be achieved. If necessary, an additional telemetry study may be required to validate the migration and spawning locations of Walleye and other large-bodied fish species that combines both active and passive tracking data to address the uncertainties of the current baseline information on the movement of fish species in Springpole Lake.	A description of limitations to the acoustic telemetry study is included in the draft EIS/EA. Where data limitations may exist, the assumptions and the use of a conservative approach in the effects assessment for fish and fish habitat is being used. The existing acoustic telemetry data provides an adequate baseline to characterize fish movement in the Springpole Lake. As such, additional acoustic telemetry studies are not proposed.	EIS Section 6.10.5, Appendix F Section 4.0, Appendix O-2 Section 3.0
IAAC-BL-038	2019-2020 Aquatic Resources Assessment - Section 2.3, pg.6; Appendices A, B, C	During the fish community study, all captured fish were identified, measured for length and weight, and information on malformations, parasites, disease, sex and age were collected. This information is provided throughout Appendices A, B and C, but it is not concisely presented in the main report within organized tables. Additionally, only species that were utilized for the fish tissue analysis were presented in the text with descriptive summary statistics (i.e. mean, median, standard deviation, standard error, minimum and maximum values). The reader must locate all other fish species weight and length information by searching the field sampling data sheets. Summarize/present fish morphometrics for length and weight as per Metal Mining EEM Technical Guidance Document (TGD) for each species at each location.	A summarized table of these data in support of the Federal Environmental Effects Monitoring (EEM) program is planned during the permitting phase.	N/A

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<table>
<tr><th>ID</th><th>Specific Reference</th><th>Initial Comments & Rationale</th><th>FMG Response</th><th>Where Addressed</th></tr>
<tr><td>IAAC-BL-039</td><td>2019-2020 Aquatic Resources Assessment - Section 2.4.1, pg.7</td><td>a. The EIS Guidelines (pg.25) requires the proponent to provide: “a description of primary and secondary productivity of aquatic resources (e.g. benthic communities, feeder species, aquatic plants) in terms of abundance and distribution in affected water bodies with a characterization of season variability."

It is unclear how sampling effort and site locations were determined for the Benthic Invertebrate Community (BIC) assessments in Springpole Lake and whether the locations sampled are representative of all habitats supporting these aquatic resources within the lake.

Sediment and BIC samples were taken using a Petite Ponar grab sampler, with three sub-samples collected per sample location. This information was then pooled into composite samples. However, no information appears to be provided on the depth of the samples taken, how sediment and BIC samples may have been handled differently, or the mesh size used in the field for sieving and pooling samples.

Additionally, the report states that all BIC samples were initially preserved with isopropyl alcohol within six hours of sample collection, which was then replaced by 10% formalin solution prior to transport to the taxonomist.

Provide rationale and study design for the BIC assessments in Springpole Lake. Include justification for number of sites selected, rationale for sampling methodology, and why the locations selected are representative of all habitats supporting aquatic resources in Springpole Lake. Ensure suitable representation.

Provide the depths of the petite ponar grabs for each sediment sample. A preferred penetration depth of 10-15 cm and a minimum penetration depth of 6-8 cm is recommended to ensure minimum disturbance of the upper layer during sampling. (TGD Section 7.2.3). It is also recommended that five replicate samples per station be taken. A separate sub-sample from the same grab can be used to measure the variation within a sample, but not necessarily within the same sampling station (TGD Section 7.2.8). The sieve size used in the field should also be provided. All samples should be fixed in the field in a 10% buffered formalin solution to prevent damage to freshwater worms as specified in the Metal Mining EEM Technical Guidance Document (TGD Section 4.5.6). It is also recommended that at least 10% of all samples be re-sorted and that the criterion for an acceptable sort be that ≤ 10% of the total number of organisms were missed (TGD Section 4.6.4.1).</td><td>The 2020 Springpole Lake benthic invertebrate community sampling was completed within a candidate outfall location in the central basin, nearshore and offshore locations. This candidate location has since been changed to the southeast arm of Springpole Lake where benthic invertebrate sampling occurred in 2019, as well as additional sampling in the fall of 2021. Sampling methodology followed the EEM study design for metal and diamond mines.

The depth range of samples at each location is included in the draft EIS/EA; It should be noted that the sample locations are no longer proposed to receive treated effluent discharge in the north basin of Springpole Lake. The study design followed the MDMER guidance, by collecting three replicate subsamples that were composited and sieved in the field using a 500 micron bucket sieve. The sieved samples were then transferred to a prelabelled container and preserved with isopropyl alcohol to conform with the requirements of the Transportation of Dangerous Goods; however, as recommended by the EEM Technical Guidance Document, the samples were re-preserved with 10% buffered formalin, as noted in Section 2.4.1, pg. 7 of the 2019-2020 Aquatic Resources Assessment report. A subset of the samples (two out of ten, or 20%) were re-sorted to comply with quality control and assurance requirements. The results of the two samples that were re-sorted are tabularized below, showing the initial number of organisms that were sorted, and the number of organisms found during the re-sort:

<table>
<tr><th>Station</th><th>Number of Organisms Recovered (Initial sort)</th><th>Number of Organisms in Re-sort</th><th>Percent Recovery</th></tr>
<tr><td>L-15-S-03</td><td>64</td><td>64</td><td>100.0%</td></tr>
<tr><td>L-15-D-05</td><td>23</td><td>23</td><td>100.0%</td></tr>
<tr><td></td><td></td><td>Average % Recovery</td><td>100.0%</td></tr>
</table></td><td>EIS Section 6.10.2.1, Appendix O-1 Section 2.8.</td></tr>
<tr><td>IAAC-BL-040</td><td>2019-2020 Aquatic Resources Assessment - Section 3.5.2, pg.27; Appendix D Table D2.2b, pg.D12;

Appendix B Tables B1.7a B1.7b and B1.8, pgs. B3-B5</td><td>The EIS Guidelines (pg.23-25) require: “sediment quality analysis (e.g. total metals, particle size, and total organic carbon content) for key sites likely to receive mine effluents.”

There are inconsistencies and gaps in the reporting presented. For instance, information in Table D2.1a (page 225) do not match the results presented in Table D2.2a (page 227). It was also found that there was no separate summary of sediment sampling results. Nor was there a discussion about metal concentrations in fish tissue. Finally, the data in Tables B1.7a, B1.7b, and B1.8 do not match the lab analysis sheets or information from Tables B1.1-B1.5.

Complete and accurate baseline information is important to have to compare to future studies. Check and correct the results and information in the baseline studies for future reference.</td><td>Acknowledged. The noted inconsistencies are being reviewed and corrected as needed in the draft EIS/EA.</td><td>Appendix O-1: Section 2.8, 3.1.7</td></tr>
</table>

Table C-1.1: First Mining Gold Responses to Impact Assessment Agency of Canada Comments on the Baseline Study Reports for the Springpole Gold Project

ID	Specific Reference	Initial Comments & Rationale	FMG Response	Where Addressed
IAAC-BL-041	2019-2020 Aquatic Resources Assessment - Section 2.4, pg.7	The EIS Guidelines (pg.25) require: "a description of primary and secondary productivity of aquatic resources ..." and "a characterization of fish populations on the basis of species and life stage, abundance, distribution,...". Springpole Lake supports a complex community of large-bodied and small-bodied fish populations. Removing a deep-water basin that may provide important refuge habitat for multiple species, particularly Lake Trout, has the potential to result in imbalances in the food web, and changes in population and community dynamics. For example, fish using that area will need to move to other suitable habitat in the lake, which may result in density-dependent limitations on populations (i.e. increased competition and predation). These potential imbalances in the food web in relation to baseline conditions and how predicted changes in primary and secondary producers may affect fish food sources was not described in the baseline report and it is unclear if the data collected is sufficient to predict future food web imbalances, as per Part 2, Section 7.3.1 of the EIS Guidelines. In addition, It is unclear how the baseline work completed to date will be integrated to inform a defensible baseline that will be the basis of an effects assessment to sufficiently describe "the anticipated changes in the composition and characteristics of the populations of various fish species, including shellfish and forage fish", as per Part 2, Section 7.3.1 of the EIS Guidelines. Provide detailed information describing how the fish community use the available primary and secondary aquatic resources in Springpole Lake and how mine-related effects may impact the existing food web. If sufficient information is not available in the baseline report, the proponent should consider further baseline studies to describe the food web in Springpole Lake. The existing baseline and any additional information collected (see the other actions in the disposition table) should be integrated to provide a holistic baseline characterization of fish and fish habitat in Springpole Lake. This baseline should allow the quantification of effects to fish and fish habitat, including but not limited to potential changes in fish populations directly and indirectly as a result of effects to Springpole Lake (e.g. changes in populations including structure due to increased competition and predation). These will ultimately inform the monitoring program to verify the predicted effects and the offsetting required to balance the impacts. If sufficient baseline does not exist, the proponent should describe how the data collected to date and subsequent characterization of baseline is using the precautionary approach based on supporting literature and technical reports. Where there are gaps and information is insufficient to characterize baseline, additional studies may be needed.	A comprehensive baseline for aquatic resources has been carried out for the Project over the last ten years. In 2021, a detailed sampling program was completed within Springpole Lake that included physicochemical profiling at a number of deep water basins, lower trophic level sampling (phytoplankton, zooplankton), benthic invertebrate community surveys, fish community surveys, and forage fish contaminants analyses. Additional fish population surveys are planned for 2022, subject to approval from the Red Lake District MNDMNRF. The baseline data collected for the Project provides a holistic characterization of fish and fish habitat for Springpole Lake to support the effects assessment in the draft EIS/EA.	EIS Sections 3.4.8, 6.10,2,1, Appendix O-3 Section 3.1.

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IAAC-BL-042	Existing Conditions Report – Fish Community and Habitat (2018) 2019-2020 Aquatic Resources Assessment	The EIS Guidelines (pg.25) requires the proponent to provide: "maps, at a suitable scale, indicating the surface area of potential or confirmed fish habitat for spawning, rearing, nursery, feeding, overwintering, migration routes, etc.". This information can also support the requirement (pg.40) for "environmental sensitivity mapping, including likely pathways (that) will identify areas sensitive to accident and malfunction scenarios that are located adjacent to project activities, such as streams and wetland areas frequented by fish and/or migratory birds". With the recent Project Description update, the proposed project footprint now overlaps the Birch Lake watershed. The waste rock / tailings co-disposal facility will be in close proximity to Birch Lake and is surrounded by Birch Lake on three sides. Yet there is very little information about fish and fish habitat in Birch Lake, near the co-disposal facility and in general. Of particular note, spawning surveys were undertaken in Springpole Lake, but not Birch Lake. There is unknown potential for adverse effects on fish spawning habitat and other fish habitat in Birch Lake through seepage and/or accidents and malfunctions in the event of a tailings breach. Characterize relevant habitat in Birch Lake. Provide a rationale for not undertaking fish spawning surveys in relevant areas in Birch Lake or undertake fish spawning surveys in Birch Lake. In general, provide whatever information is necessary from Birch Lake to support an assessment of effects in the event of an accident or malfunction scenario that results in unplanned effluent or tailings release to Birch Lake. Alternatively, provide rationale for why it is not required and seek consensus from the Agency.	The characterization of habitat in Birch Lake will be based on data collected during the 2021 field program, including surface water quality, lower trophic level sampling (phytoplankton, zooplankton), benthic invertebrate community surveys, fish community surveys, and forage fish contaminants analyses. This information, along with other relevant literature sources, is described in the draft EIS/EA and used to support the effects assessment. No direct effects to fish habitat in Birch Lake surrounding the CDF are predicted, and a result, a fish spawning survey has not been undertaken.	EIS Sections 3.4.8.2, 6.10.2.2, Appendix O-1 Section 3.2.
IAAC-BL-043	Existing Conditions Report – Fish Community and Habitat (2018) 2019-2020 Aquatic Resources Assessment	The EIS Guidelines (pg.9) require that the EIS describe the study strategy and methodology used to assess project-related effects. Throughout both baseline documents, the study design and rationale for the fish community assessments is unclear and therefore, it is unclear whether the pathway of effects can be adequately described and mitigated. Provide rationale and study design information for the fish community assessments in both baseline reports. Include justification for number of sites and the locations selected for each methodology, and how the data collected is sufficient for future pathway of effects analysis.	The initial baseline studies provide a comprehensive characterization of aquatic resources based on the description of the Project at that time. The 2021 studies provide a clear study design to supplement the existing data to address refinements in the Project design in support of the environmental assessment. The study design rationale is described in the draft EIS/EA.	EIS Sections 6.10.1, 6.10.2, Appendix O-1 Section 2.

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ID	Specific Reference	Initial Comments & Rationale	FMG Response	Where Addressed
IAAC-BL-044	Interim Baseline Air Quality Summary Report (2021) - Section 2, pg.5	The EIS Guidelines (pg.22) requires: "a baseline survey of ambient air quality in the project areas and in the airshed likely to be affected by the project, by identifying and quantifying emission sources for, but not limited to, the following contaminants in concentration units comparable to guidelines (i.e. µg/m³): total suspended particulates, fine particulates smaller than 2.5 microns ($PM_{2.5}$), respirable particulates of less than 10 microns (PM_{10}), diesel particulate matter, carbon monoxide (CO), sulphur oxides (SOx), nitrogen oxides (NOx), and volatile organic compounds (VOCs)". The report states (Sec.2, pg.5), "Due to the remote nature of the Project, baseline sources of DPM (Diesel Particulate Matter), CO (Carbon Monoxide), and VOCs (Volatile Organic Compounds) are considered negligible and were not monitored as part of the baseline study." This assumption is not validated in the baseline studies report and technical experts do not make the same assumption. It is recommended that the baseline air quality-monitoring program include substances such as DPM, CO, VOCs and PAHs (Polycyclic Aromatic Hydrocarbons). The Project will release these substances in future phases, which may have effects on air quality. It is necessary to verify that the existing concentrations of these substances are indeed negligible. Provide baseline information for common air pollutants associated with diesel emissions, including DPM, CO, VOCs and PAHs, to verify their existing concentrations and help assess the Project impacts on contaminant levels with certainty. These substances will be generated and released during each phase of the Project as a result of fuel combustion and other activities. Should other assessment approaches be chosen, including the use of surrogates and/or a qualitative assessment, provide a detailed rationale for any deviation from assessment approaches recommended, as well as a discussion on the uncertainty associated with the use of the alternative approaches. For more information, refer to: Health Canada. 2016. Human Health Risk Assessment for Diesel Exhaust.	More detailed quantitative and qualitative analysis is provided in the draft EIS/EA, including a description of baseline/existing conditions for the contaminants identified by Health Canada's Guidance for Evaluating Human Health Impacts in Environmental Assessment: Air Quality (2017) and the EIS Guidelines. A summary table of baseline concentrations including those contaminants identified in the comment, along with the rationale for selection of the baseline concentrations used for the effects assessment is included in the draft EIS/EA.	EIS Sections 3.4.2, 6.2.1.2, 6.2.2.2, Appendix G-1 Sections 3, 5, Appendix G-2 Sections 2.1, 5.
IAAC-BL-045	Interim Baseline Air Quality Summary Report (2021) - Table 2.3.1, pg.8; Section 3, pg.16-18	The EIS Guidelines (pg.22) require the proponent to provide: "a baseline survey of ambient air quality in the project areas and in the airshed likely to be affected by the project, by identifying and quantifying emission sources for, but not limited to … sulphur oxides (SOx)…" Sulfur dioxide (SO_2) concentrations are not included from National Air Pollution Surveillance Program (NAPS) stations, given that SO_2 results from passive sampling are very low. However, it is important to include SO_2 concentrations [similar to what was done for Nitrogen dioxide (NO_2)] from both NAPS stations and use Canadian Ambient Air Quality Standards (CAAQS) SO_2 thresholds for comparison. It is important to have SO_2 data from NAPS to compare the results measured at the site to see that baseline for SO_2 are consistent or different at the site vs the air shed. This comparison was done for NO_2 but not for SO_2. Provide SO_2 baseline data from two NAPS stations and compare the results to CAAQS for SO_2 for available averaging periods (similar to other substances included in the report with CAAQS thresholds).	The baseline air monitoring was extended and includes additional passive monitoring with longer exposure times (30 days) to support more accurate measurement of the SO_2 concentration for longer averaging times; there is both a Canadian Ambient Air Quality Standard (CAAQS) and an Ontario Ambient Air Quality Criterion for the annual averaging time. Continuous monitoring of SO_2 occurs at the NAPS station in Winnipeg (SO_2 concentrations are not measured at Thunder Bay), with hourly data available for the past several years. This data is summarized in the draft EIS/EA and is representative of the regional baseline SO_2 concentrations for the shorter (1-hour, 24-hour) averaging times. This data also informs the baseline concentration for the annual averaging time.	EIS Section 6.2 Tables 6.2-3, 6.2-7, 6.2-8, Appendices G-1, G-2.

ID	Specific Reference	Initial Comments & Rationale	FMG Response	Where Addressed
		Incorporate these results into an updated Table 2.3.1 to include CAAQS for SO_2.		
IAAC-BL-046	Interim Baseline Air Quality Summary Report (2021) - Section 4, pg.18	The Interim Baseline Air Quality Summary Report states (Sec. 4, pg.18): "The onsite ambient air quality monitoring is ongoing and will continue until the fall of 2021 to obtain a complete set of local baseline data." There are no details as to whether the ongoing sampling would use the same approach in terms of sampling parameters, methodology and analysis. Given the high number of non-detects, it may be appropriate to apply different methodology. Further, in the discipline-specific atmospheric meeting on July 13, 2021, Environment and Climate Change Canada (ECCC) and the Ministry of Environment, Conservation and Parks (MECP) noted that not capturing spring data (where levels are typically higher) results in less conservative estimates and suggested collecting a full year of data. a. Provide further information on the continuation of onsite monitoring in terms of sampling parameters, methodology, and frequency. b. Given the high number of non-detected sample results from the current approach, consider (in consultation with MECP) choosing a different sampling methodology where possible. For example, consider continuous real time monitoring for NO_2, SO_2, $PM_{2.5}$ or other approved standards methods (Hi-Vol) for TSP and metals as they yield higher certainty than current methods. Alternatively, provide a rationale for the continued use of the current approach.	a. The baseline monitoring program was expanded in 2021, as described in the workplan provided, to include the following: – Discrete sampling for Total Suspended Particulate (TSP) and metals (1-in-6 day cycle) data using high volume sampling, a reference method with detection limits that are appropriate for the measurement of trace metals (including particle-bound mercury); – Continuous monitoring of PM_{10} and $PM_{2.5}$ concentrations; – Passive dustfall sampling (30-day); and – Passive trace gas monitoring for NO_2 and SO_2 (30-days), and Volatile Organic Compounds (14 days, screening) to supplement published/regional data. An Air Quality Monitoring Plan for the extended program was prepared and submitted to MECP for review and consultation; Comments received from MECP in June 2021 were addressed prior to installation and commissioning of the additional equipment. b. The extended monitoring program was installed to increase the accuracy of the collected data and to reduce the detection limits. The high-volume TSP sampling initiated at the extended baseline air monitoring station is a reference method with detection limits that are appropriate for the measurement of trace metals (including particle-bound mercury). Baseline concentrations of NO_2 and SO_2 in remote locations do not lend themselves to continuous monitoring where accurate measurement of very low concentrations are needed. The passive trace gas monitoring, in combination with the regional data measured at the Thunder Bay and Winnipeg NAPS stations, provide quantitative baseline data for environmental assessment.	EIS Section 6.2.2.2, Appendix G-1 Sections 2, 3.1,

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IAAC-BL-047	Interim Baseline Air Quality Summary Report (2021) - Section 2.2, p.5-6 2021 Air Quality Technical Workplan - Study Area/ Sampling Locations, p.1	Insufficient details are provided on how on-site ambient air quality monitoring data will be supplemented with regional data. Selected regional air quality data may not represent project site conditions. Baseline ambient air quality samples will be collected from two locations: Station SP1 (commenced in July 2020 and will continue until fall 2021) and Station SP2 (sampling is expected to start soon for a duration of six months). It is proposed that regional ambient air monitoring data for nitrogen oxides (NOX), ozone (O3), and fine particulate matter ($PM_{2.5}$) collected from two National Air Pollution Surveillance Program (NAPS) stations, located in Thunder Bay and Winnipeg, will be used to supplement on-site monitoring data. It is not specified how NAPS data will be integrated with the on-site monitoring data, and it is unclear how the final dataset will be representative of project site ambient air quality. The data collected from Thunder Bay and Winnipeg stations are unlikely to accurately represent the site-specific conditions at human receptor locations due to different emission sources and development density. The majority of "existing monitoring stations" are known to be close to higher density development and the more remote stations generally monitor for a limited suite of parameters. The use of elevated baseline levels may underestimate the health impacts of the Project for non-threshold contaminants. a. Provide a rationale for using air quality data from Thunder Bay and Winnipeg. Clarify how this regional data will be used to supplement on-site monitoring data and how the resulting dataset will be representative of project area conditions. b. Clarify whether air quality data from nearby localities or other less industrial locations will be considered in the assessment of baseline air quality data.	a. The NAPS stations at Thunder Bay and Winnipeg provide robust, long term monitoring datasets and are reflective of regional air quality that is influenced by long range transport. For the assessment of air quality for the Project, 3 to 5 years of data is being used. The data are likely biased high, relative to the Project site, due to local influences in the populated areas of Thunder Bay and Winnipeg. However, the use of the 90th percentile for the air quality assessment, provides a conservative approach as it avoids undue influence from extreme air quality events. The average and median concentrations measured at Thunder Bay, Winnipeg, and other remote areas are also being considered in discussion of what is typical for air quality in the region. b. The onsite data collected in the baseline air monitoring program will provide data representative of Project area conditions are being compared against the regional NAPS data for validation.	EIS Sections 6.2.2.2, 3.4.2, Appendix G-1 Section 3.
IAAC-BL-048	Interim Baseline Air Quality Summary Report (2021) - Figure 1.3.1, p.4 2021 Air Quality Technical Workplan - Figure 1, p.2 Baseline Sound and Vibration Report - Section 2.0, p.3; Figure 2-1, p.5	On-site monitoring locations for baseline levels of both ambient air quality and noise are located within the property boundary. Insufficient rationale has been provided regarding whether the proposed monitoring locations are representative of true baseline conditions, due to their relative proximity to exploration camp activities. Given the remote nature of the study area, influence of exploration camp activities on these baseline measurements may lead to overestimation of baseline conditions at receptor locations chosen for the assessment of impacts that are farther away, including those at or beyond the property boundary. Confirm whether baseline data for ambient air quality and noise are representative of future receptor locations that will be chosen for the assessment of impacts. If they are not, collect baseline data for ambient air quality and noise at representative receptor locations, including receptors around Birch Lake.	Air Quality: The air monitoring station located at the exploration camp is set back from activities to minimize the influence on the measurements. The continuous monitoring of PM_{10} and $PM_{2.5}$ data, paired with local meteorological data, also facilitates interpretation of whether elevated concentrations are the result of onsite sources. Long term monitoring also allows for measurements under varied wind speeds and directions, such that measurements also occur when the stations are upwind of the exploration camp activities. Air quality baseline monitoring is not suited to assessing microscale differences in air quality in remote locations. As air quality is affected by many variables, long term monitoring of at least one year is required. To ensure valid collection of high quality data, the instruments meet MECP siting criteria, and need to be in close proximity to reliable power in order to operate, and be accessible by environmental technicians at any time. The use of the 90th percentile of measured values from the regional stations and onsite stations provides a conservative approach to the air quality assessment, as it avoids undue influence from extreme air quality events. The average and median concentrations measured at regional stations (Thunder Bay, Winnipeg), and other remote areas are used to characterize what is typical for air quality in the region. Noise and Vibration: Although the baseline monitoring locations (sound and vibration) are located within the property boundary, the distances to the exploration camp are at least 2 km. The influence of exploration camp activities on the baseline collection are considered negligible with this separation distance. The baseline data collected at these remote locations are considered to be representative of the expected conditions near future receptors.	EIS Sections 6.2.2.2, 6.3.2, Appendices G-1, Section 2, H-1 Section 3, H-2 Section 3.

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IAAC-BL-049	Baseline Sound and Vibration Reports - Section 2.0, p.4	The EIS Guidelines (pg.22) indicate: "information on typical sound sources, geographic extent and temporal variations will be included". The study reports provide insufficient/inadequate rationale about the validity of the measured baseline sound data. No scientific rationale was provided demonstrating how the baseline sound monitoring will capture seasonal variations (e.g. winter, spring, summer). While the presence of leaves off or on trees is an important buffer to sound propagation, other seasonal conditions (e.g. presence of snow) should also be considered. The proponent removed ambient sound data collected during abnormal noise events (e.g. site inspection and maintenance activities) or under inclement weather conditions (precipitation and/or wind speeds exceeding 20 km/h) to establish valid baseline noise data. However, it is not clear whether abnormal noise events caused by wildlife (e.g. birds or insects close to microphone) were also removed from the baseline data. This information is necessary to understand the baseline noise conditions at all sensitive receptor locations. a. Provide scientific evidence and/or rationale demonstrating how the baseline sound monitoring that has already been or will be conducted, is representative of all seasonal conditions, particularly in winter when snow is present. b. Ensure that all sounds that are not generated by human activity (e.g. wind, animal noises) are not included in determining baseline sound levels. For guidance on the assessment of baseline noise, refer to the applicable guidance document linked in Comment 59.	a. As have been shown in the baseline reports, the leaves-off program was conducted in April (winter condition) and the leaves-on program was conducted in June (summer condition). The weather data included with the detailed noise monitoring results also provide indications of the seasonal condition. The presence of snow can be identified from Photo 2-1 and Photo 2-2 in the leaves-off program report. b. No abnormal noise events caused by wildlife have been identified from the baseline measurement data. Further, the baseline data excluded inclement weather conditions in the data analysis. Although we acknowledge the Health Canada's guideline that "Sounds that are not generated by human activity (e.g. ocean, wind and animal noises) should not be included in determining a baseline sound level", it is to be noted that the monitoring was conducted in a remote area where the existing acoustic environment is dominated by natural sounds.	Appendix H-1 and H-2 Attachment C
IAAC-BL-050	Summary of Winter Aerial Wildlife Survey Results (2021) - Section 2.1, pg.2 Baseline Terrestrial Biology Summary Report (2021) - Section 2.3.2.2.2, pg.25; Section 3.3.2.2.2, pg.47	A significant forest fire event (2021) occurred within or in close proximity to the Springpole Gold Project Area of Investigation. The conditions resulting from this forest fire may have an impact on boreal caribou due to changes in available habitat, in particular calving and/or nursery areas. Updated information will improve understanding of the baseline conditions in the Springpole Gold Project Area of Investigation. a. Have the recent forest fires changed the exiting baseline conditions for Woodland Caribou habitat and habitat use? Have they changed in such a way that it could influence the effects assessment? b. Provide information on any additional surveys and/or repeats of previous surveys that are being considered because of this forest fire event. The Agency encourages First Mining to host a technical meeting with the Agency, ECCC, and relevant provincial ministries to discuss any known changes to caribou habitat, implications for upcoming winter survey plans, and implications for the effects assessment. c. Ensure that terrestrial baseline reports used to inform the effects assessment reflect the recent changes to the landscape as a result of the 2021 forest fire that occurred within or in close proximity to the project site.	a. Wildfire is a natural process in boreal forest which Caribou (Boreal population) have evolved with. Further, the ECCC disturbance management threshold (and subsequent evaluation of the incremental contribution of fire to disturbance effects on caribou – ECCC 2020) specifies that fire accounts for minimal effect on Caribou (Boreal population) in large landscape mosaics with minimal disturbance. Although the fire event polygon may be known, the burn intensity within it is not know, and there may/may not be significant remnant patches of unburned forest that retain significant value to Caribou (Boreal population). b. A winter aerial survey is planned in February 2022, subject to MECP approval, which will include the 2021 burned area. Technical meetings will be planned in 2022. c. The ongoing terrestrial survey data and documentation (including the 2021 fire polygon) will inform the effects assessment for the Project.	EIS Sections 6.13.1.2, 6.13.2.2, Appendix P-1 Section 3.3.

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IAAC-BL-051	Summary of Winter Aerial Wildlife Survey Results (2021) - Section 4.0, pg.5	The Federal Recovery Strategy for boreal caribou identifies their critical habitat as a minimum of 65% undisturbed area per range. The boreal caribou Churchill population's range was assessed at 31% disturbed in the 2012 Recovery Strategy, increasing to 34% disturbed based on 2015 disturbance mapping (reported in the 5-year report on Recovery Strategy Implementation in 2017). Further proposed disturbance should be assessed at a range scale with a proposed mitigation/ offset strategy if needed to address cumulative effects of additional disturbance within the range. The "Summary of Winter Aerial Wildlife Survey Results" report refers to an adaptive approach for further assessment in the region (adaptive survey boundaries) that includes consideration of up to date caribou information provided by the MECP. The proposed process for assessing the boreal caribou Churchill population must also include range scale considerations regarding Critical Habitat as well as local population status, as per the federal recovery strategy.	As the Project is within the Churchill range, the draft EIS/EA includes a disturbance assessment at the range scale for the local Churchill population, which takes into account the constraints of available geospatial data, and the proposed mitigations and offset strategy.	EIS Section 6.13.5
IAAC-BL-052	Summary of Winter Aerial Wildlife Survey Results (2021) - Section 4.0, pg.6 2021 Terrestrial Technical Workplan	Given the uncertainty associated with 2021 survey period due to snow cover, as well as limitations in conclusions that can be drawn with one year of data, it would be useful to know what the intent is for further surveying (both baseline as well as monitoring of potential impacts). Provide further information on how many additional years of aerial surveying will be completed to assess the baseline condition for the boreal caribou Churchill population and what further collaring work will be completed. The Agency encourages First Mining to host a technical meeting with the Agency, ECCC, and relevant provincial ministries to discuss its additional survey plans.	The winter aerial survey undertaken in February 2021 is planned to be repeated in February 2022, but with modification to the geographic extent, based on the proposed Regional Study Area (RSA) for Caribou (Boreal population) memo submitted to MECP in October 2021. The geographic extent of the RSA includes a block stratification based on Category 1 Caribou (Boreal population) habitat, recent survey data (February 2021 winter kernels) and informed by the seasonal kernel data provided by MECP since the February 2021 winter aerial survey. A technical meeting with FMG, Wood, ECCC and provincial ministries to discuss survey plans can be arranged in 2022, and is best informed by the draft EIS/EA materials.	EIS Section 6.13.2.2 Appendix P-1 Sections 2.5.1, 3.3.1
IAAC-BL-053	Baseline Terrestrial Biology Summary Report (2021) - Section 2.3.1, pg.13-19; Section 3.3.1, pg.35-46	Based on the information provided in the Baseline Terrestrial Biology Summary Report, federal expert advisers are unable to assess if the baseline data is sufficient in terms of the migratory birds. As a result, ECCC has provided some guidance to assist the proponent in determining their baseline data and effects assessment for migratory birds. This guidance should help the proponent meet the requirements of the EIS Guidelines through appropriate scoping, data collection and reporting of baseline conditions, which will support a meaningful effects assessment. Consider the attached ECCC guidance on collecting baseline data for migratory birds and assessing effects on migratory birds and their habitat (Annex – Springpole Gold Project Environmental Effects Assessment on Birds and their Habitat). Please note that the guidance provided has not fully taken into account the project specifics unique to the Springpole Gold Project. It remains the responsibility of the proponent to explain and justify the methods used to predict the effects of the project on each Valued Ecological Component, including impacts on migratory birds. First Mining is invited to submit their 2021 terrestrial baseline report for review after the attached ECCC guidance has been considered and incorporated. First Mining should also consider whether any additional field work is required based on the attached ECCC guidance, which may include technical meetings with ECCC and the Agency to discuss and ensure future study programs are adequate.	The draft EIS/EA includes the additional information on Project specifics unique to the Springpole Gold Project, and rationale for the methodology used to collect baseline data and the effect assessment, taking into consideration the ECCC guidance on collecting baseline data for migratory birds and the assessment of effects on migratory birds and their habitat.	EIS Section 6.12.2 Appendix P-1 Section 2.4, 3.2

Table C-1.1: First Mining Gold Responses to Impact Assessment Agency of Canada Comments on the Baseline Study Reports for the Springpole Gold Project

ID	Specific Reference	Initial Comments & Rationale	FMG Response	Where Addressed
IAAC-BL-054	Baseline Terrestrial Biology Summary Report (2021) - Section 2.3.1, pg.13	Given that the updated site layout overprints a greater portion of lands west of the open pit, the migratory bird survey program must be adapted to include these areas so that the Agency can better understand potential effects on migratory birds and their habitats. Further, surveys in habitat surrounding the proposed access road and transmission line are largely absent and/or deficient. When updating baseline studies in consideration of the ECCC Guide, provide additional information about migratory bird use in areas overprinted by major mine components west of the proposed open pit (co-disposal facility), as well as habitat use within in areas along the proposed access road and transmission line (including alternatives).	Additional avian surveys were undertaken in 2021 to include the mine site access road and the transmission line alternatives using industry-standard sampling methodology. The draft EIS/EA includes information about migratory bird use in areas overprinted by major mine components.	EIS Section 6.12.2 Appendix P-1 Appendix T
IAAC-BL-055	Baseline Terrestrial Biology Summary Report (2021) - Section 3.3, pg.35-55	The EIS Guidelines (pg.26) requires the proponent provide to: “a list of all species at risk listed under the Species at Risk Act (fauna and flora) that may be affected by the project, using existing data and literature as well as surveys to provide current field data” and “a list of all species assessed by the COSEWIC as extirpated, endangered, threatened or of special concern, using existing data and literature as well as surveys to provide current field data”. The terrestrial baseline report lists all birds known from the area based on OBBA records, as well as BCR Priority Species, but does not provide a list of all species at risk and COSEWIC listed species that may overlap the project area (e.g. Canada Warbler). Provide a list of all species at risk, including any COSEWIC listed species that have the potential to occur in the project. These lists should be provided in the EIS, with information on the potential for each species to occur based on recorded occurrences and/or habitat availability.	The draft EIS/EA includes a list of all species at risk, including any COSEWIC listed species that have the potential to occur in the development area for the Project.	EIS Section 6.11 to Section 6.16 Existing Conditions Subsections, Appendix P-1 Section 4.1
IAAC-BL-056	Baseline Terrestrial Biology Summary Report (2021) - Section 3.3, pg.35-55 Summary of Winter Aerial Wildlife Survey Results (2021) - Section 3.0, pg.3-4	The EIS Guidelines (pg.26) requires the proponent to provide: “information on residences, seasonal movements, movement corridors, habitat requirements, key habitat areas, identified critical habitat and/or recovery habitat (where applicable) and general life history of species at risk that may occur in the project area, or be affected by the project”. The terrestrial baseline summary report provide little to no information on seasonal movements, movement corridors, habitat requirements, key habitat areas, or general life history of species at risk that may occur in the project area, or be affected by the project. The Winter Aerial Wildlife Survey report provides detailed information on the relative density of Woodland Caribou in key habitat areas, as well as several other large mammals within the study area; however, the memo does not provide information on seasonal movements or movement corridors for Woodland Caribou or other large mammals. Provide information on seasonal movements, movement corridors, habitat requirements, key habitat areas and general life history of species at risk that may occur in the project area, or be affected by the Project. This information should be clearly provided in the EIS, as well as any critical habitat and/or recovery habitat within the study area.	Information on seasonal movements, movement corridors, habitat requirements, key habitat areas and general life history of species at risk that may occur in the Project area, or be affected by the Project are included in the draft EIS/EA. The aerial survey memo was focused on summarizing the relative winter densities of Caribou (Boreal population), Moose, wolves and other furbearers based on occurrence data collected during the aerial survey. Seasonal movements and movement corridors for Caribou (Boreal population) have been identified by MECP through data shared with FMG. This satellite telemetry data collected between 2012 and 2014 is sensitive information and can be shared, if approved by MECP.	EIS Section 6.11 to Section 6.16 Existing Conditions Subsections, Appendix P-1 Section 3.0

Table C-1.1: First Mining Gold Responses to Impact Assessment Agency of Canada Comments on the Baseline Study Reports for the Springpole Gold Project

ID	Specific Reference	Initial Comments & Rationale	FMG Response	Where Addressed
IAAC-BL-057	Baseline Reports and Technical Work Plans	Neither the study reports nor technical work plans include collection of baseline data on country food consumption and quality. The EIS Guidelines (pg.26-27) require the proponent to collect baseline information concerning Indigenous health and socio-economic conditions, including the consumption of country foods (also known as traditional foods). This refers to foods that are trapped, fished, hunted, harvested or grown for subsistence or medicinal purpose, outside the commercial food chain. Information about which country foods are consumed by which population groups, how frequently, and where these country foods are harvested is not provided. The collection of this information is also necessary to identify which species to include in a country foods sampling program for baseline contaminants. For example, there is a current fish consumption advisory related to mercury in lake trout, northern pike, and walleye in Birch Lake, which was identified as one of the waterbodies that could be impacted by project activities. Baseline information on country food consumption and quality is necessary for the assessment of project-related human health impacts. Provide information on the country food species consumed by potentially impacted Indigenous groups, harvesting locations, and consumption patterns. If proxy data are used (e.g. First Nations Food, Nutrition, and Environment Study), discuss the limitations of this approach. Provide baseline data for all relevant contaminants in “key” country food items identified through the baseline data collection process. For guidance on the baseline assessment of country foods, refer to the applicable guidance document: https://publications.gc.ca/collections/collection_2018/sc-hc/H129-54-5-2018-eng.pdf.	To date, samples of soil, sediment and country foods (including Walleye, Northern Pike, Labrador Tea, Blueberry, Raspberry, Cattail, Pondweed and Sweet Flag [Rat root/Weekay]) have been collected. The results of the analyses of the country foods samples collected to date are compared to regional country foods analytical data from the First Nations Food, Nutrition and Environment Study, to estimate doses and evaluate potential effects of the Project. This information is part of the Human Health and Ecological Risk Assessment in the draft EIS/EA.	EIS Section 6.24 Appendix R Section 3.4.2.5, Attachment A
IAAC-BL-058	All Baseline Reports	The EIS Guidelines (pg.3) require the proponent to engage with Indigenous groups that may be affected by the Project, and allow them to provide views on the effects of changes to human health and the environment. The baseline reports state: “during the consultation process, project-specific input from regulatory agencies and Indigenous communities will be considered at key milestones of the environmental assessment process including baseline studies (...).” However, community consultation is not discussed in any of the baseline reports. The baseline studies provide insufficient details on how input from Indigenous communities are considered. It is possible that the Agency and Federal Review Team will have additional feedback on the baseline studies for biophysical components of the environment once information about human land use becomes available. Clarify whether the proponent engaged with Indigenous groups that may be affected by the Project and how their input was considered in the baseline studies. Be aware that the Agency and Federal Review Team may have additional feedback on the baseline studies for biophysical components of the environment once information about human land use becomes available.	FMG has shared the same information, as reviewed by government reviewers, with Indigenous reviewers. Local Indigenous communities have participated in aspects of the field work and we look forward to more participation in ongoing monitoring work as the Project advances. Potential effects of changes to human health and environment are being assessed in the draft EIS/EA which is being shared with the communities to provide their views. FMG committed to provide a draft EIS/EA so that input from government and Indigenous communities can be obtained and considered for a final EIS/EA.	N/A

Table C-1.1: First Mining Gold Responses to Impact Assessment Agency of Canada Comments on the Baseline Study Reports for the Springpole Gold Project

ID	Specific Reference	Initial Comments & Rationale	FMG Response	Where Addressed
IAAC-BL-059	All Baseline Reports and Technical Work Plans	The EIS Guidelines refer to Health Canada's Guidance for Evaluating Human Health Impacts in Environmental Assessment, but this guidance is not referenced in any of the plans or reports provided for review, except the Baseline Sound and Vibration Report. These guidance documents provide an overview of the key elements to include in the environmental assessment of potential impacts of the proposed Project on human health. Health Canada recommends referring to guidance on the collection of baseline information for use in the assessment of human health impacts, as found in the following documents: – Air Quality (https://publications.gc.ca/collections/collection_2017/sc-hc/H129-54-1-2017-eng.pdf) – Noise (https://publications.gc.ca/collections/collection_2017/sc-hc/H129-54-3-2017-eng.pdf) – Drinking and Recreational Water Quality (https://publications.gc.ca/collections/collection_2017/sc-hc/H129-54-2-2017-eng.pdf) – Country Food (https://publications.gc.ca/collections/collection_2018/sc-hc/H129-54-5-2018-eng.pdf)	Acknowledged. It is recognized that the EIS Guidelines refer to Health Canada's Guidance for Evaluating Human Health Impacts in Environmental Assessment. The draft EIS/EA includes a Human and Ecological Health Risk Assessment, in consideration of the noted Health Canada Guidance documents.	EIS Section 6.24 Appendix R, Section 2.5

Table C-1.2: First Mining Gold Response to the Federal Information Requirements related to the Springpole Gold Project Draft Environmental Impact Statement / Environmental Assessment

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
IAAC -AQ-001	Section 4.1 - Baseline Air Quality Sections 6.2.1.2, and 6.2.2.5, Appendix G1 & G3 Baseline Air Quality Reports Appendix G G-2 Air Quality Modelling Report	Selected background air quality data may not represent Project site conditions. Baseline ambient air quality data were collected at two on-site locations in 2020 and 2021 (Section 6.2.1.2). However, the baseline concentrations described in the draft EIS are based on data collected from two National Air Pollutant Surveillance (NAPS) stations located in Thunder Bay and Winnipeg. Appendix G states that the NAPS stations at Thunder Bay and Winnipeg provide robust, long-term baseline monitoring datasets and are reflective of regional air quality that is influenced by long-range transport. However, the onsite data collected in the baseline air monitoring program continues to provide data representative of the Project area conditions. The draft EIS mentions that baseline air quality data collected during 2021 is comparable to the NAPS regional data (Section 6.2.1.2). This is contradicted by a statement that the use of urban NAPS stations will overestimate air concentrations at the project site (Section 6.2.2.5). In terms of human health, the data collected from Thunder Bay and Winnipeg stations are unlikely to accurately represent the site-specific conditions at human receptor locations due to different emission sources and development density. The majority of "existing monitoring stations" are close to higher density development and the more remote stations generally monitor for a limited suite of parameters.	1. Provide justification and rationale as to why baseline data used for the assessment is regional air quality data from Thunder Bay and Winnipeg. Describe how local air quality data from nearby localities or other less industrial locations will be considered in the assessment of air quality. 2. Explain which data source will be used in the final assessment. If the NAPS data will continue to be used, discuss the uncertainties associated with this approach, including how the use of overestimated baseline data may affect the assessment results (including risks to human health) for non-threshold contaminants and identify additional mitigation measures and follow-up monitoring, if necessary.	1. The assessment used 3 to 5 years of data from the two referenced National Air Pollutant Surveillance (NAPS) program stations, to ensure a robust, long term monitoring data set has been considered. The selected NAPS locations are influenced by long range transport but are reflective of regional air quality, and from an environmental assessment (EA) perspective overestimate parameters relative to the Project site. This lends itself to a conservative approach when assessing the effects on air quality from the Project. The onsite data collected in the baseline air monitoring program will provide data for comparison against the regional NAPS data and will appropriately characterize the existing air quality at the remote Project site. The final EIS/EA will include a discussion on the comparison in air quality between urban and remote areas. 2. NAPS data will be used primarily due to their available long-term datasets. Onsite data will be used to qualify NAPS data as applicable. The use of overestimated baseline data means that conclusions (air quality and human health) are likely to overestimate effects. Mitigation measures are described in Section 6.2.3 of the draft EIS/EA and a preliminary follow-up program will be described in the final EIS/EA, as applicable.	1&2. The Agency acknowledges that the Proponent has been collecting more on- site monitoring baseline data and will include this more representative baseline data in the final EIS; however, the Agency and federal reviewers recommend the use of on-site data to the extent possible to establish background concentrations for the assessment of all the substances that are to be measured. For substances that were not included in on-site monitoring, other sources of data such as NAPS or Provincial monitoring stations that remotely represent the project can be used. If this is the case, include in the final EIS a discussion of the uncertainties with NAPS data and appropriate mitigation measures and follow up monitoring. Additionally, provide a final table of comparison from all sources of baseline data in the final assessment. The Agency and federal reviewers will review the changes in the next version of the EIS and will follow up at that time if further information is needed.	Acknowledged. Where data could be collected onsite in a robust and representative manner, these data have been preferentially used to establish the background concentrations used in the effects assessment for the final EIS/EA. For those substance where NAPS or Provincial data are used, a discussion of the uncertainties has been included in the final EIS/EA. The air quality effects assessment in Section 6.2 of the final EIS/EA will present which values were selected to represent baseline values for determination of cumulative effects. A final table of comparison from all sources of baseline data will be included in the Baseline Air Quality Report Appendix of the final EIS/EA.	EIS Sections 3.4.2, 6.2.1.2, 6.2.2, Appendices G-1 Section 5, G-2 Section 4
IAAC -AQ-002	Table 6.2-1	The annual baseline NO_2 concentration is not provided in Table 6.2-1 (Section 6.2). Also, the 2025 CAAQS values for NO_2 are incorrectly listed as 1-hour average of 84 µg/m³ and annual average of 24 µg/m³ instead of 79 µg/m³ and 23 µg/m³, respectively.	Update Table 6.2-1 with annual baseline concentration and 2025 CAAQS values for NO_2.	The difference is due to the temperature used to convert between units (25°C versus 15°C). The federal government defines standard condition	Unsatisfactory. The National Air Pollution Surveillance Network Quality Assurance and Quality Control	Table 6.2-1 in Section 6.2 has been updated in the final EIS/EA to include concentrations converted	EIS Section 6.2.1.2 Tables 6.2-1, 6.2-3

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
				temperature as 15°C. The conversion approach will be clarified in the final EIS/EA.	Guidelines recommend using 25°C and 760 mm Hg for conversion.1 Update Table 6.2-1 using this conversion or provide further justification or information to support the assertion that “the federal government defines standard condition temperature as 15°C.”	using 25°C and 760 mm Hg.	
IAAC -AQ-003	Section 6.2.1.2	A summary for onsite passive VOCs monitoring is provided in Table 4-9 (Appendix G-3). However, the data is not presented as part of baseline air quality concentration in the Air Quality Report (Section 6.2.1.2).	Include a discussion of onsite passive VOCs monitoring data in Section 6.2 and explain how the data will supplement the current dataset.	The onsite VOC monitoring serves as a screening for the presence of target species, and a general comparison of VOC concentrations to background values from regional National Air Pollutant Surveillance program stations. Where detection limits are appropriately low, concentrations will be compared to the relevant AAQC by using the averaging time conversion methodology of the Ministry of the Environment, Conservation and Parks, Guideline A11: Air Dispersion Modelling Guideline for Ontario (Version 3.0). The use of the VOC data collected on site by passive sampling will be described in the final EIS/EA.	Acknowledged.		EIS Sections 6.2.1.2, 6.2.2, Appendix G-1 Section 4.6
IAAC -AQ-004	Appendix G - G-2 Air Quality Modelling Report Section 3.1 - Air Pollutants associated with gold mining (P. 3-1) Section 4.1 - Baseline Air Quality (p. 4-1)	Appendix G’s report states, “VOCs and PAHs not chosen as an air quality indicator as emissions are expected to be very minor. Baseline sources of PAHs (Polycyclic Aromatic Hydrocarbons) and VOCs (Volatile Organic Compounds) are considered negligible and were not monitored as part of the baseline study.” These substances are also not included in the air quality assessment and dispersion modelling for the Project. This assumption is unsupported. The baseline air quality-monitoring program and air quality assessment for all phases of the Project should include substances such as VOCs and PAHs. These substances will be generated and released during each phase of the Project as a result of fuel combustion and other activities, which may have effects on air quality. It is necessary to verify that the existing concentrations of these substances are indeed negligible.	1. Provide baseline information for VOCs and PAHs to verify their existing concentrations. 2. Include these substances as air quality indicators for all phases of the Project and incorporate them in air quality assessments and dispersion modelling. 3. Should other effects-assessment approaches be chosen, including the use of surrogates and/or a qualitative assessment, provide a detailed rationale for any deviation from assessment approaches recommended, as well as a discussion on the uncertainty associated with the use of the alternative approaches.	1. Baseline information for VOCs and PAHs will be provided in the final EIS/EA. 2. The final EIS/EA will include assessments of PAH and VOC concentrations for all phases. 3. Acknowledged.	Acknowledged.		EIS Sections 6.2.1.2, 6.2.2, Appendix G-1, Sections 3.1.7, 4.6, 5.5, 5.6.
IAAC -AQ-005	Appendix G - G-2 Air Quality Modelling Report	Appendix G states that the construction phase is expected to take place over a three-year period. Construction phase effects will be smaller and of shorter duration than the operation phase. Potential air quality effects would be limited in geographic area and duration and therefore dispersion	1. Provide air quality assessment results for the construction and decommissioning phases of the Project similar to the approach/methods used	1. Air dispersion modelling for construction phase activities, including the development of site infrastructure, the construction of the transmission line, and the construction of the	1. Acknowledged. 2. Satisfactory.		EIS Sections 6.2.1.2, 6.2.3, 6.2.5.1, Appendix G-2

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
	Section 5.0 - Prediction of effects (p. 5-1 to 5-11) construction and operation phase including assessment tables Section 5.3.3 - Air Quality Assessment Results (p. 5-3)	modelling was not conducted. The Air Quality report contains a detailed assessment of the air quality impact during Year 5 of the operations phase using acceptable methodology and identifies emissions for substances that will affect air quality during the worst-case emission scenarios. However, an assessment was not conducted for other phases of the Project (construction and decommissioning phase). The EIS Guidelines require changes to the environment to be considered in relation to each phase of the Project (construction, operation, decommissioning, and abandonment). The Proponent discusses the potential impacts on air quality during construction (3 years) and suggests these to be minimal; however, in terms of human health, it should be noted that emission sources and receptor locations may be different during other phases (e.g., construction). In the absence of further rationale, it is unclear whether the assumption is conservative for all receptor locations during each phase of the Project.	for the operations phase including: dispersion modelling, an inventory of all equipment, and a complete list of substances/air pollutants that will be generated from the Project. Include: nitrogen dioxide, sulphur dioxide, dust (total suspended particles), PM_{10}, $PM_{2.5}$, carbon monoxide, ozone, volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and any other substances that may be released. Compare the results with CAAQS where applicable. 2. Alternatively, provide further rationale for the selected maximum exposure scenario to confirm it represents a worst-case scenario for all receptor locations during each phase of the Project (e.g., construction, operation, decommissioning, and closure).	mine access road will be included in the final EIS/EA. Potential effects on air quality during the decommissioning and closure phases, and the mitigation thereof, will be assessed qualitatively in the final EIS/EA. 2. Total material movement for the construction and operations phases were considered, and the maximum annual values were used to develop the maximum emissions scenario. Decommissioning and closure emissions are expected to be less than those of the construction phase noting that assessment of the mine access road and transmission line will be further developed in the final EIS/EA and considered in the human and ecological health risk assessment, as warranted.			
IAAC -AQ-006	Section 5.0 - Prediction of effects, construction and operation phase including assessment tables Section 5.3.3 - Air Quality Assessment Results	Table 5-3 compares the maximum point of impingement concentrations from dispersion modelling predictions with the Ministry of the Environment, Conservation and Parks (MECP) point of impingement limits. Table 5-7 provides emission summaries for $PM_{2.5}$, NO_2 and SO_2; however, the modelled results for concentrations of these pollutants are different from (lower than) the same pollutants in Table 5-3. The modelling results are compared in Table 5-7 with the Canadian Ambient Air Quality Standards (CAAQS) as the CAAQS will be the most stringent levels for key air pollutants. Between the two different sources of concentrations for NO_2, $PM_{2.5}$ and SO_2, the lower concentration was used for comparison with CAAQS.	1. Explain why concentrations used for comparison with CAAQS differed from the concentrations from Table 5-3 for $PM_{2.5}$, NO_2 and SO_2, given that the emission summary for the operations phase shown in Table 5-3 is based on the maximum operations scenario (conservative approach). 2. Provide a comparison of the emission results from the maximum operation scenario as shown in Table 5-3 with CAAQS where applicable.	1. The CAAQS in Table 5-7 in Appendix G-2 of the draft EIS/EA have specific statistical forms which is not the case in the AAQC values in Table 5-3. For example, the statistical form for the 3-year average of the annual 98th percentile of the daily 24-hour average concentrations for 24-hr $PM_{2.5}$. The results of modelling were compared against CAAQS and incorporated additional post-processing steps to match the statistical form of the CAAQS. This will be clarified in the final EIS/EA. 2. It would not be appropriate to directly compare the results to CAAQS without matching the statistical form. The statistical form of the CAAQS is reflective of the fact that CAAQS are not intended for the assessment of specific emission sources but rather to characterize air quality within a broader air zone.	1. Acknowledged; ECCC recommends that the Proponent include a like-for- like comparison of modelled air quality parameters within the air quality assessment's study area to the most stringent Federal, Provincial or Territorial air quality standards, guidelines or objectives applicable to the given region that may be affected by the Project's activities. In many cases, the CAAQS will be the most stringent levels for key air pollutants. 2. Unsatisfactory. ECCC recommends the inclusion of a like-for-like comparison or air quality parameters with the CAAQS, or a more	Acknowledged. The most stringent of the Federal and Ontario standard, guidelines, or objectives has been used for comparison in Appendix G-2. The maximum predicted effects have also been directly compared to the CAAQS. The comparison has been done using a like-for-like statistical form.	EIS Section 6.2.5, Appendix G-2 Section 5.2.1

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
					stringent provincial or territorial air quality standard where applicable, in determining the Project's impact on air quality levels and the resulting mitigation measures that may be required to prevent an exceedance of applicable air quality standards, guidelines or objectives. Depending on the location of receptors, emissions at the facility boundary may need to be evaluated if they are near or above the CAAQS.		
IAAC -AQ-007	Appendix G - G-2 Air Quality Modelling Report Section 3.4.9 - Road Dust (p.3-6) Section 6.0 - Mitigation Measures (p. 6-1)	The proponent provided a summary of the standard and acceptable mitigation measures for all phases of the Project and will prepare a dust management plan, a blasting plan, and a vehicles and engine preventive maintenance plan. Insufficient information was provided on the procedures for implementing the mitigation measures for air quality emissions that require an adaptive management approach to their implementation. As some of the mitigation measures have been applied in the results of the modelling, provide further details on the efficiency of these mitigation measures. For example, road dust (page 3-6) used a silt content of 3.9% with a control efficiency of 95% for watering, vehicle speed and low silt content. The information provided on mitigation measures does not include the benchmarks/thresholds that the Proponent will monitor to determine when it will implement mitigation measures to reduce air emissions, how air emissions will be monitored, and whether adaptive management will be implemented to ensure a timely response to exceedances.	1. Provide details on planned best management practices (BMPs) including e.g., the application of mitigation measures; the methodology for implementing mitigation; inspection, record keeping, scheduling and frequency of the standard application of mitigation measures. 2. Provide details for additional mitigation measures and corrective actions that will be implemented in the case of an occurrence of an exceedance of any air pollutant (when standard mitigation was been applied and is not sufficient). 3. Provide evidence and justification as to how the 95% control efficiency and 3.9% silt content for road dust was achieved. 4. As part of the EA follow-up or monitoring program design, conduct silt content sampling and dustfall sampling along the road to ensure 95% control efficiency is achieved.(given the large proportion of fugitive dust emissions attributable to the haul road)	1. The details of a Best Management Practices (BMP) Plan to mitigate dust will be developed as part of the provincial Environmental Compliance Approval process to address relevant sources of dust during construction. The plan will include the requested details. 2. Table 6-1 in Appendix G-2 of the draft EIS/EA, includes preliminary mitigation measures for each source of dust. The development of the BMP Plan will include further details on corrective actions. 3. The evidence and justification for a 3.9% silt content is as follows: The US EPA's AP-42 Chapter 13.2.2 provides a silt content range of 3.9 to 9.7% with a mean of 5.8% for Taconite (lean iron ore) mining and processing haul roads to/from the pit. The supporting report (Cuscino, T., (1979) also notes that the "silt content of mine haul and service roads (approximately 5%) is generally lower that that of public unpaved road in rural area" attributing this difference possibly to surface material type and or more frequent road maintenance. Keeping an unpaved road surface's silt level	1., 2., and 4. Acknowledged. 5. Unsatisfactory. It should be noted that the typical silt content values for roadways at Ontario mining sites has a mean value of 9.14% based on the information from the Centre for Excellence in Mining Innovation (CEMI). The US EPA's AP-42 Chapter 13.2.2 provides a silt content with a mean of 5.8% for Taconite (lean iron ore) mining and processing haul roads to/from pit. ECCC also notes that 95% control efficiency is very high for unpaved roads. The typically used control efficiencies for unpaved	3. The Air Quality Model for the final EIS/EA includes a sensitivity analysis for both 95% dust control efficiency and 85%, which is typical of other mining EAs. As well, the model will include a sensitivity analysis using silt content values of both 3.9%, and 5.8% which is typical of other mining EAs. Note, although the geographic extent of the predicted air quality effects increases when dust control efficiencies are reduced to 85% and road silt is increased to 5.8%, the characterization of geographic extent	EIS Sections 6.2.4, 6.2.3, 6.2.1.2. Appendix G-2, Sections 3.5.1.10, 6.2.1, 7.0, Table 6-1

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
				~1% below what was typical in the 1970s was considered feasible using modern practices. Considering the proximity of the planned haul road to the property line, it was assumed that highly effective road surface design and maintenance (including a robust fugitive dust management plan and monitoring program) would be required. The onsite crushing and screening plant will be able to provide coarse aggregate product to an engineered specification with less than 3.9% silt for use as road surface. The evidence and justification for a 95% control efficiency is as follows: The control efficiency was selected as it is known that the haul roads are along the northern bound of the property in close proximity to waterbodies and therefore require highly effective dust control measures (including a robust fugitive dust management plan and monitoring program with real-time feedback). Control efficiencies of 85% to 95% have been successful applied to other mining projects in northern Ontario. Control efficiencies are multiplicative, meaning that an overall control efficiency may be estimated considering the expected efficiency of individual control measures as follows: Control Efficiency (CE) $CE_{Total} = 1 - (1-CE_1)*(1-CE_2)*...(1-CE_N)$ Considering the following individual CEs, an overall CE of more than 95% is justified where an effective dust management and monitoring plan is implemented: • Watering: 70 to 75% • Chemical dust suppression: 80 to 84% • Limit vehicle speeds: 44%. The rationale for the selection of the control efficiency for unpaved roads representative of	roads range from 70-85%. ECCC recommends that the proponent use a more conservative approach and model particulate matter emissions from unpaved road dust with the implementation of mitigation measures during the construction and operation phases. Model mitigation measures with varying control efficiency and silt content scenarios, such as modeling PM with a 70% control efficiency and 9.14% or 5.8% silt content. The Agency and federal reviewers will review the changes in the next version of the EIS and will follow up at that time if further information is needed.	attribute for the residual effect remains low (Level I).	

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
				the emissions from the Project, will be provided in the final EIS/EA. A Best Management Practices (BMP) Plan and 4. A preliminary follow-up program will be described in the final EIS/EA. An ambient air monitoring plan to mitigate dust will be developed during the ECA process, and may include continuous particulate monitoring that will allow for a real-time feedback loop between conditions and maintenance activities. A BMP will be developed during the provincial Environmental Compliance Approvals process to address relevant sources of dust during construction.			
IAAC -AQ-008	Appendix G - G-2 Air Quality Modelling Report Section 7.0 - Recommended Monitoring Table 7-1	Appendix G report states that as an expected condition of Ontario Environmental Compliance Approval (ECA), a follow-up and monitoring program will be developed according to the MECP operation manual for air quality monitoring and will be submitted to MECP. Under Section 9.2 of the EIS Guidelines, the EIS will present an outline of the preliminary environmental monitoring program (refer to Section 9.2 of the EIS Guidelines). Separately, if the level of uncertainty is high, and the potential consequences for human health are high, a preliminary follow-up program should be presented in the EIS.	1. Develop an outline of the proposed ambient air quality monitoring program for all phases of the Project and include detailed information on the: sampling locations, list of substances to be monitored, sampling duration and frequency, sampling methodology (continuous/non-continuous) and equipment, triggers and thresholds for action and adaptive measures, reporting (and exceedance reporting), analytical methods, QA/QC plan, and any plans to engage Indigenous groups in monitoring, where appropriate. 2. Substances/air pollutants for monitoring to include: nitrogen dioxide, sulphur dioxide, dust (total suspended particles), PM_{10}, $PM_{2.5}$, carbon monoxide, ozone, volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), metals and other substances that may be released.	1. The results of the human and ecological health risk assessment (HEHRA) conducted as part of the final EIS/EA will inform the need for development of appropriate monitoring plans for different environmental media and country foods to verify predictions resulting from the assumptions and exposure scenarios in the HEHRA. Preliminary follow up and monitoring programs are provided in Section 12 of the draft EIS/EA (Table 12.3-1). See the response to Comment HH-03 for further details. 2. Monitoring programs as required by the provincial Environmental Compliance Approval will be developed in consultation with the Ministry of the Environment, Conservation and Parks during the environmental approvals process. Commonly monitored parameters for mining projects in northern Ontario include: nitrogen dioxide, sulphur dioxide, dustfall, suspended particulate matter (SPM), PM_{10}, $PM_{2.5}$ and metals. These preliminary parameters are noted in in Appendix G-2 of the draft EIS/EA. With respect to the other parameters recommended for monitoring by the reviewer: • Monitoring of NO_2 would act as a surrogate for carbon monoxide. • Ozone resulting from the emissions of VOCs or NO_2 would not be immediately formed near the site where monitors can be set up. As	Acknowledged.		EIS Sections 6.2.1.2, 6.24, 12.2 Appendix G-2, R

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
				a result, monitoring ozone precursors (such as NO_2) would be more effective. • Volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and other substances that may be released at trace levels would be present at very low concentrations in the ambient air and may be below method detection limits. Contaminants attributed to tailpipe emissions such as carbon monoxide, VOCs, PAHs will be considered for monitoring, based on the results of the updated modelling for the final EIS/EA.			
IAAC -AQ-009	Draft EIS 6.2.2.1, Section 6.02, pdf p.5 6.2.2.2, Section 6.02, pdf p.6-7	The draft EIS does not include all potential sources and contaminants of potential concern (COPCs) in the air quality assessment. 1. The quantitative air quality assessment does not consider potential effects resulting from the construction and use of the access road, transmission line, and aggregate pit development (Section 6.2.2.1). The rationale provided is that standard measures will mitigate the emissions. However, expectations of 100% efficiency in mitigating air emissions from these activities may not be realistic. 2. The draft EIS (Section 6.2.2.2) mentions that "there are no anticipated sources of O_3 associated with the Project." Given the location of the Project, HC agrees it is unlikely that ozone (O_3) concentrations associated with this Project will exceed current standards. However, it is still important to identify the sources of O_3 precursors (e.g., nitrogen oxides and VOCs) in the study area, in addition to those associated with this Project. Ozone is considered to be a non-threshold substance (i.e., health effects may occur at any level of exposure[1]) and incremental health risks should be considered. [1] HC. 2017. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Air Quality. Available at: https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidance-evaluating-human-health-impacts-air-quality.html	1. Consider all project activities in the air quality assessment for all phases of the Project. Provide a scientific rationale for the exclusion of any activities. 2. Provide a qualitative assessment (at a minimum) of health risks due to incremental O_3 exposures, including a discussion on the potential for O_3 formation from project emissions of gaseous precursors. In order to minimize the health risks associated with this air pollutant, consider any mitigation measures that can reduce O_3 levels as low as reasonably achievable.	1. Air dispersion modelling for construction phase activities, including the development of site infrastructure, the construction of the transmission line, and the construction of the mine access road will be included in the final EIS/EA. 2. A qualitative assessment of health risks due to incremental O3 exposure (precursors and formation) will be included in the final EIS/EA.	1. Acknowledged; however, the Proponent does not appear to have considered potential air quality effects related to truck traffic along the mine access road during the operations phase; this information should be included to support the assessment of potential health effects to land users during the operations phase. 2. Acknowledged.	1. The air quality assessment for the construction of the mine access road will have higher predicted effects and be used as a proxy for the operation phase of the mine access road.	EIS Sections 6.2.1.2, 6.2.2.2, 6.3.5, Appendix G-2 Section 5.1
IAAC -AQ-010	Appendix R Table 4.2-2 pdf p.73 Appendix B- 2, Table B-2-7,	It is unclear whether potential cancer risk from inhalation of airborne benzo(a)pyrene [B(a)P] is adequately assessed in the draft EIS. It is unclear what toxicological reference value (TRV) was used to calculate the inhalation cancer risks of B(a)P (Table B- 2-7, Appendix B-2 of Appendix R) as this information is not provided in Table 4.2-2 of Appendix R. HC recommends cancer risks from inhalation of the contaminant in the air be calculated using appropriate TRVs, such as an Inhalation Unit Risk (I UR) of 6.0E-01 mg/m³.[1] [2] HC. 2021. Federal contaminated site risk assessment in Canada: Toxicological Reference Values (TRVs). Version 3.0. Available at: https://publications.gc.ca/collections/collection_2021/sc-hc/H129-108-2021-eng.pdf	Clarify whether cancer risks from inhalation of airborne B(a)P were calculated using a TRV developed for the inhalation exposure pathway.	The potential cancer risk from the inhalation of B(a)P in fugitive dust was calculated in the HEHRA in Appendix R of the draft EIS/EA. The oral slope factor for B(a)P was presented in Table 4.2-2 of Appendix R, and the fugitive dust inhalation dose (mg/kg/day) calculated using the Health Canada recommended equation, as presented in Section 4.3.3.1 of Appendix R. The final EIS/EA will also incorporate a calculation of inhalation cancer risks using the recommended Inhalation Unit Risk factor for B(a)P.	Acknowledged.		Appendix R Table 4.2-3, Section 4.3.3.1, 4.4.3. Table 4.4.3.1-1

Table C-1.2: First Mining Gold Response to the Federal Information Requirements related to the Springpole Gold Project Draft Environmental Impact Statement / Environmental Assessment

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IAAC-AQ-011	Appendix R 4.4.1.1 Table 4.4.1.1-1 4.6	The conclusion of negligible health risks from the inhalation of fine particulate matter ($PM_{2.5}$) and nitrogen dioxide (NO_2) is not fully supported by the air quality assessment. The Project-related air emissions are predicted to increase the maximum 1-hour NO_2 concentration at the maximum point of impingement (MPOI)[1] to 437.8 µg/m³ from the baseline level of 29.1 µg/m³ (i.e., an increase of 1,604%) (Table 4.4.1.1-1). Similarly, the maximum 24-hour $PM_{2.5}$ concentration at the MPOI were predicted to be 47.1 µg/m³, which is an increase by 586% from the baseline concentration of 9.7 µg/m³ (Table 4.4.1.1-1). Note that the predicted concentrations would reach about 664% of the relevant CAAQS[2] target value for 1-hour NO_2 in Year 2025 (79.0 µg/m³) and 274% of the CAAQS value for 24-hr $PM_{2.5}$ in Year 2020 (27.0 µg/m³) The draft EIS concludes that "(t)he results of the HHRA for exposure to [criteria air contaminants] via the inhalation of air pathway indicated potential health risks to residents or visitors/ harvesters who may practice traditional land use within the LSA were negligible" (Appendix R, 4.6). This conclusion is based on the assumption that these receptors are not likely to spend a considerable amount of time at locations in close proximity to the mine site and that the predicted exceedances of the CAAQS values occur infrequently (Appendix R, 4.4.1.1). However, traditional and recreational land users who access the areas near the mine site may be exposed to elevated levels of $PM_{2.5}$ and NO_2 for a short period of time, and may still experience adverse health effects associated with short-term exposure to these contaminants. In the absence of information on the locations of TLRU activities near the project site and on the frequency of the predicted exceedances of the CAAQS values, it is prudent to assess potential health effects from short-term exposures to NO_2 and $PM_{2.5}$ in the worst-case exposure scenario and develop related mitigation measures and follow-up monitoring plans during all phases of the Project. Additionally, $PM_{2.5}$ and NO_2 are non-threshold air pollutants, meaning that health effects may occur at all levels of exposure including below the CAAQS and Ontario's Ambient Air Quality Criteria (AAQC),[3] which should not be viewed as levels to pollute-up. The Canadian Air Quality Management System (AQMS) explicitly recognizes that health effects occur below the CAAQS values, and proposes additional management levels in recognition of the health and environmental benefits that can be realized by taking actions to decrease or maintain background levels of air pollution. Baseline and predicted 1-hour and annual NO_2 concentrations are screened against the outdated 2020 CAAQS values (i.e., 1-hour average of 112.8 µg/m³ and annual average of 32 µg/m³) (Table 4.4.1.1-1, Appendix R, pdf p.98). The 2025 CAAQS values for NO_2 (i.e., 1-hour average of 79 µg/m³ and annual average of 23 µg/m³) are more stringent and are the	Provide assessments of health effects from both short- and long-term exposures to NO_2 and $PM_{2.5}$ in the worst-case exposure scenario during all phases of the Project. In order to minimize the health risks associated with these air pollutants, consider any mitigation measures that can reduce $PM_{2.5}$ and NO_2 emissions as low as reasonably achievable. Compare the baseline and predicted NO_2 concentrations against the 2025 CAAQS and revise the air quality section and HHRA accordingly.	1. A qualitative assessment of health effects from short- and long-term exposure to $PM_{2.5}$ and NO_2 will be included in the final EIS/EA. See the response to Comment AQ-05 for further details. 2. $PM_{2.5}$ and NO_2 will be mitigated with optimized travel distances, fleet maintenance programs, and a fugitive dust best management practices. The results of the ambient air monitoring program will be used to adjust mitigation, as appropriate. The final EIS/EA will include relevant details of the mitigation measures, and a comparison of the predicted NO_2 concentrations against the 2025 CAAQS.	Acknowledged.		EIS Section 6.24.4, 6.24.6, Appendix R Section 4.2

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		appropriate screening criteria. [1] The MPOI is a theoretical point where maximum emissions are predicted in close proximity to the mine site area of the PDA. [2] Canadian Council of Ministers of the Environment (CCME). 2021. Canadian Ambient Air Quality Standards (CAAQS). Available at: https://www.ccme.ca/en/air-quality-report#slide-7 [3] Ontario Ministry of the Environment, Conservation and Parks (MECP). 2020. Ontario's Ambient Air Quality Criteria. Available at: https://www.ontario.ca/page/ontarios-ambient-air-quality-criteria					
IAAC -AQ-012	Appendix R 3.4.2 4.2.3.5	Health risks associated with exposure to the carcinogenic components of diesel exhaust (DE) are not sufficiently characterized. Diesel exhaust is a complex mixture of gases and fine particles and the gaseous fraction is composed of typical combustion gases such as nitrogen, oxygen, carbon dioxide, and water vapor.[6] As a result of incomplete combustion, the gaseous fraction also contains air pollutants such as carbon monoxide, sulfur oxides, nitrogen oxides, VOCs, alkenes, aromatic hydrocarbons, and aldehydes, such as formaldehyde and 1,3-butadiene and low- molecular weight PAHs and PAH-derivatives. The draft EIS provides a quantitative estimate of incremental lifetime cancer risk (I LCR) resulting from exposure to diesel particulate matter (DPM) based on predicted exposure to the PAHs contained in DPM (Appendix R, 3.4.2). Benzo(a)pyrene is considered a surrogate for all PAHs contained in the DPM and it is assumed that the carcinogenic potency of the PAH mixture is directly proportional to the concentration of B(a)P in the mixture (Appendix R, 4.2.3.5). Minor components (in proportion) of DE such as PAHs should be evaluated for this Project as they can have deleterious effects on human health. However, the cancer risk assessment for DE exposure should not be based solely on this group of contaminants since several other potentially carcinogenic substances are included in the mixture. Health Canada recommends using the IUR value published by the California Environmental Protection Agency (CalEPA)[6] to characterize the carcinogenic risk of DE emissions from the Project. While HC recognizes its inherent limitations and does not specifically endorse the CalEPA's IUR value, this quantitative approach represents the best available option and, given that diesel engines are the main source of combustion emissions for this Project, this quantitative approach provides important insights on the Project's potential impacts in terms of cancer risk associated with DE. Alternatively, HC recommends that a robust qualitative assessment should be conducted, including the following elements to ensure transparency: - identification of the main sources of DE for the Project and recognition of the relative importance of DE as a source of air pollution for the Project;	1. Conduct a quantitative assessment of the carcinogenic risk of DE associated with the Project, making use of the associated unit risk value published by the CalEPA accompanied by a discussion of the uncertainties associated with the CalEPA unit risk. 2. Alternatively, provide a robust qualitative assessment of the carcinogenic risk of DE associated with the Project.	A quantitative assessment of the carcinogenic risk of diesel exhaust associated with the Project will be completed in the human and ecological health risk assessment for the final EIS/EA. It will make use of the associated unit risk value published by the CalEPA accompanied and including a description of the uncertainties associated with the CalEPA unit risk. The quantitative assessment will utilize the predicted diesel particulate matter (DPM) concentrations, using $PM_{2.5}$ as a surrogate for DPM.	Acknowledged.		Appendix R Table 4.2-3, Section 4.4.3.1

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
		- recognition that DE has been declared a human carcinogen by international agencies including CalEPA,6 HC,[7] United States Environmental Protection Agency (US EPA),[8] and International Agency for Research on Cancer (IARC);[9] and, - the rationale for not undertaking a quantitative analysis of DE carcinogenic risk for the Project. [6] California Environmental Protection Agency (CalEPA). 1998. The Report on Diesel Exhaust. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/toxics/dieseltac/de-fnds.htm [7] HC. 2016. Human Health Risk Assessment for Diesel Exhaust. Water and Air Quality Bureau. Safe Environments Directorate. Healthy Environments and Consumer Safety Branch. Available at: https://www.canada.ca/en/health-canada/services/publications/healthy-living/human-health-risk-assessment-diesel-exhaust-summary.html [8] United States Environmental Protection Agency (US EPA). 2002. Health Assessment Document for Diesel Engine Exhaust. Prepared by the Office of Research and Development. Available at: https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=29060 [9] IARC. 2014. IARC monographs on the evaluation of carcinogenic risks to humans. Volume 105. Diesel and Gasoline Engine Exhaust and Some Nitroarenes. Lyon: International Agency for Research on Cancer. Available at: https://monographs.iarc.who.int/wpcontent/uploads/2018/06/mono105.pdf					
IAAC -AQ-013	Draft EIS 6.2.2.4, Section 6.02, pdf p.8	Insufficient detail is provided on how the criterion value for copper sulfate ($CuSO_4$) was developed. Copper sulfate is expected to be released into the air during ore processing. The draft EIS mentions that there are no established air quality criteria for $CuSO_4$ in Ontario. A 24-hour average criterion of 20 µg/m³ was used for screening which was recommended to be protective of health by a certified toxicologist (Section 6.2.2.4). Health Canada recognizes that there is no established TRV or AAQC for $CuSO_4$. However, HC notes that the most common AAQC used for copper (Cu) over a 24-hour period is 50 µg/m³ which is higher than the one used by the Proponent (20 µg/m³). However, the method used to develop the $CuSO_4$ criterion was not provided for review.	Provide more information regarding the approach used by the toxicologist to derive the TRV for $CuSO_4$.	The toxicologist's methodology was as follows: A maximum point of impingement (POI) limit of 20 µg/m³ was based on the intermediate minimal risk level (MRL) of 0.01 mg/kg/day as published by ATSDR (2004)10. The MRL is based on a drinking water study in adults by Araya et al. (2003)11. In the study, males and females were exposed to 0, 2, 4, or 6 mg/L of copper in drinking water (in the form of copper sulphate) for a period of two months. Daily dosages of copper were 0, 2.7, 5.9 and 11.3 mg/day were administered and blood samples for a subset of the study subjects were analysed for red blood cell copper, monocyte copper, serum copper, serum ceruloplasmin, superoxide dismutase, aspartate aminotransferases, alanine amino transferases, gamma-glutamyltransferase and hemoglobin levels. A "no observed adverse effects level" (NOAEL) of 0.042 mg/kg/day (i.e., 2.7 mg/day) for gastrointestinal effects in males and females was derived. No alterations in the copper status parameters or biomarkers of liver disease were noted. Using the NOAEL of 0.042 mg/kg/day	Unsatisfactory. The criterion value for $CuSO_4$ in ambient air was developed based on an approach that is not adequately justified (i.e., extrapolated from non-respiratory effects). The Proponent's approach to developing the ambient air TRV for $CuSO_4$ has significant limitations since it does not use inhalation data and is based on non-respiratory effects. It is not uncommon to extrapolate from oral to inhalation when inhalation-specific toxicity information is not available. However, the extrapolation of gastrointestinal effects observed in the Araya et al. (2003) study and used as a point of departure to derive	The Cu fraction of $CuSO_4$ concentrations will be compared to the AAQC value for Cu in the Air Quality Modelling Report for the final EIS/EA. In addition, the O.Reg.419/05 table in the Air Quality Modelling Report for the final EIS/EA will be updated to reflect the new ACB value for $CuSO_4$.	EIS Sections 6.2.1.1, Table 6.2-1, 6.2.1.2, Table 6.2-3 Appendix G-2 Tables 5-2 to 5-4

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				and an uncertainty factor of 3 for human variability, a MRL of 0.01 mg/kg/day was derived (ATSDR, 2004). Using the oral intermediate MRL of 0.01 mg/kg/day and the standard body weight and breathing rate of a toddler as per Health Canada of 16.5 kg and 8.3 m³/day, a maximum POI of approximately 20 µg/m³ was derived as per the equation below: Maximum POI = (0.01 mg/kg/day) *(16.5 kg/8.3 m³/day) = 19.8 µg/m³ ~ 20 µg/m³. [10] ATSDR. 2004. Toxicological profile for copper. Atlanta, GA: Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Service [11] Araya M, Olivares M, Pizarro F, et al. 2003. Gastrointestinal symptoms and blood indicators of copper load in apparently healthy adults undergoing controlled copper exposure. Am J Clin Nutr 77(3):646-650. 10.1093/ajcn/77.3.646.	the POI limit is not appropriate in this case as the effects are likely to be portal-of-entry effects, which are unlikely to occur if the substance is inhaled. Thus, although seemingly more conservative than Ontario's proposed value for Cu (50 µg/m³), the proposed criterion value (20 µg/m³) is not applicable, even for screening purposes (i.e., comparing dispersion modelling results to this value as a first step, to determine if further risk assessment is necessary). The Proponent should continue to use the Ontario AAQC (50 µg/m³ for 24-hour), using Cu percentage to compare against that standard.		
IAAC -AQ-014	Appendix R, 3.4.2	The draft EIS mentions a Table A-3.5.3.1-8 in Appendix R (3.4.2). However, the table could not be located in Appendix A of Appendix R, as mentioned.	Update Appendix R with Table A-3.5.3.1-8.	The missing table will be added to the HEHRA in the final EIS/EA.	Acknowledged.		Appendix R: Table 4.4.3.1-2
IAAC -Bat-001	Section 6.15.1.1 – Little Brown Myotis (p. 6-336); Section 6.15.1.2 – Northern Myotis (p. 6-336 to 6-337)	The draft EIS Section 6.15.1.1 states: “the limits for maternity habitat should include the contiguous ecosite where roosting females were observed between May 15 and July 31, and any area that bats may utilize within 2.4 km of the maternity site boundary (Humphrey and Fotherby 2019).” The draft EIS also states (Section 6.15.1.2) : “the limits for maternity habitat should include the contiguous ecosite where roosting females were observed between May 15 and July 31, and any foraging area within 500 m of the maternity site boundary (Humphrey and Fotherby 2019).” In order to correspond with the timing of emergence from hibernation, tree clearing should not be conducted from April 15 to August 31. If maternity roost trees are removed after pregnant females have established a roost area, there is a higher likelihood of abortion than there would be otherwise.	Provide an explanation for how tree clearing, in areas with known or potential roosting habitat, between April 15 and May 15, and between July 31 and August 31, will avoid adverse effects to Little Brown Myotis and/or Northern Myotis.	As noted in Section 6.15.3 of the draft EIS/EA, the removal of bat maternity habitat outside the bat active season of May 1 to August 31 for northern Ontario (MECP 2021) will be avoided to the extent practical. It is noted in this comment from IAAC, and IAAC comment BIR-04 that the sensitive window is April 15 to August 31, inclusive and states “For bats, ECCC recommends avoiding tree clearing from April 15 to August 31 in order to correspond with the timing of emergence from hibernation and the maternity period.” The timing window for vegetation clearing to avoid potential indirect effects to roosting SAR bats will be updated in the final EIS/EA. However, based on further consultation with MECP, sensitive windows that cannot be avoided may be subject	Acknowledged.		EIS Sections 6.15.2, 6.15.4, 6.15.6

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
				to additional conditions under an Endangered Species Act permit.			
IAAC -Bat-002	Section 6.15.1.1 - Little Brown Myotis (p. 6-336)	Section 6.15.1.1 states: "in 2021, 15 candidate hibernaculum sites were surveyed to assess their suitability for hibernating bats (Figure 6.15-2). Three of these sites, M4, M7 and M8, could not be found despite a thorough search, ..."	1. Provide details on the methodology for surveying and searching for each candidate bat hibernaculum site. 2. Provide a figure with the locations of the candidate hibernaculum sites.	The 2021 baseline terrestrial report (Appendix P-3 of the final EIS/EA) includes Figure 6-1 which shows the locations of the candidate hibernacula sites that were assessed as well as the detailed methodology for these assessments. Additional hibernacula assessments (including autonomous recording unit (ARU) deployment) were undertaken in 2022. The data is currently being updated in the baseline terrestrial report for the final EIS/EA. Hibernacula were searched for in several ways: • Through initial desktop GIS exercise areas with potential karst geology (with the Ontario bedrock via the OGSearth database), any abandoned mine sites or features, as well as any area with cliff-like topography were identified. • The aforementioned sites were visited in the field by trained biologists. The candidate locations were investigated, moving outward in a circular pattern to find the mapped feature. Once biologists are confident the location has been reasonably examined, the investigation is concluded for that location. • Potential cliff features mapped during the desktop exercise or encountered in the field were examined for suitably as a bat hibernaculum. Openings and cracks were examined and documented (length, depth). For features greater than one metre deep with the potential to hold suitable thermoregulatory microclimates for wintering bats, an ARU was placed at the opening to record bats in the spring or fall.	Clarify the term "reasonably examined"; i.e., indicate the time / area included in the search, and any specific criteria employed by the biologist prior to concluding the investigation of each excluded candidate site.	The abandoned mines database locations were compiled for further examination. Each team of bat biologists spent up to a day at each location to assess whether there was evidence of a candidate hibernacula being present. Searches for candidate sites were undertaken within a maximum 500 m radius from the database location or until the feature was found. Locations where candidate or suitable hibernacula occurred, had ARU's (including controls) deployed to assess the probability of use.	EIS Section 6.15.2.1. Appendix P-1, Section 2.7.3
IAAC -Bat-003	Section 6.15.1.1 - Little Brown Myotis (p. 6-336)	Section 6.15.1.1 states: "as per provincial requirements, the candidate hibernacula sites will be further assessed in 2022 during spring emergence period. The spring 2022 results paired with the Fall 2021 results will be used to determine whether there is enough evidence of candidate sites being confirmed as hibernacula."	Clarify which candidate hibernacula sites were assessed during the 2022 spring emergence.	Figure 4-4 of the baseline terrestrial report in Appendix P-3 of the draft EIS/EA includes all candidate hibernacula locations, and Figure 4-5 includes field vetted locations in 2021 (Attachment IAAC-BAT-03). The candidate hibernacula sites from 2022 as well as 2021 will be included in the updated baseline terrestrial report in the final EIS/EA.	Acknowledged.		EIS Section 6.15 Figure 6.15-8 Appendix P-1 Figure 3-25
IAAC -Bat-004	Section 6.15.4.1 - Change in	The EIS must identify and describe mitigation measures to avoid, or lessen potential adverse effects on species and/or critical habitat listed under the Species at Risk Act. These measures must be consistent with any applicable	Provide details of the mitigation measures for the potential loss of hibernation habitat that were proposed in Section 6.15.3.	If a hibernaculum was identified, foraging resources within 2.6 km of the feature will be considered habitat associated with the	Acknowledged.		EIS Section 6.15.4

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	Habitat (p. 6-340 to 6-341)	recovery strategy and action plans. Section 6.15.4.1 states: “hibernacula are relatively scarce on the landscape and bats return to the same hibernacula year after year. Bats may travel substantial distances to hibernacula from summering sites, and even between multiple hibernacula during the fall swarming (i.e., breeding) season. Therefore, the loss of a hibernaculum could result in the loss of bats, if bats are present within a hibernaculum during its removal, and survival of bats may be impacted through energetic costs of unanticipated long-distance associated with locating alternative overwintering sites.”		hibernaculum. Removal/disturbance of such habitat will be avoided to the extent possible. If avoidance is not possible, removal of foraging habitat associated with hibernacula will be limited to the period between May 15 and July 31 or between an alternative period as determined in consultation with ECCC and MECP. Unless otherwise mitigated or compensated for, noise will be limited within 500 m of any identified hibernaculum entrance as required by the MECP Bat Survey Standards Note (2021) document, which states that "Activities producing loud noises and/or vibrations (e.g., blasting, drilling, movement of heavy equipment, etc.) that occur more than 500 m from a bat hibernaculum are unlikely to harm or harass hibernating bats." Any loss of foraging habitat associated with a confirmed hibernaculum will be compensated as required by the provincial Endangered Species Act (ESA), using measures such as the installation and monitoring of bat houses, conservation/protection of adjacent habitat, progressive and long-term remediation/rehabilitation. If a hibernaculum is identified and must be removed, the removal of the hibernaculum will be limited to the summer months when bats are not hibernating, while avoiding removal of trees during this period. Further, compensation may be required under the ESA and may include measures such as the construction of new wintering habitat.			
IAAC -Bat-005	Section 6.15.5 - Significance of Residual Effects (p. 6-342 to 6-343)	Section 6.15.5 states: “the residual effect from the removal of vegetation is the loss of maternity roosting habitat with the PDA during construction. With the appropriate mitigation measures, the magnitude of the residual effect is considered to be low (Level I) as the effect is not likely to change the abundance and/or distribution of SAR bats or their habitat and, subject to confirmation with MECP, authorizations under the ESA will be obtained and offsetting measures will be implemented.”	Provide more information regarding the mitigation measures that will be in place to ensure that the loss of maternity roosting habitat within the PDA during construction will have a low magnitude effect on SAR bats.	Project development will remove less than 1.5% of the available habitat in the regional study area (RSA). The removal of wetland habitat adjacent to suitable roosting habitat may reduce the quality of the roosting habitat if alternative foraging areas are unavailable; however, project development will remove less than 0.4% of the available habitat in the RSA. As a result, the magnitude of the residual effect is considered to be low (Level I) as the effect is not likely to change the abundance and/or distribution of SAR bats or their habitat. In addition, mitigation measures will be implemented and include, maintaining uncleared buffers adjacent to sensitive bat habitat, minimizing vegetation removal along corridors, and progressive rehabilitation.	Acknowledged.		EIS Sections 6.15.6, 6.15.7

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IAAC -Bat-006	Section 6.15.5 Significance of Residual Effects (p. 6-342 to 6-343)	The EIS must document where and how scientific, engineering, community knowledge and Indigenous knowledge were used to reach conclusions. Assumptions must be clearly identified and justified. The following statement in Section 6.15.5 is not clear or scientifically justified: "the SAR Bats VC is capable of supporting the predicted residual effects with typical measures, and therefore the ecological and social context is considered low (Level I)."	Provide scientific evidence to support the statement, "the SAR Bats VC is capable of supporting the predicted residual effects with typical measures, and therefore the ecological and social context is considered low (Level I)."	The assessment of potential bat maternity habitat shows there is an abundance of suitable bat maternity habitat in the regional study area, meaning there is likely sufficient alternate roosting sites available. Despite this, the effect of tree clearing on bat population sizes may be variable since population sizes are difficult to estimate and bat activity can increase after clearing due to increased suitable edge foraging habitat. "Roost exclusion studies suggest that exclusion from permanent structures can decrease site fidelity, alter home range size, lower reproductive recruitment, and reduce colony size and the strength of association among individuals" (Silvis et al. 2015[1]). However, the removal of roosts at a small scale has shown no effect on the distribution and roost selection of Northern Myotis but Little Brown Myotis that change roosts less often may be less resilient (Silvis et al. 2015). Based on the results of the 2022 survey, the assessment of potential effects on SAR bats will be re-evaluated for the final EIS/EA, to clarify the characterization of residual effects. Compensatory measure approved under the Endangered Species Act will be monitored to assess the efficacy of the measures. Additional references to supporting literature for this assessment will be included in the final EIS/EA. [1] Silvis, A., W.M.Ford and E.R. Britzke, 2015. Day-roost tree selection by northern long-eared bats—What do non-roost tree comparisons and one year of data really tell us? Global Ecology and Conservation, Volume 3, pp. 756 – 763.	Acknowledged.		EIS Sections 6.15.6, 6.15.7.
IAAC -Bir-001	Appendix P-3 Terrestrial Resources Baseline Report, Section 4.5.1 - Breeding Bird Surveys (p. 4-17)	The draft EIS Section 4.5.1 states: *"Wildlife Acoustics brand Song Meter Micro Wildlife Recorders were used as ARUs in the RSA; ARUs were deployed in 33 locations across the RSA (Figure 4-2)."* Choice of acoustic recorder is likely to have impacts on data completeness and quality. Relative to other ARU models, the single-microphone "Micro" is a lower quality acoustic recorder. Using lower quality ARUs to detect birds is likely to reduce confidence in resulting data and conclusions, due to the likelihood that species and individuals remain undetected. ARUs with two microphones allow for 360-degree recording and should be use where abundance and reliable estimates of occupancy are required. As stated in the ECCC's Annex on Baseline Guidance from August 13, 2021, *"record the survey visit using a high quality portable recording device (i.e.,*	1. Provide a rationale for the use of single-microphone use for the ARUs or clarify the limitations of using a single-microphone and the potential uncertainly associated with the data recordings. 2. Follow ECCC's Annex on Baseline Guidance from August 13, 2021, for future data collection using ARUs.	1 & 2. Recording with a single microphone can allow for more areas to be surveyed quickly and efficiently. Due to the size of the study area (including all linear feature alternatives being considered), baseline surveys were initiated with this approach. Baseline surveys were initiated prior to receiving the ECCC's Annex. Therefore, in 2022 Song Meter Micro's were used to maintain consistency. It is understood that individuals are more easily identified in dual-microphone recordings due to the listener's ability to localize the sound source more easily. Generally, for studies using two	Acknowledged; however, ECCC recommends a quantification of the potential uncertainty associated with the data recordings be provided to support confidence in the conclusions.	Acknowledged. The final EIS/EA will include details pertaining to confidence intervals and precision with respect to target avian indicators. Confidence intervals are obtained through hierarchical bootstrapping which weights resampling by the number of observations obtained from each sampling route	Appendix P-1 Section 2.4.7.1

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		with 360- degree recording in WAV format, selectable sampling rate, and adjustable microphone gain)..."		microphones at autonomous recording units (ARU) sites, all ARU data is analyzed manually. Manual identification of individuals in recordings is useful for generating correction factors that link point count data and ARU data. However, manual identification is time consuming and can introduce observer bias. It is therefore not feasible to analyze all recordings manually for large projects with enormous data requirements. To date ARUs have recorded 5 million bird detections in 2021 and 2022. To date, a density analysis has been undertaken of the point count data correcting for detection probability and effective detection radius (EDR) following Sólymos et al. (2013)[1]. Both datatypes have been integrated following methods by Van Wilgenburg et al. (2017)[2] with the assumption of equal detection probability and EDR for both survey methods. This involved modelling the differences between ARU and point count data and including the model coefficient for survey type in the offset. Trends obtained using this method were different from those when analyzing just point counts. Both data types are being integrated following the Bayesian integration analysis described by Doser et al. (2021)[3] which includes a false-positive correction for ARU data but does not account for differences in detection probability or EDR. A technical meeting with ECCC has been requested to discuss targeted surveys being considered for 2023.		(i.e. the random factor in the density models). The data are iteratively resampled and a new offset to account for detection probability following the QPAD method (Solymos et al. 2013) is modelled and calculated. Selected models are refit to the subsampled data with the new offsets and new estimates/prediction are obtained based on the re-fit model. Recalculating the offset at each iteration allows for propagation of the detection probability error in the final confidence estimates. The process is repeated 1000 time and confidence intervals are obtained from the 0.05 and 0.95 quantiles of the model predictions/estimates.	
IAAC -Bir-002	Appendix P-3 Terrestrial Resources Baseline Report, Section 4.5.1.1 - Bird Detector Analysis	Section 4.5.1.1 states: *"Analysis of the data collected on ARUs was completed specifically for target SAR birds (Canada Warbler, Common Nighthawk, Eastern Whip-poor-will, Evening Grosbeak, Olive-sided Flycatcher, Yellow Rail) using Wildlife Acoustics brand Kaleidoscope PRO software version 5.4.6 (released 30 October 2021). A cluster analysis was completed using all recorded data from ARUs in addition to known recordings of the target SAR. A cluster analysis sorts similar signals into clusters of vocalizations, which can then be manually identified. Recorded vocalizations from ARUs that clustered with the known SAR recordings were manually reviewed to confirm identification."*	1. Provide more information on the quality assurance and quality control (QA/QC) measures to assess whether an adequate number of recordings have been manually reviewed to confirm identification. 2. Provide the number of false positive and false negative rates for each species, including details of sample sizes and methodology.	1 & 2. Before filtering the data for analyses, the quality of all files auto-classified to a SAR species were examined with the exception of species at risk that had greater than 10,000 detections, which included Common Nighthawk, Olive-sided Flycatcher and Chimney Swift. Data were then filtered for analyses which involved selecting only files with a Birdnet species classification confidence of 30%. Additionally, only files from the first 10 minutes of hours 04:00 and 0:500 for diurnal species, and hours 21:00 and 22:00 for	1. Satisfactory. 2. Acknowledged.		Appendix P-1 Section 2.4.7 and Attachment 7

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		Automated approaches to the interpretation of acoustic recordings (as described in 4.5.1.1) can lead to high rates of false positives and false negatives, especially in areas that are not well represented in the training data set and those with low abundances or rare occurrences. Interpretation is recommended to be completed by people with strong expertise and knowledge of Northern Ontario bird songs. If automated approaches are used, a subset of interpreted recordings should also be interpreted by an expert to allow estimation of false positive and false negative rates. These double interpretations should be randomly selected and representative of the broader recording sample in both time and space. Documentation of these processes should include the detailed descriptions of methods and estimates of both the false positive and false negative rates by species. The method used also does not appear to allow for estimates of abundance or counts. Providing false positive and false negative rates for each species, including details of sample sizes and methodology would allow for assessment of accuracy and reliability of conclusions reached from this methodology (see Knight et al. 2017).[4] ECCC's Annex on Baseline Guidance from August 13, 2021, provides advice on data collection (design, protocols), data management and analysis, and methods and results reporting. [4] Knight E, Hannah K, Foley G, et al. 2017. Recommendations for acoustic recognizer performance assessment with application to five common automated signal recognition programs. Avian Conservation and Ecology 12. Available at: https://doi.org/10.5751/ACE-01114-120214		nocturnal species were selected. After filtering the data, the quality of all files from species identified as a Significant Wildlife Habitat indicator species or as a Federal Priority species (excluding species at risk) were examined. For all remaining species (including Common Nighthawk, Olive-sided Flycatcher and Chimney Swift), 10 recordings from each site were selected for quality assurance/quality control. This methodology ensured that all species were provided an equal verification effort such that less abundant species were not under-verified while setting a reasonable effort limit on more abundant species. In total, the quality of 44,278 files were examined. The number of false positives and false negative rates for each species, including details of sample sizes and methodology will be summarized in the updated baseline terrestrial report in the final EIS/EA.			
IAAC -Bir-003	Section 6.12.1 - Existing conditions (p. 6-261)	The EIS Guidelines (Section 7.1.7) note that the EIS should include a description of the abundance, distribution, and life stages of migratory and non-migratory birds likely to be affected in the project area. Section 6.12.1 of the draft EIS presents the number of species detected, species richness and species abundance, and notes that the most abundant and frequently observed species in the investigation area are representative of the avifauna and habitats found in the study area; however, the presented estimates are difficult to assess for accuracy and statistical uncertainty. To generate accurate measures of abundance, abundance should be calculated to account for the ability of observers to detect individual birds, which differs among species and survey conditions. Acceptable methods are widely available (e.g., see Sóllymos et al., 2013 and Yamaura, Kéry and Royle, 2016)[5,6] Current results presented in the draft EIS also appear to extrapolate from point counts locations and results to the extents of the LSA, PDA, and RSA. The basis and validity of this extrapolation are not well supported. Further, Section 6.16 does not provide abundance or distribution estimates for Species at Risk (SAR) birds for the PDA, LSA, or RSA, as stipulated in the EIS Guidelines. As presented in the EIS, the information provided does not	1. Provide an analysis of species abundance and distribution that accounts for observer bias or provide a rationale for excluding observer bias from the analysis. 2. Demonstrate that the data gathered from point count surveys are valid for estimating abundance or distribution estimates for migratory birds, including SAR birds, for the PDA, LSA, and RSA (e.g., provide statistical information, such as standard error, confidence intervals and other possible sources of error).	1 & 2. See response to BIR-01. In the final EIS/EA, analyses will be included demonstrating that the data gathered from Point Count surveys are valid for estimating abundance or distribution of migratory birds. Abundance estimates and confidence intervals will be included. Estimates will quantify and account for sources of error and bias including species probability of detection, detection distance, time of day, observer, and habitat. Observer bias has been incorporated into the analysis of avian data and will be described in more detail in the updated baseline terrestrial report in the final EIS/EA. Targeted surveys in 2023 are planned for select avian species that require additional sampling to detect change more accurately. Further, targeted surveys will be undertaken in 2023 to integrate autonomous recording units (ARU) and point count datasets into a single analysis. Differences between point count and ARU data will be corrected for by	Acknowledged.		EIS Section 6.12.2 Appendix P-1 Sections 2.4, 3.2

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		support accurate assessment of baseline conditions and therefore does not support accurate estimation of residual effects. Information to support conclusions require: data collected according to robust and well described survey designs, use and description of appropriate protocols, appropriate data analysis conducted and well described, and results described in sufficient detail for review and evaluation. ECCC's Annex on Baseline Guidance from August 13, 2021, provides advice on data collection (design, protocols), data management and analysis, and methods and results reporting. [5] Sólymos P, Matsuoka SM, Bayne EM, et al. 2013. Calibrating indices of avian density from non-standardized survey data: making the most of a messy situation. Methods in Ecology and Evolution 4:1047–1058. Available at: https://doi.org/10.1111/2041-210X.12106 [6] Yamaura Y, Kéry M, Andrew Royle J. 2016. Study of biological communities subject to imperfect detection: bias and precision of community N-mixture abundance models in small-sample situations. Ecological Research 31:289–305. Available at: https://doi.org/10.1007/s11284-016-1340-4		pairing point counts with single microphone ARUs (SM Micro) as well as dual-microphone ARUs (SM Mini) at a subset of sites in 2023. This will be summarized in the final EIS/EA. A concordance table against the ECCC Annex on Baseline Guidance will be provided in the updated baseline terrestrial report in the final EIS/EA.			
IAAC -Bir-004	Section 6.15.5 - Significance of Residual Effects (p. 6-342 to 6-343); Section 6.12.3 - Mitigation Measures (p. 6-267 to 6-268) Section 6.16.3 - Mitigation Measures (p. 6-358)	The timing window for vegetation removal to mitigate impacts to migratory birds and bats is not clear in the EIS. Section 6.15.5 of the draft EIS states: *"the timing of the residual effect will not be fully mitigated and is considered to be moderate (Level II) as the vegetation clearing may occur throughout the year."* While Section 6.16.3 of the draft EIS states: *"General measures to be implemented to avoid, reduce, or minimize the effects of the Project on all identified SAR birds will include: … Implement the mitigation measures for wildlife and wildlife habitat (Section 6.12), during all phases of the Project, including avoiding the removal of vegetation during the breeding season, which occurs from April 20 to August 31 (as required to avoid contravention of the Migratory Birds Convention Act.)"* Section 6.12.3 does not provide mitigation measures for timing window for vegetation removal. For birds timing windows, please refer to the Avoiding Harm to Migratory Birds website. For bats, ECCC recommends avoiding tree clearing from April 15 to August 31 in order to correspond with the timing of emergence from hibernation and the maternity period.	Clarify and provide rationale for the timing windows that will be used for vegetation removal to mitigate impacts on migratory birds and bats and remain consistent throughout the EIS.	Timing windows for migratory birds will be revised to be consistent with the Migratory Birds Convention Act (2022) throughout the final EIS/EA. The implementation of a timing window will reduce the potential effects to adjacent habitat used during sensitive periods, particularly indirect effects to habitat and the risk of mortality; however it will not reduce the effect due the direct loss of habitat. This will be clarified in the final EIS/EA.	Acknowledged.		EIS Sections 6.12.1.1, 6.15.4, 6.16.4
IAAC -Bir-005	Section 6.16.4 - Assessment of Residual Environmental Effects (p. 6-358 to 6-363); Section 6.12.4.	The conclusion that the displacement of migratory birds and SAR birds from direct loss of habitat will not permanently impact or impair bird populations is not founded in evidence. No support from data or scientific references are provided to support these conclusions. As stated in the ECCC's Annex on Baseline Guidance from August 13, 2021: *"if displacement of nesting birds will occur, baseline data should provide evidence that there is enough equivalent habitat for birds to be displaced to,*	Provide an analysis of displacement of nesting bird habitat to provide evidence that there is enough equivalent habitat for birds to be displaced to, and that the vegetation being removed is not unique to the project footprint.	Table 6.16-2 in the draft EIS/EA presents the change in cover type and shows a less than 1% change in vegetation communities in the RSA. An analysis of habitat available within the revised regional study area relative to each habitat type within the project development area will be provided in the final EIS/EA.	Acknowledged.		EIS Sections 6.12, 6.16.6, 6.16.7, Table 6.16-2

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	2 - Indirect Effects on Wildlife Habitat (p. 6-269 to 6-6-271)	*and that the vegetation being removed is not unique to the project footprint."* ECCC's Annex on Baseline Guidance from August 13, 2021, provides advice on data collection (design, protocols), data management and analysis, and methods and results reporting.		ECCC's Annex states "If displacement of nesting birds will occur, baseline data should provide evidence that there is enough equivalent habitat for birds to be displaced to, and that the vegetation being removed is not unique to the project footprint".			
IAAC -Bir-006	Section 6.16.4.4 - Common Nighthawk (p. 6-360 to 6-361)	Section 6.16.4.4 asserts that there will be *"No residual effects on Common Nighthawk."* Surveys confirm Common Nighthawk occupies the RSA, the LSA, and the PDA. Aerial foraging and road-roosting behavior make this species susceptible to collision risk.	Develop mitigation plans appropriate to avoid collisions of Common Nighthawks from vehicles, when and where nighthawks are observed foraging near or roosting on gravel roads. Demonstrate how the planned mitigation activities will result in no residual effects from this pathway.	Mitigation measures identified for wildlife, as noted in Section 6.12.3 of the draft EIS/EA, that would also be applicable to Common Nighthawk, particularly when observed foraging near or roosting on gravel roads include: - During the operation phase of the mine access road, enforce reduced speed limits along Project-controlled roads within high quality wildlife habitat, particularly along segments with known or recurrent wildlife crossings; - During the operation phase of the mine access road, Project-related vehicles travelling on the mine access road must come to a stop if wildlife are encountered and provide them with the right-of-way to cross the road; - During all phases of the Project, wildlife awareness training will be provided to Project employees; and - During all phases of the Project, log (and report as needed) observed wildlife, sign / tracks and wildlife-vehicle collisions and alter mitigation measures as appropriate. As recommended in ECCC's Annex, monitoring of these mitigation measures and nighthawk presence is used to demonstrate how mitigation results in collision reduction from vehicles. Adaptive monitoring during and post-construction will allow for analyses to be conducted which will help to show if a change in mitigation effort is required as project impacts are more accurately estimated.	Satisfactory.		EIS Section 6.12.4
IAAC -Bir-007	Section 6.12.2 - Potential Environmental Effects (p. 6-264 to 6-267); Section 6.16.2 - Potential Environmental	There is a lack of assessment of potential water-based impact pathways to foraging shorebirds, waterbirds and waterfowl due to spills or other accidents. The lakes surrounding the Project feed into downstream habitat and a spill into the waterway could lead to mortality of migratory birds. Assessment of the impacts of potential aquatics-related accidents or system malfunctions on birds and SAR birds would require supported surveys designed to target areas of potential impact. This includes baseline knowledge of bird use in these downstream habitats, particularly for	1. Provide an assessment of potential effects from spills and other accidents and malfunctions on birds and SAR birds. 2. Where effects are predicted, identify appropriate mitigation measures for bird species that have the potential to be harmed by accidental events impacting aquatic systems, and identify any residual	1 & 2. Section 9 of the draft EIS/EA provides an assessment of potential malfunctions and accidents, relevant safeguards, potential environmental concerns and response measures. Specifically, section 9.12 considers vehicular accidents that could release materials, section 9.13 considers the potential spill of cyanide and section 9.14 considers the potential release of products from containment and dispensing facilities.	Unsatisfactory. Additional information is required to articulate pathways of effects from spills/accidents to migratory birds, species at risk and other wildlife. Detail how the spill response plan will be protective of migratory	Section 9 of the final EIS/EA will include a qualitative assessment of the potential effects on migratory birds, SAR birds and wildlife due to a potential spill from Project activities. Mitigation measures	EIS Section 6.12.1.1, 9.10, 9.13, 9.14

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	Effects (p. 6-354)	migrating waterbirds, waterfowl and shorebirds, in addition to any breeding and overwintering birds that make use of the hydrological network downstream from the project site.	effects and the significance of the residual effects.	Key measures to mitigate potential effects of a spill on the environment, including migratory birds and SAR birds include: – Chemicals such as liquid, gas and solid reagents required for processing and other purposes will be adequately stored and handled, in accordance with industry standard and applicable safety data sheets. – Emergency and spill response plan will be established and would be expected to include measures to contain, treat and monitor spills.	birds, and describe any mitigation measures specific to bird species.	specific to migratory birds will be described and it will be explained how they are protective of migratory birds.	
IAAC -Car-001	Section 5.21 - Mine Access Road Routing (p. 5-57 to 5-59); Section 5.26 - Transmission Line Routing (p. 5-74 to 5-75); Section 6.13.3 - Mitigation Measures (p. 6-299 to 6-300)	Section 6.13.3 of the draft EIS does not include information on how alternative routes were considered in relation to caribou habitat; and specifically to avoid destruction of biophysical attributes of Critical Habitat, such as calving areas. Section 5 provides some information on access road alternatives and transmission route alternatives; however, it is noted that both routes selected for the Project impact higher amounts of caribou Category 1 habitat then the other proposed alternatives.	1. Provide more details and justification with respect to the selection of linear development routes in relation to Caribou and Caribou habitat (including Critical Habitat, as identified in the federal Recovery Strategy; and provincially identified Category 1, 2 and 3 habitat). 2. Provide details on proposed mitigation measures and offset measures for linear disturbances. 3. Provide a rationale for why limited twinning of the transmission line and access road is being considered.	1, 2 & 3. A comprehensive assessment of alternatives, including the mine access road and transmission line routes, for all SAR (including for caribou) is presented in Appendix T-2 of the draft EIS/EA. The alternatives assessment determined the preferred alternatives to Project components that minimize potential effects while balancing the technical and safety aspects of the Project. Based on the alternatives assessment for the mine access road (MAR), Alternative #1 (MAR1; preferred) and Alternative #5 (MAR5) both pass via Category 1 Caribou habitat. The final EIS/EA will assess / confirm which mine access road option has the least incremental impact with respect to effects to caribou, based on the collection of the following information: – New telemetry data from the program initiated in February 2023; – Consideration of recent disturbance information where available (recent burns and exploration activity); and, – Available information on planned future disturbance (forestry). Transmission line route alternative #3 (TL3) is preferred and aligns where feasible with other infrastructure to minimize additional effects. This transmission line route alternative will be confirmed in relation to updated disturbance data and newly acquired caribou data in the final EIS/EA.	In the absence of detail on mitigation measures for caribou and based on a preliminary analysis5 indicating a high risk of an adverse effect on Boreal Caribou due to the Project, a precautionary offsetting requirement could be as high as 15:1. The Agency and ECCC recommend further technical discussion on effects and potential offsetting requirements. In particular, ECCC has requested further detail on the following: – The alternative route selections with respect to effects on caribou using updated information (detailed in this response and other IR responses); – Mitigation measures and offset measures (as per this Information Requirement and related Information Requirements); and – Feasibility of pairing transmission line and mine access road.	Acknowledged. FMG is assessing recent FRI and disturbance data received in summer of 2023 as well as recent telemetry data from spring and summer of 2023, and the updated GHD data). FMG is working with IAAC to organize a meeting with federal technical reviewers to present preliminary results; anticipated for March 2023. This assessment will be used to consider further optimization of the transmission line route, and inform appropriate mitigation measures. The mine access road and transmission line, north of the southeast arm of Springpole Lake have been paired within a 50 m corridor to the extent possible. The mitigation measures and potential offsetting measures as described in the draft EIS/EA will be	EIS Sections 4.19, 4.25, 6.13.4

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
				TL3 was determined to have the overall shortest length of disturbance (lowest cumulative effect) compared to the other alternatives considered, and has potential to be co-located along a portion of the MAR. Further optimization work is being conducted for the MAR 1, MAR 5 and TL3 alignments, for the final EIS/EA, based on ongoing data collection to inform the EA and subsequent anticipated ESA permitting. We are seeking ECCC input on routing options MAR 1 and MAR 5. Additional information for the selection of the preferred route selection and optimization for the mine access road and transmission line routes will be included in the final EIS/EA. The proposed mitigation and offset measures are described in Section 6.13.3 of the draft EIS/EA and will be re-evaluated in the context of further optimization work for the Project, as necessary, with additional details of the mitigation provided in the final EIS/EA including consideration for measures suggested by MECP and ECCC.		revised in the final EIS/EA, based on the updated analysis and input received from government agencies.	
IAAC -Car-002	Section 6.13.2.3 - Spatial and Temporal Boundaries (p. 6-294 to 6-295) Section 6.13.2.4 - Analytical Methodology (p. 6-295 to 6-298)	The draft EIS defines the project development area (PDA) as, “The footprint of the Project, including the mine site area, mine site access road and the transmission line corridor as currently understood, as well as a buffer of approximately 250 m around the mine site area, 40 m wide corridor for the transmission line and 20 m wide corridor for the mine access road, in order to allow for flexibility for design optimizations.” It was also noted that: “the indirect loss of Caribou habitat was calculated using a 500 m buffer from the Project footprint as per ECCC 2020.” It is not clear why the Caribou PDA uses buffers of approximately 250 m around the mine site area, 40 m around the transmission line and 20 m for the access road when ECCC guidance recommends a minimum buffer of 500 m for habitat disturbance and sensory disturbance. The national recommendations, as identified in the Woodland Caribou, Boreal population Amended Recovery Strategy do not exclude the use of a potentially larger buffer which may be recommended by the province of Ontario as the leading authority for boreal caribou in Ontario.	Provide explanations of how each spatial boundary and associated buffer distance addresses both potential direct and indirect effects to Caribou considering that ECCC guidance recommends a minimum buffer of 500 m for habitat and sensory disturbances disturbance.	The Project Development Area (PDA) is defined as the footprint of the Project including the mine site area, mine site access road and the transmission line corridor, as well as a buffer of approximately 250 m around the mine site area, a 40 m wide corridor for the transmission line and 20 m wide corridor for the mine access road, in order to allow for flexibility for design optimizations. A wider buffer for the PDA is not considered necessary as a result. The Local Study Area (LSA) is intended to capture potential direct effects from the Project (such as habitat loss) and indirect effects (such as sensory disturbance) resulting from the Project. Direct effects typically only occur within the PDA, however indirect effects could extend beyond the PDA. As a result, the LSA has been extended beyond the PDA and was defined by applying a buffer around the PDA. However, the LSA in the final EIS/EA will include an additional 500m buffer to the PDA to inform the indirect disturbance assessment.	Acknowledged; however, the Proponent is encouraged to consider national recommendations as identified in the Woodland Caribou, Boreal population Amended Recovery Strategy. Specifically, the recovery strategy does not exclude the use of a potentially larger buffer which may be recommended by MECP as the leading authority for boreal caribou in Ontario.	FMG will include an assessment of potential effects using the 500 m buffer in the final EIS/EA.	EIS Sections 6.13.1.3, 6.13.5.2 Appendix P-1 Table 1-1, Figure 1-2

Table C-1.2: First Mining Gold Response to the Federal Information Requirements related to the Springpole Gold Project Draft Environmental Impact Statement / Environmental Assessment

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
IAAC -Car-003	Section 6.13.2.4 – Analytical Methodology (p. 6-295 to 6-298)	The draft EIS states that, "Caribou satellite telemetry data was used to identify potential locations of clusters of movement activity"; however, there is no reference in this section to when the data was collected, or the overall study design (e.g., how many caribou were collared). Figure 6.13-8 states that the data was provided by FMG via the Ministry of the Environment, Conservation and Parks (MECP) in 2021, with no further details.	Provide caribou and caribou habitat baseline data collected to date (e.g., when was the data collected, number of individuals collared, and spatial location).	As presented in Appendix P (baseline reports) and W (2022 workplans) of the draft EIS/EA, aerial surveys were conducted in 2021, 2022 and, this continued in 2023 including classification of groups and calf recruitment (more than 300 animals have been recorded to date). In addition, satellite telemetry collars have been deployed in early February 2023. Additional details pertaining to Caribou methods and results will be provided in the updated baseline terrestrial report in the final EIS/EA.	Acknowledged. The Agency understands the Proponent's commitment to provide details pertaining to caribou methods includes caribou habitat, as well as caribou.		EIS Section 6.13.2.2 Appendix P-1 Sections 2.5.1, 2.5.2, 2.5.3, 3.3.1, 3.3.2, 3.3.3 and P-3
IAAC -Car-004	Section 6.13.1 – Existing Conditions (p. 6-291)	The 2021 aerial caribou surveys provide a current snapshot of winter use validating class 1 wintering habitat designation by the Ontario government. ECCC agrees with the consultant report that 1 year of data is not enough to provide certainty regarding population status (i.e., recruitment and adult survival) but does suggest a potential population decline in 2021 in the area surveyed. The draft EIS reports a calf-cow ratio of 16.7 calves/100 cows, which is lower than the 28.9 calves/100 cows threshold typically used to assess population growth trajectory. Considering past range level survey information (summarized in the ECCC 2017 5-year progress report on implementation) where both Churchill and Berens local populations were reported as declining, this does indicate a need for caution. It was noted that traditional knowledge, traditional land use studies and land use plans were reviewed for information related to Caribou.	1. Provide additional survey information to fully understand occupancy, demography, and other relevant data to confirm habitat use. 2. Ensure that baseline data for caribou is informed by any additional traditional knowledge that is provided, or traditional land use studies and land use plans that become available.	1. Aerial surveys were conducted in 2021, 2022 and 2023 including classification of groups and calf recruitment (more than 300 animals have been recorded to date). In addition, satellite telemetry collars have been deployed in early February 2023. Caribou demography/occupancy assessment will be updated with the 2022 and 2023 survey results, new telemetry data and any new traditional knowledge information, if available. Additional details pertaining to Caribou methods and results will be provided in the updated baseline terrestrial report in the final EIS/EA. 2. Traditional knowledge will continue to be considered as the Project advances and subject to confidentiality requirements.	Acknowledged.		EIS Sections 3.3.1, 3.3.2, 3.3.3, 6.13.2. Appendix P-1 Section 2.5.1, 3.3-1
IAAC -Car-005	Section 6.13.1 - Existing Conditions (p. 6-290 to 6.291); Appendix W - 2022 Environmental Monitoring Workplans	The 2022 Terrestrial Technical Workplan states "Additional survey work for Boreal Caribou (adik) that takes into consideration impacts to Caribou and their seasonal range use in Churchill, Kinloch and Berens ranges at both the RSA and LSA scales. This includes plans for a study be conducted to evaluate the calving habitat use in Birch Lake by Caribou." This workplan also states "A winter aerial survey and satellite telemetry program has been proposed to MECP. The winter aerial survey undertaken in February 2021 (Figure 4-1c) is planned to be repeated in February 2022, but with modification to the geographic extent, based on the proposed RSA for Caribou (Boreal population), to be confirmed through discussion with MECP. A satellite telemetry program is currently planned and requires MECP permit approval*." However, the draft EIS does not include a reference to the calving habitat use study, nor an ongoing satellite telemetry program. This data allows for understanding the key habitat areas currently being used by caribou in the PDA and LSA; as well as movement corridors that provide for habitat connectivity. An understanding of movement corridors is needed to determine the impacts of the project components—in particular, the proposed road access route and transmission line.	1. Provide an update on the 2022 Terrestrial Technical Workplan, and future studies to assess habitat use by caribou. Include specific details on the plan to complete another aerial survey and an update on telemetry surveys to assess summer habitat use. The provision of this data is required to assess the caribou baseline conditions. 2. Provide mapping to show current known calving, wintering and migration/movement routes as well as proposed general study location.	1. Aerial surveys were conducted in 2021, 2022 and 2023 including classification of groups and calf recruitment (more than 600 animals have been recorded to date). In addition, satellite telemetry collars were deployed in early February 2023. Additional details pertaining to Caribou methods and results will be provided in the updated baseline terrestrial report in the final EIS/EA. 2. Mapping using the available provincial data set was used to show known calving, wintering and migration/movement routes and presented in Figures 6.13.7 to 6.13.9 in the draft EIS/EA. Mapping to show current known calving, wintering and migration/movement routes will be provided once identified with satellite telemetry data and with aerial survey data collected to date.	Acknowledged. ECCC continues to suggest that the Proponent provide additional details on summer habitat use and updated mapping to support the evaluation of potential impacts on the species habitat use.	Revised mapping is in progress and includes updated FRI and General Habitat Descriptions updates from MECP. These data will be used in association with telemetry analyses of seasonal habitat use from the spring/summer 2023, to support the evaluation of potential effects on habitat use in the final EIS/EA. FMG is working with IAAC to organize a meeting with federal technical reviewers to present updated mapping and preliminary results; anticipated for March 2023.	EIS Section Figures 6.13-7, 6.13-8, 6.13-9 Appendix P-1 Sections 2.5.1, 2.5.2, 2.5.3

Table C-1.2: First Mining Gold Response to the Federal Information Requirements related to the Springpole Gold Project Draft Environmental Impact Statement / Environmental Assessment

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
		The significant forest fire event in 2021 that occurred within or in close proximity to the Springpole Gold Project Area of Investigation may have an impact on boreal caribou due to changes in available habitat, in particular calving and/or nursery areas.					
IAAC -Car-006	Section 6.13.1 – Existing Conditions (p 6-290 to 6-292) Appendix P-1 Baseline Terrestrial Biology Summary Report Appendix P-2 Summary of Winter Aerial Wildlife Survey Results	The summary of existing conditions provides little information on current and potential seasonal caribou habitat use beyond the 2021 aerial survey (winter use) and there appears to be information that is available but not directly utilized or included at this time. Some information that is included regarding 2012 calving surveys is at a different scale (around the mine site) in Appendix P-1, and it is acknowledged in Appendix P-2 (page 5) that *"A more detailed assessment of Caribou occurrence relative to key habitat and landscape attributes will be undertaken once Provincial data from MECP has been shared with FMG as part of the EA and Overall Benefit Permit".*	1. Provide to the Agency and ECCC this more detailed assessment when available for evaluation under section 6.13 of the EIS. 2. Provide a map in this section of the document that shows how other known areas of seasonal use interact with elements of the project proposal (e.g., the Category 1 calving / nursery habitat) in the area of the mine site and mine access road referenced on page 6-299). Include on the map the spatial distribution of each of the General Habitat Classification categories referenced throughout the document to be confident in the narrative of the effects assessment and to ensure all habitat needs are considered / addressed.	Aerial surveys were conducted in 2021, 2022 and 2023 including classification of groups and calf recruitment (more than 300 animals have been recorded to date). In addition, satellite telemetry collars have been deployed in early February 2023. Additional details pertaining to Caribou methods and results will be provided in the updated baseline terrestrial report in the final EIS/EA. A map will be provided in the final EIS/EA that shows how other known areas of seasonal use interact with elements of the project proposal (e.g., the Category 1 habitat) in the area of the mine site and mine access road including General Habitat Classification categories. It was previously understood that there were confidentiality issues with presenting this data in a public process which we will aim to clarify during discussions with ECCC and MECP.	Acknowledged. Note that a detailed assessment of Caribou occurrence relative to key habitat and landscape attributes and updated mapping is required as per the EIS guidelines. During the Terrestrial Technical Working Group meeting on July 13, 2022, MECP noted that there is value in displaying the General Habitat Description (GHD).	The provision of the detailed GHD information is considered confidential by MECP, however FMG will continue to work with IAAC, ECCC and MECP to review this data and determine an appropriate manner in which to present the conclusions of the analysis for this data in the updated baseline report and effects assessment for the final EIS/EA. A technical meeting has been proposed with ECCC and MECP in December 2023 to discuss the appropriate method.	EIS Section 6.13.5.3 Figure 6.13-7 Appendix P-1 Section 2.5, 3.3
IAAC -Car-007	Section 6-13.2.4 – Analytical Methodology (p. 6-297 to 6-299)	The analysis outlined in Section 6.13 of the draft EIS uses a 500 m buffer from the Project footprint as per the 2020 Amended Recovery Strategy for Boreal Caribou (ECCC, 2020) to represent indirect habitat loss due to sensory disturbance (assuming effects diminish beyond 500 m). However, ECCC requests clarification on why the threshold values for avoidance from the scientific literature (that have been summarized in Figure 6.13-3, page 6-315) are not considered or referenced in the text. ECCC notes that a 500 m buffer provides a general rule of thumb generated from a disturbance buffering analysis related to calf recruitment at the range scale from 24 local populations across the boreal caribou distribution. The information in Figure 6.13-3 is more specialized to disturbance type and could be useful in evaluating residual effects specific to certain actions.	Provide further information on potential indirect impacts reducing functionality of habitat from development (e.g., avoidance behaviour, increased energy expenditure, barrier effects, and potential for demographic impacts) related to the scientific literature summarized in Figure 6.13-3 for consideration in mitigation strategies and the residual effects assessment.	Further information will be provided on the potential indirect impacts resulting in the reduction of functionality of habitat from mine-related development (e.g., avoidance behaviour, increased energy expenditure, barrier effects, and potential for demographic impacts) related to the scientific literature summarized in Figure 6.13-3 for consideration in the development of mitigation strategies and the assessment of residual effects for Caribou in the final EIS/EA. We look forward to meetings with MECP and ECCC and suggestions for mitigation measures and offsetting options. Figure 6.13.3 will be removed from the EIS/EA.	Acknowledged; however, ECCC has requested clarification as to why the Proponent intends to remove Figure 6.13-3 in the final EIS.	Figure 6.13-3 will be removed from the final EIS/EA to avoid confusion regarding use of the 500m buffer for the assessment of effects	EIS Section 6.13
IAAC -Car-008	Section 6.13.4.1 Direct Habitat Changes (p. 6-301); Table 6.13-3:Direct and	Section 6.13.4.1 states "the Project will result in the direct loss of 0.91 km² of Category 1 and 1.05 km² of Category 2 and 8.17 km² of Category 3 habitat (Table 6.13-3)" for Boreal Caribou. However, these estimations are different from those provided in Table 6.13-3.	Clarify the amount of Category 1, 2, and 3 Caribou habitat that will be directly and indirectly lost as a result of the Project.	Table 6.13-3 of the draft EIS/EA is correct and the amounts referenced in Section 6.13.4.1 should be: – Direct loss of 0.91 km² of Category 1 Caribou Nursery Areas; – Direct loss of 1.05 km² of Category 1 Caribou Winter Use Areas; and, – Direct loss of 8.17 km² of Category 2 Caribou	Acknowledged.		EIS Section 6.13.5.3

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
	Indirect Disturbance per GHD Type			Seasonal Ranges. Category 3 Caribou habitat classifications will be clarified in the final EIS/EA.			
IAAC -Car-009	Sec. Section 6.13 – Caribou (Boreal Population) Sec. Section 4.41 – Pre-development Activities (p. 4-41, 4-42, 4-44)	The draft EIS provides an overall project description, however several of the disturbances described are not discussed and do not appear in the mapping in the boreal caribou section of the EIS. These include the potential long-term impacts from the new forest road extension (including the footprint and any upgrades or increased usage of heavy mining vehicles) and several aggregate sites to be used during the construction phase. There is also recognition of the need for temporary winter roads during transmission line construction that could increase access/risk of predation from wolves along the corridors. The draft EIS states that the transmission line is expected to be constructed primarily in the winter from temporary winter roads avoiding sensitive periods for wildlife as much as practical. Establishment of a permanent road along the right of way is not proposed, unless winter roads prove to be untenable.	Provide additional information regarding the potential for long-term impacts on Boreal Caribou from the new forest road extension, proposed aggregate sites, and temporary winter roads during transmission line construction.	Section 6.13 of the draft EIS/EA includes a comprehensive description and analysis of the potential effects from the Project including the mine site, access road and transmission line. Potential effects considered included direct habitat change; indirect habitat changes including connectivity, movement behaviour, sensory disturbance; population demography; predator-prey dynamics; and range scale habitat. We look forward to discussing the details with ECCC to better understand the comment. In addition, in February 2023, a satellite telemetry program was initiated to measure the current distribution and abundance of seasonal Caribou habitats on the landscape. Additional field studies have been undertaken, including habitat disturbance assessments and aerial surveys (2021 to 2023) to further described the current habitat use across the landscape. The final EIS/EA will include additional information from the collection of the most current data. Further, Section 5 of the draft EIS/EA and Appendix T-1 include an assessment of alternatives to Project components. The assessment was based on nearly 30 criteria and over 60 indicators, which consider a number of biological, technical and socio-economic factors that are important in decision making.	Satisfactory.		EIS Sections 6.13.6, 6.13.7
IAAC -Car-010	Section 6.12.4.1 - Direct Effects on Wildlife Habitat (p. 6-269) Section 6.13 – Caribou (Boreal Population)	The draft EIS report notes that one of the mitigation strategies is to locally enhance forage availability on linear disturbances for Moose, which is predicted to offset residual effects. The section of the draft EIS on caribou acknowledges the potential impacts of linear features to caribou in terms of increased efficiency in predator movement leading to increased mortality risk and the associated risk from apparent competition (as defined in Section 6.13 page 10): *"Apparent competition is an increased predation of Caribou because of increased alternate prey such as Moose responding to habitat changes caused by disturbance (e.g., increased browse availability, and amount of early succession deciduous and mixed wood forest cover), and the subsequent response by a shared predator (Wolf and Black Bear) to increased Moose densities."* This is further discussed in Section 6.13.4.2, Section 6.13.4.3, and	Provide further clarification on the mitigation measure proposed for Moose and consider how the measures may result in negative effects to boreal caribou.	Section 6.12 of the draft EIS/EA did not state this was a mitigation strategy to locally enhance moose browse. Rather, it was stated that this is an expected outcome that will offset residual effects of the Project on moose. A local increase of moose browsing activity (particularly with respect to the incremental increase of new linear development) is not anticipated to result in a detectable change in apparent competition effects unless the disturbance resulted in a functional or numeric response by moose and wolves - forestry/burns would have a much more substantial local effect than the limited disturbance by the Project.	Acknowledged.		EIS Section 6.12.1.1, 6.13

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
		Section 6.13.4.4. This is a mitigation measure that will benefit moose but may have contrary impacts to caribou via apparent competition.		Further clarification will be provided in the final EIS/EA on the mitigation measures proposed for Moose as well as consideration of how these measures may result in negative effects to Caribou.			
IAAC -Car-011	Section 6.13.1 - Existing conditions (p. 6-290 to 6-291); Section 6.13.3 - Mitigation Measures (p. 6-299 to 6-300); Section 4.18 - Conceptual Closure Plan (p. 4-49); Section 6.11.3 - Mitigation Measures (p. 6-242)	Section 6.13.1 of the draft EIS states: *"Progressive rehabilitation will occur at select locations during construction and operation when disturbance activities have been completed, and where there is unlikely to be any additional work required. Nevertheless, the assessment of the effects assumes that final rehabilitation activities will be completed during the closure phase, and progressive reclamation is not accounted for during operations."* However, no details are provided as to the plan for progressive rehabilitation, nor details on the closure phase in this chapter for caribou. Section 6.13.3 also notes the use of *"an adaptive management approach by incorporating monitoring results (aerial surveys, satellite telemetry, ground surveys by environmental monitors) to improve mitigation being applied during construction and operations phases"*. However, no details are provided on ongoing monitoring or field studies. Finally, Section 4.18 states: *"the Project area will be revegetated to support plant, wildlife and fish communities (or could be considered for other land uses as applicable). It is expected that revegetation will occur through active seeding and hand-planting of seedlings of commercially available, native plant species, as well as natural revegetation from local vegetation communities."* However, there is also no mention of reforestation plans that would benefit caribou in Section 6.11.3. Details on ongoing monitoring as well as plans for progressive rehabilitation and closure are required to assess if mitigation will reduce the effects of the Project.	Provide more details on the following: the progressive rehabilitation plan; the closure plan, and future follow-up monitoring and field studies, in relation to caribou and caribou habitat. Specifically: – Describe what measures will be in place to address this loss of forested habitat suitable for Caribou; – Describe the site rehabilitation activities including timing of activities that will be initiated prior to site closure that are intended to benefit caribou and/or its habitat; – Map and describe the approximate locations of progressive rehabilitation measures as well as the expected post-closure landscape within the Churchill Range; – Describe any considerations for cumulative effects as they relate to changes to caribou habitat, particularly total range disturbance and habitat connectivity; – Provide in detail the post-closure monitoring plan for caribou occupancy and habitat use which will determine the success of any restored habitat; and, – Provide the effects and timing for site restoration activities, specifically in the context of caribou habitat, if the mine life is extended past 12 years.	Additional details will be provided in the final EIS/EA on proposed progressive rehabilitation measures; the closure plan, and future follow-up monitoring and field studies, in relation to Caribou and Caribou habitat.	Acknowledged.		EIS Sections 6.13.4, 6.13.5, 6.13.8
IAAC -Car-012	Section 6.13.3 Mitigation Measures (p. 6-299 to 6-300); Section 6.13.5 Significance of	Section 6.13.3 states that a habitat restoration program for Caribou would be developed in collaboration with Indigenous communities and MECP, and where feasible, implement the creation of suitable Caribou calving habitat through restoration of part of the open pit. Further, Section 6.13.5 states the residual effects will be offset by a provincial overall benefit permit.	1. Provide specific details to address the residual effects to caribou (e.g., through offsetting). 2. Develop and implement an offset plan in consultation with ECCC, the Province of Ontario, and Indigenous communities. This	1. It is acknowledged that a detailed description of the anticipated post-closure landscape (following offset and mitigation) is required to determine if the measures are sufficient to offset the area that will perform similar ecological functions to that impacted by the Project. It is understood that these conceptual offsets and mitigation measures	Acknowledged. The Agency is available to facilitate discussions with ECCC and MECP regarding offsetting to build confidence in anticipated residual effects to caribou in the federal	Acknowledged. FMG is committed to providing appropriate compensation to offset adverse effects to caribou habitat in the final EIS/EA and will continue to meet	EIS Section 6.13.4

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
	Residual Effects (p. 6-304 to 6-306)	A detailed description of the landscape post-closure (following offset and mitigation) is required to determine if the measures are sufficient such that the offset area will perform similar ecological functions to that impacted by the Project development. The offsets and mitigation measures must be designed and implemented so that the functions necessary for boreal caribou survival and recovery are returned to the landscape over time as the offset matures. These offsets and mitigation measure must be identified in the EA and can not be deferred to the overall benefit permit. In the case where offsetting is required, ECCC is available to assist the Proponent in the determination of appropriate offsets that would balance against project effects.	plan should consider ECCC's Biodiversity Offsetting Approach that is described in the Operational Framework for Use of Conservation Allowances (ECCC, 2012).	should be identified in the environmental assessment and we look forward to the collaboration with ECCC. 2. FMG would be pleased to initiate consultation with ECCC on appropriate offset measures that would balance predicted Project effects on Caribou.	Environmental Assessment report.	and discuss with ECCC and MECP.	
IAAC -Car-013	Section 6.13.3 – Mitigation Measures (p. 6-299 to 6-300)	The list of mitigation measures as outlined in Section 6.13 do not include references to scientific papers/technical reports, nor are they discussed in terms of what is known with respect to rates of efficacy, specifically for boreal caribou. For example: What is the expected level of reduction in predator use of linear features such as transmission lines with the application of line of sight measures? How does efficacy change over the project duration (including the additional contribution of winter access roads during construction to mortality risk)? What is the risk of mortality outside of the designated areas of mitigation for linear features (which will only be associated with class 1 habitat and caribou habitat use clusters)? Directly link this information to a discussion of the proactive monitoring efforts needed to improve mitigation and limit mortality and avoidance in these areas.	1. Provide scientific/technical references related to the efficacy of mitigation methods specific to boreal caribou. 2. Provide monitoring mitigation commitments and protocols, including but not limited to, a rationale, monitoring areas, methodology, and frequency, as well as what levels/thresholds would trigger a response to ensure adaptation of mitigation methods as needed and ensure desired outcomes.	1. Scientific and/or technical references related to the efficacy of mitigation methods (Section 6.13.3) specific to Caribou will be provided in the final EIS/EA and includes application of the best management practices for mineral exploration and development activities and Woodland Caribou in Ontario (MNR 2014) with respect to minimizing effects. For example: – Reduced line of sight along a transmission line through vegetation mitigation and regrowth is considered to reduce wolf travel and hunting efficiency by reducing predator line of sight to less than 100 m and movement rates by 70% where vegetation heights are less than 1.4m (Dickie et al. 2017[1], Finnegan et al. 2014[2], Keim et al 2019[3], Spangenberg et al 2019[4]) – Efficacy of the measures would be determined through a monitoring program, but science literature indicates mortality risk is related to traffic levels, adjacent habitat matrix and prey density with respect to functional response by caribou (DeCesare 2012[5], Holbrooke et al 2019[6]) and wolf (Wittington et al 2005[7], McKenzie et al. 2012[8], Muhly et al 2019[9]) use of linear features. – Mortality risk outside of linear feature mitigation – this would be derived from a monitoring program, but mortality risk would be a function of adjacent habitat matrix suitability, prey density and wolf/caribou habitat selection. 2. A preliminary follow-up and monitoring program for Caribou will be provided in the final	Acknowledged.		EIS Section 6.13.5

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
				EIS/EA and include a description of such features as the rationale, monitoring areas, methodology, and frequency, and the approach to adaptatively manage potential effects on Caribou.			
IAAC -Car-014	Section 6.13.5 – Significance of Residual Effects (p. 6-302 to 6-305)	The EIS does not separate out the different components of caribou habitat that are being directly or functionally lost in the evaluation of residual effects and their significance (e.g., General Habitat Description (OMNR 2013) habitat categories and subrange habitat features, e.g., calving/nursery areas, winter use areas, travel corridors, seasonal ranges). For example, ECCC questions: – Are all habitat components equal in terms of the magnitude of their loss? – Are certain habitat types under-represented in the landscape with a greater magnitude of impact of removal/loss for the next 40 years? As mentioned in another comment, it will be important to include a spatial representation of habitat types in the document including travel corridors and movement routes from adjacent ranges, including Kinloch and Berens (Section 6.13-5, page 6-302) to assess the geographical extent of impacts from direct and indirect habitat loss relative to the baseline condition. This will allow for better informed/ optimized decisions.https://www.ontario.ca/page/general-habitat-description-forest-dwelling-woodland-caribou	Provide more detail regarding the sensitivity of various habitat types to direct or functional loss and include these considerations in the analysis of significance where appropriate.	Additional detail regarding the sensitivity of various habitat types to direct or functional loss will be provided in the final EIS/EA and will be considered in the characterization of significance attributes, where appropriate.	Acknowledged.		EIS Sections 6.13.1.1, 6.13.6.1
IAAC -Car-015	Section 6.13.5 – Significance of Residual Effects (p. 6-304 to 6-305) Section 7.8.1 – Summary of Project Residual Effects	The draft EIS summarizes the overall significance assessment for boreal caribou and indicates that the Project will have a minor residual effect. The interaction between the temporal component (i.e., duration assessed as a level III) and the other elements (e.g., frequency) could potentially lead to an overall significant environmental effect. For example, partially mitigating an impact to calf recruitment over an extended duration of 40 years will likely have consequences to recruitment in a population already in decline. ECCC notes that there needs to be an effort to consolidate all of the unknowns into this analysis as well. For example, what will be reclaimed, and what may be used by future industrial partners – e.g., reference to assumption that the transmission corridor will be restored on page 6-305 and potential future uses for the access road.	Provide additional information regarding considerations of any relevant cumulative effects with respect to the environmental assessment criteria.	The assessment will be updated in the final EIS/EA as a result of additional data collected.	Acknowledged.		EIS Section 6.13.5.6
IAAC -Car-016	Section 6.13.4 - Assessment of Residual Environmental Effects (p. 6-301 to 6-302); Section 6.13.5 - Significance of Residual	Section 6.13.4 of the draft EIS describes the Assessment of Residual Environmental Effects, including Direct and Indirect Habitat Changes, summarized by area per General Habitat Description (GHD) habitat type. However, the maps provided (e.g., Figures 6.13-4, 6.13-7), only show "Classified Habitat", which is a simplified delineation of known Category 1 habitat. More precision in the visual representation of GHD habitat types is needed to support the data provided in the tables, the conclusions, and potential mitigation needed. Section 6.13.4.1 provides a quantification of direct habitat loss for caribou, and states: *"Temporally, long term effects are limited to the time span it*	Provide maps that correspond to more precise spatial locations described in Table 6.13-3, i.e., GHD habitat type – Category 1 Nursery Areas, etc. Mapping should be at a scale where the reader can see where these habitat types intersect with project infrastructure and study areas (i.e., this may require multiple maps to show overlap with the Mine site, Access Road and transmission line).	This data will be provided as classified habitat, as requested by the Province to not show this information in any publicly available documentation. The detailed mapping will be provided for review by regulatory agencies, where necessary in an appropriate manner and marked confidential. The information will be provided to show how habitat loss will be mitigated and provide associated timeframes for mitigation measures to	Acknowledged. ECCC is available to review maps that correspond to more precise spatial locations described in Table 6.13.3. and requests that maps should be at a scale where the reader can see where these habitat types intersect with project infrastructure and study areas. ECCC is	Acknowledged. FMG will continue to work with IAAC and ECCC to review this data and determine an appropriate manner in which to present the conclusions of the analysis for this data in the final EIS/EA. FMG is working with	EIS Section 6.13.6.1

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	Effects (p. 6-304 to 6-306)	*takes for the forest to regenerate after closure to a state suitable for Caribou use. The effects will be fully mitigated once the habitat returns to mature coniferous refuge habitat for Caribou."*	Provide information as to how habitat loss will be mitigated and provide associated timeframes for mitigation measures to take effect. Specifically address how this mitigation will be achieved over the short and medium term while the mine is in operations.	be effective, specifically over the short and medium term, while the mine is in operations.	receptive to confidentially reviewing this information in an appropriate manner as suggested by the Proponent. As mentioned in comment Car-06, MECP noted in the Terrestrial Technical Working Group Meeting on July 13, 2022 that there is value in displaying the General Habitat Description (GHD).	IAAC to organize a meeting with federal technical reviewers to present preliminary results; anticipated for March 2023.	
IAAC -Car-017	Section 7.8 Caribou (Boreal population)	Section 6.13.5 of the draft EIS characterizes the residual effects of direct loss of Caribou habitat as Level 1, residual effects of indirect loss of Caribou habitat as Level 2, and residual effects on Caribou demographics (calf recruitment) as Level 2; however, Section 7.8.1 (cumulative effects section) states that the Project is predicted to have only a minor residual effect on Caribou that will be further offset with the implementation of measures through the Overall Benefit Permit requirements. Therefore, the characterization of residual effects detailed in 6.13.5 do not match with the summary of project residual effects in 7.8.1. If the overall residual effect for indirect habitat loss and change in population demography are "level 2", further justification to understand why cumulative effects on Caribou is considered minor. There may be an unmitigated residual effect that will contribute to cumulative adverse effects on Caribou.	Provide a clear rationale for the conclusion that cumulative effects on Caribou would be minor in consideration of the predicted residual effects of the Project, or re-assess the conclusions that cumulative effects on Caribou are minor.	The residual effects on Caribou in Section 7.8 of the draft EIS/EA should be the same as the residual effects in Section 6.13. This will be reviewed and clarified in the final EIS/EA, as needed.	Acknowledged.		EIS Section 7.12
IAAC -Car-018	Section 7.8.2 – Screening and Analysis for Potential Cumulative Effects (p. 7-27 to 7-28)	The cumulative effects section lists projects with spatial overlap to the caribou Regional Study Area and temporal overlap to the project timeframe including: allocations under forest management plans, a new transmission line and operations of existing transmission corridors, quarry and aggregate sites. The proposed project adds 0.67% incremental new disturbance to the existing 34% of total disturbance (which was measured based on the 2015 footprint) within the Churchill range (page 6-304). This outdated value is approaching the 35% disturbance threshold for critical habitat in the Recovery Strategy.	Provide information to account for new anthropogenic and natural disturbance to caribou in the Churchill range from 2015-2022 to establish a baseline for assessment in the context of critical habitat identification in the federal Recovery Strategy. In addition, provide information on future cumulative effects to caribou from this mine and other proposed disturbances. Using this information, update the percent of total disturbance for the Churchill range.	The spatial disturbance data for the spatial extent of the entire Churchill Range for Caribou are being updated with recent fire and forestry related disturbance data where available from forestry companies and government willing to share the data. Where feasible, annual report depletions will be incorporated into this update. The information will be used to update the percent of total disturbance for the Churchill range in the final EIS/EA.	Acknowledged. It is noted that another source of information that could be added to provincial and industry sources for the disturbance update is ECCC's 2020 disturbance mapping product, which is expected to be available in January 2024 on the open government data portal https://open.canada.ca/en. ECCC requested clarification on the calculation method for disturbance, nothing that, while there are differenced between the federal methodology and provincial methods, both are useful as baseline accounting for disturbance	FMG has updated the currently available ECCC disturbance geospatial layer with supplemented Provincial/MECP information from forestry and recent burns and FRI. In order to meet the timeline for submission of the final EIS/EA, the analysis will need to start prior to January 2024. Both the federal and provincial calculation method for disturbances will be included in the final EIS/EA.	EIS Section 7.8.2, Figure 7.2-7.

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					within the Churchill range and subsequent landscape management.		
IAAC -CF-001	Appendix N-2 3.2 Appendix R 3.4.3.5 4.1.3.2	Screening of contaminants of potential concern (COPCs) in the country food assessment used inadequate methods. The draft EIS states that "(d)ue to a lack of regulatory screening guidelines for most metals in plants and fish, COPC in country foods are chosen based on COPC identified in soil, surface water, and/or sediment, where there is a potential for the COPC to be taken up into plants and/or fish from the media. In addition, parameters that are known to be highly bioaccumulative (such as mercury and methylmercury in aquatic organisms) are selected as COPC in country foods" (Appendix R, 3.4.3.5). The COPCs identified in different environmental media and subsequently considered as part of the country food assessment are arsenic (As), cobalt (Co), vanadium (V), mercury (Hg), methyl mercury (Me-Hg), and PAHs (Appendix R, 3.4.3.5). However, the country food assessment does not include several elements identified as COPCs in surface water [sulphate ($SO_4$2-), Cu, and phosphorus (P)] (Appendix N-2, 3.2) and soil [Cr, Ni, and zinc (Z)] (Appendix R, 4.1.3.2) and no rationale was provided for their exclusion. In the absence of guidelines/ standards/ criteria available for screening contaminants in country foods, HC recommends that these COPCs be carried forward into a quantitative risk assessment to identify whether there may be health risks associated with the predicted concentrations, particularly where background levels or project contributions are high. In particular,HC recommends Pb be included in the country food assessment, due to its toxicological significance to human health.	Consider all COPCs identified in different environmental media (e.g., Cu, Cr, Ni, Z, Pb) in the country food assessment. Alternatively, justify the exclusion of any COPCs from the country food assessment.	Section 3.4.3.3 of Appendix R of the draft EIS/EA indicates that the maximum and exposure point concentrations (EPC) of surface water concentrations measured over the last five years in the local study area were screened against applicable guidelines for the protection of human health based on the ingestion of surface water for drinking water purposes. The results demonstrate that maximum concentrations for five parameters including; aluminum, copper, iron, manganese and phosphorus, exceed their respective Ontario provincial water quality objectives and/or the Health Canada, health based maximum acceptable concentrations guideline for Canadian drinking water quality. Supplemental human health screening of surface water in Table 4.1.3.3-1 in Section 4.1.3.3 of Appendix R however, indicated that there are no surface water exposure point concentration (EPC) exceedances of the applicable human health-based guidelines for surface water, based on the highest EPCs calculated for Birch Lake and Springpole Lake North Basin in all three Assessment Scenarios (Baseline, Project and Post-Closure). Table 4.1.3.2-1 and Section 4.1.3.2 in Appendix R of the draft EIS/EA indicates that chromium, nickel and zinc meet the human health guidelines for soil and therefore were not identified as COPC in soil. Lead was not identified to be elevated in any of the Baseline, Project or Post- Closure Scenario concentrations in any media, and therefore was not carried forward as a COPC in country foods.	Acknowledged. Given that it is the Agency's understanding that potentially impacted Indigenous communities may have yet to provide information on country food consumption, there is still uncertainty on the full range of exposures and potential impacts on human health. The Proponent should validate its exposure pathways with Indigenous communities through its ongoing engagement and integrate any new information regarding country food consumption into its HEHRA in the final EIS. Where there is uncertainty regarding potential exposure pathways, the precautionary approach should be pursued, and the COPCs should be carried forward into the HEHRA. The HEHRA also excludes certain contaminants (e.g., Cr and Ni) for which the maximum predicated concentrations are below the Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines; however, these contaminants may be even higher as they can accumulate via other environmental media/pathways. To account for the overall project-related risks to	Acknowledged.	EIS Section 6.24.1.2 Appendix R Section 3.4.2.2, Table 2.4.2.2-2, Section 3.4.2.3, Tables 3.4.2.3-1 to 3.4.2.3-3

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
					human health, it is recommended that the HEHRA include a country food assessment that considers all COPCs identified in different environmental media. For more information, refer to Section 5.2 of: Health Canada. 2018. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Country Foods. Available at: https://publications.gc.ca/site/eng/9.855584/publication.html		
IAAC-CF-002	Draft EIS Table 6.21-4 Table 6.21-6 Table 12.3-1 Appendix R Section 4.3.2.1 Tables 4.3.2-1 to 4.3.2-3 Section 4.6	Potential health risks via consumption of contaminated country foods and communication plans are not sufficiently assessed. 1. Two regional studies were considered when developing country food ingestion rates for members of Indigenous communities in the region (Appendix R, 4.3.2.1), but were not ultimately used due to lack of supporting data. Instead, Indigenous food consumption rates for fish, wild game, plants, and birds were based on Chan et al. (2014)[3] (Appendix R, Tables 4.3.2-1 & 4.3.2-2). Food consumption rates of younger age groups (i.e., infant, toddler, child, and teen) were then derived by comparing the age group-specific food consumption rates described in two HC documents[4,5] (Appendix R, Tables 4.3.2-3 & 4.3.2-4) to the adult Indigenous food consumption rates (Chan et al. 2014). However, the age group-specific food consumption rates from Health Canada were developed for the Canadian general population and the rates do not necessarily represent the food consumption patterns of Indigenous youth in the area. Note that Health Canada has removed this information in the new Preliminary Quantitative Risk Assessment Guidance (2021).[6] As such, Health Canada does not support this approach without a discussion of limitations and an uncertainty analysis. 2. The draft EIS provides a list of preliminary follow-up and monitoring programs for different valued components (Table 12.3-1). However, follow-up monitoring of country foods is not included in the program. Given that *"(..)the results of the HHRA for exposure to inorganics (metals), methylmercury and PAHs via all exposure pathways identified minor exceedances of the non-carcinogenic targets for three of the COPCs (arsenic, mercury and methylmercury) for a resident -heavy country foods consumer receptor"* (Appendix R, 4.6), a monitoring program should be developed accordingly.	1. Provide further rationale on how the age group-specific food consumption patterns developed for the Canadian general population could represent the consumption patterns of Indigenous consumers. Preferably, the country food consumption practices, including age group-specific consumption patterns, of Indigenous receptors would be informed by the ongoing Indigenous engagement. 2. Develop and implement a comprehensive country food monitoring program, or provide a rationale for its exclusion, given that minor exceedances of three COPCs were identified. If the Proponent determine that a country food monitoring program should be developed, ensure that it includes Hg in fish from Birch Lake, for all phases of the Project. The program would consider community-specific or representative food types/species, harvesting/fishing/hunting/trapping grounds, and consumption patterns. 3. Provide a rationale for including or excluding a communication plan, in consultation with local Indigenous communities, detailing how country food monitoring reports will be shared with local Indigenous communities and feedback	1. The methods detailed in Section 4.3.2.1 of the human health risk assessment in Appendix R were used to develop a reasonable estimate of age-group specific food consumption for Indigenous communities in the area of the Project. Additional discussion of the limitations and uncertainty will be added to the updated HEHRA for the final EIS/EA. If sufficient additional information is provided by local Indigenous communities, more site-specific age group-specific food consumption rates could be considered in an updated HEHRA. 2. Appropriate monitoring plans will be developed prior to construction, based on the results of the HEHRA in the final EIS/EA. A preliminary list of monitoring plans is provided in Table 12.3-1. For further information, see the response to Comment HH-03. 3. The results of monitoring will be shared through annual reporting that will be required for the Project. As described in Section 12.3 of the draft EIS/EA, the results of monitoring programs, including related to air quality, water quality, and fish and fish habitat monitoring, will be summarized annually and the information will be used to adapt existing plans, procedures and mitigation measures where appropriate, in order to continue to minimize environmental effects.	1. Acknowledged. The Proponent should seek site-specific age group- specific consumption data where possible through its ongoing engagement. In the absence of this data, the Proponent should validate its estimates of food consumption with Indigenous communities through its ongoing engagement. 2. Acknowledged. The final EIS should include a comprehensive monitoring plan that includes Hg in fish from Birch Lake. 3. Unsatisfactory. Insufficient information is provided regarding the country food monitoring and communication plans. Clarify when and how the reports will be distributed, and whether there will be a feedback process to inform adaptive management.	1.Acknowledged. 2.Acknowledged. Appropriate monitoring plans will be developed prior to construction, based on the results of the HEHRA in the final EIS/EA. 3. A communications plan will be developed, in consultation with local Indigenous communities, prior to construction describing how monitoring results and analyses on human health risks will be shared with potentially affected groups and how feedback will be considered.	EIS Section 12

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
		Additionally, there is an existing fish consumption advisory for Hg in lake trout, northern pike and walleye in Birch Lake[7], which are also known to be traditional foods of Indigenous interest (Table 6.21-6, p.29-30). The draft EIS asserts that health risks associated with the consumption of fish from Birch Lake can be sufficiently addressed by following the fish consumption advisories. However, the existence of fish consumption advisories is not necessarily a permanent measure. Although the Proponent predicted that the Project will not increase Hg concentrations in fish, Hg levels in fish should be closely monitored to identify and respond to any impacts by Project-related emissions. 3. The Métis Nations of Ontario have expressed their concerns about the potential adverse effect of the Project on country foods and the resulting health impacts from the consumption of contaminated foods (Table 6.21-4). A communication plan would be useful to inform local Indigenous communities about predicted or observed changes in levels of potential contaminants in country foods and related impacts on human health. The plan should also include a formalized means of receiving and responding to concerns regarding country foods quality raised by the local communities to support effective and efficient communication between the Proponent and communities. [3] Laurie Chan, Olivier Receveur, Malek Batal, William David, Harold Schwartz, Amy Ing, Karen Fediuk, Andrew Black and Constantine Tikhonov. 2014. First Nations Food, Nutrition and Environment Study (FNFNES): Results from Ontario (2011/2012). Available at: http://www.fnfnes.ca/docs/FNFNES_Ontario_Regional_Report_ENGLISH_2019-10-16.pd [4] HC. 2007. Human Health Risk Assessment of Mercury in Fish and Health Benefits of Fish Consumption. Available at: https://publications.gc.ca/site/eng/9.690319/publication.html [5] HC. 2012. Federal Contaminated Site Risk Assessment in Canada, Part I: Guidance on Human Health Preliminary Quantitative Risk Assessment (PQRA), Version 2.0. Available at: https://publications.gc.ca/site/eng/9.694180/publication.html [6] HC. 2021. Federal contaminated site risk assessment in Canada: Guidance on human health preliminary quantitative risk assessment (PQRA), version 3.0. Available at: https://publications.gc.ca/site/eng/9.896930/publication.html [7] Eating Ontario Fish (2017-2018). Available at: https://www.ontario.ca/page/eating-ontario-fish-2017-18	from the communities on the results, as well as how any other country food related issues will be addressed. In the case where a communication plan is developed, provide information on the steps that will be taken if there are any exceedances of established benchmarks and adaptive measures.		Additionally, sharing information through annual reporting schemes may not be sufficient to fully update potentially affected Indigenous communities on environmental quality. The Proponent should develop a communications plan outlining how monitoring results and analyses on human health risks will be shared with potentially affected groups and how their feedback will be considered. This communications plan should also be discussed and agreed upon by potentially affected Indigenous groups.		
IAAC-CF-003	Appendix R: Appendix A 1.2.1.1 Appendix A 1.2.2 Appendix B Tables B-1- 1a to B-1-17,	Information on 'baseline' and 'baseline + project scenario' concentrations of the Project-related COPCs in wild game tissues are not provided. 1. The draft EIS predicted health risks from the consumption of larger (moose) and small (snowshoe hare) mammals. However, unlike the case of plants and fishes, (Appendix A of Appendix R, 1.2.1.1 and 1.2.2), baseline COPC concentrations were not presented for wild game tissues. The source of baseline data used to calculate the average daily dose for large and small mammals (Appendix B, Tables B-1- 1a to B-1-1-7) is unclear. 2. Health Canada recommends undertaking metals analysis for game	1. Justify the lack of site-specific baseline data and provide a rationale to validate the data used to characterize baseline levels of contaminants in larger and small mammals. Discuss how these assumptions may contribute to uncertainty in the HHRA. 2. The country food monitoring program recommended in CF-02 should include sampling (where possible) or reference data	1. Baseline concentrations in wild game were estimated using the total dose and body burden for baseline, project and post closure concentrations from applicable exposure media (e.g. soil, surface water, plants, etc.) for the purposes of the HEHRA in the draft EIS/EA. Since the time that the HEHRA was completed and the draft EIS/EA was submitted for comment, baseline small mammal sampling has been completed, with co-located soil sampling to predict uptake factors. These additional baseline sampling data will be	1. Acknowledged. These changes will be assessed in the final EIS. 2. Satisfactory. This reference data and more complete baseline will be assessed in the final EIS.	1. Acknowledged 2. Acknowledged.	Appendix R Section 3.4.2.5

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
		animals prior to Project construction, where possible to do so. For example, the Proponent could work with local Indigenous communities to obtain samples of meat and/or organs from animals that they have recently harvested from the area. Alternatively, the Proponent can use reference data from other studies from the same ecozone. This information would help to establish a more complete baseline level of COPCs in country foods. A comparison of baseline and follow-up monitoring data can be used to assess the Project's contribution and develop adaptive management measures, if warranted.	from other studies prior to the commencement of construction activities.	used to update the calculations in the HEHRA for the final EIS/EA, as appropriate. 2. As indicated in Health Canada's Supplemental Guidance on Human Health Risk Assessment for Country Foods (HC, 2011), "...potential difficulties, and hence larger uncertainties, may arise with sampling tissues previously harvested by a local community. These include the inability to accurately determine harvesting patterns (e.g., location or time-of-year of harvesting) or food processing variables (e.g., length of time frozen) because of a lack of documentation of previously harvested material. Therefore, reference data from other studies from the same ecozone (such as from Chan et al. 2014) will also be reviewed to help establish a more complete baseline for typical metals concentrations in game animals from the region. Health Canada, 2011. Federal Contaminated Site Risk Assessment in Canada: Supplemental Guidance on Human Health Risk Assessment for Country Foods (HHRAFoods) https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/contaminated-sites/federal-contaminated-site-risk-assessment-canada-supplemental-guidance-human-health-risk-assessment-country-foods-hhra-foods-health-canada-2011.html. Accessed on February 9, 2023.			
IAAC-EIG-001	Section 2.1	The Proponent states, "The federal and provincial government has delegated some procedural aspects of consultation to FMG". Notwithstanding that fact that the Proponent is required to engage with potentially affected Indigenous communities in the preparation of its EIS, the Impact Assessment Agency of Canada is the Crown consultation coordinator for the environmental assessment process and does not delegate any aspects of its Duty to Consult to Proponents.	Remove or revise the text indicating a delegation of procedural aspects of the federal Crown's duties.	The text in Section 2.1 of the draft EIS/EA will be revised in the final EIS/EA to remove the reference to federal delegation of procedural aspects of the Crown's consultation duties.	Acknowledged.		EIS Section 2.2
IAAC-EIG-002	Section 2.2.1 Section 6.25.3	In Sections 2.1 and 6.25.3, the Proponent lists eight Indigenous communities as having been identified as "local" or "in proximity" to the Project by MECP and IAAC. IAAC clarifies that the March 11, 2022, Amendment to the EIS Guidelines identifies a total of six Indigenous communities that are expected to be affected by the Project.	Revise this sentence to "by MECP or IAAC" instead of "by MECP and IAAC".	Comment noted with thanks. Editorial comments will be addressed with the final EIS/EA.	Acknowledged.		EIS Section 2.4.1

Table C-1.2: First Mining Gold Response to the Federal Information Requirements related to the Springpole Gold Project Draft Environmental Impact Statement / Environmental Assessment

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
IAAC -EIG-003	Section 2	The Proponent is required to describe all efforts, successful or not, taken to solicit views and comments from Indigenous communities to support the preparation of the EIS. The draft EIS does not clearly describe these efforts. This information may be best presented in an engagement log, which should indicate the methods used, location of the engagement, the persons and/or organizations engaged, the concerns raised, and how the information was incorporated into the design of the Project and/or the EIS. The log would also include records of any unsuccessful engagement attempts (e.g., unanswered phone calls or unreturned letters).	Detail all the Proponent's engagement efforts with Indigenous communities, successful or not.	The final EIS/EA will include a Record of Consultation, to document the results of public participation and further engagement with government agencies, Indigenous communities and stakeholders. In advance of the final EIS/EA, a Record of Consultation will be provided to the Agency that summarizes Indigenous consultation from the start of the process until December 31, 2022.	Acknowledged. The Agency also acknowledges receipt of a Record of Consultation, dated April 2023. The Agency emphasizes that, in addition to describing efforts that have been made to engage with Indigenous communities, the final EIS should describe, in detail, how information discussed in engagement activities has been incorporated into the project design and/or the EIS. This information should be articulated for each Indigenous community and provided in keeping with appropriate ethical standards and obligations of confidentiality. Also, the Agency emphasizes that the Proponent should record or respond to all comments from Indigenous communities either in the final EIS or the Record of Consultation, not only to written comments submitted by communities. Key issues, feedback, and community perspectives shared verbally in meetings or phone calls should also be recorded and validated and the Proponent should create responses to this input, noting how this input was considered by the Proponent and integrated into the EIS, the project design, and mitigation and accommodation measures. The Agency will review this information in the next version of the EIS and will	Section 2.9 of the draft EIS/EA includes a summary of the influence of consultation on the project design and EIS/EA to that point in time. The input received included feedback on the project description, baseline studies and the assessment of alternatives, and was used to optimize the project design and enhance the assessment of the Project. Engagement is ongoing and the consultation section of the final EIS/EA will be updated with additional information including where comments inform the project or final EIS/EA. A summary of comments from each Indigenous community will be included in this section. This section will be supplemented with the Record of Consultation and an appendix with the responses to all comments received. Further, the updated assessment of alternatives and valued components (VC) in the final EIS/EA will include a section summarizing input received and how this influenced the assessment of alternatives and the potential effects to VCs.	EIS Sections 2.6.2, 3.1, 4.2, 5.3, 6.2.1.2, 6.3.1.2, 6.4.1.2, 6.5.1.2, 6.6.1.2, 6.8.1.2, 6.9.1.2, 6.10.1.2, 6.11.1.2, 6.12.1.2, 6.13.1.2, 6.14.1.2, 6.15.1.2, 6.16.1.2, 6.17.1.2, 6.18.1.2, 6.19.1.2, 6.20.1.2, 6.21.1.2, 6.22.1.2, 6.23.1.2, 6.24.1.2, 8.2, 9.1.1. Appendix D

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
					follow up at that time if further information is needed.		
IAAC -EIG-004	Section 2	Section 2 of the draft EIS describes the Proponent's consultation approach for the Project to include "involving participants early in the Project planning and continuing notifications through the EA process", and "focusing timing of engagement and consultation activities at key decisions." As noted in that section, the federal assessment process began in February 2018 with the submission of the Project Description; however, the draft EIS, including Appendix D, only describes engagement activities with Indigenous communities that occurred in 2021 and 2022. Engagement activities from 2018 to 2020 should be included. Refer to EIG-03 for recommendations on information format.	Describe all engagement since the start of the federal assessment process in 2018, including how concerns raised have been addressed in the project design or the EIS.	The final EIS/EA will include a Record of Consultation to document the results of public participation and further engagement with government agencies, Indigenous communities and stakeholders. Efforts made since the start of the environmental assessment process (2018) and a summary of how comments were addressed will be provided in the final EIS/EA.	Acknowledged. The Agency also acknowledges receipt of a Record of Consultation, dated April 2023. The Agency notes that the Record of Consultation in the final EIS should include all communications and efforts since the beginning of the environmental assessment process in 2018, not only the activities that have taken place since the federal EIS guidelines were issued. Refer to EIG-03 for recommendations on information format.	Since the receipt of the final Environmental Impact Statement Guidelines for the Project in 2018, the focus of consultation and engagement was largely on the preparation of the provincial Terms of Reference, baseline information and studies, alternatives and general aspects of the Project. The Record of Consultation for this period was provided as Appendix F in the April 2023 submission. A summary of the consultation and engagement activities for the period between the start of the federal environmental assessment and the start of the provincial terms of reference process will be provided in the final EIS/EA.	Appendix D-1
IAAC -EIG-005	Section 2, Appendix C	The Proponent's engagement record must document the main issues and comments raised during the engagement activities by each Indigenous community and the Proponent's responses. Section 2 and Appendix C of the draft EIS tabulates comments received from the Shared Territory Protocol Nations, but does not describe community-specific comments that informed the draft EIS. As a reminder, the characterization of effects on Indigenous peoples should be disaggregated by community so that it can be understood how different communities may be affected in different ways. This will become critical information when the Agency proposes follow-up program measures as potential conditions to the Minister.	Ensure to document comments raised by each Indigenous community, when comments are provided by specific communities, If comments are provided by aggregate organizations, be sure to seek to understand how communities may experience effects differently, which will support clear documentation in the effects sections.	FMG continues to engage with Indigenous communities regarding the Project. Comments received will be attributed to specific communities where possible in the final EIS/EA and will distinguish how communities may experience effects differently if identified by the communities.	Acknowledged.		EIS Section 2.6.1, Appendix C, Appendix D-1.1
IAAC -EIG-006	Section 2	The Proponent is required to respond to the comments of Indigenous communities[1] prior to submitting the EIS. This includes validating with each community that their information and perspectives were captured properly.	As a reminder, prior to submitting Final EIS, validate, as necessary, that concerns raised by Indigenous communities have been	During preparation of the draft EIS/, FMG has engaged with Indigenous communities to receive feedback on baseline studies and the preliminary	Acknowledged. The Agency emphasizes that the Proponent should	FMG is following a consultation process that is consistent with the EIS	EIS Section 2.6.1, Appendix D-1.1

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
		In cases where there are discrepancies between the views of the Proponent and community, the EIS will document these and the rationale for the Proponent's selection of information. [1] "Indigenous communities" in this document refers to the Indigenous groups that are identified in Part 2, Section 5 of the EIS Guidelines.	adequately recorded and how they have been addressed. Identify in the final EIS where there are discrepancies between the views of the Proponent and Indigenous community. Provide a rationale for the selection of information.	alternatives assessment. A summary of comments received from local Indigenous communities and an explanation of how the comment was considered is provided in Tables 2.9-1 to 2.9-6 of the draft EIS/EA. In addition, Appendix C of the draft EIS/EA includes a copy of the comments received during the preparation of the draft EIS/EA as well as the responses and a reference to where in the draft EIS/EA the comment was addressed. The draft EA consultation process provides a key opportunity for consultation on the Project and EA, should communities be interested in participating. In addition, FMG is supporting an Indigenous-led assessment process that will inform the final EIS/EA. A summary of the comments received and how these were addressed will be provided in the final EIS/EA, including if any discrepancies between views.	attempt to validate with each community, through its ongoing engagement efforts, that information and perspectives were captured correctly and are accurately reported in the EIS. The Proponent should document any steps that were taken to validate the information and perspectives included in the draft, including in Tables 2.9-1 to 2.9-6, in the final EIS or in the Record of Consultation. The Proponent's summary of feedback received should also be validated with communities. In cases where there are discrepancies between the views of the Proponent and community, include the rationale for the Proponent's selection of information.	Guidelines and the provincial ToR which includes a Consultation Plan. In addition, FMG is following consultation processes agreed to by local Indigenous communities. These processes are continual and iterative in their nature. Opportunities have been provided to Indigenous communities to review and comment on the draft EIS/EA over the last year plus and are continuing. Funding has been provided as needed and comments that have been received have been reviewed and responses provided, and followed up with meetings to review the responses, where there was interest by the Indigenous community. The final EIS/EA will include an updated summary of comments received and FMG responses to those comments with the goal of resolving comments to the extent reasonable. In addition, Indigenous communities will have an opportunity to review the final EIS/EA during the federal and provincial review process and FMG remains committed to address comments to the extent reasonable through the process and life of the Project.	

Table C-1.2: First Mining Gold Response to the Federal Information Requirements related to the Springpole Gold Project Draft Environmental Impact Statement / Environmental Assessment

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
IAAC -FH-001	6.10 Fish and Fish Habitat – Overarching Comment	Section 7.1 of the EIS Guidelines suggests that baseline information requires sufficient detail to identify effects, supported by appropriate analyses. In its current state, the draft EIS is lacking in sufficient baseline data and analyses to fully support the assumption that the Project will have 'no predicted residual effects as a result of cofferdam construction and dewatering of the isolated basin' on fish and fish habitat.	Additional literature, study design details, baseline data collection and analyses are necessary to adequately characterize the uncertainties of the Project and support the assumptions found within the EIS. Explicitly identify anywhere professional judgement and assumptions were used and clearly identify any remaining uncertainties and the magnitude of the uncertainties.	Additional fisheries and aquatic data was collected for the entire Springpole Lake and the proposed dewatered basin during 2022. This included a full lake broadscale monitoring program, ongoing lower trophic level studies, a lake-wide hydroacoustic fish community survey, and multiple eDNA metabarcoding surveys. This additional data, in combination with previously collected aquatic data increases the confidence that although the fish habitat present in the isolated basin of Springpole Lake is important, and encompasses one of six deeper water basins in the lake, the majority of the Springpole Lake area (94% area and 91% volume) will remain capable of sustaining all species and all life functions present in the lake. The data collected from 2022 demonstrates that the remaining deep-water basins and lake areas support comparable and, in some cases, greater numbers of fish than the isolated basin. This data from 2022 will be provided in in the final EIS/EA and will increase the certainty in the effects assessment predictions. The assessment of potential effects on fish and fish habitat in the final EIS/EA will make clear reference to data, literature and professional judgment that was considered in the predictions.	The Agency acknowledges the new baseline data, including portions shared in the Proponent's response table annex. The Agency and federal reviewers will review resultant changes in the final EIS and will follow up at that time if further information is needed.		EIS Section 6.10.2, Appendix O-1
IAAC -FH-002	Appendix F p.ii	The Proponent makes reference to the project impacts as a *"moderate fisheries impact when compared to other similar Canadian mines"* and proposes an offsetting strategy that will *"require a moderate time lag (approximately 17 years) between the impact to fish habitat and the restored basin being available to fish".* It should be noted that neither the time lag nor the impact to fisheries is considered 'moderate' by Fisheries and Oceans Canada (DFO) standards. Typically, any works, undertaking, or activity persisting over 1 year is rated 'high' in temporal persistence. In this case, given the maximum lifespan of fish species in the north basin is approximately 20 years of age, 17 years is a considerable time lag and the effects of the proposed impacts should reflect that. In addition, due to the alteration of the north basin from mining, rationale is not sufficient to conclude that residual impacts will not persist beyond project decommissioning timelines. As per Section 3.2.3 of the EIS Guidelines *"If (temporal) impacts are predicted after project commissioning, this should be taken into consideration in defining (temporal) boundaries".*	Temporal boundaries and time lag associated with the Project's proposed impacts and residual effects should be updated to adequately reflect each VC. Provide updated predictions of residual impacts to fish and fish habitat addressing the uncertainty of time lag and severity of temporal persistence (see GWn-10 for additional context).	The clarification and input is appreciated and will be considered in the Fisheries Act Offset Plan and MDMER Schedule 2 Fish Habitat Compensation Plan for the final EIS/EA. It should be noted that the Plan considers lag time in Section 8.1 and as a result, the Project has proposed to expedite the refilling of the open pit basin. The available baseline fisheries data provides confidence that although the fish habitat present in the isolated basin of Springpole Lake is important and encompasses one of six deeper water basins in the lake, the majority of the Springpole Lake area (94% area and 91% volume) will remain capable of sustaining all species and all life functions present in the lake. The remaining deep-water basins and lake areas support comparable and, in some cases, greater numbers of fish than the isolated basin. Further, the lost	The Agency acknowledges that a technical meeting with Fisheries and Oceans Canada (DFO) occurred on February 22, 2023. At that meeting, DFO noted that it continued to have concerns regarding the long lag time before impacts to fish habitat would be mitigated by the proposed re-flooding of the open bit and creation of the fish habitat development area. DFO also raised concerns about the effectiveness of some of the proposed offsetting measures. The Proponent indicated that it		EIS Section 6.10.1.2, Appendix F Section 8.0

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
				productivity from the affected fish habitat is proposed to be offset with the measures identified in the Plan, specifically including fish habitat features incorporated into the lake facing portions of the cofferdams (dikes), the reintroduction of Lake Sturgeon and the establishment of a micro hatchery where there is interest from local Indigenous communities. As a result of these measures, the effect on fish habitat due to the lag time will be mitigated. Section 6.1 of the draft EIS/EA provides a detailed description of the methodology used for the assessment of potential effects of the Project. The significance of residual effects (after the application of mitigation) is characterized with seven attributes, including duration of the residual effect. The definition of the temporal boundaries is provided in Section 6.1.3 and is used for the assessment of all valued components in the draft EIS/EA to characterize the duration of residual effects of the Project. The potential effects of the Project on fish and fish habitat have been assessed in Section 6.10 of the draft EIS/EA, and includes a description of the potential effects, mitigation measure and an assessment of the potential effects. It was determined that with the implementation of the proposed design of the Project and mitigation and offsetting measures listed in Section 6.10.3, residual effects on fish and fish habitat are not predicted. A technical meeting with DFO will be requested to discuss this comment, and the information will be clarified in the final EIS/EA.	would review its proposed offsetting measures in consultation with DFO and may pursue alternative measures, including potential restoration of fish habitat in other waterbodies or watersheds, and the use of complementary measures, as defined under the Policy for applying measures to offset adverse effects on fish and fish habitat under the Fisheries Act.1 Any mitigation or offsetting measures to be considered in the environmental assessment should be clarified in the final EIS.		
IAAC -FH-003	Appendix O-3: Appendix A Figure A1-1a to 1e, Figure A1-2a to 2c, Figure A1- 3a to 3c	During previous review of baseline studies, DFO requested updated figures and quantification of suitable lake trout, northern pike, and lake whitefish spawning habitat in Springpole Lake. The Proponent provided figures highlighting the potential available spawning habitat for each species throughout the lake; however, quantification of this habitat is not included in the draft EIS. In addition, verifying that predicted spawning areas in the south basin are being used by spawning fish would provide greater certainty in the generated data.	Quantify and tabulate the total available spawning habitat in both the impacted and non-impacted areas of the mine for lake trout, northern pike, and lake whitefish. Validate that a portion of the GIS-predicted spawning habitat in the south basin of Springpole Lake is being used by the aforementioned species for spawning with additional field studies if required. Arrange a technical meeting to discuss rationale if verification of habitat use is not planned.	A table summarizing the total available GIS inferred spawning habitat in both the impacted and non-impacted areas of Springpole Lake is provided for Lake Trout, Northern Pike, and Lake Whitefish in Attachment FH-03-1. Additional field investigations were completed in 2022 that provide confirmation that the majority of the Springpole Lake area (94% area and 91% volume) will remain capable of sustaining all species and all life functions present in the lake. Additional Northern Pike spawning surveys were conducted in the spring of 2022. A technical meeting with	The Agency acknowledges the new fish habitat baseline data, including the portions shared in the Proponent's response table annex. The Agency further acknowledges that the proposed technical meeting occurred on February 22, 2023. The Agency and federal reviewers will review resultant changes in the		EIS Sections 6.10.1.2, 6.10.2 Appendix O-1 Sections 2.4, 3.1.2.5 and Attachment A Table A1-1

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
				DFO will be requested to discuss habitat validation.	final EIS and will follow up at that time if further information is needed.		
IAAC -FH-004	Appendix O-3 Section 3.6.1 Fish Habitat Section 3.6.1.2 Spawning Habitat Assessment p.3-11	During previous review of baseline studies, DFO requested movement and residency patterns of lake trout and walleye in Springpole Lake. The Proponent indicated that lake trout and walleye movement and residency patterns along with an illustrative map would be included in the draft EIS. Further, DFO requested a detailed description of the limitations of the telemetry study in the potential dewatered area. Neither was provided in the draft EIS.	1. Provide lake trout and walleye movement and residency patterns along with an illustrative map as originally requested. 2. Provide a detailed description of the statistical limitations of the telemetry study in the areas that will potentially be dewatered as well as the broader lake.	Due to several earlier comments regarding the previous telemetry study, additional fish community studies were undertaken in 2022 to better describe fish distribution through the lake. A technical meeting will be proposed to discuss whether further analysis of the historic telemetry data would add value to the current analysis given the data collected in 2022, as provided in the response to Comment FH-01.	The Agency acknowledges that the proposed technical meeting occurred on February 22, 2023. DFO noted that use of the historic telemetry data to assess lake trout abundance and distribution is not likely to provide robust results due to bias in the telemetry data resulting from poor study design. The new 2022 BsM and acoustic data should be preferred.		EIS Section 6.10 Appendix O-3
IAAC -FH-005	Appendix O-3 Section 2.6 Lower Trophic/Primary Productivity Assessment p.2-3	During previous review of baseline studies, DFO requested detailed information describing how the fish community uses the available primary and secondary aquatic resources in Springpole Lake to inform how mine-related effects may impact the existing food web. The EIS Guidelines requires consideration of: 'any potential imbalances in the food web in relation to baseline conditions'. Information in the draft EIS is insufficient to understand if changes to the food web will occur as a result of mine related impacts and proposed offsetting measures (i.e., micro-hatchery/stocking, fish rescue, re-introduction of lake sturgeon).	Provide information regarding how the fish community interacts with primary and secondary aquatic resources and how these are predicted to change with mine impacts and offsetting activities.	Springpole Lake is a large waterbody (~2,557 ha) of which 6% (156 ha) will be isolated and permanently altered due to the Project. The isolated portion of the basin will be entirely dewatered and as such all primary and secondary aquatic resources will be temporarily lost for the life of mine. Detailed lower trophic studies (Phytoplankton and Zooplankton) presented in Appendix A2 of the 2021 Aquatic Baseline Report (Appendix O-3 of the draft EIS/EA), show comparable primary resources in the six deep water sample stations in Springpole Lake and two stations in Birch Lake, and a high degree of similarity between the three most northern stations in the north basin of Springpole Lake. Temporarily removing 6% of the lake area, and one of the deep basin habitats is not expected to alter or imbalance the remaining lake's primary or secondary communities or the way they interact. There are no critical resources or conditions in the isolated basin that are unique to only that portion of the lake that would prevent the remaining lake from continuing to function as it does now. The water quality of the treated effluent discharged to the southeast arm of Springpole Lake will meet or exceed federal and provincial regulatory requirements which are based on guidelines for the protection of aquatic life, including primary and secondary resources. As a result, the discharge is not expected to alter or	Acknowledged. The Agency understands that the Proponent continues to evaluate the anticipated effectiveness of the proposed micro-hatchery offset measure. The decision as to whether to include this measure in the Fisheries Act Offset Plan should be clarified in the final EIS.		EIS Section 6.10.1.2

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
				imbalance the aquatic community structure. The micro-hatchery offset measure is currently a concept meant for engagement and discussion. Detailed studies in 2022 have provided confirmation of the fish community structure and relative abundance by species. Should the hatchery measure be advanced to a final offset measure, the data from the baseline studies would be used to establish a monitoring program to evaluate whether an imbalance in community structures has occurred. Furthermore, a detailed stocking plan would require development prior to undertaking the measure that takes this into account.			
IAAC -FH-006	Appendix O-3 Section 2.2 Fish Habitat Assessments p.2-1 and Figure 2-1a	During previous review of baseline studies, DFO requested more information about fish and fish habitat in Birch Lake, near the CDF and in general. There is unknown potential for adverse effects on fish and fish habitat in Birch Lake which may include, but are not limited to, accidental tailings release and changes in groundwater contributions (i.e., cold water) as a result of the drawdown cone from the pit (See GWn-09 for further context related to groundwater modelling). Birch Lake fish community was sampled in spring (June 8 to 15) with minnow traps and seine nets at two sites (BIRCH-B1, BIRCH-B2). Habitat characterization of the nearshore areas of Birch Lake adjacent to the proposed CDF and within the drawdown cone are not included in the study. The sample sites appear to be selected at random and only include spring data, which is not sufficient to understand potential effects to fish and fish habitat as a result of the CDF and drawdown cone, and therefore further sampling near the proposed CDF and within the pit drawdown cone that is representative of seasonal habitat is required.	1 Provide additional fish community data at sites near the proposed CDF and in the area of Birch Lake impacted by the pit drawdown cone that are representative of seasonal fish habitat. 2. In addition, characterize the nearshore areas of Birch Lake adjacent to the proposed CDF and habitat potentially impacted by the pit drawdown cone. A similar desktop GIS approach used for determining lake wide spawning habitat in Springpole Lake could be used for nearshore assessments of Birch Lake. Characterization of habitat within the pit drawdown cone should consider life history requirements of species relying on groundwater discharge within Birch Lake (see GWn-09)	Additional aquatic investigations were completed along the south shore of Birch Lake in 2022 to better describe the lake conditions adjacent to the Project. The results will be provided in the final EIS/EA. The updated information will also include a GIS analysis of the southern portion of Birch Lake as suggested. As per the response to Comment GWn-09, additional plots will be provided which will aid in the interpretation of interactions with fish habitat. Other than the water intake, there are no physical works or activities within Birch Lake. Section 6.6.4.1 of the draft EIS/EA assesses the changes in surface water quantity and did not predict effects in surface flow that would be distinguishable from background. None of the identified species of fish in Birch Lake are considered dependant on groundwater upwellings for critical life stages; and as such the localized groundwater change (slight increase in groundwater input due to the co-disposal facility) is not expected to have a measurable effect on fish or fish habitat. Potential accidents or malfunctions such as a tailings release is discussed in Section 9 of the draft EIS/EA.	Satisfactory. The Agency and federal reviewers will review resultant changes in the final EIS and will follow up at that time if further information is needed.		EIS Section 6.10.2 Appendix O-1
IAAC -FH-007	Section 6.10 Fish and Fish Habitat	The Proponent is required to provide the description and location of suitable habitats for fish species at risk that appear on federal and provincial lists, and sportfish of importance to Indigenous peoples that are found or are likely to be found in the study area.–While the Proponent	Characterize and identify suitable habitat for lake sturgeon in the area.	In the immediate Project area, Lake Sturgeon were historically present in Birch, Springpole, and Seagrave Lakes, as well as Cat Lake, Lake St. Joseph and several lakes in between and along the	Satisfactory. The Agency understands that the Proponent continues to evaluate the anticipated		EIS Sections 6.10.1.2, 6.10.2.1 Appendix F Section 4.2, O-2

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
	Section 6.10.1.1 Springpole Lake p.6-213	acknowledges that lake sturgeon are a provincially listed fish and are valued by Indigenous communities, there is no description or location of what is considered suitable habitat within Springpole Lake.		Birch River flow path (Cat Lake / Slate Falls / MNRF. n.d. 2015/2016)[1]. Birch Lake, Springpole Lake and other surrounding lakes are large, with numerous embayments. deep water refugia; and large connecting rivers which are favorable habitats for Lake Sturgeon. These lakes all have a mixture of both relatively shallow (2 to 3 metres) and deeper water habitats (>9 metres) with the connecting rivers providing the needed habitat requirements for Lake sturgeon as described in Kerr (2011[2]). Several historic spawning locations have been identified between Lake St. Joseph and Cat Lake (Cat Lake / Slate Falls / MNRF. n.d. 2015/2016). The minimum range for a combined river and lake network without fish barriers is 250 to 300 kilometres as suggested by Auer (1996)[3]. There are currently barriers downstream of the Project site including the Rat Rapids and Cedars Channel dam at the east end of Lake St. Joseph, and the Root River at the west end of Lake St. Joseph. These dams were developed in approximately 1950 and diverted flows from the Albany River to the Root River. A connected lake and river network from Lake St. Joseph to Cat Lake, Shabumeni Lake, Birch Lake, Springpole Lake and Seagraves Lakes would be considered a range that is at or just over the upper threshold (approx.300 km) for a minimum range. Excluding the dams at Lake St. Joseph, there are no known major works within these waterbodies that would have changed the physical habitats of these upstream waterbodies which historically supported a healthy Lake Sturgeon population. Based on records provided by MNRF, there is no known catch records of Lake Sturgeon in the local waterbodies, including scientific or recreational records, since the anecdotal observations more than 20 years ago, around 1997. Studies conducted at the Project Site, including three cycles of broadscale monitoring in Birch Lake, recent broadscale monitoring in Springpole Lake and two eDNA metabarcoding events, have not identified Lake Sturgeon in Birch Lake (near the Project site) or Springpole Lake.	effectiveness of the lake sturgeon restocking offset measure. The decision as to whether to include this measure in the Fisheries Act Offset Plan should be clarified in the final EIS.		

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
				[1] Cat Lake / Slate Falls / MNRF. n.d. 2015/2016 Species at Risk Stewardship Fund Project (a Partnership between Cat Lake / Slate Falls and the Ministry of Natural Resources and Forestry) [2] Kerr, S. J., M. J. Davison and E. Funnell. 2010. A review of lake sturgeon habitat requirements and strategies to protect and enhance sturgeon habitat. Fisheries Policy Section, Biodiversity Branch. Ontario Ministry of Natural Resources. Peterborough, Ontario. 58 p. + appendices. [3] Auer, N.A, 1996. Importance of habitat and migration to sturgeons with emphasis on lake sturgeon			
IAAC -FH-008	Section 6.10 Fish and Fish Habitat Section 6.10.4. 1 Changes in Fish Habitat p.6-222	The Proponent makes the following assertion: "Assuming isolation of the basin occurs in the first year of construction (Year -2), and filling begins in Year 10, the basin can be filled and ready for reconnection to Springpole Lake in approximately Year 13 to 15 of the Project. As a result, there will be no residual effects on fish and fish habitat due to refilling of the open pit basin." Given the project size, duration and uncertainty in timeline with respect to pit refilling (see GWn-10 for example), there will likely be long-term, potentially permanent, residual effects to fish and fish habitat. The severity of the residual effects will depend on the impact that dewatering the north basin of Springpole Lake has on fish communities and the time required for populations to re-establish.	Describe the importance of the north basin to the Springpole Lake ecosystem and how the area remaining following dewatering will support the fish community during the life of the mine. This investigation should be based on the biology of the primary species and the habitat availability and capacity of the lake (see FH-09 for additional context). If the remaining habitat is not expected to support the fish community in the same way as it did pre-construction, evaluate the residual impacts this will have, specifically addressing the uncertainties with time lag and potential for multi-generational impacts to fish species between dewatering and reconnection.	Additional fisheries and aquatic data was collected for the entire Springpole Lake and the proposed dewatered basin during 2022. This included a full lake broadscale monitoring program, ongoing lower trophic level studies, a lake-wide hydroacoustic fish community survey, and multiple eDNA metabarcoding surveys. The additional data, in combination with previously collected aquatic data increases the confidence that although the fish habitat present in the isolated basin of Springpole Lake is important and encompasses one of six deeper water basins in the lake, the majority of the Springpole Lake area (94% area and 91% volume) will remain capable of sustaining all species and all life functions present in the lake. The data collected from 2022 demonstrate that the remaining deep-water basins and lake areas support comparable and in some cases greater numbers of fish, Including Lake trout and whitefish, than the isolated basin. As described in the response to Comment FH-05, the primary and secondary aquatic resources and their interaction with the fish community is not expected to be altered in the remaining lake area. This further confirms our understanding that conditions in the isolated basin that are not unique to only that portion of the lake, and its	The Agency acknowledges the new baseline data, including portions shared in the Proponent's response table annex. The Agency and federal reviewers will review resultant changes in the next version of the EIS and will follow up at that time if further information is needed.		EIS Section 6.10.6.1

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
				isolation would not prevent the remaining lake from continuing to function as it does now. A summary of the findings of the broadscale monitoring results and the hydroacoustic program are provided as Attachment FH-08-1 and full results will be provided in the final EIS/EA.			
IAAC -FH-009	6.10 Fish and Fish Habitat – Overarching Comment	Insufficient consideration is given to lake trout in the context of MNRF fisheries management objectives. Specifically, the fisheries management plan objectives for Fisheries Management Zone 4 state a key goal is 'To maintain current lake trout abundance.' The north basin of the lake is one of few deep areas in the larger lake complex that lake trout use to complete their life history (i.e., spawning, rearing and summer refuge) and therefore should be considered limiting habitat. In Diavak (Lac de Gras), an example the Proponent uses as a comparison of impacts to the Springpole Lake project, lake trout habitat is not limiting and lake trout populations are able to sustain themselves throughout the life of the mine. There is uncertainty that lake trout could maintain their population throughout the life of the mine in Springpole Lake with the data provided. A cursory analysis of Table 21 in the 2018 Fish Community and Habitat Existing Conditions Report for the 2013 telemetry data suggests that almost 80% (114/143) of the detections of lake trout in July and August were found in the proposed dewatered basin. The same pattern can be found for every other year. This suggests that removing that summer refuge habitat could have significant impacts on lake trout in the remaining lake.	Provide more consideration in the EIS to the status of lake trout in Springpole Lake and assess how the removal and alteration of an important summer refuge habitat will impact the sustainability of lake trout populations through the life of mine and post-closure.	As requested, more consideration will be given in the final EIS/EA to the status of Lake Trout in Springpole Lake. Recent studies in 2022 have provided additional confidence that Lake Trout and the resources they depend on are well distributed in the north basin and not reliant only on the portion that will be isolated, including for summer refuge. See the response to Comment FH-08 for a summary of the 2022 results.	Acknowledged.		EIS Sections 6.10.1.2, 6.10.2.1 Appendix O
IAAC -FH-010	Appendix F Section 6.0 Schedule 2 Tables 6-1 and 62	Area calculations for watercourses in Tables 6-1 and 6-2 are based on length and wetted width. Wetted width measurements are influenced by inter and intra annual variability and are not accurate measurements of available fish habitat.	Provide calculations in Tables 6-1 and 6-2 with bankfull widths.	Where field verified numbers were available, these were used as the channel width in Tables 6-1 and 6-2 of Appendix F of the draft EIS/EA. Alternatively, if high resolution imagery enabled the discernment of a defined channel, a measurement was taken from the imagery and used in the calculation, if field data was not available. Many of the watercourses shown as impacted are classified as Type D. These watercourses are shown in provincial base mapping as drainages, but do not have defined channels within portions of reaches or in their entirety and are not expected to be fish frequented. For the draft EIS/EA and Appendix F, it was conservatively assumed that these channels were present, fish frequented and assigned a value of 0.5 m in width. Additional studies in 2022 will allow more detailed values and or confirmation of which features are not present. The Fish Habitat Offsetting and Compensation Plan will be updated in the final EIS/EA and will include additional information describing the	Acknowledged.		Appendix F Section 6

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
				method and value used to calculate channel width for each watercourse in Tables 6-1 and 6-2.			
IAAC -FH-011	Section 6.10 Fish and Fish Habitat Section 6.10.2 Potential Environmental Effects p.6-216 Appendix F Section 7.1 Measures, Standards and Contingencies p.7-1	The draft EIS notes that timing windows will be employed as a mitigation measure to protect sensitive life stages of fish species. However, the timing of the pit dewatering is unclear and does not appear to give consideration to the specific species life stages and when they use the north basin nor how they may be affected by construction timing. For example, respecting the provincial timing windows for Springpole Lake would limit construction to occur between June 16 to August 31 (72 total days). Therefore, construction of the coffer dams and isolation of the north basin would have to fall within that timeframe; however, as per the telemetry data provided in the baseline report, the majority of lake trout and walleye spend that timeframe occupying the north basin as optimal summer refuge habitat. Reciprocally, if construction occurred during the spring (outside the timing windows), the telemetry data suggests all adult walleye migrate out of Springpole Lake to spawn and therefore the number of walleye present in the north basin would be considerably lower.	Provide a detailed timeline of cofferdam construction in relation to provincial timing windows, a detailed fish rescue plan, and how the isolation and dewatering of the north basin of Springpole Lake will potentially impact important life stages of fish occupying the basin during construction.	As the reviewer correctly identified, fisheries in-water timing constraints are determined by Provincial guidelines and based on regions and individual species. The timing constraints based on the Provincial guidelines would restrict in-water works in Springpole Lake to between June 16 to August 31 (72 total days). Telemetry data has shown that tagged Walleye and Lake Trout both use the north basin of Springpole Lake during summer months. Telemetry data shows both tagged Walleye and Lake Trout utilized the north basin from June through October, with Lake Trout dispersing in October to the broader lake (remainder of Springpole Lake and adjacent river systems) and returning in May the following year. Walleye tend to remain in the north basin until late winter when they begin moving out of the basin towards the southeast arm of Springpole Lake and then move up the Birch River towards Cromarty Lake in April and May; returning to the north basin in June. During their residency in the north basin, tagged Walleye and Lake Trout data suggest a concentration both within the portion of the basin that will be isolated for the Project as well as in the basin to the south of the west cofferdam (dike). There is an annual period of approximately late winter (February) and spring (May) when most tagged fish of both species have left the north basin into the broader lake and rivers. Construction of the west and east dikes (cofferdams) are expected to take approximately 1 year to complete. Based on previous experience, barriers such as turbidity curtains could be used to isolate the dike areas during the allowable in-water work window (June 16 through August 31). Once the area is isolated between barriers and fish are removed from this area, construction of the dikes could then proceed year-round until completed. Dewatering of the north basin would commence once the west and east dikes have both been constructed above the water level of Springpole Lake.	Acknowledged.		EIS Section 6.10.6 Appendix F Section 5.2.3.

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
				Adhering to the current in-water construction timing window and isolating the work areas around the dike in mid-June would likely result in adult Walleye and Lake Trout trapped within the isolated north basin. These fish would need to be captured with a subsequent fish removal program. If an in-water timing constraint exemption were to be granted that would allow the initial isolation using barriers to be completed in the spring as suggested by the reviewer, the telemetry data indicates that most of the Walleye and Lake Trout that utilize the basin will be distributed throughout the broader lake and the number of fish trapped in the isolated basin would be reduced. Given that the end use of the fish from the isolated basin has yet to be determined pending further consultation with Indigenous communities and government agencies, this could result in lower mortality to adult fish. However, given that the barriers and dike construction would occur prior to Lake Trout egg emergence and fry dispersal, there may be higher egg and fry mortalities experienced in the footprint of the dikes where Lake Trout have spawned. As stated in the Fish Habitat Offsetting and Compensation Plan (Appendix F of the draft EIS/EA), the end use of the fish removed from the isolated dike area and isolated north basin of Springpole Lake is to be discussed with Indigenous communities and government agencies. Following this discussion, a comprehensive fish removal plan for the isolated basin of Springpole Lake, both before and during the dewatering efforts, will be developed. Based on previous experience of the Project team with completing both whole and partial lake fish removals, capture gear would target both large and small bodied fish. If the agreed end use of fish is redistribution to the broader Springpole Lake, then gear types with lower mortality would be utilized. A quantitative depletion model would be used to monitor the success and efficiency of the removal program. The end target for fish removal will be determined in consultation with government agencies but will likely fall within the range of 70 to 85% removal for most sport fish.			

Table C-1.2: First Mining Gold Response to the Federal Information Requirements related to the Springpole Gold Project Draft Environmental Impact Statement / Environmental Assessment

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
IAAC -FH-012	Appendix F Section 5.4 Road Crossings and Pipelines Section 5.4.1 Avoidance and Mitigation p.5-6	Appendix F states "Road crossings will use standard design measures such as structure sizing, embedment and construction methods to mitigate impacts". The potential effects of road crossings have not been adequately articulated by the Proponent.	Identify potential effects resulting from the installation of road crossings that require mitigation. Include details on mitigating the potential for erosion and scour, and the provision of fish passage, if required.	The draft Fish Habitat Offsetting and Compensation Plan (Appendix F of the draft EIS/EA) will include additional information on the potential effects to fish and fish habitat from road crossings in the final EIS/EA, as requested.	Acknowledged.		EIS Section 6.10.6.1 Appendix F Section 5.4
IAAC -FH-013	Section 6.3 Noise and Vibration, Section 6.3.2.5 Assumptions and the Use of the Conservative Approach p.6-47 and Appendix F Section 5.2 Dewatered Basin and Open Pit Section 5.2.3 Avoidance and Mitigation p.5-4	Blasting noise and vibration levels were assessed in accordance with DFO's Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters (Wright and Hopky 1998), and limits were derived to develop a blasting plan in consultation with DFO. These guidelines are not currently accepted as a code of practice by DFO, and more recent research suggests the 100 kPa threshold may not be appropriate to ensure that fish are not harmed. DFO's previous Western and Arctic Region has recommended a maximum overpressure threshold of 50 kPa (Cott and Hannah 2005).[4] More recent research suggests this value is protective of fish including sensitive life stages (Koden and Aimone 2013). [4] Cott P., and B. Hanna. 2005. "Monitoring explosive-based winter seismic exploration in waterbodies, NWT 2000–2002." In Offshore Oil and Gas Environmental Effects Monitoring: Approaches and Technologies, edited by S.L. Armsworthy, P.J. Cranford, and K. Lee, 473-490. Columbus: Batelle Press. https://doi.org/10.13140/2.1.2312.7688	Update the blasting assessment using the 50 kPa threshold. If the threshold is exceeded, mitigation measures should be proposed to reduce harmful effects. If measures to reduce impacts are predicted to be ineffective due to project design or site limitations, the potential impacts should be quantified and accounted for in the offsetting plan. Develop a monitoring plan to confirm predictions and adaptively manage effects from blasting.	The blasting impact assessment (Appendix H-4 of the draft EIS/EA) will be revised to include the 50Kpa threshold for explosives per charge of 192kg. The estimated setbacks to comply with the 50Kpa threshold is 109 metres. However, the estimated setback to comply with the 13 mm/s peak particle velocity is 209 metres. As a result, these setback distances will extend into Birch Lake, L2 and L1 as shown in the attached Figure FH-13-1. Although applicable mitigation measures will continue to be evaluated for the final EIS/EA, an additional potential effect to fish and fish habitat due to blasting will be considered in Fish Habitat Offsetting and Compensation Plan and the effects assessment for fish and fish habitat section of the final EIS/EA. Areas associated with the potential effects are shown in the Attachment FH-13-1. A detailed blasting plan, including monitoring near fish habitat will be prepared prior to construction of the Project.	Acknowledged.		EIS Section 6.3.1.2 Appendix H-4 Section 2
IAAC -FH-014	Appendix F, Section 5.3 Plant Site and Ore Stockpiles Section 5.3.1 Direct Effects p.5-5	A water intake structure is proposed to be constructed in Birch Lake with an assumed footprint of 50 m². Impingement and entrainment of fish in the intake is likely without appropriate mitigation, and would result in an unaccounted-for effect to fish. Appropriate screening of the intake is not identified as mitigation in Section 6.6 nor Appendix F.	1. Confirm whether DFO's Interim code of practice: End-of-pipe fish protection screens for small water intakes in freshwater can be followed. If not, confirm that an appropriate screen will be designed and constructed to mitigate impingement and entrainment and characterize any impacts to fish. Provide a monitoring plan to verify the screen is functioning as designed to avoid impingement and entrainment.	For the purpose of assessing effects and determining no residual effects, the current DFO Code of Practice for End-of-pipe fish protection screens for small water intakes in freshwater (2020) was considered as the detailed design of the water intake will be completed during the environmental approvals stage. The Code describes best practices for the design, installation and maintenance of small water intakes with flow rates up to 0.150 m³/s. Currently, the Birch Lake water intake flow rate is proposed to be approximately 0.036 m³/s, which is at the low end of the flow range for the Code. Typically, the deterrent to entrainment for a small water intake such as the Birch Lake water intake would be the	Satisfactory.		EIS Section 5.12.4 Appendix F Table 7-1

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
				use of a screened structure (box, cylinder or drum), which is consistent with the Code.			
IAAC -FH-015	Appendix F	The calculation of habitat offset area and value relative to project impacts does not provide confidence that the impacts to fish and fish habitat can be adequately mitigated. Further, the draft EIS does not demonstrate how the offsetting plan meets the guiding principles laid out in DFO's Policy for applying measures to offset adverse effects on fish and fish habitat under the Fisheries Act. Without confidence in the ability to mitigate potential effects to fish and fish habitat through offsetting, an accurate residual effects determination cannot be made.	Provide an updated fish and fish habitat offsetting proposal that aligns with DFO's guiding principles, following the specific advice provided in Enclosure 2.	The measures currently proposed in the Fish Habitat Offsetting and Compensation Plan (Appendix F of the draft EIS/EA) were developed in consideration of the DFO's Policy. A technical meeting with DFO will be requested to clarify and address the required changes to the Plan. Following the discussions with DFO, necessary revisions to the Plan will be addressed and included in the final EIS/EA.	The Agency acknowledges that a technical meeting DFO occurred on February 22, 2023. The Proponent indicated that it would review its proposed offsetting measures in consultation with DFO and may pursue alternative measures, including potential restoration of fish habitat in other waterbodies or watersheds, and the use of complementary measures, as defined under the Policy for applying measures to offset adverse effects on fish and fish habitat under the Fisheries Act. Any mitigation or offsetting measures to be considered in the environmental assessment should be clarified in the final EIS.		Appendix F Section 9.0
IAAC -FH-016	Appendix F Section 1.5 Phases and Schedule p.1-5, Table 1-2	Table 1-2 provides a broad overview of the timing of impacts to fish and fish habitat, and the offsets. It is clear from this high level overview that the majority of the offsetting will start near the end of operations and into closure.	Provide a high level overview of the time lag by adding a column that provides an estimate of the area of impact/offset for each line.	A column will be added to Table 1-2 of Appendix F and included it the final EIS/EA, as requested.	Acknowledged.		Appendix F Table 1-1
IAAC -FH-017	Appendix F Section 8.1.1 p.8-2	The planned end-pit lakes are not considered restoration of degraded habitat, and this proposed offsetting approach does not align with the preference of restoration of degraded habitat identified in DFO policy. There is no evidence to suggest that an end-pit lake of this description presents better habitat components than the currently existing natural lake which hosts self-sustaining fish populations. DFO does not accept the suggestion that an end-pit lake could be considered "enhanced" habitat over what is currently existing. Quantification of offsetting areas should demonstrate a more realistic reflection of the likely habitat value of a	Should the generation of fish habitat in the end-pit lake continue to be considered, address the consequences of the design on fisheries productivity including: that the restored pit will likely make the benthic habitat inaccessible to fish in deep areas (300 m deep); how the ratio of deep to shallow water	DFO's caution to using the end pit lakes for fish habitat offsetting and compensation are understood. Given the Species at Risk considerations for this area and to minimize altering the existing terrestrial environment, the intent is to maximize the opportunities to use the available aquatic footprint in the Fish Habitat Offsetting and Compensation Plan to the extent possible. It is acknowledged that there will be a time lag between the impacts and the	The Agency acknowledges that a technical meeting DFO occurred on February 22, 2023. The Proponent indicated that it would review its proposed offsetting measures in consultation with DFO and may pursue alternative measures, including		Appendix F Sections 8.1, 8.2

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		rehabilitated end-pit lake should it continue to be proposed as an offsetting measure. End-pit lakes have been accepted as offsetting in the Canadian mining context, but approval of one offsetting plan does not constitute approval of another. End-pit lakes as offsetting carry large amounts of uncertainty, primarily associated with the following variables: Time lag associated with life-of-mine, and uncertainty associated with the layout of the mine-closure landscape. Bathymetry supporting fish productivity is often difficult to achieve as it requires large amounts of back-filling. The time lag associated with achieving water quality acceptable to support aquatic life introduces uncertainty into the timeframe when productive fish habitat can be established, making calculations of required offsetting area difficult. Due to the large degree of uncertainty associated with end-pit lakes as offsetting measures, robust rationale including clear alignment with fisheries management objectives, feedback from Indigenous communities, and regional considerations would be required for DFO to consider this proposal as acceptable. This is in addition to robust scientific information addressing the technical barriers mentioned here.	habitat may affect fish food web dynamics; how the artificially deep pit may affect limnological processes upon which fish depend to carry out life processes; and, how mixing of the lake will be impacted by the remainder of the cofferdams left in place.	effectiveness of the offsetting measures that will need to continue to be accounted for in the Fish Habitat Offsetting and Compensation Plan. It is important to recognize that the reclaimed basin is only 6% of the lake and not a distinct and separate pit lake. Within the reclaimed basin there is approximately 78 ha where physical alterations are not proposed other than the temporary dewatering and habitat enhancements. An additional 19 ha of backfilled area will be treated with substrates and habitat structure to provide functional littoral habitat and an additional 44 ha of the new basin will be excavated for fish habitat and designed to ideal depths, substrates and cover conditions. It is acknowledged that the 104 ha, deep open pit pelagic area would not have a coupled benthic zone; however, data collected in 2022 demonstrate summer fish distribution within the deep basin is primarily in the pelagic zone (Figure HAC-01 in Attachment FH-08-01). The proposed former pit, deep pelagic area 104 ha, represents approximately 42% of the total reclaimed basin (245 ha). The existing deep basin (greater than 12 m in depth) is approximately 63 ha and represents approximately 40% of the 155 ha isolated by the Project. One of the frequent critical limitations to end use lakes is a lack of littoral zone (Gamons et.at., 2009[5];Golder, 2017[6]). By integrating the areas not physically altered, the backfilled areas and the new excavated basin, the proposed offset measure will address this limitation and compliment the deep area which will provide a thermal summer refugia area. A technical meeting with DFO will be requested to clarify and discuss the comment. The Fish Habitat Offsetting and Compensation Plan will be revised for the final EIS/EA, following discussions with DFO. [5] Gammons, C.H., Harris, L.N., Castro J.m, Cott, P.A., and Hanna, B.W. 2009. Creating lakes from open pit mines: processes and considerations – with emphasis on northern environments. Can. Tech. Rep. Fish. Aquat. Sci. 2826: ix + 106p. [6] Golder, 2017. Literature review of global pit lakes:	potential restoration of fish habitat in other waterbodies or watersheds, and the use of complementary measures, as defined under the Policy for applying measures to offset adverse effects on fish and fish habitat under the Fisheries Act.1 Any mitigation or offsetting measures to be considered in the environmental assessment should be clarified in the final EIS.		

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
				Pit Lake – Case studies. Unpub. Report Number:1777450.			
IAAC -FH-018	Appendix F, Section 8.1.3 Reintroduction of Lake Sturgeon	DFO has previously communicated with the Proponent (March, 2021) regarding the difficulty of offsetting in the undisturbed area of Springpole Lake. At first glance, supporting recovery of Lake Sturgeon, a provincial species at risk, appears to be a viable option but given the age of maturity of lake sturgeon, determining success for the proposed offsetting could take decades (see below). From the *Policy for applying measures to offset adverse effects on fish and fish habitat under the Fisheries Act*:[7] <u>Chemical or Biological Manipulations</u> *These measures should be used only when the other types of measures to offset are not available, and only under specific circumstances, such as where the site-specific issues are well understood, the limitations to fish production are known, and fisheries management objectives are clear for the fishery.* There is no indication that the site-specific issues limiting lake sturgeon recovery are well understood in the draft EIS and any rationale provided should be scientifically defensible and include evidence of the successful application of the measure under similar conditions (e.g., similar aquatic ecosystems). Any proposed framework for lake sturgeon reintroduction should include investigation into these specific factors to ensure the stocking efforts have a high probability of success. Collection of additional field data may be necessary to identify gaps in the information available for these populations. Identifying habitat or water quality limitations may reveal physical offsetting options that could support a reintroduction program. Monitoring the success of a lake sturgeon reintroduction program should also be detailed in the Offsetting Plan given the slow maturing nature of lake sturgeon (up to 25 years). In order to determine if stocking efforts are successful, there would need to be evidence of successful recruitment and sustainability, one generation of lake sturgeon stocked until sexually mature would likely extend past the life of the mine. As per the Offsetting Policy, the criteria for measuring success that are linked to this objective and benchmarks for measuring progress must be clearly articulated. This will allow DFO to evaluate whether the risks of failure are worth the potential gain. These plans should be reviewed and supported by provincial regulators (Ministry of the Environment, Conservation and Parks and Ministry of Natural Resources and Forestry) of the Endangered Species Act as well as Indigenous communities with land and harvesting rights in the areas proposed.	Update offsetting plan following advice from DFO, to help build confidence in the environmental assessment that mitigation is feasible and that any residual effects would be justified in the circumstances. Ensure that the proposed plan is reviewed and supported by DFO, provincial regulators (Ministry of the Environment, Conservation and Parks and Ministry of Natural Resources and Forestry) of the *Endangered Species Act* as well as Indigenous communities with land and harvesting rights in the areas proposed.	Details regarding Lake Sturgeon restoration will be included as part of the Fish Habitat Offsetting and Compensation Plan in the final EIS/EA. The details will include the likely causes of Lake Sturgeon decline, potential sources of brood stock, and monitoring objectives and methods, taking into account the long duration of the measure. Additional eDNA sampling is planned at historic spawning locations in 2023 to assess if the sites are currently being used and would offer a potential source for brood stock. The development of the draft Lake Sturgeon Restoration Plan will solicit advice and input from both DFO and the Provincial regulators.	The Agency acknowledges that a technical meeting with DFO occurred on February 22, 2023. The Proponent indicated that it would review its proposed offsetting measures—including the lake sturgeon restocking—in consultation with DFO and may pursue alternative measures, including potential restoration of fish habitat in other waterbodies or watersheds, and the use of complementary measures, as defined under the Policy for applying measures to offset adverse effects on fish and fish habitat under the Fisheries Act.1 Any mitigation or offsetting measures to be considered in the environmental assessment should be clarified in the final EIS.		EIS Sections 6.10.1.2, 6.10.2.1 Appendix F Sections 1.4, 8.3

Table C-1.2: First Mining Gold Response to the Federal Information Requirements related to the Springpole Gold Project Draft Environmental Impact Statement / Environmental Assessment

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		[7] https://www.dfo-mpo.gc.ca/pnw-ppe/reviews-revues/policies-politiques-eng.html					
IAAC-FH-019	Appendix F Section 8.1.8	"The intent of the strategic stocking program is to maintain the existing level of fish productivity in Springpole Lake during construction, operations and early closure activities." Through the environmental assessment process, baseline information collected on the lake includes fisheries abundance data using a standardized protocol (Broadscale Monitoring). Stocking fish during mine operation will bias the ongoing fisheries abundance monitoring which will impair the ability of the Proponent to verify the effects assessment on the lake as described in Section 9 of the EIS Guidelines: "A follow-up program is designed to verify the accuracy of the effects assessment..."	Consider the potential for fish stocking to bias ongoing fisheries abundance monitoring and update the offsetting plan to help build confidence in the environmental assessment that mitigation is feasible and that any residual effects would be justified in the circumstances.	Currently, the proposed Fish Habitat Offsetting and Compensation Plan (Appendix F of the draft EIS/EA) does not apply any habitat offset credit to the strategic stocking program. It was included as a means of mitigating a lost of fish production during the mine life, and as a potential capacity building opportunity for Indigenous communities with an interest. The intent was that only brood stock collected annually from Springpole Lake would be cultured, and only to limits that are justified by the ongoing fish monitoring data. The measure will only be taken forward into the final Plan with the support of Indigenous communities; and a clear vision that would maintain the genetic stock and biodiversity of Springpole Lake.	The Agency acknowledges that a technical meeting DFO occurred on February 22, 2023. The Proponent indicated that it would review its proposed offsetting measures—including the strategic stocking program—in consultation with DFO and may pursue alternative measures, including potential restoration of fish habitat in other waterbodies or watersheds, and the use of complementary measures, as defined under the Policy for applying measures to offset adverse effects on fish and fish habitat under the Fisheries Act.1 Any mitigation or offsetting measures to be considered in the environmental assessment should be clarified in the final EIS.		Appendix F Section 1.4
IAAC-FH-020	Appendix F Table 8-3	There are critical components that should be addressed explicitly in future iterations of the fish offsetting plan. The collection of consistent and sufficient baseline data is critical to provide a comparison to post-construction monitoring data, and to effectively measure success. For each specific offsetting measure, indicators, metrics, and success targets need to be defined based on the objective of the measure. The monitoring design should be described adequately, and include considerations for statistical power, effect size, and uncertainty. As an example, the construction of a spawning shoal should be based on the type of monitoring that will occur. Indicators could include a variety of physical and biological endpoints that could include spawning habitat criteria, as well as presence of spawning fish, eggs, and young of year. The targets for these would vary based on the location, and these criteria and the targets would not be relevant for a project like restoring fish passage at a road crossing. Any fish stocking program will require a comprehensive monitoring program beginning with adequate baseline to determine viability, and will need to go beyond maintaining species abundance to understand the	Refer to DFO Canadian Science Advisory Secretariat documents[8,9] for use in the development of a comprehensive and defensible monitoring program. [8] Karen E. Smokorowski et al. 2015. Assessing the Effectiveness of Habitat Offset Activities in Canada: Monitoring Design and Metrics. Canadian Technical Report of Fisheries and Aquatic Sciences 3132. Fisheries and Oceans Canada. Available at: https://publications.gc.ca/collections/collection_2015/mpo-dfo/Fs97-6-3132-eng.pdf [9] Douglas C. Braun et al. 2019. A review of functional monitoring methods to assess mitigation, restoration, and offsetting activities in Canada. DFO Canadian Science Advisory Secretariat Research Document	The 2022 baseline studies included a standardized Broadscale Monitoring Program (BsM) as per the MNRF protocol and a hydroacoustic fish community study. Both studies are quantitative, and in the case of the BsM, a provincial standard for monitoring lakes in Ontario. Both can be used for future monitoring of lake-wide fish population and distribution trends (effectiveness monitoring) consistent the DFO Science Advisory document. Additional details of specific success metrics will be added to Section 8 of the Fish Habitat Offsetting and Compensation Plan in addition to those currently shown in Table 8-3. l Applications for permits for measure-specific baseline data collection such as Lake Trout spawning surveys within existing habitat have not been approved by the Red Lake District MNRF due to concerns of impacting spawning activities. Future quantitative and standardized studies that	Acknowledged.		Appendix F: Sections 1.4, 8.9

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		dynamics, limitations, and to be able to implement contingencies if the measure is ineffective.	2019/057. Available at: https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/40856720.pdf	meet the referenced documents may be conducted based on additional discussion with DFO and with MNRF approval.			
IAAC-FIR-AM-001	9.13 Cyanide Spill During Transportation (p.9-17 to 9-18)	In Section 9.13, the Proponent indicated the potential use of liquid cyanide on days that solid cyanide is in short supply. However, the frequency of this shortage has not been provided. Indicate the intent to use liquid cyanide in the risk assessment.	Provide a risk assessment for a spill of liquid cyanide.	Cyanide is proposed to be transported to site in a pellet or similar solid form (Table 4.6-2 of the draft EIS/EA). Liquid form cyanide is not proposed for the Project. Use of liquid cyanide is only considered in Section 9.13 (malfunctions and accidents) to be conservative in the effects assessment, as it could pose a higher risk in the case of an accident. Liquid cyanide would only be used in the event that solid cyanide is temporarily unavailable as indicated, and with the inclusion of appropriate additional safeguards as needed. Due to the safety and operational measures that will be put in place for the Project, there is no reasonable likelihood that a cyanide spill would occur during transportation to the Project	Acknowledged. The Proponent is encouraged to ensure that this clarification is made in the next version of the EIS.	This will be clarified in the final EIS/EA.	EIS Section 9.15.1
IAAC-FIR-CE-001	7.2	The Proponent's cumulative effects methodology appears to be consistent with Agency Guidance; however, the Proponent anticipates that the majority of residual effects would be “fully reversible” and asserts that “there would be no residual effects during the post-closure phase”, and has, therefore, excluded this phase from the cumulative effects assessment. Other comments in this table call into question the Proponent's assessment of reversibility and residual effects.	Should the Proponent's position regarding residual effects in the post-closure phase change, the cumulative effects assessment must be updated accordingly.	The cumulative effects assessment will be reviewed and updated, as applicable, in the final EIS/EA.	Acknowledged.		EIS Section 7.13, Table 7.13-1
IAAC-FIR-CE-002	Table 7.13-1	Table 7.13-1 includes a column marked “Spatial and Temporal Overlap”. For the Air Quality valued component, this column is marked as “yes”; however, in section 7.3.2, the Proponent asserts that residual effects from the Project will not spatially overlap with the potential residual effects from other projects.	Use separate columns to indicate when a residual effect from the Project is anticipated to have spatial or temporal overlap with effects from other Projects.	As noted in Section 7.3.2 of the draft EIS/EA, there is no predicted spatial and temporal overlap between the air quality residual effect for the Project and the Trout Lake Forest Management Plan. Table 7.13-1 will be updated to be consistent with Section 7.3.2. The spatial and temporal overlap column in Table 7.13-1 will be split into separate spatial and temporal overlap columns in the final EIS/EA to provide additional clarity.	Acknowledged.		EIS Section 7.13 Table 7.4-1
IAAC-FIR-GEN-001	Sections 6.19 to 6.25	1. In several locations in the draft EIS, the Proponent notes that information on Indigenous land use is still being collected; further, the Proponent has signalled its intent to support an Anishinaabe-led impact assessment process proposed by the Shared Territory Protocol Nations. As such, the Agency acknowledges that the draft EIS was not fully informed by Indigenous knowledge. Further information requirements may arise as more information becomes available. For instance, if the Proponent determines that Indigenous communities navigate in the portion of Springpole Lake that is proposed to be dewatered, additional information on potential impacts to the exercise of Indigenous rights may be required. Similarly, if drinking water resources or areas of high frequency for	1. Continue to collect information on Indigenous and non-Indigenous land and resource use and socio-economic conditions to determine potential effects to Indigenous peoples (refer to paragraph 5(1)(c) of the Canadian Environmental Assessment Act, 2012 (CEAA 2012)) and effects due to changes to the environment that are directly linked or necessarily incidental to a federal authority’s exercise of a power or performance of a duty or	1. FMG is continuing to work with Indigenous communities on additional Traditional Land and Resource Use information sharing where it is made available. The final EIS/EA will include non-confidential new information that may be provided. This information will be used to determine potential effects on Indigenous peoples and effects that are linked or incidental to a federal authority’s exercise of power or performance of a duty or function that would permit carrying out the Project.	1. Acknowledged; however, the Agency notes that the Proponent’s response does not refer to non-Indigenous populations. The Agency reminds the Proponent that non-Indigenous populations may experience effects due to changes to the environment that are directly linked or necessarily	1. Information has been collected that will inform the assessment of effects to non-Indigenous populations due to changes in the environment as required by 5(2)(c). The draft EIS/EA includes this assessment in Section 6.25.4 and will be	EIS Sections 6.26, 6.20, 6.20.1.2., 6.24.1.2, 6.17.2, Appendix D

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
		traditional use are identified, new information may be requested about environmental changes. 2. Further, as has been previously communicated to the proponent, the assessment of potential effects to any such Indigenous valued components may require further information on biophysical valued components to describe the pathways of effects from the Project to the valued component via some change to the environment. For instance, should a spring be used for drinking water, groundwater monitoring may be required. Or if areas of high frequency use for traditional purposes are identified, new information questions may arise about air quality. The above caveats also apply to any changes to the environment that are directly linked or necessarily incidental to a federal authority's exercise of a power or performance of a duty or function that would permit the carrying out of the Project. For instance, would a decision under the Canadian Navigable Waters Act or the Fisheries Act enable changes that would impact the economic conditions of non-Indigenous tourism outfitters? 3. Finally, the Project and its potential effects must also be informed by Indigenous knowledge.	function that would permit the carrying out of the Project (refer to subsection 5(2)(c) of CEAA 2012). 2. Ensure that the biophysical effects assessment is sufficiently scoped to enable the assessment of pathways of effects from the Project to Indigenous and non-Indigenous receptors. Additional information requirements about the biophysical data collection program may arise once the human context is considered. 3. To reduce surprises in the final EIS, share any new Indigenous knowledge that is provided regarding the Project with the Agency in real time, while keeping with appropriate ethical standards and obligations of confidentiality. [Refer to EIS Guidelines Part 1, Section 4.2.4. Confidential information, for considerations around the treatment of confidential information]	2. The biophysical effects assessment is scoped to facilitate incorporation of additional information regarding potential Indigenous and non-Indigenous receptors. As information is collected, it is distributed to relevant biophysical disciplines for incorporation into the effects assessment which may identify the need for additional data collection. 3. FMG will continue to share and discuss updates regarding engagement with Indigenous communities, including related to Traditional Knowledge, with the Agency on a regular basis.	incidental to a federal authority's exercise of a power or performance of a duty or function that would permit the carrying out of the Project. The Proponent must ensure that it has sufficient information on non-Indigenous land and resource use and socio-economic conditions to complete analysis required by section 7.3.5 of the EIS Guidelines. For instance, would a decision under the Canadian Navigable Waters Act or the Fisheries Act enable changes that would impact the economic conditions of non-Indigenous tourism outfitters? 2. Satisfactory. The Agency notes that this comment stands as general guidance. 3. The Agency acknowledges receipt of a Record of Consultation, dated April 2023, and will expect to receive updates on future engagement efforts. The Agency notes that this comment stands as general guidance.	updated for the final EIS/EA, with additional information that has been collected since the submission of the draft EIS/EA. 2. Acknowledged. 3. Acknowledged.	
IAAC -FIR-GEN-002	Section 6.25 Federal Considerations Section 13 Conclusions Table B-2-1: … Concordance Table for the [EIS] Guidelines …	The EIS Guidelines require a table that summarizes the effects assessment including each potential effect, the associated mitigation measures, the residual effect, and the significance characterization for each residual effect (in federal jurisdiction – considering sections 5(1) and 5(2) of CEAA 2012). The EIS Guidelines also require a second table to summarize all mitigation measures and commitments made by the Proponent that will more specifically mitigate any significant adverse effects of the Project on VCs. The Agency will consider the Proponent's identified mitigation measures to form the basis of enforceable conditions of an EA decision statement, should the Project be allowed to proceed. These tables have not been provided. Table B-2-1 indicates these two	1. When preparing the table summarizing the effects assessment, include a separate row for each pathway of effect on each VC. This may lead to numerous rows about pathways of effects on each VC. (i.e., do not list all potential effects on a VC in one cell, and all mitigation that supports the VC in the next cell.) Ensure that there is clarity regarding which mitigation measures are designed to address each pathway of effect, resulting in specific residual effects and characterize (magnitude, frequency, etc)	1. A table summarizing the effects assessment will be included with the final EIS/EA. 2. A table will be provided with the final EIS/EA identifying key mitigation measures to avoid significant adverse effects. 3. Draft tables will be provided to the Agency for comment prior to the submission of the final EIS/EA.	Acknowledged. The Agency requests an anticipated time frame for the Proponent to submit the draft tables for Agency review.	A template for the effects assessment table and mitigation measures table is attached, for review and comment. Input received from IAAC will be considered in finalizing these tables for the final EIS/EA. These tables will be populated during the preparation of the final EIS/EA.	EIS Sections 6.2 to 6.26 (Proposed Mitigation Measures Tables), and Section 15

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		tables will be provided in the final EIS. To avoid questions and delays at the final EIS stage, suggestions are provided.	each residual effect for each pathway of effects. For added clarity, consider identifying priority areas of uncertainty with the environmental assessment predictions and recommend objectives for the follow-up program in the same row, for each pathway of effect as applicable. 2. When preparing the second table about mitigation measures that mitigate significant adverse effects, be clear about which mitigation measures are key to avoiding a significant effect. 3. Provide a draft of these tables for Agency review and feedback prior to submitting a final EIS.				
IAAC -FIR-GEN-003	Section 6.25 Federal Considerations	Generally, the perceived goal of Section 6.25 is a good idea – a standalone section that points federal reviewers to the other broader sections where the specific federal EISG requirements for federal VCs are met. The section and its tables would be more helpful if the content was more deliberate and clearly linked back to federal VCs and EISG requirements (particularly for Indigenous peoples and direct or incidental effects related to federal decisions – comment may also apply to some biophysical VCs). Consider adding a column with the EISG requirements that are addressed by summary bullets in the effects and mitigation tables, to be sure that the content deliberately scopes to federal requirements. Extra information is not harmful, but it should at least include the information of relevance to the federal assessment. Specific examples are provided in the IRs for the socio-economic conditions and cultural heritage of Indigenous peoples, and a general comment about direct and incidental effects.	1. Update Table 6.25-1 to more explicitly address the federal information requirements for federal VCs, and the scope of the federal assessment, by deliberately pulling in and pointing to specific information that responds to the EIS Guidelines. 2. Consider adding a column with the EIS Guideline requirements to help guide your thinking.	1&2 The assessment of potential effects on areas of federal jurisdiction will be clarified to illustrate how the requirements of the federal EIS guidelines have been met in the final EIS/EA.	Acknowledged.		EIS Section 6.25.1, 6.25.2, Table 6.10-10, Table 6.11-5, Table 6.12-6, 6.13.4, Table 6.14-4, Table 6.15-5, Table 6.16-4, Table 6.18-8
IAAC -FIR-GEN-004	Section 6.25 Federal Considerations Other info throughout Section 6	Section 7.5 of the EIS Guidelines requires an assessment of the significance of VCs within federal jurisdiction, including those VC categories referred to in section 5(1) and 5(2) of CEAA 2012. The Agency will provide advice to the Minister of Environment and Climate Change about each of these valued components, including the significance of any residual effects. Section 6 of the draft EIS includes a characterization of residual effects and significance determination for broad VC categories that are designed to address both provincial and federal requirements. The inclusion of Section 6.25 is helpful to clarify linkages to the scope of the federal assessment. A characterization of residual effects and determination of significance on each VC within federal jurisdiction (in Section 6.25) would support efficient review and clear storylines for the Agency's advice to the Minister.	Incorporate a characterization of the residual effect and determination of significance into Section 6.25 ('Federal Considerations') to present a clear, traceable story for each VC within federal jurisdiction. [Refer also to row GEN-02 for tables required in Section 8 of the EIS Guidelines.]	The final EIS/EA will include a characterization of residual effects and determination of significance on each valued component within federal jurisdiction.	Acknowledged.		EIS Section 6.25.1, 6.25.2, Table 6.10-10, Table 6.11-5, Table 6.12-6, 6.13.4, Table 6.14-4, Table 6.15-5, Table 6.16-4, Table 6.18-8
IAAC -FIR-GEN-005	Section 6.25 Federal Considerations	Section 7.1.11 and Section 7.3.5 of the EIS Guidelines outline the requirements for assessing direct or incidental effects linked to other federal decisions, including methodology and examples of valued components (VCs) to be considered. Subsection 5(2) of the Canadian	1. In Section 6.25.4, describe or refer to the federal decisions (powers, duties or functions) that would enable the project to proceed (as has been done in Section 11.1	1. Federal decisions (powers, duties or functions) that would enable the Project to proceed will be described in Section 6.25 of the final EIS/EA.	Acknowledged.		EIS Section 6.25.1, 6.25.2, Table 6.10-10, Table 6.11-5, Table 6.12-6, 6.13.4,

Table C-1.2: First Mining Gold Response to the Federal Information Requirements related to the Springpole Gold Project Draft Environmental Impact Statement / Environmental Assessment

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
		Environmental Assessment Act, 2012, (CEAA 2012) defines direct and incidental effects, and is focused on effects that are not already considered under section 5(1) of CEAA 2012. Section 6.25.4 of the draft EIS (Changes to the Environment Directly Linked or Necessarily Incidental to Federal Decisions) appears to include a mix of effects associated with the carrying out of the Project as a whole, as well as direct and incidental effects that are linked to federal decisions. The section often refers to the geographic extent of the whole project and does not clearly define the geographic scope of the activities that are linked to federal decisions. The Agency must be able to determine which changes to the environment are linked to federal decisions, and the associated geographic scope of the effect, to ensure that the Agency's advice to the Minister of Environment and Climate Change is informed by evidence and traceable logic.	of the draft EIS). 2. Explicitly describe what activities, changes to the environment, and effects of those changes are directly linked or incidental to federal decisions (such that they are discernable within the lists of all project effects on VCs). 3. Clarify the geographic scope of activities enabled by federal decisions, and related changes to the environment and effects, relative to the whole Project Development Area. This can be through a table and map (as outlined in the EIS Guidelines) or another clear method. Identify and justify the study areas. 4. Specifically characterize any direct or incidental effects (or provide rationale for why there are no direct or incidental effects) on: a. Species at risk including caribou, wolverine and bats, and b. Socio-economic activities and conditions including local trapline areas, baitfish harvest areas, bear management areas, remote fishing lodges including any related changes to the fishery and the experience of remoteness, and any other resource-based tourism operators, as well as recreational activities such as fishing and hunting, and the ability to navigate for these purposes.	2. The activities, changes to the environment, and effects of those changes are directly linked or incidental to federal decisions will be described in the final EIS/EA. 3. The geographic scope of the activities associated with federal decisions will be described, with applicable rationale, in the final EIS/EA. 4. Applicable direct and incidental effects from activities associated with federal decisions will be characterized in the final EIS/EA, and specifically consider federal species at risk, resource-based activities, recreational-based activities, and the associated navigation.			Table 6.14-4, Table 6.15-5, Table 6.16-4, Table 6.18-8.
IAAC -FIR-GEN-006	Section 12 Follow-up and Monitoring Table B-2-1: … Concordance Table for the [EIS] Guidelines …	Insufficient information was provided about a preliminary follow-up program for the Agency to identify priority areas and propose conditions for the Decision Statement. Section 12 of the draft EIS indicates that more information about the follow-up programs will be developed after the environmental assessment (which is too late); however, Table B-2-1 indicates that more information will be provided in the final EIS. More information is required in the final EIS. The Agency will consider the identified follow-up measures to form the basis of enforceable conditions of an EA decision statement, should the Project be allowed to proceed.	1. Clearly identify any uncertainties with the EA predictions and effectiveness of mitigation and recommend areas of uncertainty that would be a priority for a follow-up program (using considerations in EIS Guidelines as well as considering the potential for a significant adverse environmental effects and the consequences if predictions are wrong). 2. Provide a preliminary follow-up	1. A preliminary follow-up program will be included in the final EIS/EA. The program will focus on priority valued components as determined through the effects assessment for the Project, where uncertainty in the effects predictions and/or effectiveness of the proposed mitigation measures warrants follow-up. The objective of the specific follow-up programs for select valued component will be described. 2. In addition to the specific follow-up programs	Acknowledged.		EIS Section 12

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
		A follow-up program is designed to verify the accuracy of the effects assessment and to determine the effectiveness of the measures implemented to mitigate the adverse effects of the project. Proponents are to identify areas of uncertainty that warrant special attention in a Follow-up Program. The objectives of the follow-up program should explicitly address those areas of uncertainty. Section 12 of the draft EIS did not clearly identify uncertainties state objectives designed to address the uncertainties. Where there is uncertainty about effects outcomes, the Proponent will show evidence of detailed follow-up programs to identify change, and identify adaptive management measures that will be applied. Section 12 of the draft EIS did not provide this information. Follow-up programs are different from monitoring programs which ensure proper measures and controls are in place to decrease the potential for environmental degradation. Section 9.2 of the EIS Guidelines requires an outline of a monitoring program including regulatory instruments that require monitoring. The concepts of follow-up and monitoring programs are not clearly discernable in Section 12 of the draft EIS. For additional context, proponents are encouraged to review existing Follow-up Programs in existing Decision Statements and are expected to provide sufficient and clear information in the draft EIS to support prioritization of uncertainties and prepare meaningful conditions. Please note that the Agency will likely have additional comments about the follow-up program upon review of the proposal.	program with the information required in the EIS Guidelines, including clear objectives for selected VCs, information about adaptive management, and information about how results will be communicated. 3. Clearly differentiate proposed follow-up programs from standard environmental monitoring required for permitting and for general environmental management on site.	for select valued components, further detail on how adaptative management and the associated communication strategy will be described in the final EIS/EA. 3. The final EIS/EA will differentiate proposed follow-up programs from environmental monitoring, such as required by environmental approvals and for regulatory compliance. Having said that, in some cases, one plan may be developed to serve multiple purposes during the approvals phase.			
IAAC-FIR-GEN-007	Section 4.9, Section 4.15, Table 11.1-1	In the Project Description, the Proponent notes that an airstrip may be developed to support site access. An airstrip has not previously been included among the project components. The potential effects of any new project components must be assessed. Location of all project components must be provided on maps. Should there be uncertainty with the plans for an airstrip, the Proponent can describe and assess the effects of alternatives in the final EIS: a project with an airstrip, and a project without an airstrip. Sufficient detail is required for a full assessment.	1. Provide further information to determine whether the proposed airstrip is a project component or is incidental to the Project. If the airstrip is deemed to be part of the designated project, assess the potential effects in the Environmental Impact Statement. 2. Provide the proposed location (or potential locations) of the proposed mine airstrip and ensure that it is included on any site maps.	1. An airstrip may be constructed onsite (for use by Dash-8 type aircraft) to support up to 2 flights per week during construction, operation and closure phases of the Project. The effects of the construction and operation and closure of the airstrip on air quality, noise and wildlife will be assessed in the final EIS/EA. 2. The location is proposed to be within the existing project development area, co-located along a section of the mine access road and outside of Caribou Category 1 habitat. Site investigations are ongoing and further information will be provided in the final EIS/EA	Acknowledged; however, the Agency encourages the Proponent to discuss the airstrip and frequency of flights, and their potential effects on wildlife including caribou, in any technical working group meetings, external participant meetings, and future interim technical submissions. This will help ensure potential effects on wildlife are fully understood and taken into account in discussions about suitable mitigation, to avoid surprises in the final EIS review period.	The airstrip is being introduced during engagement opportunities with external participants. For example, during a meeting with IAAC, MECP and MNRF regarding comments received on the assessment of Caribou, the airstrip was described to participants and input was sought on potential effects to wildlife from the airstrip.	EIS Sections 5.17.2, 6.12.3, 6.13.3

Table C-1.2: First Mining Gold Response to the Federal Information Requirements related to the Springpole Gold Project Draft Environmental Impact Statement / Environmental Assessment

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
IAAC - GHG-001	Appendix I Greenhouse Gas Assessment Section 3.0 - Sources, Sinks, and Reservoirs (p. 3-1)	The Proponent is required to quantify GHG emissions for all phases of the Project. Some GHG emissions such as the construction-phase emissions from in-pit blasting, and emissions during the "closure and decommissioning" phase (onsite fuel combustion and purchased electricity) are not fully quantified in Appendix I. These emissions are only noted for qualitative assessment in Appendix I, Table 3-1.	Quantify the emissions for all phases, including the noted emissions sources.	GHGs were quantified for all phases where data were available at the time of the draft EIS/EA preparation. The preliminary fuel consumption and electricity forecasts for the Project were available up to the end of operations, Year 13. GHG sources for the closure phase will be considered and emissions estimated where it is reasonable to do so for the final EIS/EA. Closure phase GHG emissions and Land Use Land Use Change Forestry (LULUCF) will be described and estimated in the final EIS/EA. Blasting emissions during construction were estimated at 994 tonnes CO2e (2% of construction GHGs).	Acknowledged.		EIS Section 6.4.1.2, 6.4.1.3, Appendix I-1 Table 3-1, Attachment Table A2.
IAAC - GHG-002	Appendix I Greenhouse Gas Assessment Section 5.4 - Scope 1 Mine Access Road and 230 kV Transmission Line Construction (p. 5-2)	The Proponent has estimated construction emissions for the mine access road using an emission factor "based on an example road construction project in Canada's north". However, no further information on this emission factor was provided. Furthermore, GHG emissions associated with the 230 kV transmission line construction were not quantified as information on the construction fleet and the schedule was not available. As a result, the Project's construction phase GHG emissions have been underestimated.	1. Provide a justification for the estimates and emission factors used in Section 5.4 of Appendix I as required by Section 7.2.1 of the EIS Guidelines. 2. Rationalize the use of emission factors from other projects and applying them to the Project. Provide additional details on these emission factors, the assumptions made, and the associated uncertainty with applying them to the Project. 3. Discuss the details of the construction of the 230 kV transmission line and quantify the related GHG emissions.	1. The estimate was developed by creating a representative construction fleet for a northern road project using professional judgement. Detailed calculations will be provided in the final EIS/EA. 2. See the response to question 1. Details regarding construction fleets are not available at this stage of project design and therefore a similar project was used to approximate GHG emissions. This estimate will be updated in the final EIS/EA. 3. An estimate of associated GHG emissions will be included in the final EIS/EA which reflects a more developed construction schedule and fleet.	Acknowledged.		EIS Section 6.4.1.2, Appendix I-1 Section 4.4.1, Attachment Table A6
IAAC - GHG-003	Appendix I Greenhouse Gas Assessment Table 6-1	In some sections of the draft EIS, the access road construction emissions were calculated using a 15 km access road length; however, elsewhere in the EIS, including in Appendix I Table 6-1, the length is stated as 17 km.	Clarify the access road length, and ensure that the correct length is used for estimating the GHG emissions associated with the construction of the access road.	The length of the access road is 17 km. Table A1 of the Greenhouse Gas Assessment (Appendix I of the draft EIS/EA) will be updated in the final EIS/EA to reflect this.	Satisfactory.		Appendix I-1 Section 4.4.1
IAAC - GHG-004	Appendix I Greenhouse Gas Assessment Table A1: GHG Emissions	In Table A1 of Appendix I, the "Maximum Year" emissions value for "Blast - Total CO2eq" does not match any of years -2 to 13. The value for emissions from blasting in Year -1, includes only a value for emulsion but no value for Blast – Total CO2eq.	Identify the year used for the Maximum Year Column in Table 6-1. Validate the calculation of Blast – Total CO2eq.	The maximum blasting CO2e emissions is predicted to be 2,452 tonnes CO2e in year 5. The calculation will be validated in the final EIS/EA to show (pending updated data) 994 tonnes CO2e for year -1 blasting emissions.	Satisfactory.		Appendix I-1 Attachment Table A1

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	Summary Table						
IAAC - GHG-005	Appendix I Greenhouse Gas Assessment Section 8.0 - Summary (p. 8-1)	In regards to the emission estimates, the Proponent displayed the aggregate emissions rates by emission source (diesel exhaust emissions from construction off-road equipment, etc.) but did not provide the individual vehicles and engine description.	Include individual vehicles and engines descriptions (engines type, engine make/model, model year, power rating, fuel type, etc.); detail any assumptions regarding the activity data (e.g.., hours per day), the emissions factors referenced for the emissions estimates and, provide the methods along with the sample calculations used.	GHG emission estimates were based on preliminary fuel consumption forecast which is accepted practice for completing the estimations. Detailed equipment information was not available to support the estimation for the draft EIS/EA, and is not expected to be available to support the final EIS/EA.	In the absence of detailed equipment information, ECCC recommends the proponent commit to using best available technologies, such as using Tier 4 vehicles during all phases of the Project or provide justification on why it was not possible.	Estimates have been based on preliminary fuel consumption forecast which is an industry-accepted practice for completing the estimations at this stage. It should be noted that low-carbon alternatives will continue to be assessed for economic and technical feasibility as the Project progresses to detailed engineering.	EIS Section 6.4 Appendix I-2
IAAC - GHG-006	Appendix I Greenhouse Gas Assessment Section 5.3 - Scope 1 Land-Use Change (p. 5-2) Section 6.1 - Summary of Greenhouse Gas Quantification (p. 6-1)	In several places, the Proponent has considered direct emissions from land use change as being separate from the other direct emissions (for example, in Appendix I Tables 6-2, 6-3, A-1, etc.). However, land use change is often excluded from the Proponent's direct GHG emissions calculation. Direct GHG emissions should include emissions from land use change. [For guidance, refer to Section 3.1.1. of the Strategic Assessment of Climate Change (SACC), and 2.1.1.2 of the draft technical guide.] Elsewhere in Appendix I, the Proponent lists impacts to carbon sinks, such as "loss of CO2 uptake" as an emission related to land use change. ECCC notes that there is a distinction between direct emissions due to land use change and impacts to carbon sinks. For guidance on impacts to carbon sinks, refer to Section 5.1.2 of the SACC and Section 4 of the draft technical guide.	1. Discuss and clarify the emissions estimates of land use change and the impacts on carbon sinks. 2. Estimate the impact on carbon sinks in tonnes of carbon, rather than tonnes CO2-eq.	1. Emissions from land use change (LUC) will be included in the direct emissions and additional discussion regarding LUC will be included in the final EIS/EA. 2. The impact to carbon sinks will be present both as carbon and CO2. The Strategic Assessment of Climate Change guidance will be considered. This Project is subject to the federal EIS Guidelines for the Springpole Gold Project, and requirements under CEAA, 2012.	Satisfactory.		Appendix I-1 Sections 4.4.3, 6.1
IAAC - GHG-007	Appendix I Greenhouse Gas Assessment Section 5.0 - Section 7.1	The Proponent notes that the GHG assessment includes estimation of the GHG emission intensity, and that the federal Output-Based Pricing System benchmark of 7.7 t CO2-eq./kg gold may be exceeded; however, it does not appear that GHG emission intensity was reported in the draft EIS or in Appendix I. For reference, Equation 2 of the SACC defines Emission Intensity as: Emission Intensity = Net GHG Emissions / Units Produced	Provide the calculation for the Project's GHG emission intensity.	Yearly and Project total GHG intensity will be included in the final EIS/EA. The projected total GHG intensity for the Project based on the data available for the draft EIS/EA, was estimated as: Scope 1 = 723 kt/100.3 tgold = 7.2 tCO2e/kggold Scope 1, 2 = 811kt/100.3 tgold = 8.1 tCO2e/kggold Scope 1, 2, LUC = 852kt/100.3 tgold = 8.5 tCO2e/kggold	Satisfactory.		Appendix I-1 Sections 4.4.4, 6.1.1.
IAAC -	Section 6.4.3 - Mitigation	It is recognized that the connection to the provincial electrical grid will help reduce the potential energy-related greenhouse gas (GHG) emissions of	Recommendation: Provide further detail on the implementation schedule of emerging	The Greenhouse Gas Assessment in Appendix I of the draft EIS/EA provided consideration of the	Acknowledged.		EIS Section 6.4.1.2

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GHG-008	Measures (p.6-70) Appendix I Greenhouse Gas Assessment Section 7.0 - Greenhouse Gas Monitoring and Reporting (p.7-1)	the Project, and that the Proponent will give future consideration to the "potential electrification of fleet vehicles, trolley-assist technology and the use of lower emission vehicles, including in the Project detailed design". The Proponent asserts that "the GHG assessment [was] prepared following the Strategic Assessment of Climate Change (SACC) … where it is compatible with the Project EIS Guidelines". Section 3 of the draft technical guide related to the SACC: Guidance on quantification of net GHG emissions, impact on carbon sinks, mitigation measures, net-zero plan and upstream GHG assessment would require further details on GHG mitigation measures, such as an implementation schedule for emerging technologies when they become technically and economically feasible.	technologies when they become technically and economically feasible.	potential effect of the Project on climate change in terms of the potential GHG emissions and land use changes associated with the Project, per the approved Amended Terms of Reference (provincial) and the requirements under CEAA, 2012 (federal). Further details on the implementation schedule of emerging technologies will be included in the final EIS/EA, if the information is available.			
IAAC - GHG-009	Section 6.4.5 - Significance of Residual Effects (p. 6-72 to 6-73)	With regard to GHG emissions, the proponent states that "the residual effects are predicted to be fully reversible (Level I), as the GHG emissions will cease once the Project activities cease and the area is reclaimed." This statement is unsupported. The proponent proposes measures to reduce GHG emissions, but does not propose to achieve negative emissions or sequestration. The proposed measures would not reverse emissions released throughout the Project.	Remove this statement and re-evaluate the characterization of the residual effect.	The approved Amended Terms of Reference (ToR) require quantification of GHG emissions, consistent with the Canadian Environmental Assessment Act, 2012. However, the quantification of GHG emissions does not require adherence to the guidance provided by the federal Strategic Assessment of Climate Change. Section 6.4.5 of the draft EIS/EA will be revised in the final EIS/EA to reflect that the Project's residual effects on atmospheric GHGs are not fully reversible, however relative to Canada's inventory and commitments under the Canadian Net-Zero Emissions Accountability Act, the Project's annual contribution to Canada's emission inventory will be fully reversible at closure. The cumulative effects assessment in Section 7 of the draft EIS/EA will be updated to be consistent with Section 6.4, as necessary.	Unsatisfactory. ECCC previously raised concerns with the Proponent's characterization that the residual effects of the project are predicted to be fully reversible. ECCC did not support this statement as the Project will emit during operations, and the Proponent has not proposed to offset or reverse those emissions by sequestration or other means. It should also be noted that while the Proponent's GHG emissions will cease at the closure phase of the proposed project, the GHG emissions that have already been discharged into the atmosphere will remain there between 300 to 1,000 years. Thus, the effects from these emissions are not reasonably reversible. In its response, the Proponent agreed to remove this statement in the final EIS. However, it states: *"relative to Canada's inventory and commitments*	It is recognized that this Project will not have measurable effects on global warming and that climate change does not have clear and measurable endpoints. The assessment and mitigation of GHG emissions is discussed in terms of annual emissions where effects can be quantified and evaluated relative to a baseline and governmental inventories. As a result, it is not standard practice to use atmospheric GHG concentrations as an indicator to measure potential environmental effects. Therefore, the emission rate of GHGs was used as the VC indicator. Relative to Canada's inventory and commitments under the Canadian Net-Zero Emissions Accountability Act, the Project in closure will have effectively no negative impact on	EIS Section 6.4.7

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
					under the Canadian Net-Zero Emissions Accountability Act, the Project's annual contribution to Canada's emission inventory will be fully reversible at closure." The meaning of this assertion is not clear. If such a statement were to be included in the final EIS, it would require clarification and elaboration.	Canada's commitment to net-zero by 2050. Section 6.5 will be revised for the final EIS/EA to include a description of the distinction between the reversibility of GHG emissions (the VC) versus that of atmospheric GHG concentrations. This will support the description of the reversibility attribute to reflect the Project's residual effects on atmospheric GHG concentration are not fully reversible.	
IAAC - GHG-010	Appendix I Greenhouse Gas Assessment Section 8.0 - Summary (p. 8-1)	Appendix I notes that "The Project will be in the closure and decommissioning phase in 2050, therefore a plan to achieve net-zero, as per Canada's Strategic Assessment of Climate Change, is not required". Technically, the Project will likely be in the post-closure monitoring phase covering year 18+. Section 6.4 of the EIS predicts there will be GHG emissions in the closure and decommissioning phase (years 13-17), but not during the post-closure monitoring for years 18+. ECCC clarifies that any project that is subject to the SAAC that has a project lifetime beyond 2050 is required to provide a credible plan that describes how the project will achieve net-zero emissions by 2050, even if the project is in the closure and decommissioning phase by 2050.	1. Remove or re-evaluate this statement. 2. Recommendation: If there is any chance the closure and decommissioning phase will not be completed by 2050, and emissions will continue past 2050, provide a credible plan that describes how the Project will achieve net-zero emissions by 2050, following the principles and guidance outlined in the SACC and the draft technical guide related to the SAAC.	1 & 2. The Greenhouse Gas Assessment in Appendix I of the draft EIS/EA provided consideration of the potential effect of the Project on climate change in terms of the potential GHG emissions and land use changes associated with the Project, per the federal EIS Guidelines and the requirements under CEAA, 2012. The statement will be reworded accordingly in the final EIS/EA.	Acknowledged.		Appendix I Section 9.0
IAAC - GWI-001	Draft EIS Figure 6.5-7, Section 6.5, pdf p.25 Figure 6.6-3. Section 6.06, pdf p.39	A figure identifying a Regional Study Area (RSA) for groundwater quality was not provided. Figure 6.5-7 (Section 6.05, pdf p.25) delineates the LSA for groundwater but there is no RSA provided. No rationale could be identified. In comparison, Figure 6.6-3 (Section 6.06, pdf p.39) delineates both an LSA and RSA for surface water.	Provide a rationale for excluding an RSA for groundwater and/or revise Figure 6.5-7 to include an RSA.	The maximum extent of potential effects is restricted to the groundwater modelling domain, which is defined as the local study area. As a result, a regional study area was not defined for groundwater.	Satisfactory; however, it is recommended that the EIS include a clarification and definition of "natural groundwater boundary"; e.g., does this refer to a physical or hydraulic boundary?	The groundwater model assessment boundary is represented by two hydraulic boundaries: Springpole Lake and Birch Lake. This will be clarified in the final EIS/EA.	EIS Sections 6.5.1.2, 6.5.1.3.
IAAC - GWI-002	4.7.3 Page 4-28	In the preliminary design of the CDF, NAG filtered tailings will be co-managed with the PAG mine rock in the north cell of the CDF, while the conventional PAG slurry tailings will be kept saturated in the south cell of the CDF to mitigate acid rock drainage (ARD) potential. NAG mine rock will be used for construction purposes. It is unclear how the PAG mine rock will be disposed into the North Cell during operations. From this initial review, HC-2 TRA appears to have higher levels of SO_4, Cu, Fe, Zn, Co, Se, Ni and sulfur. Also, HC-2 TRA, HC-5 POR and HC-09 VBX appear to be important	1. Confirm the feasibility of encapsulating PAG rock as well as ML rock (e.g., HC-2 TRA, HC-5 POR, HC-09 VBX) within NAG tailings. 2. Provide further details on the sequencing and spatial disposal of PAG and ML mine rock and NAG tailings in the North Cell. For instance, if there will be enough	1&2. The design of the CDF has been optimized based on comments received from technical reviewers on the draft EIS/EA, as well as additional engineering, and field investigations. The CDF description will be revised as needed in the final EIS/EA to reflect the progression of the Project design since the draft EIS/EA was prepared.	Satisfactory.		EIS Section 5.3.3, 5.10 Appendix, V-1

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		sources of selenium. These could potentially generate metal leaching (ML) NAG but ML rock may also need to be managed.	NAG tailings to encapsulate PAG rock when the PAG rock is exposed.	The optimized strategy includes the production of a thickened non-acid generated tailings, instead of the previously considered filtered tailings. The thickened tailings provide a more robust operation for co-mingling with mine rock, reduced energy consumption and reduced air emissions (including greenhouse gases). Additional geotechnical investigation since the preparation of the draft EIS/EA, has also confirmed that the natural foundations conditions for the CDF are equal to or better than previously assumed conditions. This is largely due to the low hydraulic conductivity of the andesite bedrock which provides highly favourable foundations to limit seepage emanating from the CDF without a liner under the south cell. The perimeter dams will be designed during detailed engineering with embankment liners and where required with engineering controls, such as bedrock grouting. There are no changes anticipated to seepage water quality as a result of the CDF optimization. In addition to the favourable foundation conditions, seepage mitigation will include perimeter seepage capture and management in the contact water collection system. The humidity cells referenced in the comment are not representative of the PAG rock in general and are considered to represent a small percentage of that PAG material. A supplemental humidity cell program was initiated in late 2021, utilizing samples with more representative 'typical' sulphide and metal contents relative to the overall Project dataset. Results will be provided with the final EIS/EA and incorporated as appropriate in related water quality modelling efforts. Co-disposal of mine rock and tailings is a proven effective method of managing mine wastes. Based on the Prefeasibility Study, an estimated ~105 Mt (~68 Mm³) of NAG tailings and ~90 Mt (~41 Mm³) of PAG/ML mine rock will be produced over the Project lifetime, with tailings deposition occurring for an additional two years after the last mine rock has been placed in the co-disposal facility (CDF). This is proposed to be placed to fully cover any PAG/ML rock to minimize ongoing oxidation and			

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				prevent the onset of ML/ARD. Further, most of the PAG mine rock is expected to have a long lag time until acid generation occurs, thereby reducing the risk of ML/ARD onset. Additionally, seepage from the CDF will be captured with the integrated water management system, and excess water will be treated in the effluent treatment plant prior to discharge to the environment as needed. Prefeasibility level designs have been prepared for the CDF as summarized in Section 4.7.3. Updates to the mine waste facility designs including for comments received on the draft EIS/EA will be incorporated into the final EIS/EA as appropriate.			
IAAC - GWI-003	Appendix K-1 Section 3.3 Page 3-1	The Proponent is required to complete a geochemical characterization of tailings in order to predict ML and ARD. Tailings tested to date are not representative of the planned processing method and thus do not represent potential reactivity of the NAG flotation tailings or the PAG concentrate tailings. As such, static tailings testing was not included in the draft EIS. Testing of the tailings material from ongoing metallurgical test work should include physical characteristics and process water.	1. Provide a detailed work plan for testing of the tailings material. 2. Provide a report detailing the results of tailings testing and implications for mine waste management, the mine site and receiving environment water quality models.	1&2. The Static Geochemical Testing Baseline Report (Appendix K-1 of the draft EIS/EA) was prepared in 2021 using test results available at that time. In 2021, the Project flowsheet was optimized and included production of a NAG flotation tailing and a PAG concentrate. One synthetic NAG flotation tailings sample was produced at that time, representing the life of mine tailing. Static testing including ABA, elemental content, NAG testing, SFE and R-XRD was conducted on the sample. Water quality analyses were conducted on the decant (supernatant water). Static test results for the available NAG tailings and supernatant water quality data will be included in the final EIS/EA and incorporated into updated water quality modelling as applicable. A humidity cell test was initiated with the NAG flotation tailings sample in late 2021. Results up to 44 weeks of testing are now available and these kinetic test results will be included and incorporated into the final EIS/EA. Physical characteristics of the tailings were assessed as part of geotechnical studies. Metallurgical testwork representing the updated flowsheet has been ongoing through 2022. Additional flotation tailings and concentrate samples were produced. Supernatant samples (post detox) were collected. Additional tailings geochemical testing was initiated in Q1 2023, including static testing of the recently produced metallurgical tailings. Kinetic testing is currently planned to include both humidity cells and column	Satisfactory.		Appendix K-1.3, K-2

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				tests on selected, representative samples, and will be initiated in Q2 2023. Results of these programs will be summarized, and test results will be included in the final EIS/EA, as available at that time. Source terms utilized in Project water quality models will be updated to incorporate the additional data as applicable and available. Reasonably conservative source terms were used to support the draft EIS as outlined in responses to GWI-04.			
IAAC - GWI-004	Appendix K-2; Appendix B	Kinetic tests were conducted on one tailings sample generated from an earlier mine plan (HC-11; Col-1). In addition, kinetics and column testing were only completed on one sample. The tests are on-going on mine tailings representative of the current mine plan. After approximately 65 weeks, Fe, As, Se, V, S, Sulfate, P and acidity were still increasing while pH was decreasing at levels between pH 2 and pH 3. These increases creates uncertainty in the upper release rates predictions from the tailings as these are likely underestimated, which then affects the base case and upper case prediction in the site water quality model and the receiving environment water quality model.	1. Replicate kinetic testing on current mine plan tailings to better understand upper release rates of acidity and metals (As, Se, S, Sulfate and P). 2. Replicate column tests on current mine plan tailings. 3. Provide updated source term predictions once acidity, As, Se, S, Sulfate and P have peaked. 4. Discuss the updated water quality predictions and their effect on site and receiving water quality modelling and how these updated predictions could affect the selection and performance of the CDF.	1&2. Additional tailings humidity cell tests and column tests are proposed as part of tailings testing programs for 2023. Tailings samples representative of the current mine plan will be used in the tests and both flotation tailings and concentrate will be tested. Additional information on the proposed tailings program is provided in the response to Comment GWI-03. 3.Conservative source terms were developed for the site water quality model using available Project data and information from an analogue site. Specifically, as outlined in Appendix K-4 of the draft EIS/EA, an 'expected case' source term was developed based on humidity cell test results for NAG tailings from an analogue gold mine site. A 'conservative case' source term was developed using neutral pH leachate results (i.e., pre-acid onset) from HC-11 which is a PAG tailing (representative of a previous mine plan for the Project). The strongly acid generating conditions observed in HC-11 are not representative of the planned Project NAG tailings. While release rates for HC-11 (PAG tailings) did increase after 65 weeks as indicated in Comment GWI-04, HC-11 was strongly acid generating at this time (leachate pH ~2.5). The currently planned Project tailings will have a NAG stream representing approximately 80% of the tailings volume. As such the observed increasing release rates in HC-11 are not a source of uncertainty in the current Project source terms. Updating the source term to reflect these release rates would not be consistent with leaching characteristics for a NAG tailing.	Satisfactory.		Appendix K-1.2 Attachment A, K-1.3 Attachment B, K-2 Section V-1

<table>
<tr><th>ID</th><th>Specific Reference</th><th>Initial Comments & Rationale</th><th>Proposed Action / Solution</th><th>FMG Response</th><th>Commenter Response</th><th>FMG Response 2</th><th>Where Addressed</th></tr>
<tr><td></td><td></td><td></td><td></td><td>4. Reasonably conservative assumptions were made in the model to address this uncertainty as outlined in Appendix K-4 of the draft EIS/EA. Model source terms will be updated for the final EIS/EA using Project-specific NAG tailings data from the currently running NAG tailings cell and the proposed 2023 tailings test program.</td><td></td><td></td><td></td></tr>
<tr><td>IAAC - GWI-005</td><td>Appendix K-1 Section 3.4 Page 3-2</td><td>The Proponent is required to complete a geochemical characterization of waste rock, ore, low grade ore, and overburden in order to predict ML and ARD.

Geochemical samples collected from ore, low grade ore, waste rock, and pit walls were presented as borehole collar locations in one plan view (Figure 3-1). This does not meet the guidance provided in MEND (2009)1[1] , and does not adequately present the spatial distribution of all ore, low grade ore, and waste rock samples collected as part of this study.

MEND (2009) provides a recommended minimum sampling frequency per waste rock lithology, where the final sample number must be determined based on sites-specific conditions, study objectives, and the overall tonnage of each lithology to be mined. Tonnage estimates by waste rock lithology were not provided to demonstrate that the number of samples collected per lithology (Table 3-1) are sufficient for each of the main waste rock lithologies to be mined.

Due to these information gaps, the overall representativeness of the study samples cannot be validated in support of determining ARD/ML potential of mine rock that will require management at surface in the long-term, and potential effects to fish and fish habitat.

[1] MEND. 2009. Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials. MEND Report 1.20.1. Mining Environment Neutral Drainage Program, Natural Resources Canada. December 2009.</td><td>1. Provide cross sections or block model images that show the location of all ore, low grade ore, waste rock, and pit wall samples from the Portage, East Extension, and Camp zones.

2. Provide tonnage estimates for each waste rock, low grade ore, and ore lithology from both the Portage, East Extension, and Camp zones, and quantitative justification for the number of samples collected to date. Include a plan to address data gaps.</td><td>1. The spatial distribution of samples was considered during the sample selection process. Samples were generally selected at regular intervals representing key Project lithologies, alteration types, and mineralization styles. Available exploration multi-element ICP data was also reviewed during sample selection to ensure good coverage among the available geochemical data.

Cross-sections will be provided in the final EIS/EA to provide clarity on sample coverage.

2. Ore will not be segregated by lithology and as described in Appendix K-1 of the draft EIS/EA, ML/ARD characteristics do not appear to be lithologically controlled. The tonnages for mine rock, ore, and low-grade ore based on the Prefeasibility Study mine plan, are provided in the table below. The number of ML/ARD samples (e.g., full ABA and elemental content analysis) for each material type is shown.

<table>
<tr><th></th><th>Total tonnage (Mt)</th><th>N ML/ARD samples</th><th>N analogue AP (Leco S and ICP S)</th><th>N analogue NP (ICP Ca)</th><th>N multi-element ICP</th></tr>
<tr><td>Mine rock</td><td>~250</td><td>715</td><td>~9000</td><td>~3700</td><td>~3700</td></tr>
<tr><td>Ore (including HG, MG and LG ore)</td><td>~122</td><td>161</td><td>~5000</td><td>~2300</td><td>~2300</td></tr>
<tr><td>LG ore*</td><td>~19</td><td>40</td><td>~1200</td><td>~450</td><td>~450</td></tr>
</table>
*Note: Low grade (LG) ore tonnage shown is total tonnage mined. Maximum stockpile balance is ~15 Mt.

As described in GWI-06, ABA analogue relationships have been developed for Project mine rock based on ABA test results and multi-element ICP sulphur and calcium data. These analogue relationships showed good performance to estimate ARD characteristics of the mine rock samples. Information on ABA analogue</td><td>Satisfactory.</td><td></td><td>EIS Section 5.3.3 Appendix E, K-1.2, V-1</td></tr>
</table>

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
				relationships will be provided in the final EIS/EA. Extensive Leco S data was also available for drill core samples from a previous program. The analogue ABA data and Leco S data can be used to supplement available ABA test results and expand the ARD assessment. Exploration ICP data was also available for several other elements, including arsenic and other metals. The number of samples with supplemental data is shown below, along with the ML/ARD samples. The Portage Zone, East Extension Zone and Camp Zone are geologic zones that describe the mineralized zones of the deposit. These zones do not directly correlate with the mine plan and mine rock tonnages associated with each zone have not been defined in detail. However, based on the pit shells developed for the Prefeasibility Study, rock associated with the Portage Zone is estimated to represent approximately >95% of the pit volume, with the Camp and East Extension Zone representing a combined total of <5% of the pit volume. The number of samples of mine rock, ore and low-grade ore collected for each zone is presented below. While ore samples have slightly higher AP overall than some of the mine rock samples, there is notable overlap in terms of the ML/ARD characteristics of ore samples relative to the mine rock samples. [TABLE] Additional ML/ARD testing ore samples is proposed as part of the Feasibility Study, to supplement the currently available data. For the purposes of the environmental assessment, all ore is assumed to be PAG with a short lag time to ARD.			
IAAC - GWI-006	Appendix K-1 Project Description Section 4.7 Page 4-28	The Proponent is required to evaluate the effects of imperfect segregation of waste rock. Although PAG and NAG mine rock will be managed separately, with NAG mine rock used for site construction and the perimeter berm of the CDF, the Proponent does not provide any approach to mine rock segregation. Additionally, the Proponent indicates that “Geospatial factors governing the NP content of the rock from the various Zones is not well understood” (Appendix K-1, Section 5.1). Understanding the mineral source and	1. Provide a detailed approach to locate and segregate waste rock lithologies to optimize the management of acid generating and ML (including selenium, arsenic and other metals) mine rock. Also clearly identify mine rock suitable for construction use. This should be in the form of an ARD/ML Management Plan, linked to the CDF and mine rock storage plans.	1. As described in Appendix K-1 of the draft EIS/EA, the ML/ARD characteristics of the samples do not appear to be lithologically controlled, and mine rock is not planned to be segregated based on lithology. Mine rock that is PAG along with NAG rock that is metal leaching will be identified and stored in the CDF. NAG rock that is not metal leaching and is suitable for use in construction will be identified.	Satisfactory.		EIS Section 5.3.3 Appendix E Section 2.1.5, , K-1.6, V-1 Section 4.5

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
		distribution of neutralization potential is critical in effectively identifying and managing PAG rock. Further, textural controls on the sulphide and buffering minerals (i.e., mineral availability for reaction) may contribute to the long delay in onset to acid conditions observed in the kinetic tests to date. Therefore, more detailed mineral analysis should be completed to fully understand mineral controls on ARD potential. The success of the proposed management approach is dependent on the ability to locate and separate PAG material. Implications for imperfect segregation can drive water quality treatment requirements during operations and negatively affect site effluent quality in post-closure, thus potentially impacting fish and fish habitat. This is particularly important considering the presence of lake trout in the area.	Describe how the 3D block model will be used to support this. 2. Consider advanced statistical analysis to compare the geochemistry and exploration datasets to develop a surrogate for NP that supports its identification in mine rock. 3. Complete advanced mineralogy testing using automated SEM techniques (e.g., QEMSCAN, Tescan-TIMA) that, in addition to modal mineralogy and lower detection limits for sulphide minerals, provide textural occurrence of the sulphide and buffering minerals. Provide results and discussion on how this improved understanding of mineral controls affects the assessment of potential ARD impacts, delays before onset of ARD, and the overall evaluation of ARD potential. If possible, include recent kinetic test results in the updated lag time evaluation.	PAG, NAG and metal leaching rock volumes are being assessed through preparation of an ARD/ML block model for the Project. The primary parameter of interest for metal leaching is arsenic to date. Selenium is referenced in GWI-06 but has not been identified as a parameter of interest for metal leaching. The block model utilizes available ML/ARD test results (n=~900 samples) along with analogue ABA inputs based on 15,000 samples analyzed for Leco S and 6,000 samples analyzed for ICP Ca, S, and as part of multi-element analysis. Block model preparation is underway. Approaches to define volumes of rock that are suitable for construction and rock that requires additional management will be defined as part of the Feasibility Study. Additional ML/ARD testing and multi-element ICP analysis are proposed to supplement the available block model inputs. A ML/ARD mine waste management plan will be included in the Closure Plan that is required to be filed with the Province in accordance with the Mining Act prior to construction. The plan will identify potential ML/ARD risks for mine operations and closure, along with a description of mitigation approaches and monitoring strategies to be implemented at the site. Block model results will be considered along with mine planning / sequencing information to define mine waste management needs over the life of mine. The Closure Plan is required to be periodically updated during operations, and mine waste management will be refined as needed during subsequent Closure Plan amendments. 2. Preliminary surrogate relationships (i.e., ABA analogue) have been developed using aqua regia ICP data (Ca, S) and ABA test results for the 876 ML/ARD test samples. These relationships showed good performance to estimate the ARD potential of the mine rock samples. Information on ABA analogue relationships will be provided in the final EIS/EA. ARD block modelling is underway using analogue relationships and the exploration multi-element			

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				ICP dataset to identify volumes of NAG and PAG rock in the pit. Relationships between metal content and metal leaching potential are being developed for arsenic and volumes of potentially arsenic leaching rock will be assessed. Other metals that may be of interest for metal leaching are being evaluated as part of ongoing Project work. 3. Additional PAG humidity cell tests were initiated in late 2022 to supplement the existing humidity cell tests presented in Appendix K-2 of the draft EIS/EA. Results of these tests will be considered with the overall kinetic program and available mineralogical testing results in the interpretation of ARD potential for project rock. Field tests (field leach barrels) containing PAG materials have also been initiated to provide additional information on lag times and drainage quality for PAG rock.			
IAAC - GWI-007	Appendix K-4 Section 3.3.1 page 3-2 Section 4.0 Project description; Section 4.18	Mine rock source terms were used to represent the exposed pit wall in the mine site water quality model. The pit walls include exposed NAG and PAG mine rock. The model assumes an unjustified proportion of 45% PAG and 55% NAG exposure (Section 3.3.1).	1. Justify proportion of NAG and PAG mine rock used in representation of pit wall in water quality model. 2. Indicate plans on how block model distribution of PAG and NAG mine rock will be updated during mine operation to inform progressive reclamation plan.	1. The proportion of PAG and NAG assumed for the pit walls was based on available data at the time the Mine Site Water Quality model was prepared for the draft EIS/EA. This included use of statistical information for the overall ML/ARD dataset for the Project (n=876 samples), whereby 45% of the samples were PAG and 55% of the samples were NAG. Appendix K-4 of the draft EIS/EA will be updated to clarify the source of this assumption for the final EIS/EA. 2. Block modelling is underway as part of ongoing engineering work and estimates of the area of PAG and NAG rock exposed on the pit walls will be updated once additional information is available. Plans to support ongoing updates to the block model during mine operations will be developed as part of the ML/ARD Mine Waste Management Plan that will be included in the Closure Plan that is required to be filed with the Province in accordance with the Mining Act prior to construction.	Satisfactory.		EIS Section 5.3.3, 5.10.3 Appendix K-2 Section 3.4.1 Table 3-2 , V-1
IAAC - GWI-008	Appendix K-1 Table 4-5 page 4- 15 Appendix K-2	The static testing indicated that 20% of the other category of mine rock (Table 4-5) was PAG. This is absent from the project geology in the kinetic testing program (Table 2-1).	Ensure kinetic testing includes all relevant PAG mine rock.	Available data suggests that the ML/ARD potential of Project mine rock is not lithologically controlled. Data indicate that samples of all lithologies showed similar ML/ARD characteristics. Therefore, although 20% of the samples from the 'other' rock code were PAG, these (and all of the 'other'	Satisfactory.		Appendix K-1.1 Table 2-1, K-1.3 Table 2-1

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	Section 2.0; page 2-1			samples) have similar ML/ARD characteristics to other test samples, including specific samples included in the kinetic testing program. As such, the characteristics of the PAG 'other' samples are already captured in the kinetic tests underway. Further, as described in Appendix K-1 of the draft EIS/EA, the 'other' rock code represents a group of 29 historical rock codes that are no longer part of the Project lithological interpretation. This description was retained in Appendix K-1 for consistency with historical reporting. For clarity these samples will be reclassified and grouped with the updated Project lithologies, for the final EIS/EA.			
IAAC - GWI-009	5.0 Alternatives Assessment Section 5.31.1 page 5-91	Complete pit backfill with mineral waste from the CDF (including mine rock, potentially acid generating (PAG) tailings slurry, and filtered neutral acid generating (NAG) tailings) was rejected from the alternative assessment for mine closure. The justification given is that: it is not economically feasible; and the remobilization of PAG may be environmentally undesirable. There is however no economic assessment provided to support reason 1, nor is the source term assessment completed at this time to support reason 2, as kinetic testing on mine rock and tailings is on-going and needs to be replicated.	Demonstrate, once the tailings representative of the current mine plan have been fully characterized, that co-disposal in a surface facility is clearly advantageous compared to backfill during operation, closure and post closure. The economic feasibility component should consider that cover maintenance to control erosion may be challenging in the long-term considering the remoteness of the site.	The Project Description and Alternatives Assessment will be updated in the final EIS/EA as needed to reflect the progression of ARD/ML testing, including further assessment of the volumes of rock requiring management in the CDF (i.e., PAG and/or metal leaching rock) and tailings ML/ARD characteristics, as well as the engineering design. This comment will be fully considered in the update, and additional information will be provided regarding the economic aspects of backfilling the material contained in the co-disposal facility into the open pit on cessation of operations.	Acknowledged; however, NRCan recommends that the economic aspects of backfilling tailings and waste rock at the end of the project are described by the Proponent in order to satisfy EIS guideline requirements under Section 3.2, "alternative means of carrying out the project that are technically and economically feasible and the environmental effects of any such alternative means." NRCan noted that Mine Environment Neutral Drainage (MEND) program reports 2.36.1 & 2.36.1b provides examples of how pit backfill can be beneficial to eliminate long term potential impact of dam failure, eliminate the need to rely on long-term cover maintenance to control erosion, and hence control potential release of contaminants in the long-term, which could also reduce financial guarantees necessary to manage these	Thank you for the additional information. A preliminary cost to backfill at the end of mine life will be included within the assessment of closure alternatives in the final EIS/EA. It will consider the potential for long term financial advantages, as well as the economic aspects of materials movement.	EIS Section 4.7, 4.29, 5.19.3.2 Appendix E Table 3-2

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					risks by the provincial or federal government.		
IAAC - GWI-010	5.0 Alternatives Assessment Section 5.32 pages 5-93 to 5- 94 Appendix T-1 Tables T1-16 & T1-17	The Proponent selected a low permeability cover, and plans to implement it on the south cell of the CDF during closure. Both the north and the south cell will have a final growth medium cover (e.g., overburden mixed with organics). It is unclear from the water quality time series graph if long-term water quality predictions considered progressive erosion of the organic cover over time and how erosion could be mitigated considering the remoteness of the site.	Provide long-term water-quality predictions after implementation of the low-permeability cover at closure and how erosion could affect long-term performance of the closure plans.	The co-disposal facility (CDF) cover will be designed and constructed to minimize erosion loss and have long term stability. Long term monitoring and maintenance of the Project site including the CDF, will be described in the Closure Plan to be filed with the Province prior to construction. Regular inspections will be made of the CDF during closure to ensure the CDF structure and cover is performing as designed and maintenance will be performed as required. Therefore, the requirement to model the CDF with a significantly degraded or absent cover is not appropriate.	Unsatisfactory. NRCan notes that modelling the CDF with a significantly degraded or absent cover would help inform reviewers of the impacts of a cover being progressively eroded over time. For an example of this approach, the Proponent can refer to the Environmental Impact Statement for the Near Surface Disposal Facility Project.5	Section 5.1 of the draft EIS/EA outlines the process for identifying feasible options for the assessment of alternatives The assessment of an alternative with a significantly degraded or absent cover on the CDF at closure would be inconsistent with criteria/questions included in Section 5.1, as this alternative type does not provide a viable solution, it is not a proven technology and is not technically feasible. Further, the criteria/indicators for the assessment of alternatives, which are listed in the approved Amended Terms of Reference do not include the assessment of malfunctions / accidents for the alternatives assessment.	EIS Section 4.7, 4.29, 5.19.3.2 Appendix E Table 3-2
IAAC - GWn -001	Section 6.5 Groundwater App. L-1, sections 3, 5, and App. A	Extent of porphyry intrusive rock: The extent of porphyry intrusive rocks influences the interpretation of higher hydraulic conductivity results. This extent could influence the drawdown cone and the groundwater flow into the north end of the pit. Figure 3.4 (Appendix L-1) shows the local, surficial geological bedrock map. Unit 1 metavolcanics extends over the northern half of the isthmus between Birch and Springpole Lakes, NW of the camp. Porphyry intrusive bedrock occupies the southern part of the isthmus. This figure also shows the high density of boreholes in the area. Figure 3.5 (Appendix L-1) shows the structural model with faults and zones of weakness (low RQD). The faults and low RQD zone do not appear to extend into the northern part of the isthmus. Figure 2-6 (Appendix L-2) shows the extent of the low RQD. It covers the camp area, but most of the isthmus lies outside the low RQD zone. It does	1. Confirm that the porphyry bedrock does not extend beyond the Portage Zone used in Figure 5-4 (Appendix L-2) for the groundwater modelling, particularly between Birch and Portage lakes. If it can't be confirmed, define the extent of porphyry bedrock in the area. 2. Confirm if the variant 5 Portage Zone (Figure 5-4 Appendix L-2) extent shows the maximum possible extent of high hydraulic conductivity in the isthmus between Springpole and Birch lakes. 3.. Incorporate known high hydraulic conductivity zones between Springpole and Birch lakes (e.g., from pump test results). Variant 5 of the groundwater model should	Since release of the draft EIS/EA, additional information has continued to be collected and the bedrock hydrostratigraphy model for the site will be updated for the final EIS/EA. The current data indicates that a sand zone (i.e., the zone of highly altered/disintegrated rock) associated with the ore zone is surrounded by / adjacent to a zone of low RQD. These zones are surrounded by a more competent host rock. Effectively, the Portage Zone has been further broken down into these two zones. The extent of the sand zone and low RQD zone has been mapped in detail as part of rock mechanics investigations, which will inform the hydrogeological modelling and report for the final EIS/EA. Uncertainty in the extent of these high hydraulic conductivity zones will be incorporated	Acknowledged. Ensure that the extent of the Portage zone, at surface and at depth, is well illustrated and considered in the final EIS.	Figures/graphics depicting the extent of the Portage Zone (i.e., Low RQD and unconsolidated granular material zones) will be provided in the final EIS/EA.	EIS Section 6.5.1.2, Appendix L-1 Section 3.2.1, Figure 3.2-2

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
		not extend to SPW20-001 and boreholes monitored during the pump test. Figure 5-4 (Appendix L-2) shows the simulated extents of the Portage Zone and its related higher hydraulic conductivity. The Portage Zone extents of both the baseline model and the variant 5 are identical in the isthmus area. Neither of these extend to the pump test area or to Birch Lake. From these results, it would appear that the porphyry intrusive bedrock does not extend to Birch Lake or significantly into the area of the long-term pump test. However, it is noted that the higher-than expected hydraulic conductivity values at depths >200 m in pumping well SPW20-001 are attributed to segments of porphyry rocks in the borehole (Appendix L-1, p. 26).	use the maximum possible extent of high hydraulic conductivity between Springpole and Birch lakes.	into sensitivity analysis. It should be noted that the isthmus area has one of the highest concentrations of boreholes at the site and is therefore one of the best characterized areas in terms of RQD. Furthermore, additional hydrogeological field investigations were completed in early 2022, included packer testing in two vertical boreholes drilled on the isthmus between the proposed open pit and Birch Lake (SH22-001 and SG22-002, each 122 m deep). The hydraulic conductivity reported hydraulic conductivity results that were typical of competent bedrock and not of the low RQD zone. This is consistent with the isthmus being a topographic high made of resistant bedrock. This information indicates the low RQD zone does not extend to Birch Lake.			
IAAC - GWn -002	Section 6.5 Groundwater Appendix L-1, sections 3, 5, and Appendix A, Appendix L-2, sections 3 and 4	Hydraulic conductivity of shallow metavolcanic and metasedimentary bedrock: A shallow zone of more permeable bedrock has not been included in the conceptual and numerical models. This zone could impact groundwater modelling results, including estimates of groundwater flow into the open pit. Most monitoring wells in shallow bedrock (Figure 5-2, Appendix L-1) appear to be located in areas of metavolcanic and metasedimentary bedrock (Figure 3-4, Appendix L-1). The hydraulic conductivity of these wells is shown in Figure 5-2 (Appendix L-1) and Table 2.3 (Appendix L-1, Appendix A). The cumulative normal probability plot of these results is shown in Figure 2.5 (Appendix L-1, Appendix A). “The in-situ shallow bedrock piezometer intervals had a hydraulic conductivity range of 2.84E-07 m/s to 3.08E-05 m/s with a mean of 4.17E-06 m/s and a standard deviation of 1.24E-05 m/s.” (Appendix L-1, Appendix A, p. 2-4). These wells are screened within the upper 15 m of bedrock of land areas. Bedrock weathering is typically greatest near the ground surface so that the upper 10 to 20 m would be expected to have higher hydraulic conductivity than that from 20 to 50 m depth. The hydraulic conductivities shown in Figure 4-5 (Appendix L-2) appear to support this claim. The conceptual hydrogeological model (Figure 6.5-4) and the numerical groundwater flow model (Appendix L-2) do not include this zone of shallow, more permeable bedrock. This shallowest zone of high hydraulic conductivity metavolcanic and metasedimentary bedrock (approximately 4.17E-06 m/s) is significantly more permeable than the value of 3E-07 m/s (Table 4-2, Appendix L-2) used in the hydrogeological model for the uppermost 50 m of bedrock (Country Rock in Figure 4-5).	1. Incorporate a shallow, weathered, more permeable bedrock zone (with higher hydraulic conductivity) into the conceptual and numerical groundwater flow models. 2. Alternatively, provide justification for excluding a shallow, weathered, more permeable bedrock zone in the conceptual and numerical models, given that it is evident in the data.	It is agreed that the shallowest bedrock (upper 10 to 20 metres) generally shows the highest hydraulic conductivity values; however, many low hydraulic conductivity values also occur in this interval. This is a fairly typical occurrence whereby variability is greatest at surface, which decreases with depth along with the overall value. The shallow bedrock hydraulic conductivity values are based on single hole test (i.e., packer tests and rising / falling head tests). While these tests are valuable for inferring localized conditions, the zone of influence for these types of tests is small compared to, for example, a pumping test. The likelihood that the permeable fractures intersecting the test wells are persistent over large scales (as represented in the hydrogeological model), is low. This is evidenced by the occurrence of shallow water levels observed in topographic highs which have thin to no overburden. If shallow bedrock contained persistent fracture networks, it would tend to drain rather than retain water. Satisfying the measured shallow bedrock hydraulic conductivity values during model calibration is balanced with the measured water levels and applied recharge. In this case, shallow bedrock hydraulic conductivity was generally lowered during calibration in effort to retain water levels at the topographic highs, whilst also maintaining recharge rates within a realistic range. The country rock zones will be further considered	Acknowledged.		EIS Section 6.5.1.2, Appendix L-1 Section 5.5.1, Appendix L-2 Section 3.1

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
		As noted in the sensitivity analysis (Appendix L-2, Table 5-1), the pit inflow estimates are most sensitive to Country Rock hydraulic conductivity (variant 1) so a thinner yet more permeable weathered bedrock zone could transmit significantly more groundwater flow to the open pit.		as part of the overall bedrock hydrostratigraphic model update being prepared for the final EIS/EA (described above in the response to Comment GWn-01). S satisfactory calibration is expected to be achieved by shortening the shallow bedrock zone in the current model (shown by the top 50 metre bar in Figure 4-5 of the hydrogeological modelling report in Appendix L-2 of the draft EIS/EA) to correspond to the highest zone of variability in the observed data (i.e., the upper 10 to 20 metres), with the rest being allocated to the intermediate bedrock zone.			
IAAC - GWn -003	Section 6.5 Groundwater Appendix L-1, sections 3, 5, and Appendix A	Packer test hydraulic conductivity of metavolcanic and metasedimentary bedrock: The hydraulic conductivity of metavolcanic and metasedimentary bedrock is a key (sensitive) parameter controlling groundwater flow model results. Figure 5-7 (Appendix L-1) shows selected hydraulic conductivity results in metavolcanic and metasedimentary rocks. Note that “Country rock” in Figure 2-7 (Appendix L-2) and Tables 4-2 to 4-4 (Appendix L-1, Appendix A) present a more complete dataset. The packer testing conclusions include (Appendix L-1, p. 27): “Hydraulic conductivity of the metavolcanic (andesite) host rock is generally low, with the average hydraulic conductivity of the upper 200 m of bedrock being on the order of 2E-8 m/s which is considered typical for this type of bedrock. “Hydraulic conductivity of the deep (below 200 m) metavolcanic (andesite) is likely on the order of 1E-8 m/s, although some structural features may impart higher permeabilities to the andesite bedrock where present.” The values of 2E-08 m/s (<200 m) and 1E-08 m/s (>200 m) are not consistent with the results presented in Figure 5-7 (Country rock, Appendix L-1).	Provide a rationale for the discrepancy in the values and conclusions presented for hydraulic conductivity of metavolcanic and metasedimentary bedrock.	The values in the upper 200 metres appear consistent with the 2×10-8 m/s estimate, based on the values in Figure 5.7 of the Baseline Hydrogeology report in Appendix L-1 of the draft EIS/EA. The values presented in-text are intended to demonstrate that the average value beyond the 200 metres, given many data, would be approximately 10-8 m/s, though it acknowledges that the localized presence of faults may produce the higher values that are shown. Hydraulic testing has continued since the preparation of the draft EIS/EA. The baseline hydrogeology report (Appendix L1) will be revised as needed in the final EIS/EA to incorporate the most updated data / information. When incorporating this new information, this comment will be considered and rationale provided to explain the selection of hydraulic conductivity.	It is noted that the original context and rationale should have referenced Figure 2-7, not 5-7. Corrected herein. Discussion of the country rock hydraulic conductivity should also take into consideration the results of the pump test. The pump test provided large scale measurements of T (transmissivity) and K (hydraulic conductivity) within the Country rock zone that will be proximal to the pit. Note feedback to GWn-05 in relation to the pump test interpretation.	Acknowledged. Additional discussion on the pumping test is provided below in the response to GWn-05.	EIS Section 6.5.1.2, Appendix L-1 Section 5.2
IAAC - GWn -004	Section 6.5 Groundwater Appendix L-1, Sections 3, 5, and Appendix A	Locations and role of structural features on groundwater flow in metavolcanic and metasedimentary bedrock: Structural features are not represented in the model, yet are known to influence the hydraulic conductivity of metavolcanic and metasedimentary bedrock outside the pit and consequently may influence groundwater flow and transport. In Appendix L-1, Section 5.2.4 on the hydraulic conductivity of metavolcanic and metasedimentary rocks, higher than expected hydraulic conductivity results of some packer tests are attributed to structural features identified in the SRK (2013) model that are considered “responsible for the increase in apparent permeability” (Appendix L-1, p. 26). The measured high hydraulic conductivity values are not considered	1. Confirm whether the structural features extend into metavolcanic and metasedimentary rocks. Confirm whether they impart a higher hydraulic conductivity to these rocks. Confirm whether any of the other modelled or known faults intersect project infrastructure or the isthmus between Springpole and Birch lakes. 2. Provided the acknowledged hydraulic significance of known structural features	Since release of the draft EIS/EA, additional information has continued to be collected and the bedrock hydrostratigraphy model for the site will be updated for the final EIS/EA. The current data demonstrates that a sand zone (i.e., a zone of highly altered/disintegrated rock) associated with the ore zone is surrounded by / adjacent to a zone of low RQD (previously referred to / simplified as the Portage Zone). These zones are surrounded by a more competent country/host rock. The sand zone and low RQD zone would have a more significant effect on groundwater flows around the pit than local structures, given their comparative	Satisfactory.		EIS Section 6.5.1.2, Appendix L-1 Section 5.1.1, Appendix L-2 Section 7

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		sampling artifacts. As acknowledged above, they result from structural features that extend into the metavolcanic and metasedimentary bedrock. Consequently, they will influence groundwater flow and transport outside the pit area. As noted in Appendix L-1, "It is expected that the large structures with the higher permeability will control the overall flow system and have to be included in any subsequent 3D flow and transport modelling of the mine water flows and when assessing the areas that will be impacted by the drawdown cone that is produced by pit dewatering." (Appendix L-1, Appendix A, p. 4-6). The structural model in Figure 3.5 (Appendix L-1) shows 5 of 12 modelled faults. Faults appear to extend from the open pit to the CDF and its water management facility. The results of multiple packer tests in pumping well SPW20-001 showed that most of the flow (83.5%) occurs from 65.6 m to 203.6 m depth in a zone with a hydraulic conductivity of 2.21E-06 m/s (Appendix L-1, Appendix A, Fig 6.1). It appears that this well is outside the low RQD and Portage Zone (see GWn-01). These results and statements appear to contrast with the response to Comment 21 (Appendix C). The Proponent states that "Based on the current understanding of site conditions it is inferred that the high K zone is coincident with the porphyry intrusive rock only and that the metasedimentary and metavolcanic bedrock that hosts the porphyry intrusive rock is more typical of the crystalline bedrock found in Northern Ontario, i.e., is lower hydraulic conductivity".	and the above recommendation in the March 2021 consultant report (Appendix L-1, Appendix A), validate why identified structural features in metavolcanic and metasedimentary bedrock are not included or represented as higher hydraulic conductivity zones in the conceptual and numerical hydrogeological models. 3. Provide a geological log (indicating the depths of the metavolcanic and porphyry rocks) for pumping well SPW20-0011. 4. As appropriate, based on above responses, update conceptual and numerical hydrogeological models with relevant structural features. Arrange a technical meeting to discuss before finalizing the EIS.	volume, although it is agreed that the E-W trending structures (i.e., SW1 and SW2 in Figure 3-5 of the baseline hydrogeology report) may have some influence on interaction of the CDF with the open pit. Based on the understanding gained from rock mechanics investigations, the E-W trending structures are expected to be more permeable than the country rock (other structures are largely within the low RQD zone). These structures are planned to be tested in future programs as part of pit slope stability assessments. As overburden is removed from the pit slopes during pit development and these structures are potentially exposed, a grouting program may be employed to seal these surficial expressions. Sensitivity analysis will be conducted to assess the potential effect of these faults and included in the updated model as part of the final EIS/EA. As requested, a geological log, indicating the depths of the metavolcanic and porphyry rocks, will be generated for SPW20-01. A discussion of this information is being organized and planned to occur in February or March 2023.			
IAAC - GWn -005	Section 6.5 Groundwater Appendix L-1, Section 5.2.6, and Appendix A, Section 6.	Long-term aquifer test results: The long term aquifer test can be used to estimate the bulk hydraulic properties over a much larger volume than those sampled in packer and slug tests. The test was also performed in a key area between Birch and Springpole Lakes. According to the Theis equation, with all other variables fixed, drawdown increases with decreasing transmissivity and decreases with increasing transmissivity. For example, if we analyze two monitoring wells at the same distance from the pumping well but in different directions, the well with the larger drawdown will produce a smaller transmissivity estimate from the Theis analysis, assuming storage properties are the same. For this reason, the monitoring wells with fractures that are well connected with the pumping well may provide lower transmissivity estimates than monitoring wells that are poorly connected and have smaller and more delayed drawdowns. Consequently, to obtain an approximate range of transmissivity estimates from the aquifer test it is necessary to analyze the results from all the monitoring wells.	1. Analyze the pump test responses for all monitoring wells and tabulate transmissivity results for each monitoring well. 2. Estimate an average hydraulic conductivity for each monitoring well and the depth range over which it is calculated. 3. As appropriate, based on above results, assess and update hydraulic conductivity values used in groundwater modelling.	Agreed; simple pumping test analysis does not account for heterogeneity / differences in hydraulic connection when comparing analysis results between two wells for a given pumping test. Observation wells with little drawdown, whose data would yield higher K/T estimates (all else being equal), are generally suspect when larger drawdowns are observed at wells farther from the pumping well. To provide better context for this, distance-drawdown plots for late test data may give insight into which wells are likely best connected to the pumping well (and therefore whose hydraulic conductivity estimates are most representative for that pathway). Monitoring wells with unexpectedly low drawdown are indicative of limited hydraulic connection to the pumping well; therefore, K/T	Acknowledged. *Advice:* NRCan provided the following clarification to the original context with respect to the pump test interpretation. It was assumed that the monitoring wells with the largest drawdowns indicated fractures that are well connected to the pumping well and those monitoring wells with small drawdowns indicated fractures that are less-well connected with the pumping well. However, the	- Acknowledged. Additional context related to the long-term pumping test will be provided in the updated baseline hydrogeological report for the final EIS/EA to incorporate hydrostratigraphic, potential hydrologic boundaries, and other relevant considerations.	EIS Section 6.5.1.2, Appendix L-1 Section 5.2.2

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
		Among the 18 wells monitored during the aquifer test, the results of two wells were analysed. The results are presented for the pumping well, SPW20-001 and monitoring well BL-102, which was the monitoring well with the largest and most rapid drawdown (Appendix L-1 Appendix A, Figures 6.7, 6.9 and 6.10). The pump test responses should be analyzed for all monitoring wells and the transmissivity results for each monitoring well should be tabulated. This table should also estimate an average hydraulic conductivity for each monitoring well and the depth range over which it is calculated. Such a table will provide a better estimate of the range of transmissivity and average hydraulic conductivity for the aquifer test. These results should provide additional estimates of bulk hydraulic conductivity over a large scale in the fractured rock, to assess hydraulic conductivity values used in groundwater modelling.		value estimates in these cases are not representative. An assessment of distance-drawdown will be conducted for monitoring wells for the long-term aquifer test. This will be described in the updated hydrogeology baseline in the final EIS/EA and will be incorporated into the effects analysis as appropriate.	observed groundwater responses show that lower drawdowns occur for the monitoring wells on the low RDQ (more fractured and sand textured Portage zone) south side of the isthmus. Higher drawdowns occur for the monitoring wells on the higher RDQ (less fractured Country rock zone) north side of the isthmus. The lower drawdowns in the Portage zone appear to indicate better connected fractures (and the possible influence of sand) in this zone. The T (transmissivity) and S (storativity) is not uniform across the volume over which the pump test occurs. On the less fractured (higher RQD), north side of the isthmus (Country rock zone), there is more drawdown which is a consequence of the lower T (transmissivity) and S (storativity). On the less fractured (lower RQD), south side of the isthmus (Portage zone), there is less drawdown which is a consequence of the higher T (transmissivity) and S (storativity). In effect, the drawdown cone is not uniform around the well as clearly shown in Figure 6.9 (Appendix L-1, Appendix A). These observations are generally consistent with a pump test analysis using Theis assumptions for each	The transmissivity of fractures contributing flow to the pumping well cannot exceed the transmissivity as estimated in the pumping well. Pumping test analyses for monitoring wells that yield transmissivity values greater than estimated based on the pumping well data are likely to be unrepresentative. Though, it should also be recognized that, due to nonlinear/ turbulent flow losses, transmissivity based on pumping well drawdowns can be difficult to quantify in the absence of step-test data. Further to this, it is possible that the primary fractures contributing flow to the pumping well are not intersected by the monitoring well network. The proximity of the observation wells to Springpole Lake and Birch Lake may also influence/suppress responses to pumping from SPW20-001. For example, a well that shows minimal response to pumping may actually point to a well that is well-connected to Springpole Lake via the Low RQD bedrock zone, rather than a well that is poorly connected to the pumping well.	

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
					rock zone in that estimated T (and S) will be higher for the Portage zone rock and lower for the Country rock zone. Although, the Theis assumptions do not strictly apply to non- uniform T and S (and since they do not apply to fractured rock in the first place), it may nonetheless be useful to consider T and S estimates for each rock zone. The distance drawdown analysis proposed at the February 24, 2023, hydrogeology technical meeting (FMG, Feb 2023 slide deck, slide 18) appears to be appropriate for the Country Zone rock. The Proponent assumes that "Monitoring wells with unexpectedly low drawdown are indicative of limited hydraulic connection to the pumping well; therefore, K/T value estimates in these cases are not representative." These low drawdowns appear to occur within or near the Portage zone and may be related to the higher T and K expected in this zone, in effect, demonstrating a greater hydraulic connection to the pumping well.	These concepts will be applied in concert when discussing the pumping test in the updated baseline hydrogeological report in the final EIS/EA.	
IAAC - GWn -006	Section 6.5 Groundwater Appendix L-2, Sections 4 and 5	The groundwater table within the CDF: Maintaining saturated conditions in the CDF is a critical design element of the CDF, particularly during the post-closure phase when water infrastructure is no longer present and CDF surfaces are modified. Hydrogeological analysis will be required to assess saturation and the water table depth in the CDF. For the mine operations conditions groundwater flow model, the CDF is	Include a hydrogeological analysis as part of the detailed geotechnical design for the CDF to assess saturation conditions and predict groundwater levels and flow within the CDF, particularly for the post-closure phase.	This is acknowledged and agreed that understanding saturation conditions is important; however, the primary deterrent of acid generation is to limit oxygen diffusion, which can be achieved without fully saturated conditions for the post-closure condition.	Acknowledged.		EIS Section 6.5.1.2, Appendix L-2 Section 6.2

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
		represented as a type 3 (fluid transfer) boundary condition at the base of the CDF. The water table is assumed to be at the ground surface. This boundary condition implicitly assumes that flow through the CDF is vertical from the CDF surface to its base (i.e., that there is no lateral flow within the CDF). Therefore, the model provides no assessment of the groundwater levels (and depths from ground surface) during the mine operations phase. "For post-closure conditions, the CDF 3rd type boundary condition was replaced with a 2nd type flow boundary (i.e., recharge)" (Appendix L-2, p. 5-2). It would appear that the post-closure model set the type 2 boundary condition at the base of the CDF and did not include the body of the CDF in the simulation. If this is the case, then the model cannot simulate the water table or the groundwater flow within the CDF.		The CDF will be explicitly simulated with additional numerical layers in the updated version of the groundwater model, utilizing 1st and 2nd type boundary conditions as appropriate. This will allow for the assessment of water levels within the CDF.			
IAAC - GWn -007	Section 6.5 Groundwater Appendix L-2, Section 5	Groundwater modeling of ore stockpiles: The design of the ore stockpiles does not appear to have specific design features to minimize seepage of leachate. It is important to verify that seepage from the stockpiles does not flow to Birch Lake. For the mine operations conditions, "infiltration rates were maintained the same as in the baseline conditions model (70 mm/yr), effectively assuming that infiltration in the facility will be governed by the underlying existing topography / hydrostratigraphy." (Appendix L-2, p. 5-1). "For post-closure conditions, the ore stockpiles were simulated the same as mine operations conditions." (Appendix L-2, p. 5-2). Given that the modelling has assumed that recharge will not change, it is evident that the analysis will not demonstrate potential impacts of ore deposits on groundwater flow. It is not apparent if the topography of the ore stockpiles was included in the mine operations model. There similarly does not appear to be the inclusion of the NAG mine rock pad installed at its base (04 Description, p. 4-17). Despite the lack of consideration and analysis on the potential impact of ore stockpiles on groundwater flow, it is observed that all the seepage from the ore stockpiles is predicted to discharge to the open pit for the mine operations model as the entire area of the stockpiles lies within the drawdown cone. Consequently, it becomes an engineering design issue to minimize the amount of leachate created by the ore stockpiles that will eventually be captured and treated before release to the environment.	Explain whether and how the groundwater model takes into account relevant ore stockpile design. Propose and describe a follow-up or monitoring program with sufficient groundwater monitoring to verify predictions that the ore stockpile areas will lie within the drawdown cone and to verify that groundwater flow from these areas does not seep to Birch Lake.	Error! Reference source not found.iven the anticipated high hydraulic conductivity of ore stockpile materials, it was assumed that percolation through / seepage from the ore stockpile would be similar to recharge through the existing, pre-mining, landscape (i.e., groundwater would not mound within the ore stockpile). As such, the ore stockpile was not explicitly simulated with numerical layers. Rather, the groundwater model budgets within the footprint of the proposed stockpile were used for analysis. Additional monitoring wells have been placed around the ore stockpiles in 2022 and will be incorporated into the updated hydrogeological modelling report in the final EIS/EA. Additional wells may be established in the future, during the permitting stage. Follow-up and Monitoring is also discussed in Section 12.0 of the Draft EIS/EA. A preliminary follow-up program will be described in more detail in the final EIS/EA.	Satisfactory.		EIS Section 6.5.1.2,12 Appendix L-2 Section 3
IAAC - GWn -008	Appendix C, Table C-1A: IAAC comments on baseline study reports Section 6.5 Groundwater	Request for cross-sections and water level monitoring results: Federal review comments on the baseline study report were provided to the Proponent in 2021. Comment 17 in Table C-1.A of Appendix C requested several "cross-sections with geologic and structural information, and groundwater levels". The response indicated "Additional hydrogeological cross-sections are included in the draft [EIS]". Suitable geological cross-sections would help the reader visualize the distribution and interconnections of various geological units and structures.	1. Prepare cross-sections with geologic and structural information and groundwater levels. These should include the location of the proposed pit walls in the cross-sections. In addition, draw cross-sections along and transverse to the main axis of the pit and the Tailings Management Facility (TMF). Describe their significance to the site hydrogeology and the pump test results.	Relevant cross-sections, as requested, will be produced and provided as part of the final EIS/EA. The 3D hydrostratigraphic model is being updated with additional data collected since the draft EIS/EA and will be included in hydrogeology baseline and modelling for the final EIS/EA. The updates will feature the further developed conceptual model (refer to the response to	Acknowledged.		EIS Section 6.5.1.2, Figure 6.5-6

Table C-1.2: First Mining Gold Response to the Federal Information Requirements related to the Springpole Gold Project Draft Environmental Impact Statement / Environmental Assessment

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
	Appendix L-1	The cross-section in Appendix L-2 (Figure 4-3 and 5-2) shows the geological model but no geologic or structural information as required. There are no cross-sections intersecting the pumping well. It is not clear if structural features really extend into the CDF (Appendix L-1, Figure 5-8 and 5-9). Comment 17 in Table C-1A of Appendix C is reiterated for cross-sections with an emphasis on geologic, structural and groundwater data, with useful project infrastructure (pit, CDF, key wells and boreholes) superimposed to orient the information. It is noted that the Proponent states, in its response to comment 17 that "An updated baseline report will be prepared for the final [EIS] which will include this information, as well as data from the delayed 2021 hydrogeology field program." Comment 20 in Table C-1A of Appendix C is also reiterated for groundwater hydrographs as required. Groundwater hydrographs demonstrating the seasonal magnitude of water level fluctuations would help support interpretations of recharge, discharge and baseflow in sub-catchments. Hydrographs in deeper piezometers would help demonstrate the nature of the hydraulic connections to the shallow groundwater system. The response to comment 20 did not address the request. There are 30 monitoring wells (Appendix L-1, Figure 5-1). However, no groundwater hydrographs are shown of either manual or datalogger data of natural groundwater fluctuations. The hydrogeological modelling report (Appendix L-2) mentions the "collection of water level measurements including acquisition of long-term transducer data" (Appendix L-2, p. 1-2). Only the aquifer test response is presented in L-1 (Appendix L-1, Appendix A).	2. Provide time series of available groundwater monitoring data.	Comment GWn-01 response). In addition, updated water level monitoring information, including time series datalogger data, will be provided.			
IAAC - GWn -009	Section 6.5 Groundwater Appendix L-2, Sections 4 and 5	Presentation of groundwater drawdown and fish habitat: The results of the groundwater modelling need to be presented in a manner that allows for the assessment of the impacts on fish and fish habitat. Figure 5-3 in Appendix L-2 shows the simulated hydraulic heads for the mine operations phase. However, the contour interval is 20 m and consequently does not show sufficient detail of the drawdown cone in the vicinity of Springpole Lake and Birch Lake to assess the potential impacts on fish and fish habitat.	1. Re-draft Figure 5-3 to also include the 391 m and 393 m contours (the boundary condition elevations for Springpole and Birch Lakes respectively, Appendix L-2, Table 4-1) to allow assessment of the extent of the drawdown cones into Springpole and Birch lakes respectively. 2. Include an additional figure with a map showing the distribution of the vertical flux (direction and magnitude) into/out of Springpole and Birch Lakes at the lake/sediment interface. This figure will provide key information to assess potential changes to fish habitat. This latter map of fluxes is also requested for post-closure conditions.	1 & 2, Revised head plots, including the 391 and 393 m contours, will be provided in the updated hydrogeological model report for the final EIS/EA. Simulated drawdown plots will also be provided for this case. Plots will also be provided in the final EIS/EA, as requested, showing the simulated nodal rate budgets (darcy fluxes) focused at the boundary condition interfaces. The assessment of potential effects will consider this information in the final EIS/EA.	Acknowledged.		EIS Section 6.5.1.2, Appendix L-2 Figures 5-9, 6-7, 6-8
IAAC -	Section 6.5 Groundwater	As described in GWn-09, the drawdown cone is not fully presented in the vicinity of Springpole Lake and Birch Lake. Loss of groundwater contribution can have effects beyond lake water level changes, primarily	Use fish habitat baseline characterization requested in FH-06 in combination with the improved presentation of the pit drawdown	Detailed model outputs will be provided as per the response to Comment GWn-09. Although there will be an influx of groundwater to the open pit	Satisfactory.		EIS Section 6.5.1.2, 6.10.6

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GWn -010	Appendix. L-2, Sections 4 and 5	changes in groundwater discharge that result in thermal changes (i.e., cold water) and changes in specific types of habitat (e.g., spawning) if a species relies on groundwater discharge. Baseline data requests are outlined in FH-06 to accurately characterize fish habitat within the drawdown zone.	cone requested in GWn-09 to describe potential effects to fish and fish habitat in Birch and Springpole lakes as a result of groundwater loss.	during dewatering which will last until the open pit refills, the expedited refilling of the open pit will reduce the duration and mitigate this effect. None of the identified species of fish in Birch Lake are dependent on groundwater upwellings for critical life stages; however, this will be clarified in the final EIS/EA.			Appendix L-2 Sections 4.0, 5.0
IAAC -HH-001	Section 4.9 Section 6.3.1.1 Section 6.18.1 Section 6.21 Tables 6.21-1 to 6.21-4 Figures 6.21-1 and 6.21-2 Appendix R 3.1.1.1 Figure 3-23.4.3.5	Indigenous and non-Indigenous receptors are not adequately identified in the draft EIS. The human health risk (Appendix R, 3.1.1.1,) and noise assessments (Section 6.3.1.1) focused on eight receptor locations in the local study area (LSA) that are meant to represent seasonal/occasional residences and areas where traditional land and resource use (TLRU) may be practiced. 1. No receptor locations were chosen within the PDA as access to the mine site area and country food harvesting within the PDA will reportedly be restricted during the active phases of the Project (i.e., construction, operations, and decommissioning and closure) (Appendix R, 3.4.3.5). However, how the Proponent intends to restrict access is not specified, and access to the PDA may still occur in the absence of a physical barrier. Separately, Section 6.21 notes that prior to construction, the Proponent would develop an access management strategy with local Indigenous communities to manage access in the PDA, north of the Birch River crossing, throughout all phases of the Project. 2. Evidence of TLRU activities in the PDA, LSA and regional study area (RSA) is provided throughout the draft EIS and include: – Indigenous use of Crown Land within the LSA/RSA for traditional purposes, including harvesting, fishing and gathering.(Section 6.21.1.1 to 6.21.1.3) – Various types of infrastructure exist in the area which are used for TLRU (e.g., transportation routes, portages, trails, traditional camps or habitation sites) and cultural/spiritual practices (Tables 6.21-1 to 6.21-4). There are also cabins, lodges, outfitters, and campsites in the LSA and RSA (Figure 6.21-2). – The proposed mine site area, access road, and transmission line intersect ten traplines (, Section 6.21.1.1; Figure 6.21-1). – Recreational hunting is conducted in two Wildlife Management Units that overlap the PDA and LSA (Section 6.18.1.2). 3. The closest receptor location (Site 9) is approximately 1.5 km from the PDA (Appendix R, Figure 3-2), and no supporting rationale is provided to exclude the presence of visitors closer to the PDA. It is unclear how the selected receptor locations represent a worst-case scenario for the ingestion of contaminants via country foods collected near the PDA.	1. Clarify how access to TLRU activities will be restricted or specially managed within the PDA during the active phases of the Project. 2. Provide the approximate locations of Indigenous TLRU activities (including country foods harvesting and drinking water sources) and non-Indigenous recreational activities within the PDA, LSA, and RSA on a map. 3. Provide further rationale on the selection of receptor locations to confirm they represent a worst-case scenario. 4. Provide a human health risk assessment (HHRA) of exposure to contaminated air, water, and country foods, as applicable, as well as an assessment of potential noise impacts on off-duty workers within the PDA. In the human health risk assessment, consider whether the plan to carefully manage site access will require air quality modelling predictions at more locations that is required for the provincial Environmental Compliance Approval (e.g., the property boundary)	1. The intent is to develop an access management strategy with local Indigenous communities to provide access for traditional land and resource use activity areas outside the mine site project development area (PDA). There will be no public access to the mine site area and the mine site access road will be gated or otherwise secured. 2. Information on the currently known general locations of traditional land and resource use areas and non-Indigenous recreational activities is included in Sections 6.18 and 6.21 of the draft EIS/EA. These will be revised in the final EIS/EA, if additional information becomes available. 3.The receptor locations (cabins) were chosen as the closest areas to the Project where people are known to spend considerable time, therefore representing the worst case. It was also conservatively assumed that people spending time at these locations are Indigenous people who also conduct traditional activities including harvesting, fishing and gathering within the local study area and regional study areas. The human and ecological health risk assessment (HEHRA) report in Appendix R of the draft EIS/EA includes calculations that assume full time exposure at the Maximum Point of Impingement, for illustration purposes. However, the MPOI was not identified as a human receptor location since humans are not expected to spend substantial time at this location. If additional information on traditional land and resource use areas and recreational use areas becomes available, the list of receptor locations will be re-evaluated for the final EIS/EA. 4. All employees are expected to work 12-hour shifts for two weeks on site, followed by two	1. Satisfactory. The Proponent should consider mitigation measures such as signage to ensure land users are aware of any potential exposure to contaminants during periods where access may not be strictly monitored, such as during temporary site closures or post-closure. 2. Unsatisfactory. Sections 6.18 and 6.21 show some TLRU infrastructures like trapline areas, cabins, lodges, and outfitters, and recreational sites and cabins. However, there is insufficient location information for features such as important cultural sites, drinking water sources, or areas where Indigenous people practice TLRU activities, including country foods harvesting, fishing, and gathering. The final EIS should provide a map that includes approximate locations where Indigenous communities are practicing their rights, which would be used to illustrate potential receptor locations of the HEHRA. Ensure that this information is provided in keeping with appropriate	1. Acknowledged. 2.The final EIS/EA will include a map that includes approximate locations where Indigenous communities indicate they are practicing their rights, which will be used to illustrate potential receptor locations of the HEHRA. The information will be provided in keeping with appropriate ethical standards and obligations of confidentiality. 3. In addition to identifying additional receptor locations based on known locations where Indigenous communities indicate they are practicing their rights, the HEHRA section of the final EIS/EA will make reference to the MPOI as a precautionary, worst-case scenario, although it is highly unlikely that short term receptors will be exposed to these modelled impacts. Details on modelled impacts at the MPOI and their assessment will be included in the HEHRA	EIS Section 6.24 Figure 6.24-2 Appendix R, Figure 3-2

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		Visitors may also consume surface water (e.g., Birch lake, Springpole Lake or other inland water bodies) and groundwater (i.e., natural springs) during TLRU activities. It is also unclear how the selected locations are representative of cumulative effects within the RSA, particularly if TLRU patterns change as a result of the Project. 4. An accommodation complex will be built within the PDA to accommodate 450 to 650 workers (Section 4.9). However, off-duty workers are not identified as a receptor (Appendix R, 3.1.1.1). and drinking water source(s) are not identified in the draft EIS.		weeks off site (they will not remain in the PDA during their time off). While on the Project site (within the PDA), the health of workers is protected by occupational health and safety standards, codes and regulations established by the provincial and federal governments; thus, occupational health and safety is not addressed in the scope of this assessment. Drinking water within the Project site will meet applicable drinking water guidelines whether sourced and treated directly or otherwise obtained (Section 4.10.1.3).	ethical standards and obligations of confidentiality. Refer to EIS Guidelines Part 1, Section 4.2.4. Confidential information, for considerations around the inclusion of confidential information in the EIS. 3. Unsatisfactory. The Proponent's rationale to support the statement that "humans are not expected to spend substantial time at [the MPOI] location" is not sufficient since health risks can exist through short - term exposure or consumption of country foods harvested from these locations. It is the Agency's understanding that potentially impacted Indigenous communities may have yet to provide information on TRLU activities, so it is premature to scope out the MPOI from the HEHRA at this stage. As such, the Agency and Health Canada recommend the Proponent pursue a precautionary approach and consider MPOI as a receptor location in the HEHRA to assess the worst- case scenario. 4. Satisfactory.	model (Appendix R) in the final EIS/EA. 4. Acknowledged	
IAAC -HH-002	Section 6.21.1, Appendix R, Section 4.4, Figure 4-1	The proposed use of a target risk value of 1.0 in the HHRA is not appropriate to determine negligible health risks given that some potential exposure pathways are excluded from the assessment. The calculated risk values for threshold substances are compared to a target risk value of 1.0, instead of 0.2, to determine an acceptable (or negligible) risk. The rationale for this assumption is that both Project-related and baseline exposure from all environmental media are combined	Provide further rationale on why potential exposure via ingestion of contaminated surface or groundwater and incidental ingestion of or dermal contact with contaminated sediment are not operable pathways. In the absence of such rationale, compare the calculated total risk value to a target risk value of 0.2 to account for the	Ingestion of surface water was included as an operable pathway in the human and ecological health risk assessment (HEHRA) found in Appendix R of the draft EIS/EA, although no contaminates of potential concern were identified to exceed applicable human health guidelines in surface water. As indicated in Section 6.5.1 of the draft EIS/EA, there are no groundwater wells within the	Acknowledged.		EIS Section 624.1.2 Appendix R Section 4.4

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		(i.e., total exposure is being assessed) (Appendix R, 4.4). However, the HHRA does not consider ingestion of contaminated groundwater and incidental ingestion of or dermal contact with contaminated sediment as potential exposure pathways in the assessment of the total exposure or risk (Appendix R, Figure 4-1). Given that waterbodies within the LSA may be used for TLRU activities e.g., boating/kayaking, shellfish/bait/vegetation harvesting and fishing, wading, and swimming), users may be exposed to contaminated sediments via incidental ingestion and dermal contact pathways. Additionally, the eight Indigenous communities that were engaged with regarding the Project have yet to provide information, or the information has yet to be incorporated into the draft EIS, on drinking water sources within the PDA, LSA, or RSA (Section 6.21.1). Ingestion of surface water and groundwater (including natural springs) should be considered an operable pathway as a precautionary approach.	exposures not taken into consideration as per Health Canada (HC) HHRA Guidance[1] [1] Health Canada (HC). 2019. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Human Health Risk Assessment. Available at: https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidance-evaluating-human-health-impacts-risk-assessment.html	local study area (LSA) that are used as a source of drinking water, nor are there any known springs within the PDA and LSA that are used as a source of drinking water. Therefore, Ingestion of groundwater was excluded from the risk assessment. If additional information becomes available that indicates other exposure pathways may be operable (such as groundwater ingestion from springs, sediment contact and incidental ingestion of sediment) proximal to the Project, this will be considered in the HEHRA and updated for the final EIS/EA. In the updated HEHRA included in the final EIS/EA, individual media pathway hazard quotients will be compared to a target hazard quotient of 0.2 and multi-media total hazard quotients will be compared to an appropriate total target hazard quotient (less than or equal to 1 depending on whether all potential exposure media have been taken into account).			
IAAC-HH-003	Section 12.1 Appendix R Section 4.6, Section 6.0	The approaches and assumptions used in the HHRA should be validated for accuracy during follow-up activities. 1. The draft EIS concludes that "(t)he change in calculated risk levels from the Baseline Assessment Scenario to Project Assessment Scenario is minimal" (Appendix R, 4.6) and "Project-related contributions of COPCs are not expected to result in unacceptable levels of risk to human and ecological receptors in the LSA" due to highly conservative assumptions used in the HHRA (Appendix R, 6.0). However, the use of some conservative assumptions and exposure scenarios is not an appropriate rationale for excluding potential adverse health risks from further consideration in the environmental assessment. There remain uncertainties associated with elevated exposure levels and/or health risks for certain contaminants (see AQ-11, CF-01) and insufficient consideration of multi-media exposure (see HH-02) to calculate the total health risks. Uncertainties resulting from assumptions and exposure scenarios should be verified through follow-up monitoring. 2. The final EIS should provide preliminary details regarding monitoring plans and how mitigation (and adaptive management) measures would be implemented, rather than being finalized prior to commencement of construction (Section 12.1). This would allow for a more complete analysis of how the assumptions and predictions will be verified, and any uncertainties addressed regarding the Project's potential residual human health effects.	1. Provide more details about monitoring plans for different environmental media (e.g., air, surface water, groundwater, soil, and sediment) and country food identifying the COPCs to be monitored, sampling locations, duration, and frequency. Provide a rationale for the selection of the COPCs and sampling locations. 2. Develop adaptive management plans for such events where the monitored contaminant concentrations in environmental media substantially exceed the predicted levels.	1.The results of the HEHRA conducted as part of the final EIS/EA will inform the need for development of appropriate monitoring plans for different environmental media and country foods to verify predictions resulting from the assumptions and exposure scenarios in the HEHRA. Preliminary follow up and monitoring programs are provided in Section 12 (Table 12.3-1). For example, the preparation of an air quality monitoring plan is expected to be a condition of the provincial air emission approval (Environmental Compliance Approval – Air). Further, Appendix G-2 of the draft EIS/EA (Air Quality Modelling) included recommended parameters (and associated averaging time) for monitoring. Frequency would be expected to follow the National Air Pollution Surveillance schedule as applicable. The air quality parameters (COPCs) in Table 7-1 of Appendix G-2 of the draft EIS/EA are those that the provincial Ministry of the Environment, Conservation and Parks have historically required for similar projects and cover the COPCs for which effects were predicted. Similarly, water quality monitoring will be a condition of the provincial approvals.	1. Acknowledged. It is the Agency's understanding that several areas of uncertainty in the HEHRA are due to a lack of information from Indigenous communities potentially impacted by the Project. As such, the Proponent should make every effort to validate assumptions with Indigenous communities through its ongoing engagement and document these attempts in the final EIS. The final EIS should include clear objectives for the follow-up program based on these clearly described areas of uncertainty, and information about how the objective will be met such as the COPCs to be monitored, sampling locations or how they will	1.Acknowledged. Information received from Indigenous communities such as traditional knowledge studies was considered in the HEHRA model for the draft EIS/EA. Further information received during ongoing engagement will be evaluated for incorporation into the HEHRA model for the final EIS/EA. A summary of the engagement effort will be included in the final EIS/EA. 2. The final EIS/EA will include additional information about plans for follow-up programs and adaptive management with respect to human health, as recommended based	EIS Sections 12.2, 12.5, 12.6, 12.7

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				2. Adaptive management is discussed in Section 12.5 of the Draft EIS/EA	be determined in relation to the objective, duration, and frequency for different environmental media and country foods and how/when contingency measures (and adaptive management) measures would be implemented. This information will also allow for a more thorough analysis of how assumptions and predictions will be verified and how uncertainties regarding residual health effects will be addressed, which will be necessary for the development of potential conditions under section 52 of the Canadian Environmental Assessment Act, 2012. 2. Unsatisfactory. The information included in section 12.5 is not sufficient, as there is very little detail about the Proponent's specific plans. Adaptive management should be considered in any follow-up program; as detailed in point 1.	on the results of the HEHRA.	
IAAC -HH-004	Section 6.18 Outdoor Recreation Appendix Q-1 Section 5.3	Extremely low frequency (ELF) electromagnetic field (EMF) exposure levels encountered in Canadian homes and schools, including those located just outside the boundaries of power line corridors, are far below the thresholds to induce acute effects. As such, there are no national guidelines in Canada for human exposure to ELF EMF2. However, these fields are strongest at their source. This means exposure to stronger ELF EMFs is possible if anyone is close to a source (e.g., right beside a transformer box, directly under a high voltage power line). As the distance from the source increases, the level of exposure rapidly decreases. The draft EIS mentions the construction of an 89 km-long, 230 kV overhead transmission line, which will connect to the existing Wataynikaneyap transmission line (230 kV) (Section 4.16). The switching station at the connection point will have a footprint of about 5,000 m². The proposed transmission line intersects four traplines (Section 6.21.1.1). It is unclear	1. Identify any current and future uses of land and resources for traditional purposes in close vicinity of the proposed transmission line. Provide the proximity of these activities to the line. 2. Consider developing communication strategies to inform the public about the health risks associated with exposure to EMF.	1. There are no known dwellings within the vicinity of the proposed transmission line, and it is not anticipated that traditional land and resource use (TLRU) activities would result in significant time spent near the transmission line. However, if additional information becomes available that indicates that TLRU is potentially occurring in close vicinity to the proposed transmission line, this will be considered in the final EIS/EA. 2. A communication strategy related to EMF is not proposed for the Project given that there are no permanent residences in close proximity to the	1 & 2. Acknowledged. The Proponent should ensure that there is adequate signage and communication with trapline users and community members practicing TLRU activities in the area so that they are aware of the new transmission line.	Acknowledged.	EIS Section 6.18.2

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		whether there are any other existing or possible future uses of land and resources for traditional purposes (e.g., harvesting plants) in proximity of the proposed transmission line during the active phases of the Project. 2 HC. 2020. Power lines and electrical appliances. Extremely low frequency electric and magnetic fields. https://www.canada.ca/en/health-canada/services/health-risks-safety/radiation/everyday-things-emit-radiation/power-lines-electrical-appliances.html		transmission line, and only a 230 kilovolt transmission line (as compared to a 500 kilovolt or extremely high voltage line) is proposed. There is also information readily available publicly on this aspect, including from Health Canada and Hydro One and exposure potential for northern Ontario transmission lines is minimal. Research on the possible human health effects of electromagnetic field (EMF) has been conducted since the 1970s and has generally concluded that scientific evidence is not strong enough to conclude that exposures cause health problems.			
IAAC -HH-005	Section 6.5.4.2 Tables 6.5-1 and 6.5-3	The impact on groundwater and surface water quality in the receiving environment due to seepage from the co-disposal facility (CDF) has not been compared against guidelines protective of human health. The draft EIS does not specify whether there are any Indigenous groundwater drinking sources within the Project PDA, LSA, or RSA. Ingestion of contaminated surface water and groundwater (including natural springs) should be considered an operable pathway for human health effects as a precautionary approach (see HH-02).	Compare the predicted groundwater and surface water quality that is impacted by seepage from the CDF with guidelines protective of human health.	The predicted surface water quality was compared to guidelines protective of human health, as noted in Section 3.4.3.3 of Appendix R of the draft EIS/EA. As described in the response to Comment HH-02, the groundwater pathway was excluded for human health, but will be revised in the final EIS/EA if additional information indicates it should be included.	Acknowledged.	Acknowledged.	EIS Section 6.5.1.2, Appendix R Section 3.4.2
IAAC -IP-001	Section 6.21, other	The Proponent is required to provide the location of traditional territory (including maps where available); location of reserves and communities.	Provide maps indicating the traditional territories of Indigenous communities and their reserves.	A map indicating the traditional territories of Indigenous communities and their reserves will be provided in the final EIS/EA as available.	Acknowledged.		EIS Section 6.21 Figure 6.21-1
IAAC -IP-002	Section 6.25 Federal	Section 6.25 of the draft EIS states: “FMG recognizes that Indigenous people live, work, hunt, fish, trap, drink water and gather / harvest throughout their lands and rely on them for their individual as well as their community’s overall cultural, social, spiritual, physical, and economic well-being.” There is some information provided throughout the draft EIS to inform the potential impacts of the Project on Indigenous peoples; however, a comprehensive section on impacts to Indigenous peoples would be helpful. The Agency acknowledges the Proponent’s support of a potential Anishinaabe-led impact assessment process, and other independent traditional use studies that are underway, and looks forward to receiving more information on Indigenous perspectives, values, and interests that emerge from these processes.	Ensure that information presented in the final EIS regarding effects to Indigenous peoples and impacts to rights is informed by the proposed and ongoing Indigenous-led processes and proponent engagement.	Information presented in the final EIS/EA regarding effects to Indigenous peoples and impacts to rights will be informed by the Indigenous-led processes and proponent engagement. This will be included in a stand-alone assessment in the final EIS/EA.	Acknowledged. For clarity, the Agency interprets that “stand-alone assessment in the final EIS/EA” means a comprehensive section on impacts to Indigenous peoples, which will include all Indigenous communities with disaggregated information about impacts. The Agency emphasizes that this assessment should be informed by various engagement activities and Indigenous-led processes underway, not solely the Anishinaabe-led assessment.	The final EIS/EA will include a section on the effects on Indigenous People (See Attachment IP-02). This section will be informed by the biophysical assessment of the applicable valued components, relevant information available from consultation. For clarification, similar to the federal and provincial processes, the STPN process will be undertaken based on the final EIS/EA and will not inform the final EIS/EA. However, FMG has provided meaningful opportunities for all Indigenous communities to participate in the draft EIS/EA review process	EIS Sections 2.6.1, 6.26

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						and we continue to encourage the STPN to provide feedback on the draft EIS/EA and have offered capacity support in that regard.	
IAAC -IP-003	Section 6.19 to 6.21 Section 6.24 Section 6.25 Table B-2-1: ... Concordance Table for the [EIS] Guidelines ...	In describing potential effects of the Project on the socio-economic conditions of Indigenous peoples, the Proponent is required to provide information about effects on commercial activities (e.g. fishing, trapping, hunting, forestry, outfitting), and recreational uses. Table B-2-1 indicates that this information will be found in Section 6.21 (Traditional Land Resource Use). Separately, Section 6.25 (Federal Considerations), which the Agency understands is intended to explain where the broader VCs in the EIS link to the specific federal VCs, identifies that effects on the socio-economic conditions of Indigenous peoples would be found in Section 6.19 (Local and Regional Economy), Section 6.20 (Local and Regional Infrastructure and Services), and Section 6.24 (Human and ecological health). Table 6.25-1 summarizes sections the Proponent considers relevant to the federal assessment, but none of these identify commercial and recreational uses that would be affected by changes to the environment. The summary of 6.21 (Traditional Land Resource Use) in the next section (for Current Use) also does not mention the commercial and recreational activities, although the actual Section 6.21 has some disparate details scattered throughout. See also GEN-03.	1. Provide clear information about baseline conditions and effects on commercial activities (e.g. fishing, trapping, hunting, forestry, outfitting) and recreational uses by Indigenous peoples. Update Table 6.25-1 to more explicitly address the federal information requirements for effects on socio-economic conditions of Indigenous peoples, by deliberately pulling in or referring to the specific information that responds to the EIS Guidelines and is specific to Indigenous peoples.	1. FMG continues to work with Indigenous communities and input received through ongoing engagement activities will be acknowledged in the final EIS/EA. Any new information provided about relevant commercial activities and recreational uses will be considered in the effects assessment (and other sections as needed) and updated as appropriate in the final EIS/EA. 2. Specific information to address the federal information requirements for the effects on socio-economic conditions of Indigenous peoples, will be updated in the final EIS/EA. Section 6.20.1.2 of the draft EIS/EA provides a summary of the existing social conditions for the potentially affected or interested Indigenous communities, and Section 6.20.4 provides a description of the potential effects of the Project. Section 6.19.1.2 of the draft EIS/EA provides a summary of the existing economic conditions for the potentially affected or interested Indigenous communities, and Section 6.19.4 provides a description of the potential economic effects of the Project. Section 6.24.4.1 of the draft EIS/EA provides an assessment of the potential health effects from the Project on Indigenous people, based on the human and ecological health risk assessment in Appendix R. Relevant information on commercial and recreational activities from Section 6.21 will be amalgamated in Section 6.25 of the final EIS/EA.	1. Acknowledged. The Agency emphasizes that the Proponent should actively seek to collect this information through its ongoing engagement, and should include records of any attempts to collect this information, including the specific questions being asked to communities during outreach and engagement activities. The Agency notes that secondary information sources or historical records may also provide this information if it is not provided directly by Indigenous communities. 2. Acknowledged. The Agency will review the synthesis of information in section 6.25 in the next version of the EIS and will provide any further comments at that time.	1. Publicly available secondary information sources or historical records will be reviewed for relevant information on baseline conditions for commercial activities and recreational use by Indigenous people. FMG continues to engage Indigenous communities, and non-confidential information will be presented in the assessment of potential effects. 2. As noted in the response to IP-02, a section will be provided in the final EIS/EA on the effects on Indigenous People, which will include the synthesis of this information.	EIS Section 2, 6.26 Appendix D-1.1, D-2.1
IAAC -IP-004	Section 6.25 Federal	The EIS Guidelines require that the Proponent consider and document how effects of changes to the environment could be different for particular sub-populations within an Indigenous group (for example, women, youth, elders, specific families). There is some disaggregation (i.e., children, pregnant / breastfeeding mothers) in the human health risk assessment. The Agency acknowledges that the Proponent in continuing to collect information through Indigenous engagement; this engagement should continue to seek perspectives of diverse sub-populations and information should be disaggregated by sub-populations. The Proponent may wish to refer to Agency guidance on Gender Based Analysis Plus for guidance:	As a reminder as you continue engagement, provide information about effects on health and socio-economic conditions of Indigenous peoples in a manner that considers and documents how effects could be different for particular sub-populations within an Indigenous community.	Information about the potential effects on health and socio-economic conditions of Indigenous peoples will be disaggregated by sub-population within an Indigenous community, where the information is available.	Acknowledged. The Agency emphasizes that the Proponent's ongoing engagement should actively seek to understand how effects could be different for different sub-populations, and the Proponent should	FMG continues to engage Indigenous communities during the environmental assessment process, and include a record of activities in the final EIS/EA.	EIS Section 2, 6.26 Appendix D-1.1, D-2.1

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		https://www.canada.ca/en/impact-assessment-agency/services/policy-guidance/practitioners-guide-impact-assessment-act/gender-based-analysis.html			document any attempts to obtain this information in the final EIS.		
IAAC -IP-005	Section 6.25 Federal Section 6.23 Cultural Heritage	In describing effects on the physical and cultural heritage of Indigenous peoples, the Proponent is required to provide information about effects on cultural heritage of importance to Indigenous peoples, and the ability to access the features. Table B-2-1 points reviewers to Section 6.21 (Traditional Land Resource Use), 6.22 (Archaeology) and 6.23 (Cultural Heritage). Section 6.23 (Cultural Heritage) does not provide information about which cultural heritage values are of importance to Indigenous peoples; however, Section 6.21 (Traditional land resource use) has some disparate details scattered throughout. Table 6.25-1 summarizes sections the Proponent considers relevant to the federal assessment, but only provides reference to 6.23, which does not focus the audience on values of importance to Indigenous peoples. Federal reviewers would benefit from a more deliberate selection of information in Section 6.25 and its tables, to help reviewers focus in on the information most relevant to the federal review. See also GEN-03.	1. Consider updating Section 6.23 to clarify which cultural heritage resources are of importance to Indigenous peoples. Update Table 6.25-1 to more explicitly address the federal information requirements for effects on cultural heritage values of importance to Indigenous peoples, by deliberately pulling in the information that responds to the EIS Guidelines and is specific to Indigenous peoples.	1&2 The assessment of potential effects on areas of federal jurisdiction in the final EIS/EA will include a more explicit description of the information considered for cultural heritage values of importance to Indigenous people.	Acknowledged. The final EIS should include information on cultural heritage values of importance for all Indigenous communities. The Agency emphasizes that the Proponent should validate this information with communities through its ongoing engagement efforts to ensure that community concerns are accurately reported in the EIS.	FMG continues to engage Indigenous communities and offer capacity support for traditional knowledge/traditional land use studies, and non-confidential information related to cultural heritage resources of importance to Indigenous people will be considered in the assessment of potential effects of the Project on Indigenous people.	EIS Sections 6.23.1.2, 6.23.2, 6.26.
IAAC -IP-006	Section 6.25 Federal Various others	The Project will create linear corridors and access in an otherwise remote area, where Indigenous and non-Indigenous peoples may rely on that remoteness for their traditional and commercial activities. The EIS includes a commitment to prohibit workers from hunting and fishing in the work site area, but information wasn't found about any potential effects and mitigation for new access by people who couldn't access before.	1. Provide information about any pathways of effects on the experience of traditional practices and commercial remote outfitting activities as a result of the new access into the area through various linear corridors. Indicate whether any concerns have been raised to this effect and how they are being addressed. Provide mitigation options and discuss their practicality, and describe any residual effects.	1. Section 6.21 of the draft EIS/EA provides an assessment of the potential effects on the experience of traditional wildlife harvesting, fishing, plant harvesting and activities related to spiritual or cultural sites as a result of the new access from linear corridors into remote areas. In addition, Figure 6.17-4 in the draft EIS/EA shows the locations of cottages and outpost camps. The increased access created by the Project that will be available to Indigenous people and the public will only be along the transmission line corridor. Note that there will not be an access road or permanent trail created within the corridor that would decrease the level of remoteness. Maintaining a fully-cleared corridor over the life of the mine is not needed for transmission line integrity. Accordingly, access within the corridor will become more impeded with time as shrubs and trees regrow. Woody vegetation within the corridor will be cut down if needed to maintain the integrity of the conductor (the wire) or to allow access for transmission line maintenance. Cutting of hazard trees within or encroaching on the corridor may occur every 5 to 10 years. There are no cottages or outpost camps in the immediate	Satisfactory. The Agency encourages the Proponent to continue to seek views on this topic through ongoing Indigenous engagement.	We appreciate the Agency's encouragement.	EIS Sections 6.21.2, 6.21.4, 6.21.6.1, 6.21.6.3, 6.21.6.4

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				area of the transmission line corridor. The change in access to traditional land use areas will be mitigated with ongoing consultation with outfitters and Indigenous communities, and the development of an access management strategy with local Indigenous communities. The effects assessment in Sections 6.17 and 6.18 considers the potential increase access to traplines and mineral claims held by others and to recreational fishing, hunting and other activities. In response to comments from Indigenous communities regarding access to remote areas used for traditional land and resource purposes, gated access has been proposed at the start of the mine access road. Further, feedback on the effects assessment is being sought through the review of the draft EIS/EA. The final EIS/EA will document whether there have been comment(s) raised about the increased access and effects on commercial or traditional practices. The existing forestry operations include roads that provide public access to Crown land. The Project is proposing to construct a mine access road from the terminus of the Wenesaga forestry road to the mine site, which will have gated access. As noted in Section 6.21.3 of the draft EIS/EA, an access management strategy will be developed with local Indigenous communities to manage access in the PDA, north of the Birch River crossing (terminus of the Wenesaga forestry road). The remaining transmission line corridor, south of Springpole Lake, is located on crown land and would be publicly accessible. This will be clarified in the final EIS/EA.			
IAAC -IP-007	Section 6.21 Traditional Land and Resource Use Appendix R, 3.4.3.5	Section 6.21 notes that, prior to construction, the Proponent would develop an access management strategy with local Indigenous communities to manage access in the project development area (PDA), north of the Birch River crossing, throughout all phases of the Project. Appendix R notes that access to the mine site area of the PDA will be restricted to employees of the Proponent during the active phases of the Project and that country foods harvesting may resume at the mine site PDA during the Post-Closure phase of the Project.	Clarify which areas of the PDA, if any, will remain accessible to local Indigenous communities during all phases of the Project. Ensure the assessment of effects on human health, and associated mitigation and follow-up programs, take into account permitted land use.	The PDA north of Birch River, including the mine access road and the mine site, will be closed to public access and will be subject to the planned access management strategy. This restricted access will be in place during construction, operations and active closure phases of the Project. The transmission line corridor portion of the project development area (PDA) will remain accessible to the public and Indigenous peoples during all Project phases except for temporary local closures due to construction and	Satisfactory. In the final EIS, provide information regarding if and how the Proponent plans to notify communities and land users of anticipated temporary local closures in the transmission line corridor portion of the PDA.	The final EIS/EA will note that FMG will post applicable notices on its website and that we will work with MNRF to post standard signage towards the end of the Wenasaga forestry road as MNRF is responsible for managing signage as it relates to public usage along the forestry road.	EIS Section 6.21.1.2, 6.21.4

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				maintenance activities. The corridor will not be maintained fully cleared of vegetation, and will be allowed to naturally regrow. Woody vegetation in potential conflict with the transmission line conductor (wire) will be periodically cut down. Section 4.1.1 of the human health and ecological risk assessment in Appendix R incudes a summary of the geographic extent of human receptors considered in the assessment. Eight specific receptor locations (see Figure 3-2 of Appendix R) outside the project development area but within the human health local study area were assessed.			
IAAC -NV-002	Section 6.3 Table 6.3-3,	The noise assessment does not consider all Project-related noise sources. The draft EIS does not consider several Project-related activities [e.g., establishing the temporary construction accommodations complex, establishing and operating the water management and treatment facilities, operating and maintaining mine site infrastructure] in the noise assessment (Table 6.3-3, Section 6.3). Therefore, the assessment may underestimate the total effects from noise exposures that receptors may experience.	Include all relevant noise sources in the noise assessment for all project phases. Justify the exclusion of any sources from the noise assessment.	As noted in Section 6.3.2.1 of the draft EIS/EA, potential interactions during all phases were screened and those activities with the potential to cause residual effects were further assessed. The development of the temporary construction accommodations complex, and the establishment and operation of the water management and treatment facilities is not expected to represent a key source of noise emissions in comparison with the operation of the main equipment fleet on site. Further, the operation of the water management and treatment facilities and the accommodations complex are not expected to have an interaction with the acoustic environment. As a result, these were not included in the assessment. Noise sources related to road maintenance and general support equipment, that are expected to operate during both the construction and operations phases, were included in the assessment.	Acknowledged; however, to support the understanding of potential noise effects to support the assessment of potential health effects to Indigenous land users during the operations phase, it is recommended that the Proponent provide information related to: – truck traffic along the mine access road during the operations phase.(the number of vehicles on these roads per hour, day, week etc., and the specific times of day when vehicles may be on the road (i.e., daytime, evening, and/or overnight hours)); and – operational noise from the corona discharge of the transmission line.	Truck traffic along the mine access road was included in the draft EIS/EA. Additional clarification and the assumptions used will be included in the final EIS/EA. An assessment of operational noise from the transmission line will be included in the final EIS/EA.	EIS Section 6.3.1.2, Appendix H-3 Section 3
IAAC -NV-003	Appendix H-3 Table 2-1 Table A1-A	Insufficient detail is provided regarding the applicable adjustments for sound characteristics. The draft EIS does not provide sufficient details to confirm whether appropriate adjustments were applied to the noise sources. All the noise sources were characterized as steady (Table A1-A, Appendix H-3) and it is unclear whether any adjustments were applied to the noise sources. The only adjustment mentioned is +10 decibels (dB) for nighttime when calculating Day-Night Sound Levels (Ldn) for baseline sound levels (Table 2-1, Appendix H-3). When adjustments to baseline or project noise are necessary, HC prefers	Consider all applicable adjustments to baseline and project noise levels and the resulting change in percent highly annoyed (%HA) calculations as per ISO 1996-1:2003. Provide a description when they have been used or a rationale when they are deemed not applicable in a given scenario.	The final EIS/EA will be updated with further details on the baseline and project noise levels that were adjusted, in consideration of the applicable guidelines. The associated rationale will be provided.	Acknowledged.		EIS Section 6.3.1.2, Appendix H-3

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		that adjustments be made by following ISO 1996-1:2003[1]. Details of how to apply adjustments are given in Section 6 of ISO 1996-1:2003. Examples of recommended adjustments include, but are not limited to: +10 dB adjustment for quiet rural areas. +5 dB adjustment to tonal noise sources (e.g., backup alarms on trucks). +5 dB adjustment to regular impulsive noise sources (e.g., truck tailgate). +12 dB adjustment to highly-energy impulsive noise sources (e.g., blasting). [1] International Organization for Standardization (ISO). 2003. ISO 1996-1:2003 Acoustics – Description, measurement and assessment of environmental noise – Part 1: Basic quantities and assessment procedures. Available at: https://www.iso.org/standard/28633.html					
IAAC -NV-004	Appendix H-3 Table 5-2	Sleep disturbance is not assessed against all the standards recommended by HC. For noise-induced sleep disturbance, the nighttime 1-hour Equivalent Sound Level (LAeq-1hr) metric was compared to a noise impact criteria of 45 A-weighted decibels (dBA) for outdoors (Table 5-2, Appendix H) based on HC Noise Guidance.[2] However, HC Noise Guidance also states that, to limit sustained changes in sleep that may cause long-term adverse health effects, the annual average nighttime levels (Ln) should not exceed 40 dBA outdoors at the most exposed façade [World Health Organization (WHO), 2009].[3] [2] HC. 2017. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise. Healthy Environments and Consumer Safety Branch. Available at: https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidance-evaluating-human-health-impacts-noise.html [3] WHO. 2009. Night Noise Guidelines for Europe. Hurtley, C. (Ed). Available at: https://doi.org/10665/326486	Provide the predicted outdoor Ln values at all receptor locations. Consider additional mitigation measures and monitoring if the annual average Ln exceeds 40 dBA at any noise receptor location.	The final EIS/EA will be updated to provide the predicted outdoor Ln values at relevant receptor locations. Where exceedances are predicted, a description of applicable mitigation and monitoring will be provided.	Acknowledged.		EIS Sections 6.3.1.2, 6.3.6.1, Appendix H-3 Section 5.2.2
IAAC -NV-005	Appendix H-4 Section 5.0	The noise assessment does not consider human health-relevant guidance for assessing impacts from blasting. 1. The draft EIS (Section 5, Appendix H-4) calculates blasting impacts based on Ontario publication NPC 119. For a single blasting event per day, HC accepts the use of provincial overpressure limits for blasting noise [e.g., Ontario NPC 119 (1982),[4] MECP (1985)[5], and/or Nova Scotia (1999)[6] because in general, they are similar in level of protection as HC (2017),[2] which is based on ISO 1996[1] and ISO 1996 [2]. However, NPC 119 is intended to be used to evaluate exceedances of peak threshold limits to prevent structural damage, but is not specifically applicable to evaluate the health endpoints considered by HC. For multiple blasting events in a single day, HC Noise Guidance[2] has adopted the US EPA (1974)[9] criterion for sonic booms and limits the Z weighted peak sound pressure level to 125-10 log N dB, where N is the number of blasting events per day.	Provide a noise assessment following HC Noise Guidance to assess blasting-related health impacts including but not limited to C-weighted sound levels (dBC) for blasting lasting longer than a year (≥1 year) or as Z-weighted (i.e., unweighted) sound levels (dBZ) for blasting lasting less than a year (< 1 year). Provide the approximate blasting schedule with the planned number of blasts per day, blasting frequency, timing of blasting (e.g., day/night) and the number of years over which blasting will occur.	The blasting assessment in the final EIS/EA will be updated to include the HC Noise Guidance related to health impacts, specifically public annoyance. For blasting lasting less than a year, the HC Noise guidance considers the US EPA (1974) criterion for sonic booms and limits the Z weighted peak sound pressure level to 125-10 log N dB. For blasting lasting more than a year, the HC Noise Guidance considers ISO 1996-1 and ISO-1996 2. The blasting impact calculations were completed using conservative assumptions to model the predictable worst-case scenario in all cases, as described in Section 6.3 of the draft EIS/EA. Prior to construction, a detailed blasting plan will be	1. & 2. Acknowledged. 3. Acknowledged; however, the Proponent is encouraged to create a communication strategy to notify Indigenous communities who use land nearby the site of the blasting schedule. This schedule should also be developed based on input from communities.	3. The final EIS/EA will note that FMG will post blasting notices and schedules on its website and that FMG will work with local communities to further develop communication strategies.	EIS Sections 6.3.4, Appendix H-4 Section 5

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		2. The draft EIS does not provide details of the blasting schedule to enable the selection of a high annoyance criterion for blasting to which the sound levels can be compared. High annoyance from blasting can depend on the number of blasts per day, the frequency of blasting over a year and the number of years that blasting is planned to occur. 3. For mitigating blasting noise [lasting less (< 1 year) or more than one year (≥1 year)], HC advises following the recommendations in the US EPA (1974)[9] and ISO 1996 [1]:2003 [Appendix E and Appendix F, HC (2017)[2]], respectively. Appendix H also presents examples of commonly applied construction noise mitigation measures and considerations for noise reduction, some of which may also be applicable to the operations phase. [2] HC. 2017. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise. Healthy Environments and Consumer Safety Branch. Available at: https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidance-evaluating-human-health-impacts-noise.html [3] WHO. 2009. Night Noise Guidelines for Europe. Hurtley, C. (Ed). Available at: https://doi.org/10665/326486 [4] Ontario Ministry of the Environment.1982. Guideline NPC-119 – Blasting. [5] MECP. 1985. Guidelines on Information Required for the Assessment of Blasting Noise and Vibration. [6] Nova Scotia Environment and Labour. 1999. Pit and Quarry Guidelines. Available at: https://novascotia.ca/nse/issues/docs/Pit_and_Quarry_Guidelines.pdf [7] ISO. 2016. ISO 1996-1:2016. Acoustics – Description, measurement and assessment of environmental noise – Part 1: Basic quantities and assessment procedures. Geneva, Switzerland. Available at: https://www.iso.org/standard/59765.html [8] ISO. 2017. ISO 1996-2:2017. Acoustics — Description, measurement and assessment of environmental noise — Part 2: Determination of sound pressure levels. Available at: https://www.iso.org/standard/59766.html [9] US EPA. 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (Report No. 550/9-74-004).	Provide mitigation measures and consider monitoring if blasting-related noise exceeds relevant thresholds/standards/criteria as per HC Noise guidance.28 In general, all technically and economically feasible noise reduction measures should be implemented in order to reduce noise levels at nearby receptor locations. Consider developing a communication plan detailing how the schedule of blasting prior to their occurrence will be shared with nearby residents (Indigenous and non-Indigenous) so they are aware of these activities in advance.	developed for the Project to determine the maximum allowable explosive loading at various locations within the project development area to ensure compliance with NPC-119, Health Canada and DFO limits for vibration at receptors. As noted in Section 6.3.3 of the draft EIS/EA, site equipment will be operated to meet NPC-300 and Health Canada operational noise limits at receptors during construction and operation of the Project. Mitigation measures include: Implementation of source-based noise control measures on construction and other mobile equipment such as noise attenuation kits; Proper maintenance of equipment; and Use of acoustical enclosures to limit overall noise emissions on select equipment and/or buildings. For clarification, it should be noted that this Project is proposed in a remote area, with no permanent residents in the area and the closest Indigenous community approximately 40 km from the site. A Communication Plan will be developed for the Project prior to construction that describes how the schedule of blasting will be communicated.			
IAAC -NV-006	Draft EIS 12.6, Section 12, pdf p.5-6	Insufficient detail is provided regarding the noise complaint response protocol. Section 12.6 of the draft EIS states, "[a] formal procedure will be developed to document and respond to inquiries and complaints received during all phases of the Project." However, no specific information is provided on how Project-related noise complaints will be received and addressed. A complaints response protocol should include a formalized means of receiving and responding to complaints in a timely fashion with additional	1. Provide a formalized complaint response plan that describes how complaints will be received (e.g., website, telephone #, etc.), response time, and method(s) for resolution, including additional mitigation measures that could be implemented, if required. Consider developing a communication plan	1. Additional detail on the complaint response protocol will be provided in Section 12.6 of the final EIS/EA and is expected to be fully developed after EA approval, prior to construction. For clarification, it should be noted that this Project is proposed in a remote area, with no permanent residents in the area and the closest Indigenous community approximately 40 km from	1. Acknowledged. 2. Acknowledged; however, the Proponent is encouraged to create a communication strategy to notify Indigenous communities who use land nearby the site of noisy	See the response to NV-05.	EIS Sections 12.1.7, 12.3.2

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		monitoring and mitigation measures defined in the event of noise-related complaints. In addition, multiple methods of communication (e.g., telephone, mail, signage, websites) can support effective and efficient communication between the Proponent and communities. Furthermore, the Proponent may consider developing a communication plan to inform nearby residents of upcoming Project activities that may cause notable changes in sound levels (e.g., blasting) as a way to mitigate noise-related complaints. Previous experience has shown that a community is more likely to be understanding and accepting of project noise, and more likely to make appropriate adjustments to limit noise exposure if it has been engaged prior to noisy project activities (HC, 2017).[2] [2] HC. 2017. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise. Healthy Environments and Consumer Safety Branch. Available at: https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidance-evaluating-human-health-impacts-noise.html	detailing how the schedule of noisy activities (including impulsive or highly impulsive noises, such as blasting or jack-hammering) prior to their occurrence will be shared with nearby residents (Indigenous and non-Indigenous) so they are aware of these activities in advance.	the site. A Communication Plan will be developed for the Project prior to construction that describes how the schedule of blasting will be communicated	activities the blasting schedule. This schedule should also be developed based on input from communities.		
IAAC -NV-007	Appendix H-4 Table 2-2, pdf p.11	WHO (1999)[11] recommends that peak sound pressures from impulsive noise exposure should not exceed 140 Z-weighted decibels (dBZ) for adults and 120 dBZ for children to avoid hearing loss. The unit (dBL) used in Table 2-2 (Appendix H-4, pdf p.11) is different from WHO's recommendation (dBZ). [11] WHO. 1999. Guidelines for Community Noise. Berglund, B., Lindvall, T. and Schwela, D.H (Eds.). Available at: https://doi.org/10665/66217	Provide the results of Table 2-2 in dBZ.	The units in Table 2-2 of the Blasting Impact Assessment Report (Appendix H-4 of the draft EIS/EA) will be updated with to dBZ (Z-weighted decibels).	Acknowledged.		Appendix H-4 Table 2-2
IAAC -PP-001	Section 2, Appendix C, D.	The Proponent is required to describe the ongoing and proposed public participation activities for the Project, including a description of efforts made to provide project materials, engagement methods, and a summary of key issues raised, how information was incorporated into the design and EIS, and any outstanding issues. This information may be best presented in an engagement log, which should indicate the methods used, location of the engagement, the persons and/or organizations engaged, the concerns raised, and how the information was incorporated into the design of the Project and/or the EIS. Section 2 and Appendices C and D do not provide sufficient detail on the stakeholder engagement to meet the requirements of the EIS Guidelines. For example, Table 2.9-6 (Summary of Comments from Stakeholders) in Section 2 only has two entries, leaving reviewers curious about the balance of any public and stakeholder concerns including any comments from remote fishing lodge operators. Appendix D (Consultation Materials) includes materials from 2021 onwards, and therefore does not clarify how concerns raised during the federal assessment process from 2018 to 2020 have been addressed or remain outstanding.	Describe the ongoing and proposed public participation activities for the Project, including a description of efforts made to provide project materials, engagement methods, a summary of key issues raised, how information was incorporated into the design and EIS, and any outstanding issues. Include public engagement from throughout the federal assessment process including activities and concerns raised prior to 2021.	The final EIS/EA will include a Record of Consultation, to document the results of public participation and further engagement with government agencies, Indigenous communities and stakeholders. Efforts made since the start of the environmental assessment process (2018) and a summary of how comments were addressed will be provided in the final EIS/EA.	Acknowledged. The Agency also acknowledges receipt of a Record of Consultation, dated April 2023. The Agency emphasizes that, in addition to describing efforts that have been made to engage with the public, the final EIS should describe, in detail, how information discussed in engagement activities has been incorporated into the project design. The Agency will review this information in the next version of the EIS and will follow up at that time if further information is needed. Please ensure that the context, rationale, and	Section 2.9 of the draft EIS/EA includes a summary of the influence of consultation on the project design and EIS/EA to that point in time. The input received included feedback on the project description, baseline studies and the assessment of alternatives, and was used to optimize the project design and enhance the assessment of the Project. Engagement is ongoing and the consultation section will be updated with additional information including	EIS Sections 2.6, 6.2 to 6.26 Influence of Consultation Subsections Appendix C, D

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					questions identified in the Agency's previous comments are included in the future submission. Specifically, the Agency is seeking to understand whether concerns have been raised to the Proponent by the remote fishing industry or remote tourism industry and whether they have been resolved.	where comments inform the project or final EIS/EA. Further, the updated assessment of valued components (VC) in the final EIS/EA will include a section summarizing input received on the specific VC and how this influenced the assessment of effects. Outfitters in the area were provided with notice of the draft EIS/EA, as well as invitations to public open houses. In addition, FMG has been working on an individual basis with the outfitters in close proximity to the Project. To date, limited comments on the environmental assessment have been provided to FMG however, input received will be summarized in the relevant sections of the final EIS/EA.	
IAAC -Rig-001	Section 6.21 – Traditional Land and Resource Use Section 6.25 – Federal Considerations	The Proponent is required to document—for each Indigenous community—the potential adverse impacts of the Project on exercise of rights. When information is provided directly by a community to the Proponent, to the Agency, or is available through public records, the Proponent must describe, at a minimum: – location of the right being practiced or exercised; – context in which the right is practiced or exercised; – how the Indigenous community's cultural traditions, laws and governance systems inform the manner in which they exercise the right; – how often the right is practiced or exercised and timing or seasonality of the practice or exercise of the right; – the Indigenous community's perspectives on the importance of the land on which the Project is located and how it intersects with any land management uses and/or plans they may have; and, – maps and data sets.	Present, for each Indigenous community, information related to potential adverse impacts of the project on rights from primary sources (i.e., potentially affected Indigenous communities) and secondary sources (e.g., community and organization websites, existing government reports, case law). This information may include: – maps and background information of each potentially affected community's traditional territory; – geographic extent of practices, including maps showing: ◦areas uses for hunting, fishing, trapping and harvesting practices (e.g., hunting camps, cabins, harvesting, fishing and trapping areas);	FMG is continuing to work with Indigenous communities on additional TLRU information sharing where it is made available. The information provided from primary sources of information will be combined with information from secondary sources and presented for each Indigenous community in relation to potential adverse effects on the exercise of rights. The information that will be presented in the final EIS/EA will be dependent upon the level of information provided by Indigenous communities and will be subject to ethical standards and obligations of confidentiality.	Acknowledged The Agency emphasizes that any primary and secondary information should be differentiated and that sources should be properly cited. For instance, Section 6.21 identifies that two traplines that intersect the mine site area are held by members of Cat Lake First Nation but fails to identify the owner of an additional eight traplines that intersect the mine access road or transmission line corridor. The potential	The final EIS/EA will include a section on the effects on Indigenous People and the impacts on the rights of Indigenous People (See Attachment IP-02). This section will be informed by secondary sources of information and non-confidential primary sources such as TK/TLU studies and ongoing engagement with Indigenous communities. These sources of information will be	EIS Sections 6.21-2, 6.21-6, 6.26-2, 6.26-6

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		The description of rights, including land and resource use by Indigenous peoples in the project area, provided in the draft EIS does not adequately address these requirements. The Agency acknowledges proponent comments in the concordance table that much of this information is being collected and will be available in the final EIS.	◦waterways or land travel routes traditionally used for traditional practices; – nature of practices, including: hunting, fishing, trapping, and harvesting practices; – wildlife species of importance for hunting, fishing, and trapping practices; – plant species of importance including for berry and plant harvesting; – cultural and other traditional uses of the land (e.g., collection of medicinal plants, use of sacred sites, annual gathering, meeting and teaching grounds); – frequency of practices, including data sets (e.g., fish catch numbers, harvest data by species); and, – timing of practices exercised within recent memory. Ensure that this information is provided in keeping with appropriate ethical standards and obligations of confidentiality. Refer to EIS Guidelines Part 1, Section 4.2.4. Confidential information, for considerations around the inclusion of confidential information in the EIS.		for these project components to adversely impact the exercise of Indigenous rights must be assessed. The Agency emphasizes that the Proponent should validate this information with communities through its ongoing engagement efforts to ensure that community concerns are accurately reported in the EIS.	properly cited in the final EIS/EA.	
IAAC -Rig-002	Section 6.21 – Traditional Land and Resource Use; Section 6.21.2 – Potential Environmental Effects	The Proponent is required to document the potential adverse impacts of each of the project components and physical activities, in all phases, on rights, including those impacts raised by Indigenous communities. The draft EIS Section 6.21 identifies concerns relating to the Project that have been raised by only two Indigenous communities: the Metis Nation of Ontario and Wabauskang First Nation.	Provide, for each Indigenous community, information regarding the potential adverse impacts of each of the project components and physical activities, in all phases, including potential impacts that have been raised by Indigenous communities.	Section 6.21 of the draft EIS/EA includes traditional knowledge information from all identified communities which was used to identify potential adverse impacts. FMG will provide, for each Indigenous community, additional information regarding potential adverse impacts for each relevant project component and physical activity during all project phases in the final EIS/EA. This will include potential impacts that have been identified by the Indigenous communities, where available.	Acknowledged. Section 6.21 of the draft EIS includes summary information but does not clearly attribute information to each community or disaggregate potential impacts specifically enough to fully understand possible effects for each Indigenous community. The final EIS should include information on potential adverse impacts for all Indigenous communities included in Part 2, Section 5 of the EIS Guidelines. The Agency emphasizes that the Proponent should validate this information with communities through its ongoing engagement efforts to ensure that	The final EIS/EA will include a section on the effects on Indigenous People and the impacts on the rights of Indigenous People (See Attachment IP-02). This section will be informed by secondary sources of information and non-confidential primary sources such as TK/TLU studies and ongoing engagement with Indigenous communities. The information and analysis will be disaggregated by community, and validated with the communities, where possible, through ongoing engagement.	EIS Section 6.26-6

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					community concerns are accurately reported in the EIS.		
IAAC -Rig-003	Section 6.21 – Traditional Land and Resource Use	The Proponent is required to document, for each Indigenous community, measures identified to accommodate potential adverse impacts of the Project on rights and clearly describe how it intends to implement them. The Proponent should include perspectives and specific suggestions raised by potentially impacted Indigenous communities, as well as any views of Indigenous communities on the effectiveness of mitigation measures. The Proponent is further required to document where potential adverse impacts on rights cannot be fully mitigated or accommodated as part of the EA and associated engagement with Indigenous communities. The draft EIS does not include the perspectives of potentially impacted Indigenous communities, and does not include the views of Indigenous communities on the effectiveness of mitigation measures.	1. Identify, for each Indigenous community, appropriate mitigation and accommodation measures potential impacts to rights. For each mitigation and/or accommodation measure, provide the following details, if applicable: a. the Indigenous community to which each measure applies (e.g., if a protocol is developed to notify a community whenever a burial site is found during construction, which community is notified); b. whether the mitigation/accommodation was proposed by and/or shared with the Indigenous community or communities, for their consideration and feedback c. the geographic extent of the measure (e.g., area of compensatory habitat); and, d. the duration of the measure (e.g., the project phases to which the measure applies). 2. Provide, for each Indigenous community, information regarding the potential adverse impacts on rights that have not been fully mitigated or accommodated as a part of the EA and associated engagement with Indigenous communities.	1&2. As part of ongoing engagement with Indigenous communities, FMG wis seeking feedback on the proposed mitigation measures in the draft EIS/EA for the potential effects on Indigenous people. The draft EIS/EA consultation process provides a key opportunity for consultation on the proposed mitigation measures, should communities be interested in participating. The final EIS/EA will include a summary of the feedback received from Indigenous communities on the proposed measures.	Acknowledged. In the final EIS, provide all information identified in items 1 and 2 of the original question / information requirement, including where potential adverse impacts on rights cannot be fully mitigated and the associated engagement with Indigenous communities. Ensure that the summary of feedback notes which communities provided each comment and how these comments were considered and integrated by the Proponent into the mitigation and accommodation measures.	The final EIS/EA will include a section on the effects on Indigenous People and the impacts on the rights of Indigenous People (See Attachment IP-02). This section will include mitigation / accommodation measures applicable to community consultation. Further, the alternatives assessment and effects assessment for each valued components (VC) in the final EIS/EA will include a section summarizing input received and how this influenced the assessment of alternatives and the potential effects to VCs.	EIS Sections 6.2 to 6.26, Influence of Consultation Subsections, Section 6.26-4
IAAC -Rig-004	6.18 Outdoor Recreation	Section 6.18.4.4 of the draft EIS notes that the construction and operation of the Project will remove existing portage routes that cross the PDA, and will affect navigational routes between Springpole Lake and Birch Lake due to cofferdam construction, and construction and operation of the mine site. The draft EIS does not appear to indicate where navigable waterways are used by Indigenous peoples for the exercise of rights including to access areas for traditional use and cultural or spiritual purposes. A clear understanding of which waterbodies are navigable and for which navigability may be affected is required to inform potential impacts to Indigenous peoples. Further, consultation with Transport Canada (TC) to regarding any potential requirements under the Canadian Navigable Waters Act (CNWA) would inform the scope of the assessment of effects that directly linked or necessarily incidental to any power that may be exercised, or duty or	1. Provide a table listing navigable water bodies. For each waterbody in the table provide: – Details on the likelihood of that the waterbody is used by vessels, in full or in part, for any part of the year as a means of transport or travel for commercial or recreational purposes; – Details on whether the waterbody is used as a means of transport or travel for Indigenous peoples exercising rights; – Whether there is public access, by land or by water; and if not, details of riparian owners. 2. Assess any potential impacts to the	1. A table listing water bodies that are potentially navigable is provided in Attachment Rig-04-01. 2. Section 6.21.4.4 provides an assessment of the effects of the Project on existing travel routes and portages that cross the project development area (PDA). During the construction and operation of the Project, these will be removed (resulting from the construction of the dikes and dewatering of a portion of the north basin of Springpole Lake), and may reduce access to habitation, cultural and spiritual sites. This will be mitigated by managing access to the PDA north of the Birch River crossing, through the development of an access management strategy to maintain the travel corridor during operations. Through ongoing	1. As noted in the original comment, the Proponent may choose to work with TC to determine which, if any, of the identified potentially navigable waterways may be subject to the requirements of the CNWA. TC's advice for this identification was provided in row 09 of "Enclosure 2: Federal Advice on draft EIS – Springpole Gold Project", provided on November 4, 2022. Questions to collect the information described in that advice could be	1. A summary of waterbodies within the Project Development Area was provided to Transport Canada (TC) in Q3 2023 and include relevant information to assess the navigability of each waterbody. Where TK/TLU is available, it will be included in the summary information. Feedback from TC on the assessment information will be considered in preparing the final EIS/EA.	EIS Section 6.25 Table 6.25-1 and Section 6.26 Table 6.26-4

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
		function that may be performed by TC under the CNWA. The Agency acknowledges that information on Indigenous navigation is being collected and will be available in the final EIS.	exercise of rights by Indigenous peoples due to the Project's effects to the waterbody.	consultation with Indigenous communities and traditional land and resource users the location will be determined.	included in ongoing engagement efforts to ensure that the identification of waterways used for navigation is informed by Indigenous Knowledge and input (and to potentially reduce consultation needs during subsequent permitting stages). Identifying which waterbodies may be subject to CNWA would support the scoping of the assessment of potential effects that would be directly linked or necessarily incidental to the exercise of a power or the performance of a duty or function by TC under the CNWA. Otherwise, the Proponent should assume that any potentially navigable waterway would require the exercise of a power under the CNWA and scope the assessment of direct or incidental effects accordingly. 2. Unsatisfactory. The final EIS must include a description of the potential impacts to rights, including impacts due to the "reduce[d] access to habitation, cultural and spiritual sites". Provide a detailed description as to how the access management strategy would mitigate impacts or accommodate these rights.	2. The final EIS/EA will include a section on the effects on Indigenous People and the impacts on the rights of Indigenous People (See Attachment IP-02). This section will include mitigation / accommodation measures such as the access management strategy. The strategy's goal will be to maintain access for traditional land use and ensure safety. The specific details of the strategy will be advanced prior to construction in consultation with Indigenous communities using the area and the local trapline holder for the area.	
IAAC -Rig-005	6.21.4 – Assessment of Residual	The Proponent is required to document potential adverse impacts on rights that may result from the residual and cumulative environmental effects. The Proponent is required to include the perspectives of potentially impacted	For each Indigenous community: – Provide information regarding the	Through ongoing engagement during the review of the draft EIS/EA, additional information from Indigenous communities is being sought to inform	The Agency interprets (and requires) that in addition to including a summary of	The final EIS/EA will include a section on the effects on Indigenous	EIS Section 6.26

Table C-1.2: First Mining Gold Response to the Federal Information Requirements related to the Springpole Gold Project Draft Environmental Impact Statement / Environmental Assessment

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
	Environmental Effects; 6.21.5 – Significance of Residual Effects; 7 – Cumulative Effects Assessment	Indigenous communities. The draft EIS does not include information regarding the cumulative environmental effects, and does not include information regarding the perspectives of potentially impacted Indigenous communities regarding the potential adverse effects that may result from the residual and cumulative environmental effects. Specifically, Table 7.2-1 of Section 7 of the draft EIS notes that the determination of whether there will be residual effects on traditional land and resource use is ongoing. Table 7.13-1 of Section 7 of the draft EIS notes that the determination of whether there will be residual and cumulative effects on traditional land and resource use requires further input. The Agency acknowledges that much of this information is being collected and will be available in the final EIS.	significance of residual effects on Aboriginal and treaty rights. – Provide information regarding the potential adverse impacts on Aboriginal and treaty rights that may result from the cumulative environmental effects. – Provide information regarding the perspectives of potentially impacted Indigenous communities on any potential adverse impacts that may result from the residual and cumulative environmental effects.	the assessment of potential effects, applicable mitigation measures, the assessment and characterization residual effects and the assessment of cumulative effects for the Project. The draft EIS/EA consultation process provides a key opportunity for consultation on the Project and EA, should communities be interested in participating. The final EIS/EA will include a summary of the feedback received from Indigenous communities.	feedback received, the final EIS will also include the actual assessment and characterization of residual effects on the exercise of rights and the assessment of cumulative effects on the exercise of rights referenced in the original question. This assessment should also be validated by communities, and any perspectives on potential adverse impacts resulting from residual and cumulative environmental effects should be included in the final EIS.	People and the impacts on the rights of Indigenous People (See Attachment IP-02). This will include a characterization of the residual and cumulative effects on the exercise of rights of Indigenous people. Opportunities to validate this assessment will be provided to Indigenous communities participating in the environmental assessment process to provide feedback perspectives on potential adverse impacts resulting from residual and cumulative environmental effects prior to submitting the final EIS/EA.	
IAAC -Ter-001	Section 6.12.2.3 - Spatial and Temporal Boundaries (p. 6-266); Section 6.16.2.3 - Spatial and Temporal Boundaries (p. 6-356)	The EIS must describe the spatial boundaries, including local and regional study areas, of each VC to be used in assessing the potential adverse environmental effects of the Project and provide a rationale for each boundary. Spatial boundaries will be defined taking into account the appropriate scale and spatial extent of potential environmental effects, community knowledge and Indigenous knowledge, current or traditional land and resource use by Indigenous groups, ecological, technical, social and cultural considerations. The information provided in the draft EIS regarding spatial boundaries does not support a conclusion of biologically-relevant assessment of project effects. ECCC's Annex on Baseline Guidance from August 13, 2021, provides advice on spatial boundaries, as well as data collection, data management and analysis, and methods and results reporting.	Provide an explanation of how each spatial boundary addresses both potential direct and indirect effects to each VC.	As noted in Section 6.1 of the draft EIS/EA, the local study area for each valued component is based on geographic extent of the potential direct and indirect Project effects. The regional study area is based on the maximum geographic extent or zone of influence in which the potential effects are assessed and used to provide regional context to the valued component. These are further refined in the effects assessment for each valued component. The rationale for the local and regional study areas for wildlife (Section 6.12.2.3) and SAR birds (Section 6.16.2.3) will be revised in the final EIS/EA, to include consideration for watersheds, eco-districts, Bird Conservation Regions, traditional knowledge (when available), and any other guidance made available by ECCC pertaining to development of ecologically defined study areas.	Acknowledged.		EIS Sections 6.12.1.2, 6.12.1.3, 6.16.1.2, 6.13.1.3
IAAC -Ter-002	Appendix P-3 2021 Terrestrial Baseline Report, Figures 4-1 and 4-2;	The EIS must present baseline information in sufficient detail to enable the identification of how the Project could affect the VCs and an analysis of those effects. The Proponent should consult relevant guidance from other federal departments and ensure that the most up to date version is being used.	Provide a discussion on the study design, and clearly describe whether the design incorporated random selection of survey locations, including whether stratification according to biologically relevant factors	Density estimates of individual breeding bird species across local and regional study areas has been undertaken, as per provincial and federal avian protocols. Multi-year migratory bird point count surveys have been completed. In 2021, 228-	Acknowledged.		Appendix P-1 Sections 2.2, 2.4

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
	Appendix P-3 2021 Terrestrial Baseline Report, Section 4.5.1 - Breeding Bird Surveys; Section 4.3 - Site selection	Appendix P (Section 4.3) provides a description of site selection based on the Far North Land Cover Classes. Sites were selected based on the cover type, then refined using a Digital Elevation Model (DEM) and existing disturbance features, and then further refined in the field, as necessary. The information provided does not support the conclusion that surveys were sufficient to describe baseline conditions. Information to support robust conclusions about baseline conditions require data collected according to a robust and well described survey design. This design should incorporate random selection of survey locations, ideally with stratification according to biologically relevant factors (e.g., as inferred by land cover). Presented estimates are difficult to assess for accuracy. Survey locations are shown but the EIS does not document how samples are defensibly representative of the PDA, LSA, and RSA. Nor does it appear there is replication or spatial overlap of locations between sampling years. This lack of spatial and temporal segregation of sampling results in statistical issues (e.g., inability to separate sources of variance) and an inability to draw conclusions (e.g., inability to separate spatial from temporal effects). Survey design details are unclear. It is not possible to discern whether individual point count and Auditory Risk Unit (ARU) locations were chosen randomly or by some other method (e.g., haphazard or convenience) and upon what basis (e.g., via land cover classification). ECCC's Annex on Baseline Guidance from August 13, 2021, provides advice on data collection (design, protocols), data management and analysis, and methods and results reporting.	was undertaken. If the study design followed another methodology, provide a description and rationale for the design.	point count stations were surveyed. In 2022, 164-point count stations were surveyed; of which 77 were resampled point count stations from 2021. The re-sampled stations were in areas that were not burned in the fire that occurred in June and July of 2021. In 2021, 31 autonomous recording units (ARU) were deployed and was doubled to 64 ARUs in 2022. This provided a total of 3,410 ARU days. In 2021, the ARUs gathered 778,259 bird detections. In 2022, with the deployment of an additional ARUs, the number of detections significantly increased to 4,482,168. ARU's targeted all habitat types, including those preferred by Species at Risk such as Eastern Whip-poor-will. In addition, owl playbacks, waterfowl and shorebird surveys as well as raptor nest stick nests surveys were undertaken in multiple years. The design included stratification across habitat types (including upland and wetland habitats) as well as randomly selected locations for all bird survey stations (including ARU) within each target Far North Landcover class. Randomization was done using ARCMap 10.2. In some instances, the first locations randomly selected were not safely accessible by helicopter and as such, another random location was then selected. Additional survey design detail will be provided in the updated baseline terrestrial report and updated mapping areas surveyed in 2022 and 2021 will be updated. Individual density estimates per species have been modelled and take into account temporal and spatial co-variates such as year and habitat.			
IAAC -Ter-003	Appendix P-3 2021 Terrestrial Resources Baseline Report, Section 4.2 – Power Analysis,- Section 4.3 - Site Selection	The EIS Guidelines require all VCs to be described in sufficient detail to allow the reviewer to understand their importance and to assess the potential for environmental effects arising from the project activities. The information provided in the draft EIS does not support the conclusion that surveys were sufficient to describe baseline conditions. Results from the power analysis are incomplete and Appendix P-3 Section 4.2 concludes that there was insufficient sampling to quantify the current distribution and abundance of 47 species. Presenting full details of methods and the results of the power analysis would provide a transparent basis for evaluating how current sampling was deemed to be sufficient to make the presented claims in relation to impacts.	Provide full details of methods and the results of the power analysis to provide a transparent basis for the evaluation of impacts.	Power analysis of the 2021 and 2022 avian, vegetation and bat data has revealed that some species have been sampled adequately enough to detect an approximate 25% reduction in density and abundance. Additional detail on the power analysis results will be provided in the updated baseline terrestrial report in the final EIS/EA. A technical meeting with ECCC has been requested to discuss targeted surveys being considered for 2023.	Acknowledged. It is acknowledged that a technical discussion was held on April 14, 2023; at the meeting, ECCC recommended simulations to focus 2023 surveys on species that are data deficient, and to use the simplest or most efficient survey method for those species. The Agency understands that the Proponent has already	FMG and WSP appreciate the discussion in April and following that meeting, it was understood that ECCC and the Agency were reviewing the guidance for migratory birds and the applicability of the studies recommended for Canadian mining projects. Studies at Springpole have been ongoing for years and	EIS Section 6.12.2 Appendix P-1 Section 2.0, 3.0

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		ECCC's Annex on Baseline Guidance from August 13, 2021, provides advice on data collection (design, protocols), data management and analysis, and methods and results reporting.			implemented this advice for the 2023 season.	more than sufficient data has been collected for the purposes of the effects assessment. Therefore, additional field investigations have been deferred to support permitting as required. The recommended simulations discussed at the April meeting, using the existing data have been prepared for inclusion in the final EIS/EA.	
IAAC -Ter-004	Table 6.12-4 Wildlife Habitat Assessment of Developed Areas – All Wildlife (except Large Mammals and SAR)	The comparison of habitat between baseline condition and during mine operation is compromised by using, without adjustments, land cover classification that is at least 8 years out of date. Given that a major fire went through the region recently, fire and other dramatic changes since the land cover classification was created should be accounted for in the baseline condition.	Provide a description of how recent changes in land cover (e.g., fires) have been accounted for in the assessment of impacts to habitats.	The spatial disturbance layers for the spatial extent of the entire Churchill Range for Caribou is being updated with recent fire and forestry related disturbance data. Forestry companies in Trout Lake Forest, Lac Seul Forest and White Feather have been contacted to obtain information on recent forestry activities. Available updated land cover classification will be included in the final EIS/EA	Acknowledged.		EIS Section 6.12.1.2, 6.13 Appendix P
IAAC -Ter-005	Section 6.12.4 - Assessment of Residual Environmental Effects (p. 6-268 to 6-271) Section 6.16.4 - Assessment of Residual Environmental Effects (p. 6-358 to 6-363);	The information provided in Section 6.12.4 and Section 6.16.4 does not support conclusions reached in EIS assessment in relation to residual effects. Information to support high confidence conclusions require: data collected according to robust and well described survey designs, use and description of appropriate protocols, appropriate data analysis conducted and well described, and results described in sufficient detail for review and evaluation. Demonstrations of sufficient sampling are needed to provide a basis for the evaluation of assertions regarding species occurrence, and subsequent statements concerning residual effects. ECCC's Annex on Baseline Guidance from August 13, 2021, provides advice on data collection (design, protocols), data management and analysis, and methods and results reporting.	Demonstrate that sufficient baseline sampling has been undertaken to support the confidence in the conclusions of residual effects or undertake additional baseline sampling and analysis based on a robust and well described survey design to support the conclusions on residual effects.	Baseline surveys for migratory birds have continued in 2022, and include breeding bird point counts, owl surveys, autonomous recording unit (ARU) surveys and stick nest surveys adapted from ECCC's Annex on Baseline Guidance from August 13, 2021. To obtain density estimates of individual breeding bird species across the local and regional study areas, and seasons per provincial and federal avian protocols, multi-year migratory bird point count surveys have been undertaken. In 2021, 228 point-count stations were surveyed. In 2022, 164point-count stations were surveyed; of which 77 were re-sampled point-count stations from 2021. The re-sampled stations were in areas that were not burned in the fire that occurred in June and July of 2021. In 2021, 31 ARUs were deployed and this was doubled to 64 ARUs in 2022. This provided a total of 3,410 ARU days. In 2021, ARUs gathered 778,259 bird detections. In 2022, with the deployment of an additional ARUs, the number of detections significantly increased to 4,482,168.	Acknowledged. Further detail on baseline survey design should be provided in the final EIS or appendices to build confidence in the conclusions.	Acknowledged. The additional detail on baseline survey design described in the previous response will be incorporated into the final EIS/EA.	EIS Sections 6.12.1.2, 6.16.1.2, Appendix P-1 Sections 2.2, 2.3, 2.4, 2.6, 2.6, 2.7; Appendix P-3

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
				The design included stratification across habitat types as well as randomly selected locations for all bird survey stations (including ARU) within each target Far North Landcover class. Randomization was done using ARCMap 10.2. In some instances, the first locations randomly selected were not accessible by helicopter and as such, another random location was then selected. Power analysis of the 2021 and 2022 avian, vegetation and bat data has revealed that some species have been sampled adequately enough to detect an approximate 25% reduction in density and abundance. Additional detail on the power analysis results will be included in the updated baseline terrestrial report and the final EIS/EA. A technical meeting with ECCC has been requested to discuss targeted surveys being considered for 2023.			
IAAC -Ter-006	Section 4.10.1 - Water Management Facilities (p. 4-33); Section 9.9 - Active Water Management System (Pipelines) (p. 9-12)	The Proponent is required to conduct an analysis of the risks of accidents and malfunctions across all phases of the Project and to describe the preventative measures and design safeguards that have been established to protect against such occurrences and the contingency and emergency response procedures that would be put in place if such events do occur. Section 9.9 states: "During operations, fresh water, contact water and tailings slurry will be transferred within the site via a series of pumps and pipelines... The release of water and disruption of sediments could affect nearby terrestrial and aquatic life. A small release of water or tailings from a pipeline leak is likely to remain within the PDA." There are insufficient details on the potential effects of the water quality in the water management and treatment facilities and the water storage pond (WSP) on birds, species at risk, and other wildlife, including the risk of bioaccumulation of contaminants. The proponent should assess potential effects of water quality from these areas using the applicable Canadian Council of Ministers of the Environment (CCME) guidelines. The possibility of birds, species at risk, and other wildlife accessing the water management and treatment facilities and/or the WSP for drinking water, or otherwise is also not discussed in the EIS.	1. Describe and analyze the possibility of birds, species at risk and other wildlife using the water management and treatment facilities and/or WSP for drinking water and provide an analysis to determine if there is a risk to wildlife that may access these areas. 2. Clarify the intent and rationale for including or excluding features to prevent wildlife from using the water management and treatment facilities and/or the WSP.	1 & 2. Section 9.9.2 of the draft EIS/EA provides an assessment of the potential effects on water quality from a potential spill. The measures to address a potential spill are outlined in Section 9.9.3. The areas within the mine site area of the project development area, particularly around the water management facilities, will be cleared, subject to heavy equipment use and therefore suitable habitat will be limited. As described in Section 5.6.2 of the Ecological Risk Assessment Report in Appendix R of the draft EIS/EA, during the active phases of the Project, an adverse effect on birds and mammals from the contaminates of potential concern emitted by the Project is not anticipated. At this time, no potential risk to mammals and birds via exposure to chemicals in Project-influenced media near the mine site area of the project development area is anticipated.	The Proponent has not clearly articulated the rationale for its assertion that *"no potential risk to mammals and birds via exposure to chemicals in Project- influenced media near the mine site area of the project development area is anticipated."* The Proponent should clarify any mitigation measures (e.g., features to prevent birds from using the water management facility) that would reduce the possibility of migratory birds, species at risk and other wildlife using any area where water quality is expected to exceed quality thresholds.	As noted, the areas within the mine site area of the project development area, particularly around the water management facilities, will be cleared, subject to heavy equipment use and unlikely to provide suitable habitat. With respect to intermittent incidental exposure of wildlife to the water management system, it is expected that mammals and birds would avoid the immediate areas of disturbance during construction and operations due to sensory disturbances. Some wildlife such as waterfowl may be intermittently and temporarily attracted to the collection ponds, sumps, and ditches and	EIS Sections 6.12.6.3 9.2.7, 9.12

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
						the central water storage pond; however, given the sensory disturbances mentioned above and the abundance of larger and more preferred habitat in the surrounding areas, this is considered unlikely to be common or sustained. The water quality within the contact water management system may not meet provincial and federal guidelines, resulting in an increased exposure of wildlife to contaminants. However, as part of the process plant operations, tailings from ore processing containing cyanide will be directed to an in-plant SO2 / O2 treatment for cyanide destruction, to reduce cyanide and heavy metal concentrations in the tailings and effluent, with a target weak acid dissociable (WAD) cyanide value of ≤5 mg/L. As a point of comparison, Donato et al. (2007) 1considered WAD cyanide concentrations of <50 mg/L to be safe for wildlife exposure. This same threshold has been adopted as being protective of birds, other wildlife and livestock by the International Cyanide Management Institute (2018) as part of the International Cyanide Management Code (standard of Practice 4.4).	

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
						The rationale for the 50 mg/L WAD cyanide threshold is that ingested cyanide from water sources is readily metabolized to less toxic thiocyanate, which is then excreted in the urine. Due to the expected short lived and intermittent exposures, adverse effects on wildlife are not likely to be measurable. Given the limited risk to these species, additional mitigation beyond vegetation removal and maintenance is not considered necessary. However, a visual monitoring program will be implemented during operations and further adaptive management measures may be implemented if required, such as deterrents. The final rehabilitation and closure of the site will include the decommissioning of water management features no longer required. The central water storage pond will be reclaimed and is expected to provide suitable conditions as wildlife habitat. Closure of CDF will be completed in compliance with an approved closure plan taking wildlife into account.	

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
						This explanation will be included in the malfunctions and accidents section of the final EIS/EA.	
IAAC -Ter-007	Section 6.12.5 – Significance of Residual Effects (p. 6-271 to 6-273); Section 6.16.5 – Significance of Residual Effects (p. 6-363)	The draft EIS Section 6.12.5 states: "the level of confidence in the prediction is considered to be high. The predicted effects are based on previous experience, in which the potential environmental effects and mitigation measures are well understood. The existing baseline data used in the assessment is based on field studies and literature reviews. Further, the assessment uses conservative assumptions and methods to increase the level of confidence." Whereas Section 6.16.5 states: "The level of confidence in the prediction is considered to be moderate. The predicted effects are based on previous experience, in which the potential environmental effects and mitigation measures are well understood. Supplemental field study in 2022 will increase the level of confidence in specific habitat areas used by SAR birds. Additionally, a GIS analysis that uses conservative assumptions to increase confidence was undertaken." The information provided in the draft EIS does not support the statement of high and moderate confidence in the conclusions, as asserted by the Proponent. Information to support high confidence conclusions require: data collected according to robust and well described survey designs, use and description of appropriate protocols, appropriate data analysis conducted and well described, and results described in sufficient detail for review and evaluation. ECCC's Annex on Baseline Guidance from August 13, 2021, provides advice on data collection (design, protocols), data management and analysis, and methods and results reporting.	Provide a well-described and appropriately robust analysis of the baseline data, with the results described in sufficient detail, to support confidence in the conclusions for residual effects.	Robust analysis and accurate comprehension of baseline conditions can only be completed after a minimum of two-years of sampling (as per the ECCC Annex). As the number of sampling years increases so does the reliability of natural variability estimates, and their likely role in project impacts and mitigation effectiveness. Conclusions in the draft EIS/EA are based on one year of data collection and will be validated in the final EIS/EA with information to support the confidence conclusions.	Acknowledged.		EIS Sections 6.12.2, 6.12.8, 6.16.2, 6.16.8, Appendix P-1 Section 3; Appendix P-2, Appendix P-3
IAAC - Wet-001	Section 6.11.4.3 - Change in the Relative Abundance and Area of Wetland Extent (p. 6-243); Appendix T-1, Table T1-1 Detailed Assessment of Project Alternatives	The area of wetlands that will be removed during the Project is unclear. Section 6.11.4.3 states that 193 ha of wetlands will be removed, but also states that 40 ha of wetland areas will be directly displaced in the PDA. Whereas, Appendix Table T1-1 states: "133 ha of wetlands will be permanently displaced." An accurate understanding of the amount of wetland habitat to be removed is needed to evaluate the Proponent's conclusion that the loss of wetlands is small.	1. Provide the total area of wetlands to be removed including the types of wetlands. 2. Clarify the difference between 'wetlands' and 'wetland areas', and provide an explanation of why they were mapped and discussed separately in the EIS.	1. The total area of wetlands to be removed including the types of wetlands will be updated and provided in the final EIS/EA. 2. Wetlands and wetland areas are considered to be the same thing. This will be updated in the final EIS/EA.	1. Acknowledged. 2. Satisfactory.		EIS Section 6.11.6.
IAAC - Wet-002	Section 6.11.2.2 - Indicators and Measurable	Section 6.11.2.2 states that the area of wetlands indirectly altered (in ha) and area of wetlands fragmented by changes (in ha) were used as measurable parameters during the assessment of effects.	Provide a detailed estimate of the area of wetlands and the types of wetlands that will be indirectly altered, including alteration to	A detailed estimate of the wetland areas that will be indirectly altered including function, connectivity, and quality, by all anticipated residual effects will be updated in the final EIS/EA.	Acknowledged.		EIS Section 6 Tables 6.11-5, 6.11-6

Table C-1.2: First Mining Gold Response to the Federal Information Requirements related to the Springpole Gold Project Draft Environmental Impact Statement / Environmental Assessment

ID	Specific Reference	Initial Comments & Rationale	Proposed Action / Solution	FMG Response	Commenter Response	FMG Response 2	Where Addressed
	Parameters (p. 6-240); Section 6.11.4.4 - Change in the Function, Connectivity and Quality (p. 6-243 to 6-244)	These measurements are not provided in Section 6.11.4.4, with the exception of wetland areas affected by groundwater drawdown (12 ha). An understanding of the amount of wetland habitat to be altered by all residual effects is needed to evaluate the Proponent's conclusion that the magnitude of the decrease in the quality and function of vegetation communities and wetlands is low.	wetland function, connectivity, and quality, by all anticipated residual effects.				
IAAC - Wet-003	Section 6.11.5 - Significance of Residual Effects (p. 6-244 to 6-246)	Section 6.11.5 does not provide information to support the assertion that the decrease in the quality and function of wetlands will only occur during operations, or that the decrease is fully reversible. It is acknowledged in Section 6.11.4.4 that the groundwater drawdown will likely result in a change in vegetation community composition of wetlands. An understanding of the measures intended to limit the duration of effects and reverse any decrease in the quality and function of wetlands is needed to evaluate the Proponent's conclusions.	Re-assess the reversibility of residual effects of the loss of wetlands, as well as the duration and reversibility of residual effects to the quality and function of wetlands indirectly effected by the Project. Consider all residual effects (groundwater drawdown, dust deposition, fragmentation, change in wetland form and function, and invasive species) in this assessment of significance and provide a rationale for these conclusions.	To clarify, the loss of wetlands is characterized as partially reversible (not fully reversible). There will be opportunities to recreate wetland habitat during the decommissioning and closure phase in the potential aggregate locations. The duration of indirect effects on wetlands is characterized as moderate because it will occur primarily during the operations phase but may also occur during the construction phase and the early parts of the decommissioning phase. The reversibility of the indirect effects on wetlands is characterized as fully reversibility because groundwater contributions to baseflow generally return to baseline conditions in the final closure phase and dust deposition will cease at then end of the operations and decommissioning phase. Measures carried out during progressive reclamation in operation and final reclamation at closure will support the rehabilitation of wetland vegetation communities. Additional information and analysis will be provided with respect to groundwater drawdown, dust deposition, fragmentation, change in wetland form and function, and invasive species in the final EIS/EA.	Acknowledged.		EIS Sections 6.11.6, 6.11.7
IAAC - Wet-004	Section 6.11.5 - Significance of Residual Effects (p. 6-244 to 6-246); Section 12 - Draft Follow-up and Monitoring	Section 6.11.5 does not contain information to support high confidence in the conclusions with respect to the significance of residual effects to wetland vegetation communities. A complete understanding of the effects outcomes to wetland communities is needed to support the Proponent's conclusion of high confidence. In the absence of high confidence, a follow-up and monitoring program to identify effects outcomes to wetland vegetation communities is needed.	Provide additional details to support the confidence level in the conclusions with respect to effects to wetland vegetation communities. If high confidence in the conclusions cannot be substantiated, include a follow-up and monitoring program for wetlands vegetation communities.	Additional wetland surveys were undertaken in 2022 and the results of these surveys will be provided in the updated baseline terrestrial report and final EIS/EA to support the confidence level in the conclusions. Further, the data will be used to update direct and indirect impacts to wetlands including drawdown, dewatering, noise and dust.	Acknowledged.		EIS Sections 6.11.2, 6.22.7, 12 Appendix P-1 Sections 2.3, 3.1; P-3

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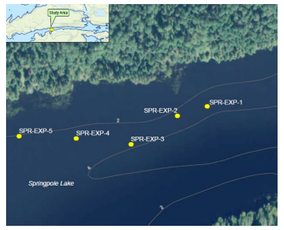
IAAC - WQI-001	Appendix O-3 2021 Aquatic Resources Baseline Report Table 2-1 Aquatic Resources Field Study Locations 2021 Figure 2-1a 2021 Sample Locations Overview Figure A3-1 to Figure A3-6 Appendix N-2 Surface Water Quality Modelling Report, Appendix C: Cormix Mixing Study – Treated Effluent Discharge, Figure 3-1	The Proponent has not provided biological monitoring results within the nearfield exposure area to understand baseline conditions. Benthic invertebrate, sediment and fish sampling was conducted at station L-15-B5, approximately 8 km downstream from the location of the proposed final discharge point. The expected extent of the plume is unclear, as the provided CORMIX model (Appendix N-2, Appendix C, Figure 3-1) only shows the effluent concentration mapped to a minimum of 16.3%. The estimated extent of the 1% plume was not provided; thus, it is unclear to what extent station L-15-B5 would be expected to be exposed. Further, benthic invertebrate and sediment samples taken in Springpole Lake in October 2021 were consistently completed below the hypolimnion in locations with 0 mg/L of dissolved oxygen during the sampling period (late September). Sampling in areas of low to no dissolved oxygen will influence the diversity of samples. For the purpose of understanding baseline conditions in the proposed effluent exposure lake, samples should ideally be completed in areas that support appropriate habitat for benthic invertebrate community and fish species. Section 2.2.2.1 of the Metal Mining Technical Guidance for Environmental Effects Monitoring (EEM Technical Guidance Document) recommends that exposure area sampling be done in an area proximate to the effluent discharge where effects may be found. Sampling areas should ideally support both appropriate habitat for the benthic invertebrate community and populations of the selected fish species. Section 4.3.7 of the EEM Technical Guidance Document provides more details on selection of ecologically relevant habitats. It is noted that a reference lake was not included in the baseline studies.	1. Conduct a biological monitoring study (benthic, sediment, fish) within the nearfield exposure area (within the estimated extent of the 1% effluent plume) of the proposed effluent to understand the baseline conditions prior to effluent discharge. 2. For a benthic invertebrate community study, take into account the benthic invertebrate diversity and the area most exposed to effluent when selecting sampling areas, as will be required for Environmental Effects Monitoring under the Metal and Diamond Mining Effluent Regulations (MDMER).	1&2. Sediment quality, benthic and invertebrate sampling was completed within the proposed nearfield exposure area in the southeast arm of Springpole Lake during the 2019 field studies (SEI 2020; see figure below) and data reported in Appendix O-2 of the draft EIS/EA. Samples were collected from five (5) replicate locations using triplicate grabs composited into one sample per replicate location, following the MDMER Environmental Effects Monitoring (EEM) Technical Guidance (EC 2012).  Additional sampling may be completed prior to effluent discharge once the final discharge design are available. This would support development of the first cycle of the MDMER EEM study design; however, the current baseline data provides an understanding of the existing conditions.	Acknowledged. To support reviews and consultation, update the EIS to include the coordinates and map of the locations of the sampling areas for the sediment and benthic results or provide a page or figure number where this information is presented in the EIS or its appendices. The map should include the proposed location of the final discharge point, and the estimated extent of the discharge plume. Advice: ECCC noted that, if the Proponent plans to conduct a before-after-control- impact (BACI) analysis for the benthic invertebrate study during potential future EEM studies, monitoring from pre- MDMER and MDMER studies should use similar methodology (i.e., samples collected at the same time of year, same locations, same sample sizes, etc.). The timing of sampling, the habitats sampled, etc., will influence the results of benthic invertebrate community studies. This detail is provided to support the Proponent's advanced planning.	The final EIS/EA will be updated to include a figure of the sample locations and coordinates as requested and will display the proposed location of the final discharge point. Effluent plume delineation will be modelled, and in-field confirmation of the plume delineation will be included in the Cycle 1 MDMER biological environmental effects monitoring program to ensure appropriate placement of the monitoring stations. These baseline data provide a "before" dataset and specific transect locations are subject to change once the final design is available. Advice acknowledged.	Appendix N-2 Figure 2-2, O-3 Figures 2.1 to 2.4
IAAC - WQI-002	Appendix O-3 2021 Aquatic Resources Baseline Report	Environment and Climate Change Canada (ECCC) notes that a reference lake was not included in the baseline studies associated with the aquatic resources baseline report.	Although not required, it may be helpful for the purpose of temporal comparison to future monitoring to find a comparable reference area and conduct a biological monitoring study concurrently with baseline studies of the proposed exposure area.	A reference area for the MDMER environmental effects monitoring (EEM) program which contains similar habitat conditions as the exposure area within the southeast arm of Springpole Lake will be identified during the environmental approvals phase of the Project and the development of the cycle 1 EEM study design. A monitoring program in a reference lake is not proposed at this time since the baseline monitoring within Springpole	Acknowledged. *Advice:* ECCC advises that if the Proponent plans to use a BACI design for future studies, then sampling a reference area at the same time as conducting the baseline studies would help	Advice acknowledged.	N/A

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				and Birch lakes provides a multi-year data set for comparison to post-development monitoring studies.	to build a data set which will be able to distinguish effluent effects from natural differences between the reference and exposure areas that may have existed before the initiation of effluent discharge. The Proponent may also consider sampling more than one year of background data before effluent is discharged to better understand the natural variability in the area.		
IAAC - WQI-003	Appendix O-3 2021 Aquatic Resources Baseline Report (p. 2-5)	ECCC notes that a Similarity Index (e.g., Bray-Curtis Index) was not calculated for the benthic invertebrate community study. The Similarity Index is one of the effect endpoints for Environmental Effects Monitoring (EEM) under the Metal and Diamond Mining Effluent Regulations (MDMER).	Provide a similarity Index in the data analysis if the purpose of sampling is to understand the baseline conditions in the exposure area for temporal comparison with EEM results.	The benthic invertebrate community data analysis in Appendix O of the draft EIS/EA describes the baseline condition using several standard metrics. For EEM, similarity indices such as the Bray-Curtis Index are more commonly used in control-impact studies to measure potential differences between a nearfield exposure area and a reference area(s). A suitable reference area for the treated effluent discharge “nearfield” study area will be identified for this Project during the EEM study design process as required by MDMER. The reviewer’s comment is appreciated and a similarity index will be included in future benthic analysis.	Acknowledged.		Appendix O-1 Section 3.8.5
IAAC - WQI-004	Appendix O-3 2021 Aquatic Resources Baseline Report Section 4.2 – Springpole Lake (p. 4-1) Section 4.3 - Birch Lake (p.4-2) Section 3.6.6 – Benthic Invertebrate Community (p. 3-16) Section 3.7.6 –	Benthic invertebrate community indices of abundance, density, richness, diversity and evenness were calculated for sampled areas within Birch Lake and Springpole Lake as well as inland lakes. The indices were graphically (Figure D2-1 to Figure A2-5) and statistically compared within each lake to determine if there was a significant difference within each lake. However, for the purpose of comparing benthic invertebrate community data, it is important that habitat characteristics are similar between and among sampling stations (e.g., depth, flow, substrate particle size composition, etc.). Depths sampled in Springpole Lake ranged from 14 metres to 37 metres and samples collected from Birch Lake ranged from 24 metres to 35 metres. A range of depths were sampled within Birch Lake and Springpole Lake, which could influence the benthic assemblage present; thus, a statistical comparison within lakes may not be meaningful. It is noted that the Inland Lakes had much higher abundance, density and richness than samples from Birch Lake and Springpole Lake. The inland lakes were sampled at depths less than 2 metres for all stations (L-18, L-19;	Select benthic invertebrate sampling locations that have similar habitat factors (including depth, flow, substrate particle composition, etc.) for the purpose of meaningful interpretation of statistical results.	The reviewer’s comments is appreciated and the comparisons of the benthic invertebrate survey results will be refined as suggested (including a similarity index) to future benthic analysis.	Acknowledged.		Appendix O-1 Section 3.8

Table C-1.2: First Mining Gold Response to the Federal Information Requirements related to the Springpole Gold Project Draft Environmental Impact Statement / Environmental Assessment

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	Benthic Invertebrate Community (p. 3-20) Figure D2-1 to Figure A2-5	Table D1-1a), thus it is not meaningful to compare the inland lake results to Birch and Springpole lake results.					
IAAC - WQI-005	Appendix N-2 Surface Water Quality Modelling Report (p. 3-2) Table 3-1 Key Habitat Type Criteria Appendix E: Surface Water Model Results, Time Series Graphs Section 4 - Project Description (p. 4-19)	Appendix N-2 states, "… with approximately 80% assumed seepage capture efficiency, there are no estimated guideline exceedances at these model nodes." (Page 3-2) Results were only provided for the scenario of no capture of seepage or runoff in which baseline and guidelines were exceeded at various stations (Appendix E). Evidence that no guidelines would be exceeded in the 80% capture scenario was not provided. Additionally, the statement above suggests that 20% of the seepage from the CDF will not be captured and thus will enter adjacent waterbodies. The summary of seepage quality (Table 3-1) includes various parameter concentrations for the operations base case and upper geochemistry case which exceed the provided water quality guidelines listed in Table 2-3 (e.g., copper, arsenic, cadmium, zinc, etc.). However, cyanide was not included in Table 3-1 even though cyanide will be used in the ore processing to leach gold from ore (Section 4 Project Description, page 4-19). Although cyanide destruction is planned prior to tailings placement in the CDF, the Project Description stated that small quantities of cyanide will be present: "Tailings are the primary by-product from the processing of ore and will contain small quantities of the residual reagents that are used in processing the ore including cyanide." (page 4-19) In addition to cyanide, substances such as total suspended solids, radium 226, un-ionized ammonia and other substances related to mining were not included in Table 3-1 or accounted for in the predictions.	1. Provide results/evidence to verify the scenario of 80% seepage capture and its baseline. 2. Include substances related to mining such as cyanide, total suspended solids, radium 226, and un-ionized ammonia for the different scenarios. 3. Confirm whether the predicted seepage entering adjacent waterbodies (20% of all seepage) would influence residual environmental effects for surface water quality, sediment quality, and fish and fish habitat given that values provided in Table 3-1 exceed guidelines at the source of input.	1. Results for both the base case as well as the seepage capture case will be provided in the final EIS/EA. 2. The requested parameters related to mining will be included in the final EIS/EA. 3. Potential effects on surface waters from both seepage and effluent discharge during the Project are assessed in the draft EIS/EA in Section 6.6 (Birch Lake System), Section 6.7 (Springpole Lake, North Basin System), and Section 6.8 (Springpole Lake, Southeast Arm). The potential indirect effects between surface water systems and other value components could occur, including to fish and fish habitat which are assessed in Section 6.10 of the draft EIS/EA. As presented in Section 6.6.4 and Section 6.7.4 of the draft EIS/EA, in an 80% seepage capture scenario, water quality of Birch Lake and Springpole Lake is not predicted to be above applicable surface water quality guidelines during any Project phase. Water quality guidelines used in the assessment (Section 6.6 of the draft EIS/EA, Table 6.6-3: CWQG, FEQG and PWQO) are protective of the most sensitive life stage of the most sensitive aquatic species for periods of indefinite exposure. Thus, by definition, the potential effects to aquatic life from seepage are not anticipated. The changes in water quality parameters are further assessed in the ecological risk assessment (Section 5 of Appendix R of the draft EIS/EA) for fish, and the results summarized in Section 6.10 and Section 6.24 of the draft EIS/EA.	1. Acknowledged. 2. For clarification, ECCC requests mining related substances which are not currently included in all aspects of the water quality effects assessment of the draft EIS (e.g., cyanide, TSS, radium 226, un-ionized ammonia, nitrate, chloride, manganese, etc.) be included in all aspects of the water quality effects assessment (e.g., CDF seepage, effluent modelling, water quality modelling, etc.) in the final EIS. 3. While the Proponent's response states that effects on surface waters from both seepage and effluent discharge during the Project are assessed in the draft EIS, Sections 6.6 and 6.7 present data for no seepage capture, in which water quality guidelines were exceeded at locations within proximity to the CDF in both Birch Lake and the North Basin of Springpole Lake for substances such as arsenic, sulphate, cobalt, copper and phosphorus (i.e., SW-24, SW-25, SW-03). It is the Agency's understanding that the final EIS will include information to verify the 80% seepage capture scenario used for	1. - 2.Confirmed, the requested parameters will be included in all aspects of the water quality effects assessment in the final EIS/EA. 3.FMG confirms the Agency's understanding that the final EIS/EA will include information to verify the 80% seepage capture scenario used for the residual effects assessment of various components (Section 6.6, 6.7, 6.10). Further, the modelled results for the Project assessment scenario in the Southeast Arm of Springpole Lake will be included in the ecological risk assessment (ERA) for the final EIS/EA. The ERA will also indicate where the mine input data (e.g., seepage, effluent, etc.) that was used to model water quality for the Project assessment scenario can be found. Future sediment quality concentrations will be predicted from water quality concentrations modelled based on mine	EIS Section 6.6.5 Table 6.6-9, 6.7.6.2, 6.10.6, Table 6.24-4 Appendix K-2 Section 4; L-2 Section 6; N-2 Section 3, O-1 Section 3.2; R Section 3.4.2.4

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					the residual effects assessment of various components (Section 6.6, 6.7, 6.10). This information will be verified during the review of the final EIS. The Proponent directed reviewers to the ecological risk assessment (ERA) from Appendix R of the draft EIS for further assessment of changes to water quality parameters. Please note the following new comments, based on ECCC's review of that information: Water Quality: • Modelled results for water quality in Birch Lake and Springpole North Basin during baseline, project operations and post-closure are provided (Table 3.4.3.3-2, 3.4.3.3-3). Although effluent is planned to be discharged to the Southeast Basin of Springpole Lake, modelled results for the project assessment scenario in the Southeast Basin were not included in Section 3.4 of the ERA. Ensure that all the mine's inputs (e.g., seepage, effluent, etc.) are captured in the ERA or explain why they are not. • Provide the mine input data (e.g., seepage, effluent, etc.) that was used to model water quality for the project assessment scenario to support the model outputs. Include this information in the next version of the ERA or indicate in the ERA where this information can be	related inputs and the ERA for the final EIS/EA and will include consideration of predicted Project related sediment quality.	

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					found. Sediment Quality: • A table of baseline sediment chemistry (Table 3.4.3.4-1) which was used in the ERA provides a column for maximum in project area (i.e., max baseline values) and exposure point concentration (EPC). It is not clear whether mine related inputs (e.g., seepage, effluent) were taken into consideration for the EPC values or where the EPC is likely to be. The EPC values are lower than the maximum in project area values and are not described as taking into consideration inputs from the Project. Model the mine related inputs for sediment quality since sediment quality can affect surface water, aquatic plants, benthic invertebrates, and fish either through direct exposure or through ingestion (Figure 5-2 in Appendix R).		
IAAC - WQI-006	Section 6.10.2 - Potential Environmental Effects (p. 6-216)	Potential environmental effects which have not been identified in the draft EIS for Fish and Fish Habitat for the Operations Phase include: 1. Contaminant accumulation in sediments due to seepage from the operation of the CDF in Birch Lake and Springpole Lake. This potential effect was not characterized in the draft EIS and therefore not considered in the assessment of residual environmental effects. This could have an adverse effect on sediment and surface water quality. It is also unclear whether sediment resuspension could be an issue. 2. Secondly, the potential effect of contaminant accumulation in sediments resulting from the release of effluent in the southeast arm of Springpole Lake was not characterized in the draft EIS and therefore not considered in the assessment of residual environmental effects. This could also have an adverse effect on sediment and surface water quality. It is unclear whether sediment resuspension could be an issue. The draft EIS states (Section 6.10.2) that “Effluent from the Project will be	1. Assess the potential effects of sediment and potential effects to surface water quality from both seepage and effluent discharge during the Operations Phase. 2. Describe any potential adverse effects to water quality due to effluent quality, in addition to the potential for erosion-related effects.	1 & 2. Surface water quality effects from both seepage and effluent discharge during the operations phase are assessed in Section 6.6 (Birch Lake System), Section 6.7 (Springpole Lake, North Basin System), and Section 6.8 (Springpole Lake, Southeast Arm). The surface water system valued components encompass aspects related to surface water, including hydrology (surface water volume and flow) and surface water quality. The results of the assessment to surface water are further considered in the assessment of potential effect to fish and fish habitat in Section 6.10.4.3 of the draft EIS/EA. The effluent treatment plant will discharge treated effluent to the southeast arm of Springpole Lake.	Unsatisfactory. The Proponent’s comparison of effluent quality to sediment guidelines does not provide a meaningful comparison. Sediment quality guidelines are applicable to sediment, not effluent. Further, seepage from the CDF is expected to exceed water quality guidelines at the source regardless of the amount of seepage entering the receiving waterbodies. In the draft EIS, potential	In the final EIS/EA, the potential accumulation of contaminants in sediment of potential concern will be assessed at the location of the final discharge point and peripheral waterbodies (Birch Lake, north basin of Springpole Lake), with potential for seepage interactions.	EIS Section 6.6.5 Table 6.6-9, 6.7.6.2, 6.10.6, Table 6.24-4Appendix K-2 Section 4; L-2 Section 6; N-2 Section 3, O-1 Section 3.2; R Section 3.4.2.4

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		discharged to the southeast arm of Springpole Lake. The release of effluent could adversely affect water quality and fish habitat at the discharge location due to erosion." Effluent quality may influence potential adverse effects to water quality, in addition to the potential erosion-related effects		Potential effects to water quality due to effluent quality, in addition to potential for sedimentation and erosion, are presented in Section 6.8 of the draft EIS/EA. Contact water / effluent that requires discharge will be protective of the receiving environment and will occur in accordance with provincial environmental approval and applicable federal requirements. As presented in Section 6.8.5, water quality in the southeast arm of Springpole Lake will not be above surface water quality guidelines during any Project phase as a result of the Project. Similarly, effluent quality is substantially below sediment guidelines (Lowest Effects Level and Severe Effects Level), and so effects to sediment quality within the 1.3 metre mixing zone are not expected. Seepage from the co-disposal facility will be managed through the establishment of diversion ditches and ponds. Potential effects to sediment quality from seepage are not anticipated.	accumulation of mine related substances in sediment were not evaluated at the location of the final discharge point in the Southeast Arm of Springpole Lake or where seepage is expected to enter Birch Lake and the North Basin of Springpole Lake. Assess the potential effects on sediment in the areas expected to receive effluent from the final discharge point or seepage from the CDF (e.g., modelled and/or discussed as appropriate) in the final EIS to verify the assertion provided by the Proponent that effects to sediment quality from seepage are not anticipated.		
IAAC - WQI-007	Appendix N-2 Surface Water Quality Modelling Report	ECCC notes that site runoff quality was not provided in Appendix N-2 but was stated to be included in the Water Quality model.	Include the site runoff quality estimates to provide a fulsome understanding of the data entered into the surface water quality model.	The source term inputs to the surface water quality model for the receiving environment are summarized in Section 2.0 of Appendix N-2 (Surface Water Quality Modelling Report). Estimates for site run-off quality are the results of the Mine Site Water Quality Estimate for Mine Operations and Closure (Section 3.3, Appendix K-4). To support ease of understanding, site run-off quality estimates will be provided within the updated Surface Water Quality Modelling Report for the receiving environment in the final EIS/EA.	Acknowledged; however, the Proponent should include all mining related substances (e.g., cyanide, TSS, radium 226, un-ionized ammonia, nitrate, chloride, manganese, etc.) in the water quality model and associated effects assessments.	The requested parameters will be included in all aspects of the water quality effects assessment in the final EIS/EA.	EIS Section 6.6 to 6.9, Appendix K-2 Section 3.4, N-2 Section 3.0
IAAC - WQI-008	Appendix N-2 Surface Water Quality Modelling Report (p. 3-3 to 3-4)	Appendix N-2 states, "Model results indicate that estimated concentrations in the southeast arm will return to baseline conditions and no parameters are estimated to be greater than applicable water quality guidelines" However, sediment contamination accumulation and potential resuspension impacts have not been considered in the draft EIS, nor has the potential associated effects on water.	Account for sediment contamination accumulation and potential resuspension impacts to surface water quality in the model, then compare to the applicable water quality guidelines.	Potential effects to water quality in the southeast arm of Springpole Lake due to effluent quality are presented in Section 6.8 of the draft EIS/EA. The effluent treatment plant will discharge treated effluent to the southeast arm of Springpole Lake. Discharged contact water / effluent will be protective of the receiving environment and will occur in accordance with provincial environmental approval and applicable federal requirements. Modelling results indicate that water quality	Unsatisfactory. The draft EIS identified both seepage from the CDF and effluent from the final discharge point as sources of mine influence to receiving waterbodies; however, the Proponent's response spoke only to the discharged effluent, and did not	In the final EIS/EA the potential accumulation of contaminants of potential concern in sediment will be modelled and assessed at the location of the final discharge point and peripheral waterbodies (Birch Lake, north basin of Springpole	Appendix R Section 3.4.2.4

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				guidelines for the protection of aquatic life will be achieved within approximately 1.3 metres downstream of the discharge. Based on this information, potential effects to sediment quality from effluent discharge, or potential re-suspension of bottom sediments are not anticipated.	reference seepage from the CDF. Seepage from the CDF is expected to exceed water quality guidelines at the source regardless of the amount of seepage entering the receiving waterbodies. Although the Proponent expects the effluent treatment plant to discharge effluent which achieves water quality guidelines within approximately 1.3 m, this does not directly indicate that effects to sediment quality will not occur. ECCC recommends that the final EIS evaluate/discuss whether substances discharged into receiving waterbodies are expected to accumulate in sediments over time. Model the potential effects on sediment in the areas expected to receive seepage from the CDF or effluent from the final discharge point and/or discuss as appropriate to verify the assertion provided by the Proponent that effects to sediment quality are not anticipated.	Lake), with potential for seepage interactions.	
IAAC - WQI-009	4.4.6 Mine related infrastructure (p. 4-12)	Mine haul roads for ore, waste rock, and overburden are required to connect the open pit to the CDF, stockpiles, the primary crusher and associated mine facilities (maintenance shop, fuel dispensing and truck wash). The Proponent reports that these roads will be approximately 37.5 m wide in order to accommodate two way heavy equipment traffic. The total length of the mine haul roads outside the pit limit is identified at approximately 8500 m for a total area of 32 ha (37.5 m x 8500 m = 0.32 km² or 32 ha). It is been estimated that assuming the 32 ha is entirely road, taking the runoff coefficients for ‘disturbed ground’ from the Proponent’s reports	1. Identify where all the runoff from the mine haul roads will be directed to. 2. Clarify whether this has been considered as mine contact water and if it will all report to collection ditches for runoff collection and then to collection ponds for storage prior to being discharged at a final discharge point. 3. Clarify whether estimates for the	Runoff from the mine site area, including the entire surface area of haul roads adjacent to the open pit, will be collected and managed within the water management facilities, as described in Section 4.10 of the draft EIS/EA. This water is considered mine contact water and will be collected by the integrated water management system and treatment facilities as presented in the Project Description (Section 4.10) and Figure 4.10-1. As a result, there is not an	Satisfactory.		EIS Section5.12.3.6. Appendix K-2 Section 3.4, M-2 Section 3.0, N-2 Section 3.4

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		(0.8), and their annual precipitation estimates, then the annual runoff volume would be 0.18 Mm³ (or 0.27 Mm³ in the 100-yr wet scenario; 0.09 Mm³ in the 100-yr dry scenario). This translates to nearly 500 m³/d of runoff from the haul roads and as much as 750 m³/d runoff in the 100-yr wet scenario. As the main function of the haul roads is to facilitate the transport of ore and waste rock (as well as some overburden/soil), there is the probability of runoff from these roads to contain some or all of the following parameters: As, Cu, Pb, Ni, Zn, TSS and ammonia.[1] The Mine Site Water Balance model boundaries, based on Figures 5-4 and 5-5 of that report (Appendix M-2), are located in the middle of the haul roads around the mine pit. Subsequently, half of the haul road runoff has not been quantified in the water balance or carried over to the water quality assessment (See WQn-02). Thus, there is an unquantified risk of untreated discharge to the environment. As stated in other IRs, the lack of quantification in the water management plan for the mine site causes considerable uncertainty in the overall layout of the mine site as well as the ability of the Proponent to collect all mine contact water, to size the water management infrastructure appropriately, and ultimately to avoid untreated discharges to the environment. It is also unclear where all the runoff from the mine haul roads will be directed to and whether this has been considered as mine contact water.	quality and concentrations of model parameters for this runoff have been made and incorporated into the water quality predications. 4. State whether runoff from a haul road will contain more substances (e.g., metals) at greater concentrations than runoff from other roads at the mine site or from disturbed ground (not used as a haul road) at the mine.	unquantified risk of untreated discharge to the environment. Source term inputs to the surface water quality model for the receiving environment are summarized in Section 2.0 of Appendix N-2 (Surface Water Quality Modelling Report). Estimates for site run-off quality (including haul roads) are the results of the Mine Site Water Quality Estimates for Mine Operations and Closure as presented in Section 3.3 of Appendix K-4 of the draft EIS/EA. Project roadways, including haul roads, will be constructed of a geochemically inert rock. It is interpreted that concerns for haul road water quality in this comment (WQI-09) are due to spillage of rock from haul trucks or the transfer of dust to the roadways. Exposed mine rock releases mass load proportional to its surface area. The quantity (and therefore exposed surface area) of rock and dust deposition on the surfaces of haul roads is expected to be minimal overall, and low relative to the surface area of the rock used to construct the roadway. Therefore, drainage quality from the haul roads is expected to be primarily influenced by the materials used for road construction (geochemically inert rock) rather than small quantities of rock / dust that may be potentially deposited along the roadway. Nevertheless, haul roads were represented in the model by the disturbed ground source term as outlined in Appendix K-4. The disturbed ground source term was developed from operational water quality monitoring data from an analogue gold mine. This included the use of data representing drainage from haul roads and other areas around an active open pit operation in northern Ontario. Therefore, it is anticipated that any potential mass loading from rock spillage and/or dust on the roadway surface has been adequately captured in the existing modelling for the EIS.			
IAAC -	Section 4.10.1 Water	The Proponent identified that water management facilities will be sized to manage design storm events. In the preliminary design, general stormwater	Assess the feasibility of designing general stormwater drainage facilities for 1 in 100-	Site runoff infrastructure during the operation phase will be designed to accommodate and	Acknowledged.		EIS Section 5.12

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WQI-010	Management Facilities (p. 4-33) Section 13.0 Conclusions (p. 13-2)	drainage facilities are designed for 1 in 10-year rainfall events and that the plant site pond and WSP are designed for a 100-year, 24-hour storm event. It is interpreted from the information and figures provided that the runoff and seepage collection ditches will be in very close proximity to nearby surface water features (e.g., Birch Lake, Springpole Lake) and that these will be designed, constructed and sized for 1 in 10-year rainfall events in the preliminary design. It is noted that the trend over the past number of years for mines subject to federal EAs in Ontario is to size and design collection systems to manage the Environmental Design Storm (EDS) based on a 1 in 100 year rainfall event. This sizing minimizes the amount of effluent and the frequency of events to overflow spillways and overtopping collection ditches discharging directly to watercourses as a form of best practice. In the draft EIS conclusions, the Proponent states that "Key Project design and mitigation measures include: Implementation of an integrated site water management and treatment system using best available technology economically achievable." The Proponent emphasizes that as a mitigation measure of the Project, the site water management system will be integrated and associates it with best available technologies. Due to the lack of complete schematic of mine site water management (including pumping and ditching), as well as the lack of initial design for the size of various ponds and capacities of ditches and pipelines, it is unclear how the Proponent plans to collect all mine contact water in a design storm event. This is particularly true for the periphery ditches and water management ponds around the CDF, the ore stockpiles and the outside of the mine haul roads; all areas that would drain to a lake (i.e., the environment) rather than the mine pit in an extreme rainfall over the design. In Section 9.8 and Table 9.17-3, the Proponent describes the risk of failure of the passive contact water management system as 'low' and the consequences as 'very low'. A 1 in 10 year failure of the contact water ditching is a 'high' or 'very high' likelihood of occurrence according to the Proponent's description in Section 9.17.	year rainfall events consistent with the plant site pond and WSP (designed for a 100-year, 24-hour storm event) and in keeping with the assertion that "Key Project design and mitigation measures include: Implementation of an integrated site water management and treatment system using best available technology economically achievable."	contain up to the 1:100 year event. The development of an integrated water management plan and the design of the water management drainage facilities continues to progress and additional information will be presented in the final EIS/EA. The passive water management system will be designed to accommodate flows greater than a 1:10 year event. As a result, the likelihood that the system overtops during a 1:10 year storm event is considered to be low.			
IAAC - WQI-011	Section 6.5.4.2 Seepage Predictions (p. 6-87) Table 6.5-6: Simulated Seepage to Surface Water Receivers (p. 6-94)	Section 6.5.4.2 reports that seepage analysis was conducted for the two stages of the CDF and ore stockpile development to predict the volume and direction of seepage emanating from each of these facilities just prior to the end of operations, and in the closure condition. Seepage analysis was conducted by performing reverse particle tracking from the various potential surface water receivers of seepage surrounding the CDF and ore stockpiles to delineate their respective source zones. Water balances at the source zones were then analyzed to determine the seepage rate corresponding to the receivers. The simulated seepages to surface water receivers for mine operations and final closure from mine source zones to surface water features are provided in Table 6.5-6. In Table 6.5-6, 1963 m^3/d of seepage is predicted to emanate from the CDF	Consider and discuss additional seepage mitigation measures that might be considered best available technology economically achievable.	To support the effects assessment on groundwater quality in Section 6.5 of the draft EIS/EA, a conservative approach was taken in the predictive modelling and used the assumptions outlined in Section 6.5.2.5. This included the assumption no groundwater recharge originating from the co-disposal facility, or other stockpiles, would be captured by the runoff water collection system. As a result, the loading to surface water from groundwater interactions and seepage is overestimated. However, as noted in Section 6.5.3 5 of the draft	Satisfactory.		EIS Section 6.5.4

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		North Cell into Birch Lake during operations. Lesser amounts of seepage from other areas of the CDF (e.g., South Cell) and Ore Stockpiles will enter Springpole Lake. The mine's seepage mitigation strategies consist of using low permeability material (e.g., clay or geomembranes) in the foundation of the CDF South Cell and embankments as well as seepage (and runoff) collection ditches. In the draft EIS conclusions, it states "Key Project design and mitigation measures include: Implementation of an integrated site water management and treatment system using best available technology economically achievable." However, it is unclear what other mitigation measures are available for implementation at the mine that might also be considered best available technology and economically achievable. For instance, measures to reduce the rate of seepage from the CDF South Cell such that seepage could be collected and discharged through the final discharge point for better flow measurement and monitoring.		EIS/EA, runoff water collection ditches will be constructed around the perimeter of key infrastructure, including the co-disposal facility and stockpiles, to collect overland flow and seepage and direct it to the water storage pond during operations. The collected contact water not re-used in processing will be treated at the effluent treatment plant as needed, and discharged to the southeast arm of Springpole Lake to maintain the site water balance.			
IAAC - WQI-012	Appendix N-2 - Surface Water Quality Modelling Report, Section 3.1 – Birch Lake (p. 3-1), Table 3-1: Summary of Seepage Quality (p. 3-5)	Appendix N-2 identifies that, during mine operations, predictive modelling results demonstrate that the primary pathway for surface water quality effects on Birch Lake is fugitive seepage from the CDF as well as contact water that is conservatively assumed to not be intercepted by the CDF perimeter collection ditching. Estimated quality of fugitive seepage from the CDF for operations is presented in Table 3-1. The majority of model parameters contained in the seepage expected from the mine include a range of different cases: - The average and maximum values for the operations base case; - Average and maximum values for the operations upper geochemistry case; and - The base and conservative cases for the post-closure annual average scenario The seepage concentrations exceed the CCME Canadian Water Quality Guidelines for the Protection of Aquatic Life (CCME CWQGPAL), the Provincial Water Quality Objectives, Interim Provincial Water Quality Objectives (iPWQO), or the Federal Environmental Quality Guidelines (FEQG) for only some cases for some model parameters, but in other model parameters for all cases. The only exceptions were for Be, B, U, and V. It is noted that there are no guideline values for Tl and W. With respect to P and SO_4, ECCC believes it is more appropriate for the MECP to comment on these model parameters. It is notable that for the estimated quality of fugitive seepage from the CDF for operations for both the base and upper geochemistry case at both the	1. Provide analysis of the chronic and acute effects from seepage to bottom dwelling fish, eggs, fry, etc. that might be at the interface of the lake bottom and beginning of the water column where seepage enters the lake waters before mixing. 2. Provide analysis of the chronic and acute effects to bottom dwelling fish, eggs, fry, etc. where uncontrolled and fugitive seepage immediately discharges from either the CDF or Ore Storage Stockpiles at the point of entry into the surrounding waters.	1&2 Potential effects on surface waters from seepage are assessed in the draft EIS/EA in Section 6.6 (Birch Lake System), Section 6.7 (Springpole Lake, North Basin System) and Section 6.8 (Springpole Lake, Southeast Arm). The potential indirect effects to fish and fish habitat which are assessed in Section 6.10 of the draft EIS/EA. As presented in Section 6.6.4 and Section 6.7.4 of the draft EIS/EA, in an 80% seepage capture scenario, the water quality of Birch Lake and Springpole Lake is not predicted to be above applicable surface water quality guidelines during any Project phase. Water quality guidelines used in the assessment (Section 6.6 of the draft EIS/EA, Table 6.6-3: CWQG, FEQG and PWQO) are protective of the most sensitive life stage of the most sensitive aquatic species for periods of indefinite exposure. Thus, by definition, the potential effects to aquatic life from seepage are not anticipated. Please note, protection of aquatic life guidelines listed by the reviewer are not applicable to seepage water quality and should not be applied. Seepage water quality is specifically assessed in Section 6.5 and compared to aquatic protection values, as is standard best practice. The changes in water quality parameters are	Acknowledged. Advice: ECCC reminds the Proponent that the definition of effluent contained in the Metal and Diamond Mining Effluent Regulations includes "(b) any seepage or surface runoff containing any deleterious substance that flows over, through or out of the site of a mine." As such, seepage is regulated by the MDMER and is not limited to provincial standards.		EIS Sections 6.6.6, 6.7.6, 6.8.6, 6.10.6.3, Appendix R Section 5.0

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		average and maximum concentrations that mercury (Hg) in seepage will exceed the CCME CWQGPAL. ECCC notes that the details of which cases are exceeded for each model parameter is as follows: • Al exceed in base case max and upper geochemistry case; • Sb exceed in avg. and max for base and upper geochemistry cases; • As exceed in avg. and max for base and upper geochemistry cases as well as conservative for post-closure; • Cd exceed in avg. and max for upper geochemistry and conservative case for post-closure; • Cr exceed in avg. and max for upper geochemistry; • Co exceed in avg. and max for base and upper geochemistry cases as well as base and conservative for post-closure; • Cu (assumed 0.002 mg/L guideline) exceed in avg. and max for base and upper geochemistry cases as well as base and conservative for post-closure; • Fe exceed in avg. and max for base and upper geochemistry cases; • Pb (assumed 0.001 mg/L guideline) exceed in avg. and max for base and upper geochemistry cases; • Mo exceed in avg. and max for base and upper geochemistry cases as well as conservative for post-closure; • Ni exceed max in upper geochemistry case; • Se exceed in avg. and max for base and upper geochemistry cases as well as conservative for post-closure and is at the guideline for base for post-closure; • Ag exceed in max for base and upper geochemistry cases; and, • Zn exceed in avg. and max for base and upper geochemistry cases.		further assessed in the ecological risk assessment (Section 5 of Appendix R of the draft EIS/EA) for fish, and the results summarized in Section 6.10 and Section 6.24 of the draft EIS/EA.			
IAAC - WQI-013	6.6.2.4 Analytical Methodology (p. 6-114) Table 6-6.3: Water Quality Criteria (p. 6-124)	In the draft EIS (Water Quality Modelling) it notes that the assessment of the potential effects on surface water quality of Birch Lake compared model results against relevant provincial and federal criteria. Applicable surface water quality criteria for comparing the predicted water quality concentrations are identified in Table 6.6-3. The Proponent utilized the CCME CWQGPAL, FEQG, PWQO, iPWQO, and others (British Columbia Water Quality Guidelines (BCWQG), United States Environmental Protection Agency (US EPA)) for comparison to water quality predictions. Comparisons for the water quality parameters were: • Al to a US EPA value; • Cu to the iPWQO; • Fe to the BCWQG; • Pb to the BCWQG; and • Se to the BCWQG. However, Canadian water quality guidelines are intended to provide protection of freshwater from anthropogenic stressors such as chemical	Considering the project location in Ontario, compare baseline water quality and predicted changes to water quality in the draft EIS and Surface Water Quality Modelling Report using both the PWQO and CCME CWQGPAL. Specifically compare Al, Cu, Fe, Pb, and Se to the CWQGPAL. Compare to values from FEQG as an additional point of comparison and include a short discussion on the differences.	Scientifically defensible and up-to-date guidelines for the protection of aquatic life were used to support the effects assessment. The selected guideline used in this assessment are protective of the most sensitive life stage of the most sensitive aquatic species for periods of indefinite exposure. Guidelines used in the effects assessment also reflect the outcomes of consultation with local communities prior to submission of the draft EIS/EA, as well as the anticipated provincial environmental approval requirements. Providing a supplemental discussion of a comparison / contrast of model results to alternative guidelines would not change the findings or conclusions of the effects assessment.	Satisfactory.		EIS Section 6.6.1.2, 6.6.5 Appendix N-2 Section 3.3, Table 3-3

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		inputs or changes to physical components. Guideline values are meant to protect all forms of aquatic life and all aspects of the aquatic life cycles, including the most sensitive life stage of the most sensitive species over the long term. The CCME ambient water quality guidelines developed for the protection of aquatic life provide the science-based benchmark for a nationally consistent level of protection for aquatic life in Canada.					
IAAC - WQI-014	Section 6.10 – Fish and Fish Habitat (p.6-212 to 6-226)	The Proponent proposes to dewater an area of Springpole Lake during the construction phase and re-flood the area at the end of operations. There was no discussion in the EIS about the effects of oxidation of the sediments following dewatering or of the potential effects of re-flooding on the resulting water quality of the north basin of Springpole Lake (e.g., mercury methylation).	Assess the potential effects to surface water quality in Springpole Lake due to oxidation of dewatered lake sediments and the subsequent re-flooding of the area.	Effects to water quality during the controlled dewatering of a portion of the north basin of Springpole Lake are not expected (Section 6.7 of the draft EIS/EA). Methylmercury production is not expected during dewatering or subsequent filling due to the reasons outline below. Additional discussion of effects to surface water quality due to oxidation of dewatered lake sediments and methylmercury production will be included in the final EIS/EA for clarity, and carried into the assessment of potential effects for fish and fish habitat. In summary: Baseline concentrations of metals in surface water and sediment are very low, at or below method detection limits for most parameters and consistently below applicable water quality and sediment quality guidelines. Exposure of lake bottom sediments to oxygenated conditions (as a result of dewatering activities) has the potential to oxidize any reduced organics / ferrous iron minerals / sulphide minerals and a subsequent release of sediment metals. However, in the north basin of Springpole Lake, the main product of oxidative dissolution would be hydrous and amorphous ferric oxides due to the nature of the binding sites of nascent ferric oxides, any sediment metals would thus stay in the solid phase and would not be available to overlying surface waters. Once the water quality in the isolated basin is determined to not be acceptable for direct pumping to Springpole Lake, residual water will be managed within the integrated site water management system. Methylmercury production can only occur in anaerobic (i.e., zero oxygen) environments in the presence of high dissolved sulphate and mercury concentrations. Baseline methylmercury, mercury	Acknowledged.		EIS Section 6.7.6

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				and sulphate concentrations are very low in the north basin of Springpole Lake, and are consistently at or below method detection limits. These conditions would exclude anaerobic methylmercury production.			
IAAC - WQI-015	Section 6.10.4.1 -Changes in Fish Habitat (p. 6-226)	The draft EIS states, "*During the decommissioning phase, runoff and seepage water from the CDF will be collected by the perimeter ditching and redirected to the open pit. As a result of these measures, no residual effects to fish health from seepage are anticipated.*" As the open pit area is planned to be flooded and reconnected to Springpole Lake, it is not clear why the Proponent would redirect contaminated runoff and seepage water from the tailings facility to the open pit. It was not clarified in Section 6.10 how this addition of mine water to the open pit would be managed/treated or how the sediments in the open pit would be mitigated prior to flooding.	Assess the potential effects to surface water quality in Springpole Lake due to the redirection of contaminated runoff and seepage water from the CDF into the open pit upon re-flooding of the open pit.	Redirection of site water to support open pit filling is a standard industry practice and serves to expedite filling of the open pit basin within a shorter timeframe, and reduces environmental effects and applicable public safety issues. Without enhancement, it would take decades (approximately 30 to 40 years) for the open pit basin to refill to the same level as Springpole Lake (Section 4.18.3.1). The requested surface water quality effects assessment for Springpole Lake during re-filling of the open pit basin is provided in Section 6.7. The effects assessment is supported by quantitative mass and water balance models (Appendix N-2) as well as PitMod modelling (Appendix N-3) to predict the physical and chemical evolution of the open pit basin during and after filling. Under the proposed water management strategy, modelling indicates that the open pit basin water quality will meet Provincial Water Quality Objectives (PWQO) for protection of aquatic life, approximately four years after mining ceases. Once the water quality meets all regulatory requirements, the cofferdams (dikes) will be lowered in a controlled manner to reconnect the reclaimed basin to Springpole Lake and physical and chemical water quality continues to improve after connection to Springpole Lake. Monitoring during re-filling of the open pit basin will provide sufficient time to validate the model predictions and identify and implement additional mitigation measures if needed (Section 4.18.2).	Provide a rationale for the assertion that the open pit basin water quality will meet PWQO for protection of aquatic life approximately four years after mining ceases. It is recommended that the potential effects on sediment quality in the open pit should be included in the final EIS. If it is expected that the sediment in the filled pit will contain mine related substances, the final EIS should explain how the Proponent will avoid re-suspension of contaminated sediment upon and after the connection of the filled open pit basin to Springpole Lake. Provide detail on the plans to monitor Springpole Lake after reconnection occurs in the follow-up and monitoring plan.	Quantitative modelling was performed to forecast open pit basin water quality over time (Appendix N-3) in the draft EIS/EA. This modelling indicated that PWQO will be achieved in 3 to 5 years. The reviewer is referred to Appendix N-3 for additional supporting rationale. The potential effects on sediment quality in the open pit will be included in the final EIS. Discussion regarding potential mitigation and management measures regarding avoidance of re- suspension sediments upon and after the connection of the filled open pit basin to Springpole Lake will be included in the final EIS/EA. A framework for a surface water quality follow-up and monitoring program will be described in the final EIS/EA, and further developed during the permitting phase.	EIS Section 5.19.3.1, 6.7.6, 6.10 Appendix N-3 Section 4
IAAC - WQI-016	Section 6.10.2 - Potential Environmental Effects (p. 6-	The Proponent notes that *"At final closure, collection and treatment of site runoff will cease and site runoff will passively drain to either the north basin of Springpole Lake or Birch Lake, which flow into the southeast arm." (page 3-3 of Appendix N-2)*	Assess the potential effects to surface water quality and sediment quality due to seepage or site runoff to adjacent waterbodies during the decommissioning	The requested effects assessment for surface water quality of Springpole Lake is provided in Section 6.7 and Section 6.8 of the draft EIS/EA. The	Refer to rows WQI-06 and WQI-08.	Refer to the responses to comments WQI-06 and WQI-08.	EIS Section 6.6.5 Table 6.6-9, 6.7.6.2, 6.10.6, Table 6.24-4

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	218) Appendix N-2 Surface Water Quality Modelling Report, (p. 3-3)	The EIS does not identify potential adverse effects to surface water quality due to the contamination of sediments resulting from seepage, site runoff and from the final discharge point in the southeastern arm of Springpole Lake; ongoing site runoff to adjacent waterbodies during the decommissioning and closure phase could have an adverse effect on fish. There is also no information regarding the potential for resuspension of contaminated sediments.	and closure phase, including potential for resuspension of contaminated sediments.	potential effects to sediment quality are described in the response to Comment WQI-06.			Appendix K-2 Section 4; L-2 Section 6; N-2 Section 3, O-1 Section 3.2; R Section 3.4.2.4
IAAC - WQI-017	Appendix N-2 Surface Water Quality Modelling Report Appendix E: Surface Water Model Results, Time Series Graphs (p. 3-3 and 4-1)	Appendix N-2 states, *"At final closure, collection and treatment of site runoff will cease and site runoff will passively drain to either the north basin of Springpole Lake or Birch Lake, which flow into the southeast arm."* Various water quality parameter exceedances of baseline in Birch Lake SW-24 (sulphate, arsenic, cobalt and copper) and an exceedance of the arsenic guideline for Springpole Lake (L-16 outlet) for the final closure phase (Figure E-7, E-8, E-10, E-11, E-43) were presented in Appendix E. The summary section for water quality modelling states, "no guideline exceedances are estimated in closure" (page 4-1). This statement is not consistent with the results presented.	Correct the draft EIS to reflect any exceedances. Update the assessment of effects as required.	Water quality effects are assessed if predicted water quality parameter concentrations are greater than applicable water quality guidelines. By definition, water quality guidelines are protective of the most sensitive life stage of the most sensitive aquatic species for periods of indefinite exposure. Thus the water quality in Birch Lake would be protective of aquatic life, as the predicted water quality concentrations during closure are less than applicable water quality guidelines in both the conservative base case and Sensitivity 3 (upper case geochemistry loadings) scenarios. Contrary to the reviewer's statement, there are no water quality parameter predictions greater than the applicable water quality guidelines in Figure E-7, Figure E-8, Figure E-10, or Figure E-11 in Appendix N-2 (Surface Water Quality Modelling Report). Note however that in Figure E-43 the presentation of arsenic concentrations for Sensitivity 3 are incorrect; concentrations of arsenic are below guidelines in final closure. This graph will be corrected in the final EIS/EA.	Acknowledged.		Appendix N-2 Attachment Figure E-43
IAAC - WQI-018	Section 4.18.3.1 Open Pit (p. 4-51)	In terms of the water quality of the refilled basin (former open pit), the Proponent identifies that model simulations were conducted to evaluate the future water quality of the refilled isolated basin to predict the physical and chemical evolution of the water column during and after filling. The draft EIS states that of key importance was to predict water quality conditions at the time the open pit basin will be re-connected to Springpole Lake. It is understood that the current model predicts that the open pit basin will be filled and suitable for reconnection to the remainder of Springpole Lake in approximately four years after mining ceases. Moreover, water quality results of the model were compared against the PWQO and those results indicate no exceedances of PWQO at completion of pit filling. While the draft EIS has taken a clear approach to compare water quality	Compare the predicted water quality at the completion of pit filling to the CCME CWQGPAL, FEQG, PWQO, and iPWQO and report any differences in the results and conclusions.	Use of the Provincial Water Quality Objectives (PWQO) for the protection of aquatic life as the benchmark for closure phase water quality (of the refilled basin) is an anticipated regulatory requirement in the Province of Ontario. This will be clarified in the final EIS/EA.	Acknowledged.		EIS Section 5.19.3.1, 6.7 Appendix K-2, N-2, N-3

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		monitoring and predictions to various water guidelines (CCME CWQGPAL, FEQG, PWQO, iPWQO, and other guidelines), it is unclear why water quality at the completion of pit filling was only compared to PWQO.					
IAAC - WQn -001	Appendix M-3 Receiver Water Balance Report	The Proponent describes the project effects to flows at the outlet of the North basin of Springpole Lake (node 5 in Tables 5-2 to 5-5 of Appendix M-3) as a reduction of 20% or more in flow at the outlet. However, the model description in Section 3.1 specifies that the construction phase model is run without the input of dewatering the portion of Springpole Lake cutoff by the cofferdams. The Proponent also describes the dewatering as a continuous 6 months of pumping, but neglects to provide a rate of pumping as well as a discharge location.	1. Provide more information on the dewatering of the former Springpole Lake cutoff by the cofferdams, including the pumping rate, discharge point, planned timing of pumping, and monthly downstream effects to flow. 2. Discuss any potential water level effects on the north basin of Springpole Lake and the subsequent effects to fish habitat.	1. Estimated maximum monthly pumping rates are provided in the Attachment WQn-01-1 and are based on 10% of the average monthly outflow from Springpole Lake at Station F8-HS7. Monthly average flows are shown, but it is recognized that the actual pumping rate will be based on a running average of daily or weekly flows which will be establish during the environmental approvals process. Dewatering of the isolated basin of Springpole Lake would involve initially pumping clean water over the dike(s) into Springpole Lake. The water would be monitored to ensure it meets water quality guidelines before discharging directly to Springpole Lake. As the water level lowers and water quality in the dewatered basin deteriorates (due to suspended solids), the water will be pumped to a water management facility to settle. From the water management facility, the water meeting water quality guidelines would be discharged at the effluent discharge location in the southeast arm of Springpole Lake, or to an otherwise approved temporary discharge point closer to the dikes. The timing of the pumping will be dependent on when the dikes are constructed and capable of isolating the basin. The dewatered basin and the dike areas will be initially isolated from the remainder of Springpole Lake with turbidity curtain barrier. The barriers will enable a fish removal program to commence in parallel with dike construction. The timing of isolating the dewatered basin will be further discussed with MNRF and DFO. 2. Hydrometric baseline data has identified that water levels are consistent across Springpole Lake. This water level, observed in the north basin, southeast arm, and outlet of Springpole Lake are controlled by the outlet. Water levels in Springpole Lake are expected to increase by approximately 10 cm as a result of the dewatering process and increased flow (assuming an average increase in			EIS Sections, 5.7.1.2, 6.7.1.2, 6.7.6.1 Appendix M-1, M-3

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				flows of 1.14 cubic metres per second). This appears to be within the seasonal variability of Springpole Lake water levels. This analysis will be refined in the final EIS/EA.			
IAAC - WQn -002	Section 6.6 Birch Lake System (p. 6-102 to 6-222) Section 9.8 Passive Water Management System (Ponds and Ditching) (p. 9-11 to 9-12) Section 9.17 Environmental Risk Assessment (p. 9-19) Appendix M-2 Mine Site Water Balance Report	Water management and water balance: The draft EIS does not appear to include a complete schematic of the mine site that illustrates water management (including pumping and ditching), an initial design for the size of various ponds, and capacities of ditches and pipelines. Thus, it is unclear how the Proponent plans to collect all mine contact water in a design storm event. More specifically: There is no complete schematic of all the components of the contact water management system in the draft EIS or appendices. Ditching and pipelines, if displayed, are not complete or clear (Figures 5-3 to 5-5 in Appendix M-2). Furthermore, the water balance model schematics do not clearly state if a water transfer is accomplished through ditching or pumping (Figures 3-3 to 3-6 in Appendix M-2), which has consequences for characterizing the risk of failure and potential mitigations. The Mine Site Water Balance model boundaries and components are incomplete. Based on Figures 5-4 and 5-5 of that report (Appendix M-2), the boundaries are located in the middle of the haul roads around the mine pit. Subsequently, half of the haul road runoff has not been quantified in the water balance or carried over to the water quality assessment. All runoff from mine haul roads is considered contact water so there is an unquantified risk of untreated discharge to the environment. The Water Balance also relies on preliminary design volumes for the CDF pond and the WSP (Section 5.8 of Appendix M-2), but does not analyze the effectiveness of those sizes for maintaining a standing water pond above the PAG tailings or for supplying the process plant, respectively. Water deficits in those ponds may require more freshwater intakes from Birch Lake. There is no analysis of the resilience of the contact water management system to extreme rainfall events. Section 4.10.1 of the draft EIS describes the design levels of water management facilities as a 100-yr 24-hr rainfall event for the plant site pond and the WSP, but only a 10-yr event (of unknown duration) for all other facilities (presumably this includes the ditches and collection ponds). The Proponent states in several sections that storm runoff may be allowed to flow to the pit for additional water management capacity, but this does not account for areas that would drain to a lake (i.e., the environment) rather than the mine pit in an extreme rainfall. This includes areas such as: the periphery ditches and water management ponds, particularly around the CDF; the ore stockpiles; and the outside of the mine haul roads. Features that may need to be resilient to extreme rainfall events in a future climate have also not been assessed	1. Provide a complete schematic of the water management system including the ditches and pipelines. 2. Update the water balance model boundaries to include runoff on the outside edge of the mine haul roads. 3. Incorporate the results from the analysis of CDF and WSP water levels from into the water balance. 4. Provide a summary of the design levels for all water management features. Analyze the resilience of the overall water management system to extreme rainfall events. Discuss the risk and consequences of discharge of untreated contact water, particularly from the periphery ditches and water management ponds. If any mine site infrastructure will need to be functional in a future climate (such as the CDF outlet in final closure), revise design for rainfall events that include consideration of possible changes in their occurrence/magnitude with climate change. 5. Once preliminary pond design volumes are supported by showing that they can collect all runoff from a design storm or will otherwise function as intended (e.g., WSP is also used to supply process water) and that all contact water is accounted for, revise or confirm the mine site layout as needed.	1 A conceptual schematic with water management conveyance and collection systems will be presented in the final EIS/EA. 2. The water balance model boundaries will be updated to include runoff on the outside edge of the mine haul roads for the final EIS/EA. This additional watershed area is extremely small in comparison to the overall total watershed (~935 ha) and is not expected to result in any changes to the effects assessment. 3. Sizing of the major storage facilities will be described in the final EIS/EA. The evaluation of water levels within these major water management facilities will be carried out during the permitting phase as required. 4. Conceptual level sizing of the major storage facilities will be carried out for the final EIS/EA. Additional detailed design of the major water management facilities will be carried out to support environmental approvals applications, and subsequently to support construction. The water management facilities will be designed to ensure that mine contact water is collected, and that infrastructure is sized appropriately to avoid untreated discharge to the environment. It will include consideration for climate change, when applicable. Section 9.8 of the draft EIS/EA provides a discussion of the risk and consequences of a discharge of untreated contact water from the ponds and ditching. 5. Conceptual level storage requirements will be evaluated for the co-disposal facility and water storage pond in the final EIS/EA. The revised storage requirements will be considered in the site layout.			EIS Sections 5.10.1.2, 6.6.1.2, Appendix M-2 Section 5.2

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		(e.g., CDF outlet in final closure). Finally, the lack of quantification in the water management plan for the mine site causes considerable uncertainty in the overall layout of the mine site and subsequent effects. In Section 9.8 and Table 9.17-3 of the draft EIS, the Proponent describes the risk of failure of the passive contact water management system as 'low' and the consequences as 'very low'. However, based on the definitions given in Section 9.17 of the draft EIS, a one in 10-year failure of the contact water ditching is a 'high' or 'very high' likelihood. If the environmental risk assessment included uncertainty, surely the lack of details and analysis described above would place the overall risk of untreated discharge to the environment as 'very high'.					
IAAC - WQn -003	Appendix M-1 Hydrology Baseline Report Appendix M-2 Mine Site Water Balance Report	Evaporation estimates and water balance: The Proponent continues to report the Atlas of Canada (1978) for lake evaporation estimates in the Appendix M-1 (see ECCC submitted comments on draft Baseline Hydrology report in August 2021); they distribute the annual evaporation into months based on Hargreaves equation and nearby temperature data in the same report. In the Appendix M-2, the Proponent abandons the Atlas of Canada and Hargreaves in favour of another estimate of evaporation based on the Harmon (1961) method and nearby temperature data. However, according to Xu and Singh (2001), 1 Harmon is known to underestimate evaporation in a study conducted in Northwest Ontario. Repercussions: – The persistence of standing water in south portion of CDF during operation phase is inconclusive (will be revegetated in closure). This creates a risk of ARD/ML. Subsequently, there may be a need for supplementary water intakes from Birch Lake. – Mine Site Water Balance also uses evaporation estimates. Water available for process plant uses these estimates, and the Proponent may request more water intakes from Birch Lake than initially planned. Xu and Singh (2001) also provide an adjusted constant that may be substituted into Harmon's equation for a more accurate evaporation estimate. 1 Xu C-Y, Singh VP. 2001. Evaluation and generalization of temperature-based methods for calculating evaporation. Hydrological Processes 15:305–319. Available at: https://onlinelibrary.wiley.com/doi/pdfdirect/10.1002/hyp.119	1. Revise evaporation estimates and incorporate into subsequent studies. 2. Analyze the effectiveness of the CDF pond and WSP preliminary design sizes for maintaining standing water of the PAG tailings or for supplying the process plant, respectively. 3. Discuss the water deficit potential in either pond (or both) and whether subsequent mitigation is needed (such as increasing the intakes from Birch Lake under dry scenarios).	1. As noted in Appendix M-2 of the draft EIS/EA, evaporation estimates using the Hamon equation resulted in an annual value that aligned with other references (i.e. Hydrologic Atlas of Canada). However, a review of the paper referenced (Xu and Singh) will be carried out in order to assess its applicability to the Project. Pan evaporation data collected from the Project site will also be considered in the hydrology modelling. It should be noted that the site data record will only be used in the selection of an alternative methodology for estimating evaporation at the Project site in the final EIS/EA. 2. The design of the water management plan and storage facilities will ensure that there is sufficient storage to supply the process plant and maintain a water cover on the PAG tailings cell. This analysis will be carried out during the detailed design phase of the Project. 3. The potential for a water deficit will be analysed and a discussion will be provided in the final EIS/EA.			EIS Section 6.6.1.2 Appendix M-2 Section 5.1
IAAC - WQn -004	Section 4.18.3.1 Open Pit (p. 4-50 to 4-52) Section 6.7.4.1 Changes to Surface Water	The Proponent plans to allow the mine pit to fill with water before reconnecting it to Springpole Lake. To speed the pit filling after the operation phase, the Proponent proposes to take water from the north basin of Springpole Lake at a rate of 10% of the monthly inflow to Springpole Lake (Section 4.18.3.1). However, the assumption that 10% of monthly flow would be available for pit filling is not defensible. It is likely that restrictions on intakes from the lake would be imposed in low flow seasons (summer and winter) that are critical for fish habitat. As cited by	Provide more information on plans for the streamflow station at the inlet of Springpole Lake (F7-HS1) to ensure continuous flow estimates, including winter streamflow measurements to allow an under-ice rating curve. Provide, considering the 10% change in	Streamflow monitoring was carried out at station F7-HS1 throughout 2021 and 2022. In the winter of 2022, it was observed that the flow monitoring station established at F7-HS1 remained relatively ice-free. These conditions are typical at the site, and therefore the open water rating curves (under development) for these stations may be valid year-round. Field personnel were not able to carry out a			EIS Sections 6.6.1.2, 6.7.1.2, 6.7.6.1, Appendix M-1 sections 4.4, 4.6; M-2 Section 5.1.

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	Quantity (p. 6-153 to 6-154) Appendix M-3 Receiver Water Balance Report	the Proponent, DFO (2013) recommends a limit of 10% change in the instantaneous flows to avoid effects to fish, which necessitates an active streamflow monitoring station. Combining the two likely limits mean the volume of water available for pit filling will be less than 10% of the annual volume. Subsequently, the time needed to fill the pit will be longer than the 3 to 5 years suggested by the Proponent. The Proponent also proposes two options for transferring water from Springpole Lake to the open pit, a siphon or an engineered spillway, but neglects to discuss/compare the potential effects and risks of the two. Additionally, the intakes from North basin of Springpole will change the typical flow from the North basin to the south by roughly -400% (Table 5-4 Appendix M-3), reversing the flow at this location and surely altering the water levels in the North basin. The magnitude of the change to North basin water levels are only discussed in Section 6.7.4.1 in the draft EIS without reference; the subsequent effects to fish habitat availability are not mentioned at all. Analyzing effects to water levels are further hampered by the lack of a summary of Springpole Lake water level data and estimates.	instantaneous flow limit and a low flow season restriction, a more reasonable estimate of water available for pit filling from Springpole Lake. Update subsequent analyses dependent on the rate of pit filling. Discuss the potential effects and risks of failure for the two infrastructure options to allow water transfer to the pit. Provide a summary of water level data for Springpole Lake. Distinguish between measurements and modeled water levels. Discuss in more detail the water level effects on the north basin of Springpole Lake and the subsequent effects to fish habitat.	winter measurement at the inlet station (F7-HS1) due to unsafe access. However, the outlet station (F8-HS7) has been accessible year-round and has a more robust rating curve and is a good comparable station for the inlet. Monitoring is expected to continue throughout 2023, with another winter site visit planned. A winter measurement will be carried out if safe to do so. The active filling rate discussed in the draft EIS/EA (1.15 cubic metres per second) is based on average annual flows. It is understood that a threshold flow will be established during the environmental approvals phase. This threshold flow will limit water takings when the receiver is in a low flow condition and may be based on near instantaneous / real-time flows. As such, during low flow conditions, overall water takings may be less than the 10% previously assumed. However, for the purposes of the environmental assessment, it is a conservative approach to evaluate potential impacts on a monthly basis under average, 1:100 wet, and 1:100 dry year conditions. This assessment has been captured in Appendix M-3 of the draft EIS/EA. Should flow conditions during the pit filling period be below average, the closure phase may be extended. For context, if the average annual water taking is reduced by half to 5%, the pit filling period would remain under 10 years (see Section 4.18.3.1 of the draft EIS/EA). This would not impact the significance of the duration of residual effects, as defined as Level II (more than 3 years, but less than 20 years) as described in Section 6.7.5 of the draft EIS/EA. Other potential limitations to water takings, such as those during the ice-free season, have not been considered, as the formation of ice should not impact water takings as long as there is measurable flow to determine allowable/permitted water takings. Water taking, even at rates greater than proposed for this Project is a common industrial process. In the event that a siphon or spillway ceases to function or fails to transfer water at the required or measurable rate then that equipment would be			

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				repaired or replaced. Potential failure of the dikes themselves was assessed as a potential malfunctions or accidents in Section 9.5 of the draft EIS/EA. A summary of the measured and modeled water levels will be provided in the final EIS/EA. Hydrometric baseline data has identified that water levels are consistent across Springpole Lake. Thus water level, observed in the north basin, southeast arm, and outlet of Springpole Lake are controlled by the outlet. As identified in Section 6.7.4.1 of the draft EIS/EA, water levels in the north basin of Springpole Lake (and therefore the entire Springpole Lake) are anticipated to lower by up to approximately 10 cm during the pit refilling phase. This estimate will be refined and substantiated by the 2021-2022 hydrometric baseline program and in included in the final EIS/EA. Fish present in the lake are adapted to the typical seasonal and annual fluctuations of the lake, such that a 10 cm will not be disruptive to their behavior or life process. The data referenced in Comment 4 of this response will be used to provide context to this statement in the updated Fish Habitat Offsetting and Compensation Plan and final EIS/EA.			
IAAC - WQn -005	Section 6.7.4 Assessment of Residual Environmental Effects 6.7.4.1 Change to Surface Water Quantity p. 6-154	The rationale for refill rate is based on DFO guidance (2013)[2] suggesting 10 to 15% reduction of the inflows are unlikely to have detectable impacts to downstream habitats. However, that guidance explicitly states 'Cumulative flow alterations <10% in amplitude of the actual (instantaneous) flow in the river relative to a "natural flow regime" have a low probability of detectable impacts'. The Proponent has based their refill rate on the assumption that 10% of monthly flow, rather than instantaneous flow per the DFO guidance, would be available for pit filling. Further limitations may also be required during low flow seasons. It is also understood that the current refilling plan may not conform with provincial requirements for a permit to take water (PTTW). Because of these factors, the time to refill the north basin is likely underestimated. Therefore, the time lag associated with restoration of the northern basin and restoration of available habitat is inaccurate. See related WQn-04 for further context. [2] DFO. 2017. Framework for Assessing the Ecological Flow Requirements to Support Fisheries in Canada. Canadian Science Advisory Secretariat Science Advisory Report	1. Quantify the time lag required to restore functional fish habitat in the north basin using a conservative estimate for duration of pit refill rate and duration. 2. Ensure that this additional time lag is reflected in the quantification of residual effects to fish and fish habitat, and any of the required offsetting.	1&2 The active filling rate discussed in the draft EIS/EA (1.15 m^3/s) is based on average annual flows. It is expected that a threshold flow will be established during the environmental approvals phase. This threshold flow will limit water takings when the receiver is in a low flow condition and may be based on near instantaneous / real-time flows. As such, during low flow conditions, overall water takings may be slightly less than the 10% previously assumed. For the purposes of the EIS/EA, it is a reasonable approach to evaluate potential impacts on a monthly basis under average, 1:100 wet, and 1:100 dry year conditions. This assessment has been captured in Appendix M-3 of the draft EIS/EA. Should flow conditions during the pit filling period be below average, the active filling phase may be extended. This means more water will be taken during high flow and relatively little water taken during the lowest flows. The lag times presented in the Fish			EIS Section 6.10.6 Appendix F Section 8.1

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		2013/017. Available at: https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/348881.pdf.		Habitat Offsetting and Compensation Plan (Appendix F of the draft EIS/EA), and the receiver water balance in Appendix M-3 remain valid, but can be discussed further with DFO. It is unclear what part of the proposed refilling plan would contradict the provincial permit to take water requirements as Continuous taking of water does not conflict with legislation or guidance associated with a permit to take water. It is understood that the Project will need to demonstrate that the water taking does do not affect existing users or the environment.			
IAAC - WQn -006	Section 6.10.2 Potential Environmental Effects p. 6-216	It is understood that the north basin intakes will change the flow from the north to the south basin by >400% (Table 5-4, Appendix M-3) at node 5, resulting in a reversal of flow during the pit refilling phase. In addition, flow reductions at node 5 are predicted to range from 20 to 51% through the construction and open pit phases of the mine. This will likely result in changes to north basin water levels, and subsequent effects on fish and fish habitat in the remaining lake that was not accounted for in the draft EIS. Also see WQn-04 and WQn-01.	Accurately describe all potential effects to fish and fish habitat as a result of flow reductions and lake water level changes associated with construction, open pit, and refilling phases of the Project. Update the required offsetting to reflect these additional potential effects.	As discussed in the above responses to Comments WQn-01 and WQn-04, water levels in the north basin are controlled by the Springpole Lake outlet. An effect due to water takings is not predicted as the change in water level is small compared to natural seasonal and annual fluctuations.			EIS Section 6.10.6

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ECCC-AA001	Section 3.0, Figure 3-2	Figure 3-2 of the document, 'Fisheries Act, Paragraph 35(2)(b) Authorization, Offset Plan and MDMER Schedule 2 Fish Habitat Compensation Plan (Draft)' (Appendix F to the draft Environmental Impact Statement), lists "Anticipated Schedule 2 Listings (Labelled with Impact Segment ID)" indicated in a pink-like colour. Waterbodies requiring a Schedule 2 listing under Section 36 of the Fisheries Act pertains to mine-waste disposal as opposed to "any work, undertaking or activity that results in harmful alteration, disruption or destruction of fish habitat" (Section 35(1) of the Fisheries Act). For this reason, waterbodies that are currently listed requiring Schedule 2 amendments should be re-evaluated. For example. S-17/IS-E should be broken into segments such that IS-F extends to the inner dam wall of the CDF (orange-like colour). Another example is L-5/IS-Y where the pink-like region should extend only to the inner wall of the dam. The remainder of L-5/IS-Y pertains to "Anticipated Section 35 Authorization (Labelled with Impact Segment ID)" as indicated with the orange-like colour. Annex 2 of the Guidelines for the Assessment of Alternatives for Mine Waste Disposal (herein, the Guidelines) explains this in greater detail: Subsection 35(2) requires compensation for the losses of fish habitat associated with the construction of the works themselves, such as a tailings dam. Losses of fish habitat in those portions of the waterbody that would be under the footprint of a tailings dam or other containment structure must be compensated under subsection 35(2). ECCC is currently working with Fisheries and Oceans Canada (DFO) to confirm the list of waterbodies for addition to Schedule 2. ECCC will follow up with First Mining Gold Corp. in the coming weeks. Following this, it is recommended that any updates associated with the authorizations under the Fisheries Act be incorporated into updated applications, including a revised assessment of alternatives report, as appropriate.	The Fisheries Act Offset Plan and MDMER Schedule 2 Fish Habitat Compensation Plan (Appendix F of the draft EIS/EA) and the Mine Waste Management Alternatives Assessment (Appendix E) will be updated in the final EIS/EA to reflect the appropriate status / category for impacted water bodies / watercourses.	Appendix E, F
ECCC-AA002	Section 3.0, Figure 3-2	Section 5.3.1 in Appendix F states that the "WSP [L-2] will be developed early in mine life to manage site runoff and store surplus water" and Table 4-1 in Appendix F states that waterbody L-2 contains 10 species of fish. ECCC has reviewed the Proponent's assessment of alternatives for mine waste disposal because it has proposed the use of several natural, waterbodies frequented by fish for disposal of waste rock and tailings. However, an assessment of alternatives has not been prepared for other mine waste components associated with the Project, such as mine runoff. All waters frequented by fish into which mine waste will be deposited must be listed on Schedule 2 of the MDMER. It is the Proponent's responsibility to conduct an assessment of alternatives for all associated mine waste components and to prepare a FHCP to offset the loss of fish habitat resulting from the deposit. It is recommended that an assessment of water storage alternatives be included in an updated report.	An updated version of the Mine Waste Management Alternatives Assessment will include an assessment for mine water storage alternatives in the final EIS/EA.	Appendix, E Section 7.0
ECCC-AA003	Section 4.7.3, p. 4-28	Section 4.7.3 in Report 4 states that the "CDF is proposed as a two-cell facility having a total surface area of approximately 381 ha, subject to ongoing geotechnical investigations and detailed design." Advice or comments provided for the current Assessment of Alternatives report are based on the current design and may be subject to change should the design change.	Comment noted. Following advancement of Project engineering, and in consideration of comments received from the Ministry of Mines, which generally questioned the proposed combined disposal strategy of filtered Non-Acid Generating (NAG) tailings with mine rock, FMG has undertaken further engineering studies resulting in optimizations for the co-disposal facility. Any resulting optimizations will be reflected in the updated Mine Waste Management Alternatives Assessment in the final EIS/EA.	EIS Sections 4.7, 5.10 Appendix E Section 2.0, Appendix V-1

ID	Specific Reference	Initial Comments & Rationale	FMG Response	Where Addressed
ECCC-AA004	General	The Alternatives Assessment does not mention how Indigenous engagement that has taken place to inform various sections in the report. As stated in the Guidelines, proposal(s) may have impacts or implications on people's way of life, culture, community and well being. Special consideration should be given to vulnerable social and economic groups such as Aboriginal peoples. Additional information about Indigenous engagement would instill confidence in the values assigned to the respective subaccounts and indicators in the Multiple Accounts Analysis, and how Indigenous Peoples' perspectives were considered in arriving at the preferred mine waste management location.	The final version of the Mine Waste Management Alternatives Assessment submitted during the permitting phase for regulatory approval, will include a summary of engagement undertaken and the outcomes of the engagement process.	EIS Sections 2, 4.2, 5.3, Appendix D; E section 1.1,
ECCC-AA005	General	Similar to Comment 4, the Alternatives Assessment does not mention the engagement of other land owners, land users or local residents, including from the City of Red Lake, Ear Falls or Sioux Lookout. As stated in the Guidelines, proposal(s) may have impacts or implications on people's way of life, culture, community and well being. It is important to accurately identify all people's whose way of life, culture and community may be impacted by the project. It is recommended that details be provided to clarify the level of engagement from local residents, land owners and/or land users.	The final version of the Mine Waste Management Alternatives Assessment submitted during the permitting phase for regulatory approval, will include a summary of engagement undertaken and the outcomes of the engagement process.	EIS Section 2, 4.2 Appendix D, E Section 1.1
ECCC-AA006	General	There are a number of report writing errors which include but are not limited to: • Subsection 1.3.1 contains a table that is not titled and numbered. • Subsection 2.0 contains a flow diagram (figure) that is not titled and numbered. • Figures 1-5 don't have page numbers. • Subheadings that contain four characters such as "2.1.6.3" do not appear in the table of contents. • It is recommended that the errors be reviewed and updated as required.	Comment noted with thanks. Editorial comments will be addressed in the updated Mine Waste Management Alternatives Assessment in the final EIS/EA.	Appendix E
ECCC-AA007	Section 1.4, p. 1-6	Subsection 1.0 states that "The Project is a greenfield site wholly owned by FMG. The main project site is centered at Universal Transverse Mercator coordinates..." however, it is unclear where FMG's property boundaries lie in Figures 1-5. It is recommended that the boundaries be added to Figures 1-5 to indicate whether or not the options lie within the footprint.	The land tenure boundary will be added to figures in the updated Mine Waste Management Alternatives Assessment in the final EIS/EA.	EIS Section 3 Figure 3.2-3
ECCC-AA008	Section 2.1.6, p. 2-7	Subsection 2.1.6 contains a pre-screening criteria "Is the method feasible with the Project mine plan? (yes/no)". If a storage method is not "applicable and usable at the on-set of operation to avoid the need for additional mine waste storage facilities", then it should be screened out in Step 1. As per the Guidelines, "the first step in the alternatives assessment process entails developing a list of all possible (i.e., reasonable, conceivable and realistic) candidate mine waste disposal alternatives for the site. This should include different mine waste disposal technologies, different disposal storage options, and different disposal locations. At this time it is imperative that no a priori judgements be made about any of the alternatives." It is recommended that Steps 1 and 2 of the report, including the pre-screening criteria be reconsidered for improved alignment with the Guidelines, or that the pre-screening criteria be reconsidered.	In-pit storage is considered reasonable, conceivable and realistic under certain conditions for gold mining operations in northern Ontario and may be considered at a later stage of Project development. However, removal of this pre-screening criterion at this stage of the analysis would not affect the outcome of the pre-screening. As such, it is proposed to retain this criterion (and discussion in Section 2.1.6.1 of the draft Mine Waste Management Alternatives Assessment) to demonstrate the initial difficulty, but potential for subsequent use.	EIS Section 4.1 Appendix E Section 2
ECCC-AA009	Section 3.1.1 & 3.1.2, p. 3-1 & 3-2	The Guidelines state that an alternatives assessment should assess all aspects of each mine waste disposal alternative throughout the project life cycle. Sections 3.1.1 and 3.1.2 of the assessment do not describe the alternatives over the project life cycle (construction, operation, closure).	Characterization information pertinent to the Project lifecycle for the candidate alternatives will be added to the updated Mine Waste Management Alternatives Assessment in the final EIS/EA. Tables 2-1 and 2-3 currently provide descriptions of each candidate alternative location considered for mine rock and tailings (respectively), which may be modified to provide this information.	Appendix E Table 3-2

ID	Specific Reference	Initial Comments & Rationale	FMG Response	Where Addressed
		This is best done by developing a summary table which lists each alternative with a concise qualitative statement as to how the alternative would apply through each of the pertinent phases of the project (i.e., the project life cycle). Table 1 of the Guidelines provides an example of the level of information that should be targeted during this step. The objective at this step in the process is to demonstrate to an external reviewer that all reasonable mine waste disposal alternatives have been brought forward.		
ECCC-AA010	Section 3.1.1, p. 3-1	Subsection 3.1.1 states that there is a "Candidate Site 1" and "Candidate Site 2" however it is unclear where these sites lie. It is recommended that supporting figures be added to subsection 3.1.1 along with FMG's property boundaries to indicate whether or not the options lie within the footprint. It is also recommended that the four alternative locations be supported with figures and their respectively affected waterbodies.	These aspects will be clarified in existing and / or additional figures for the updated Mine Waste Management Alternatives Assessment in the final EIS/EA.	Appendix E Section 3.1 Figures 2-1, 2-2, 2-3
ECCC-AA011	Section 3.1.1, p. 3-1	Subsection 3.1.1 states "Site 2 is located within Category 2 seasonal range habitat for Caribou (Boreal population). Caribou (Boreal population) are classified as Threatened, under both the ESA and SARA." Subsection 3.1.1 focuses on Site 1 and the sentence may be a typo as it is repeated in subsection 3.1.2 which focuses on Site 2. It is recommended that the paragraph be reviewed and the sentence be removed if it is redundant.	Comment noted with thanks. Editorial comments will be addressed in the updated Mine Waste Management Alternatives Assessment in the final EIS/EA.	Appendix E Sections 3.1.1, 3.1.2
ECCC-AA012	Section 3.2 – 3.5, p. 3-1 to 3-4	Subsections 3.2 – 3.5 provide descriptions for proposed alternatives making it difficult to compare alternatives. As stated in the guidelines, "the deliverable for this step should ideally be a series of summary tables that list the selected characterization criteria for each account for each of the alternatives under consideration. The table should include a concise summary of the rationale behind each criterion. This format allows an external reviewer to easily compare the factual characteristics across alternatives. Table 7 provides an example of what this summary table may look like." It is recommended that subsections 3.2 – 3.5 be summarized in tables to align with the Guidelines.	The characterization information in Sections 3.2 to 3.5 is tabulated in Table 3-1, with a rationale for each subaccount and indicator provided in Table 4-1. The text will be updated to clarify this aspect, in the updated Mine Waste Management Alternatives Assessment in the final EIS/EA.	Appendix E Section 3 Tables 3-1, 3-2
ECCC-AA013	Section 3.0 & 5.0 , p. 3-5 & 5-3	Subsections 3.2 – 3.5 contain various indicators that have been listed under more than one Account and/or Sub-account, however, these indicators have been carried into the Multiple Accounts Analysis, which may effectively result in double counting. Some examples include: • Noise Emissions under the Environmental Account and Noise Emissions under the Socio-Economic Account; and • Species At Risk (Environmental Account) vs Species At Risk Compensation (Economic Account). There should not be more than one indicator that measures the same measurement criteria. It is recommended that duplicated indicators be placed under one Sub-account and the Multiple Accounts Analysis be updated.	The noise emissions (and potentially other) indicators will be reviewed and consolidated / revised where appropriate in the updated Mine Waste Management Alternatives Assessment in the final EIS/EA. With regard to Species at Risk, the indicators are describing different aspects of the Project which may be affected. The environmental account represents the area of habitat (direct and indirect) which may be affected / overprinted, thereby quantifying the associated environmental impact. The compensation costs in the economic account are expected to vary according to the option chosen and are a material cost to the project. As such, it is not considered to be double counting and will be retained in the analysis.	Appendix E Section 4 Table 4-1
ECCC-AA014	Section 4.0, p. 4-3	The Sub-Account Rationale for "Safety Factors" contains the following sentence "Safety is a primary concern when designing the CDF and each Alternative 3". The "3" in "Alternative 3" may be a typo. It is recommended that the description be reviewed and updated accordingly.	Comment noted with thanks. Editorial comments will be addressed in the updated Mine Waste Management Alternatives Assessment in the final EIS/EA.	Appendix E Section 4 Table 4-1
ECCC-AA015	Section 5.1, p. 5-3	In subsection 3.0, Table 3-1 has an indicator that may readily lend itself to parametric terms, i.e., be quantifiable. For example, the Indicator "Loss of Undisturbed Habitat" is listed as having no quantitative unit. It is recommended that a quantitative unit for area (e.g., hectares) be inserted. Furthermore, in subsection 5.1, Table 5-1 has indicators that may readily lend themselves to parametric terms, i.e., be quantifiable as done in Table 3-1. The Guidelines state that in order to "allow qualitative or quantitative measurement of the impact (i.e., benefit or loss) associated with each alternative for any given sub-account, the sub-account needs to be measurable." It is recommended that indicators in Table 5-1 be reviewed and quantified with appropriate units where possible. Please refer to Table 10 of the Guidelines.	Indicators will be reviewed and quantified in the updated Mine Waste Management Alternatives Assessment in the final EIS/EA, as appropriate.	Appendix E Section 3 Table 3-1 and Section 5 Table 5-1

ID	Specific Reference	Initial Comments & Rationale	FMG Response	Where Addressed
ECCC-AA016	Section 3.5 & 5.3, p. 3-5 & 5-3	Values in Table 3-1 do not correspond to the values and value scales in Table 5-1 for the following subaccounts: • Loss of Wetlands • Incremental Haul / Access Road Corridor Footprint (ha) It is recommended that the values and/or value scales be aligned such that both depict accurate scoring for the subaccounts.	The values in Table 3-1 are correct. The errors in Table 5-1 will be corrected inn the updated Mine Waste Management Alternatives Assessment in the final EIS/EA. The updated values do not affect the outcome of the analysis.	Appendix E Section 3 Table 3-1 and Section 5 Table 5-1
ECCC-AA017	Section 5.3, p. 5-3	Scales for scoring criteria in Table 5-1 are not equally divided. For example, the Indicator Loss of Fish Habitat (Waterbodies) ranges from a scale of 5 ha (0.1 – 5 ha for a score of 5) to 10 ha (5.1 – 15 ha for a score of 4). As per the Guidelines, "scoring is done by developing qualitative value scales for every indicator, including those which appear to be readily measurable. An example of such a qualitative value scale is presented in Table 12. It is recommended that scales for scoring be corrected and scores be updated accordingly.	The values and scoring will be reviewed and adjusted in the updated Mine Waste Management Alternatives Assessment in the final EIS/EA, where appropriate.	Appendix E Section 5 Table 5-1
ECCC-AA018	Section 5.3, p. 5-5	"CDF Footprint" indicator scores for Alternatives 2 and 3 to not correspond between Table 5-3 and Table 5-1. This causes the Merit Score Calculation in Table 5-3 for Alternatives 2 and 3 to be incorrect. It is recommended that the indicators scores be reviewed to align between Table 5-1 and Table 5-3.	The values and scoring will be reviewed and corrected in the updated Mine Waste Management Alternatives Assessment in the final EIS/EA where appropriate.	Appendix E Section 5 Tables 5-1, 5-3
ECCC-AA019	Section 6.0, p. 6-2	It is recommended that tables similar to Tables 5-2 to 5-8 be provided for the sensitivity analyses to support summary Table 6-1.	Sensitivity analyses tables will be provided in the updated Mine Waste Management Alternatives Assessment in the final EIS/EA.	Appendix E Section 6 Table 6-1