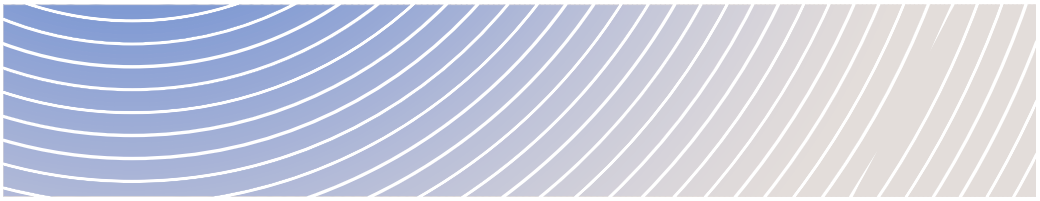
Lynn Lake Gold Project



TECHNICAL REVIEW INFORMATION REQUESTS – ROUND 2, PACKAGE 2

October 20, 2021

Impact Assessment Agency of Canada | Agence d'évaluation d'impact du Canada

Canada

Table of Contents: Information Requests by Topic

List of Acronyms and Short Forms

Acronym or Abbreviation	Definition
Agency	Impact Assessment Agency of Canada
ARD	Acid rock drainage
CAAQS	Canadian Ambient Air Quality Standards
CAC	Criteria air contaminant
CCME	Canadian Council of Ministers of the Environment
CCN	Chemawawin Cree Nation
CEAA 2012	*Canadian Environmental Assessment Act, 2012*
CO	Carbon monoxide
COPCs	Contaminants of potential concern
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CRs	Concentration ratios
Current use	Current use of lands and resources for traditional purposes by Indigenous peoples
dBL	Decibel
DFO	Fisheries and Oceans Canada
DPM	Diesel particulate matter
ECCC	Environment and Climate Change Canada
EIS	Environmental Impact Statement
EIS Guidelines	Environmental Impact Statement Guidelines
EMMP	Environmental Management and Monitoring Program
FTM	Freeze-Thaw Module
GHG	Greenhouse gas(es)
HCN	Hydrogen cyanide
HHRA	Human Health Risk Assessment
HQ	Hazard quotient
KMU	Kamuchawie Management Unit
km/h	Kilometres per hour
kt CO_2e	Kilotonnes of carbon dioxide equivalent
kV	Kilovolt
LAA	Local Assessment Area
LFN	Low frequency noise
MCCN	Mathias Colomb Cree Nation
MCFN	Marcel Colomb First Nation
MDMER	*Metal and Diamond Mining Effluent Regulations*
MEND	Mine Environment Neutral Drainage
ML	Metal leaching
MMF	Manitoba Metis Federation
MRSA	Mine Rock Storage Area
NO_2	Nitrogen dioxide
Non-PAG	Non-potentially acid generating
NP	Neutralization potential
NRCan	Natural Resources Canada

PAG	Potentially acid generating
PAHs	Polycyclic aromatic hydrocarbons
PBCN	Peter Ballantyne Cree Nation
PDA	Project Development Area
$PM_{2.5}$	Particulate matter less than 2.5 microns in diameter
PM_{10}	Particulate matter less than 10 microns in diameter
PR 391	Provincial Road 391
Project	Lynn Lake Gold Project
Proponent	Alamos Gold Inc.
RAA	Regional Assessment Area
SAR	Species at risk listed under Schedule 1 of the *Species at Risk Act*
SARA	*Species at Risk Act*
SDFN	Sayisi Dene First Nation
Section 35 rights	Potential or established rights of the Indigenous peoples of Canada as recognized and affirmed in section 35 of the *Constitution Act, 1982*
SO_2	Sulphur dioxide
SOCC	Species of conservation concern
SWMMP	Surface Water Management and Monitoring Plan
TDI	Tolerable daily intake
TLRU	Traditional Land and Resource Use
TMF	Tailings Management Facility
TRVs	Toxicological reference values
TSP	Total suspended particulates
VC	Valued component
VOCs	Volatile organic compounds
WMMP	Wildlife Monitoring and Management Plan

Information requests are detailed in the following format:

Reference IR#	Expert Dept. or Group	EIS Guidelines Reference	EIS Reference	Context and Rationale	Information Requests
Topic or Valued Component (e.g. Project Overview; Environmental Assessment Methodology; Fish Habitat; etc.)					
Information Request (IR) Round 2: IAAC-R2-XX	Nation or Department Name e.g. Impact Assessment Agency of Canada	Reference the section(s) of the EIS Guidelines that relate to the comment, concern, or information request. e.g. EIS Part 2, Section 7.1.5 Fish and Fish Habitat	Reference the section(s) of the EIS that speaks to the comment, concern, or information request.	Identify what the EIS Guidelines require and/or the link to the *Canadian Environmental Assessment Act, 2012* (section 5 or section 19). Briefly identify what the EIS presents and the information gap, inconsistency, or challenge. Explain why filling that information gap is necessary to understanding potential adverse effects to areas of federal jurisdiction or impacts to rights.	Describe the information required. Focus on the essential information, explanation, or justification required.

Information Requests Round 2, Package 2 (IAAC-R2-XX):

Reference IR#	Expert Dept. or Group	EIS Guidelines Reference	EIS Reference	Context and Rationale	Information Requests
Project Design					
IAAC-R2-54	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information Request Responses Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses	3.1 Designated project 3.1 Project components 3.2 Project activities 3.2.1 Site preparation and construction 6.4 Mitigation measures	EIS Summary 2.3.2.3 Utilities and Infrastructure 2.4.2 Manitoba Hydro Substation and Transmission Line 12.4.2.2 Project Pathways Federal IR Responses, Round 1, Package 1, Response to IAAC-06 Federal IR Responses, Round 1, Package 1, Response to IAAC-08	The Environmental Impact Statement (EIS) Guidelines require Alamos Gold Inc. (the Proponent) to identify activities to be carried out during each phase of the Lynn Lake Gold Project (the Project) including the routes, locations, and water crossings of any permanent and temporary linear infrastructure (roads, railroads, pipelines, power supply), and describe the site preparation and construction of the power supply for the Project. In its response to IAAC-06 and IAAC-08, the Proponent provides a map showing the preliminary route for the 138 kilovolt (kV)-34.5 kV substation and 34.5 kV distribution line from Lynn Lake to the MacLellan site and indicates that the final design of the line, as well as its construction and operation, will be under the care and control of Manitoba Hydro. It is unclear what ability the Proponent will have to influence the final design, routing, construction, operation, and maintenance of the distribution line, or what provincial approvals or licenses, if any, would be required to construct and operate the distribution line and substation. It is also unclear whether all of the infrastructure associated with the distribution line and substation, including linear and non-linear features inside and outside of the Project Development Area (PDA), have been accounted for in the estimated area of disturbance for the Project, and therefore the effects assessments for valued components (VCs). For instance, Mathias Colomb Cree Nation (MCCN) notes that the vegetation and wetlands effects assessments do not consider vegetation and wetland removal that may be associated with the distribution line. As the construction, operation, and maintenance of the substation and distribution line may be considered by the Impact Assessment Agency of Canada (the Agency) to be incidental to the proposed Project, these effects must be described. This information is required to support the Agency's understanding of potential effects to areas of federal jurisdiction defined under section 5 of the *Canadian Environmental Assessment Act, 2012* (CEAA 2012).	a) Describe the extent of the Proponent's ability to influence the final design, routing, construction, operation, and maintenance of the distribution line and substation that will be constructed for the Project and indicate whether a contract or agreement is or will be established between Manitoba Hydro and the Proponent. i. Provide any publically available information regarding best management practices that will be or are typically employed by Manitoba Hydro for distribution lines and substations. ii. If the Proponent has the ability to influence the final design, routing, construction, operation, and maintenance of the distribution line and substation and/or if a contract or agreement is or will be established between Manitoba Hydro and the Proponent, describe potential effects to VCs and mitigation measures, routing and design considerations, standards, and best practices that will be employed to minimize potential effects to VCs. iii. Describe the party that will be responsible for implementing mitigation measures, standards, and best practices to minimize potential effects and ensuring their effectiveness is monitored appropriately. iv. If the Proponent will be responsible for implementing mitigation measures, describe the follow-up and monitoring that will occur to verify the effectiveness of mitigation measures, including monitoring locations, parameters to be measured, study design, planned protocols, and the anticipated schedule of monitoring activities, and

					the adaptive management plan that will be employed. Refer to IAAC-R2-04 for further details regarding information requirements for adaptive management plans. b) Describe any provincial approvals or licenses that will be required to construct and operate the distribution line and substation and who will be responsible for obtaining those approvals, if known. c) If the Proponent has the ability to influence the final design, routing, construction, operation, and maintenance of the distribution line and substation and/or if a contract or agreement is or will be established between Manitoba Hydro and the Proponent, clarify whether all of the infrastructure associated with the distribution line and substation, including all linear and non-linear features inside and outside of the PDA, have been accounted for in the estimated area of disturbance for the Project, and whether this disturbance and any other effects associated with the substation and distribution line were accounted for in the effects assessments for all VCs. i. If these areas were not accounted for in the calculation of the disturbance area for the Project, revise the estimated Project disturbance area to account for this and provide revised maps showing the total extent of Project-related disturbance. ii. Revise the assessments of Project-related effects for all relevant VCs and impacts to rights to account for the revised Project disturbance area and any effects associated with the construction, operation, and maintenance of the substation and distribution line. With respect to vegetation and habitat removal specifically, describe the types and extent of vegetation/habitat that will be removed and associated potential effects to other VCs.

IAAC-R2-55	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information Request Responses Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses	3.2.1 Site preparation and construction 3.2.2 Operation 6.4 Mitigation measures	2.3.1.2 Utilities and Infrastructure 2.3.2.3 Utilities and Infrastructure Attachment IAAC-11 Section 2.1.1 Highway Maintenance Agreements Federal IR Responses, Round 1, Package 1, Response to IAAC-10 Federal IR Responses, Round 1, Package 1, Response to IAAC-11	The EIS Guidelines require the Proponent to describe Project-related components and activities, including any adjustments required to Provincial Road (PR) 391, any required transportation corridor construction or improvement, and transportation of materials. In its response to IAAC-10, the Proponent notes that Provincial Road 391 (PR 391) is under the authority of Manitoba Infrastructure (MI) and that any upgrades to PR 391 will be the responsibility of MI, subject to an agreement reached between MI and the Proponent, a schedule for upgrade activity, and issuance of a maintenance fee charged to the Proponent. Details have not been provided regarding the Proponent's ability to influence activities related to upgrading of PR 391. It is also unclear if any provincial approvals or licenses would be required to undertake the upgrades to PR 391. In its response to IAAC-10, the Proponent also notes that, as upgrades and maintenance associated with PR 391 are within the jurisdiction, care and control of MI, environmental effects and management requirements associated with upgrades and future maintenance are outside the scope of the EIS. The Proponent also notes in its response to IAAC-11, that upgrades to PR 391 will be required in order for transportation and hauling of materials and ore to occur between the Gordon site and the MacLellan site, and therefore for the Project to move forward as planned. As upgrades of PR 391 are considered by the Agency to be incidental to the proposed Project, potential effects associated with the upgrades must be described. This information is required to support the Agency's understanding of potential effects to areas of federal jurisdiction defined under section 5 of CEAA 2012.	a) Describe the extent of the Proponent's ability to influence activities related to upgrading PR 391, due to the agreement between MI and the Proponent. i. Provide any publically available information regarding best management practices that will be or are typically employed by MI for such activities. ii. Describe mitigation measures, design considerations, standards, and best practices that will be employed to minimize potential effects to VCs. iii. Describe the party that will be responsible for implementing mitigation measures, standards, and best practices to minimize potential effects and ensuring their effectiveness is monitored appropriately. iv. If the Proponent will be responsible for implementing mitigation measures, describe the follow-up and monitoring that will occur to verify the effectiveness of mitigation measures, including monitoring locations, parameters to be measured, study design, planned protocols, and the anticipated schedule of monitoring activities, and the adaptive management plan that will be employed. Refer to IAAC-R2-04 for further details regarding information requirements for adaptive management plans. b) Describe any provincial approvals or licenses that will be required to undertake any upgrades and associated activities to PR 391 and who will be responsible for obtaining those approvals, if known. c) Describe all activities that will be associated with upgrading of PR 391 and the total disturbance footprint. d) Describe the potential effects of activities associated with upgrading of PR 391 to all VCs, mitigation measures to address these potential effects, and assess the significance

					of any residual effects. e) Describe the follow-up and monitoring program that will be implemented to verify the effectiveness of the mitigation measures proposed and the adaptive management plan that will be employed. Refer to IAAC-R2-04 for further details regarding information requirements for adaptive management plans.
IAAC-R2-56	Impact Assessment Agency of Canada	3.1 Project Components 3.2 Project Activities 6.4. Mitigation measures	Federal IR Responses, Round 1, Package 1, Response to IAAC-11	The EIS Guidelines require the Proponent to describe Project activities to be carried out during each phase of the Project including ore and concentrate transportation, and storage, handling, and transportation of reagents, petroleum products, chemical products, hazardous materials and residual materials. The Proponent is also required to describe measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the Project. In its response to IAAC-11, the Proponent describes mitigation and follow-up and monitoring measures that will be implemented to address potential Project effects to VCs due to the increase in Project-related vehicle traffic along PR 391, including the use of signage, speed limits, and compliance with applicable federal, provincial, and municipal regulations. It is unclear what mitigation measures will be implemented or have been incorporated into Project design to limit the volume of Project-related traffic along PR 391, thereby limiting potential effects to VCs. This information is required to support the Agency's understanding of potential Project effects to migratory birds, Indigenous nations, and other VCs that may be affected by changes to the biophysical environment due to increased Project-related vehicle traffic along PR 391.	a) Describe the mitigation measures that will be implemented and/or that have been incorporated into Project design to limit the volume of all Project-related traffic along PR 391 to the extent possible. i. If mitigation measures have not been proposed to limit the volume of all Project-related vehicle traffic along PR 391, describe possible measures that could be implemented or provide a rationale why these mitigation measures are not necessary.
Baseline Information					
IAAC-R2-57	Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information Request Responses	4.2.2 Community knowledge and Aboriginal traditional knowledge	16.2 Existing Conditions for Heritage Resources 17.2.14 Overview of Current Use	The EIS Guidelines require the Proponent to provide baseline information for each Indigenous nation to inform the assessment of potential Project effects to Indigenous peoples, including consideration of both primary and secondary sources of information. This information must be provided for Indigenous health and socio-economic conditions, physical and cultural heritage, the current use of lands and resources for traditional purposes by Indigenous peoples (current use), and the rights of Indigenous peoples. The Proponent is also required to make reasonable efforts to integrate Indigenous traditional knowledge into the assessment of environmental	a) Describe baseline conditions for each Indigenous nation for the current use of lands and resources for traditional purposes, Indigenous health and socioeconomic conditions, Indigenous rights, including intangible aspects of rights such as governance rights, physical and cultural heritage, and any structure, site, or thing of archaeological, paleontological, or architectural significance to Indigenous peoples. i. If data for each individual Indigenous nation is not available and public information is not available,

	Mathias Colomb Cree Nation – Technical Review of Round 1, Package 2 Information Request Responses Mathias Colomb Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses Sayisi Dene First Nation - Technical Review of Round 1, Package 2 Information Request Responses Sayisi Dene First Nation - Technical Review of Round 1, Package 3 Information	4.3 Study strategy and methodology 6.1.9 Indigenous peoples	19.2 Existing Conditions for Indigenous Health Conditions, Indigenous Socioeconomic Conditions, and Indigenous Physical and Cultural Heritage Federal IR Responses, Round 1, Package 1 Federal IR Responses, Round 1, Package 2 Federal IR Responses, Round 1, Package 3	effects and provide evidence of all efforts, and to provide Indigenous nations with reasonable opportunity to review and provide comments on the information used for describing and assessing effects on Indigenous peoples. In several sections throughout the EIS, the Proponent states that no Project-specific or secondary source information is currently available to inform baseline conditions for individual Indigenous nations, including for the current use of lands and resources for traditional purposes. Further, when baseline data for Indigenous-related VCs is presented, such as for heritage resources, Indigenous physical and cultural heritage, and Indigenous health and socioeconomic conditions, the data is from a limited number of Nations that has then been extrapolated to all Nations. In its response to several Round 1 Information Requests, including IAAC-103, IAAC-104, IAAC-116, IAAC-117, IAAC-127, IAAC-133, IAAC-145, IAAC-151, IAAC-175, and IAAC-176, the Proponent states that additional information was not provided by Indigenous nations to facilitate updating the information provided in the EIS and the effects assessments for VCs, including Indigenous-related VCs. Several Indigenous nations, including MCCN, Chemawawin Cree Nation (CCN), Sayisi Dene First Nation (SDFN), the Manitoba Metis Federation (the MMF), and Peter Ballantyne Cree Nation (PBCN), express concerns regarding the lack of Nation-specific baseline data presented in the EIS and the Proponent's responses to several Round 1 Information Requests regarding Indigenous-related VCs, including Indigenous health and socio-economic conditions, physical and cultural heritage, the current use of lands and resources for traditional purposes, and the rights of Indigenous peoples. For instance, MCCN indicates that the Proponent's assessment for several VCs, including the assessment of impacts to rights, does not consider the results of MCCN's Indigenous Knowledge and Use Study, which was provided to the Proponent on June 3, 2021. As this information may reveal unique interactions between the Project and MCCN members' health conditions, current use of lands and resources for traditional purposes, physical and cultural heritage resources, and exercise of rights, such as unique locations and timing of land and resource use, species harvested, country foods consumption patterns, underlying health vulnerabilities, and unique ways in which MCCN members practice their rights and/or place value on lands and resources, this information must be considered. MCCN also notes concerns that in the Proponent's impacts to rights assessment, the	describe why and identify the data gaps and risks associated. ii. Describe the level of uncertainty and limitations associated with the assessment of potential Project effects to Indigenous peoples, including impacts to rights, and related VCs due to the absence of Nation-specific information. Describe assumptions made, including any extrapolation of data from one Nation to another, and discuss the impact of those assumptions on the level of uncertainty with respect to predictions regarding potential Project effects. iii. Describe the activities that were conducted to verify the data used and conclusions formed with the applicable Indigenous nations and the outcome of these activities. iv. Identify and discuss areas of disparity between the views of Indigenous nations and the Proponent, efforts made to reconcile disparities, and a rationale for conclusions on matters for which disparity in views remains. b) Revise the impacts to rights assessment and the assessment of potential Project effects to Indigenous health and socioeconomic conditions, the current use of lands and resources for traditional purposes, physical and cultural heritage, any structure, site, or thing of archaeological, paleontological, or architectural significance to Indigenous peoples, and any other related VCs, including the residual and cumulative effects assessments, to consider the information provided by MCCN in its Indigenous Knowledge and Use Study and any new information provided by or collected from Indigenous nations since submission of Round 1 Information Request responses, including any information collected or provided in response to a). i. Reflect any revisions, if required, to the spatial and temporal boundaries for the impacts to rights assessment or any assessments related to potential Project effects to Indigenous peoples and

	Request Responses Chemawawin Cree Nation - Technical Review of Round 1, Package 2 Information Request Responses Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests Peter Ballantyne Cree Nation – Technical Review of Round 1, Package 2 Information Request Responses Peter Ballantyne Cree Nation – Technical Review of Round 1, Package 3 Information			Proponent does not capture the full geographic range of areas where MCCN members practice their rights and where those rights may be impacted by the Project. Several Indigenous nations, including MCCN, PBCN, SDFN, MMF, and CCN, note concerns with the level of engagement conducted by the Proponent to date to inform the Proponent's assessment of effects to their Nations, including impacts to rights, and other VCs. Indigenous nations also note concerns that the Proponent did not specifically request their input on certain topics; therefore a lack of comment or information provided on a certain topic should not be interpreted as a lack of concern. For instance, in its response to IAAC-104, the Proponent notes that no new information was provided on the design of the Tailings Management Facility (TMF). PBCN notes that the Proponent did not indicate that this was an area where input was being sought. Provision of information on the integration of Indigenous nations' comments and verification of integration of comments in describing and assessing effects on Indigenous peoples and other VCs is needed to understand effects and impacts. In the EIS and in its responses to Round 1 Information Requests, the Proponent does not discuss the limitations and uncertainty associated with the information used to inform conclusions regarding potential Project effects to Indigenous peoples, including impacts to rights, and other related VCs, given the absence of Nation-specific information, or what assumptions were made in extrapolating information from one Nation to another. Further, it is unclear whether the information that was used to inform the assessment of effects to Indigenous peoples, including impacts to rights, and related VCs, including the analysis and conclusions that have been presented based on this data, has been verified with the applicable Indigenous nations to ensure that it is representative of their Nation and that data has been interpreted and applied correctly. This information is required to support the Agency's understanding of potential effects to Indigenous peoples, including the current use of lands of resources for traditional purposes, Indigenous health and socioeconomic conditions, and Indigenous rights, and other VCs.	related VCs based on this information, ensure that the assessments, including conclusions presented with respect to the anticipated significance of effects. ii. If new or worsened effects are identified in response to b) and/or i), describe mitigation and follow-up and monitoring measures that will be implemented to address potential effects. iii. Describe the activities that were conducted to verify the data used and conclusions formed with MCCN and other applicable Indigenous nations and the outcome of these activities. iv. Identify and discuss areas of disparity between the views of Indigenous nations and the Proponent, efforts made to reconcile disparities, and a rationale for conclusions on matters for which disparity in views remains. c) Describe how the Proponent will adaptively manage and monitor potential Project effects to Indigenous peoples, including impacts to rights, and related VCs should new and relevant information be identified in the future, and describe the goals/outcomes of the adaptive management plan. Refer to IAAC-R2-04 for further details regarding information requirements for adaptive management plans.

	Request Responses Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses Manitoba Metis Federation – Technical Review of Round 1, Package 3 Information Request Responses				
Surface Water and Groundwater					
IAAC-R2-58	Natural Resources Canada – Technical Review of the Supplemental Filing	6.1.5 Groundwater and Surface Water	Supplemental Filing regarding the MacLellan Site Water Balance/Water Quality Model Update following Mine Rock Storage Area Refinement, Tables 3-14 to 3-20	The EIS Guidelines require the Proponent to describe potential Project effects to water quality attributed to acid rock drainage (ARD) and metal leaching (ML) associated with mine material. In its Supplemental Filing document, the Proponent notes that the Upper Case water quality predictions are based on average precipitation and 95th percentile values for the source term and background water quality. Natural Resources Canada (NRCan) notes that it is uncertain whether this approach accurately accounts for the effects of dry and wet periods. The Proponent notes that the updated Upper Case water quality predictions report an increase in all metals and nutrients above water quality criteria, particularly at closure and during post-closure in the Keewatin River Tributary (KEE3-B1). NRCan notes that, considering that an average precipitation is used, it is unclear what the implications are to the Upper Case water quality predictions. While the updated water quality predictions indicate that the spatial extent would be limited to the	a) Provide a sensitivity analysis of the effects of dry and wet periods on water quality predictions. b) Provide a sensitivity analysis of complete wetting times on water quality predictions. c) Describe the proportion of metals that would be released to the Keewatin River that will partition to suspended matter and settle in the sediments.

				Keewatin River and part of Minton Lake (i.e. especially cadmium), the proportion of metals released to the Keewatin River that will partition to suspended matter and settle in the sediments is not understood. The Proponent also notes in its Supplemental Filing document that with the addition of five metres of waste rock on the Mine Rock Storage Area (MRSA), the complete wetting of the pile is expected to take an additional three years, which would delay seepage. NRCan notes that, considering the pile is built gradually, it is possible that weather will allow for complete wetting of different layers of the waste rock pile as it is being built and, as a result, seepage at the toe of the pile may breakthrough earlier than predicted. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water.	
IAAC-R2-59	Natural Resources Canada – Technical Review of the Supplemental Filing	2.2 Alternative means of carrying out the project 6.1.5 Groundwater and Surface Water	Supplemental Filing regarding the MacLellan Site Water Balance/Water Quality Model Update following Mine Rock Storage Area Refinement	The EIS Guidelines require the Proponent to identify and consider the environmental effects of alternative means of carrying out the Project that are technically and economically feasible. In its Supplemental Filing document, the Proponent conducted updated modelling and chose to modify the shape and height of the waste rock piles. NRCan notes that there is open pit space available at the Gordon and MacLellan sites to manage the waste rock and it is unclear why backfilling the open pits was not considered to reduce the long-term seepage of metals into the Keewatin River Tributary. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water.	a) Provide a rationale for why backfilling the open pits to reduce the long-term seepage of metals into the Keewatin River Tributary was not chosen over storage of waste rock in piles, including an analysis of the benefits and drawbacks of each option. i. If backfilling the open pits was not previously considered, confirm whether storage of waste rock in piles is still the preferred option, given the analysis of benefits and drawbacks of each. ii. If backfilling the open pits is being considered, describe the implications of this change to the effects assessment for each VC, including the identification of any new effects, elimination of any previously identified effects, and/or whether current effects predictions may change (i.e. worsen or improve). iii. If new effects to VCs are identified and/or if certain effects are predicted to be worse than currently predicted, describe mitigation measures that will be implemented to address these effects.

IAAC-R2-60	Natural Resources Canada – Technical Review of Round 1, Package 2 Information Request Responses	8.0 Follow-up and Monitoring	8.1.4.1 Temporal Boundaries Appendix F Project GHG Emissions Appendix G Concentration Contour Maps Federal IR Responses, Round 1, Package 2, Response to IAAC-57	The EIS Guidelines require the Proponent to develop and describe a follow-up program 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. In its response to IAAC-57, the Proponent states that groundwater monitoring will continue for a period of six years following filling of the pit lakes at the Gordon and MacLellan sites, and that monitoring will continue until the sites are restored to a satisfactory condition and water chemistry is stable and below federal and provincial discharge criteria. NRCan notes that is unclear whether the stable water quality condition applies to water in the pit lakes or the receiving environment. Further, as groundwater seepage effects are forecasted to occur over much longer timelines than pit water quality stability, as the Proponent notes in the EIS, there is uncertainty whether the six year groundwater monitoring period following pit lake filling will be adequate to confirm the results of the groundwater seepage assessment. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to groundwater and, through groundwater-surface interactions, surface water quality and quantity.	a) Clarify whether the stable water condition applies to water quality in the pit lakes or the receiving environment. b) Provide a rationale to support the assumption that a six year monitoring period will be sufficient to confirm the results of the groundwater monitoring seepage assessment and to confirm the stability of groundwater seepage quality, given the fact that groundwater seepage effects are forecasted to occur over much longer timelines than pit water quality stability. i. Describe the criteria that will be used to demonstrate stability of groundwater seepage quality and the cessation of monitoring, and how the Proponent will or has involved Indigenous nations in the selection of this criteria. c) If a rationale cannot be provided, as requested in c), revise the Conceptual Closure Plan to include details of how post-closure groundwater monitoring will continue until it is demonstrated that groundwater seepage quality is stable, will consistently meet water quality objective values, and to verify the results of the groundwater effects assessment.
IAAC-R2-61	Natural Resources Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.1.2 Geology and Geochemistry 6.1.5 Groundwater and Surface Water	8.2.2.1 Local Geology and Hydrostratigraphy Chapter 8, Appendix H Hydrogeology Baseline Technical Data Report/Validation Report Federal IR Responses, Round 1, Package 2,	The EIS Guidelines require the Proponent to provide an appropriate hydrogeologic model for the Project area, which discusses the hydrostratigraphy and groundwater flow systems. The Proponent is also required to perform a sensitivity analysis to test model sensitivity to climatic variations (e.g. recharge) and hydrogeologic parameters (e.g. hydraulic conductivity). In its response to IAAC-61, the Proponent provides a series of maps which confirm that the surface bedrock at the MacLellan site rises more than 25 metres between boreholes GBHM-14 and GNHM-27. The Proponent also states that overburden thickness in this area is not relevant to the groundwater flow model given the similarity in hydraulic conductivity between the shallow bedrock and glaciolacustrine and diamicton overburden. NRCan notes that, based on the assumed hydraulic conductivity profile implemented in the numerical model, a 25 metre change in bedrock topography results in the upper bedrock topography being relevant to groundwater flow as the upper bedrock unit is more than	a) Conduct a sensitivity analysis to address the potential for a continuous bedrock low from the east of the MacLellan site open pit to north of Minton Lake. i. Discuss the effect of this variability in bedrock topography on groundwater seepage pathways, quantities, and travel times from the TMF. ii. If groundwater seepage pathways, quantities, and travel times from the TMF are different from what was presented in the EIS, revise the assessment of effects for all relevant VCs to account for the updated values. iii. If additional or worsened Project effects to VCs are anticipated, describe mitigation measures that will be implemented to address these effects.

			Response to IAAC-61 Federal IR Responses, Round 1, Package 2, Response to IAAC-67	an order of magnitude lower in hydraulic conductivity relative to the overburden and shallow bedrock. In its response to IAAC-67, the Proponent suggests that topography appears to influence the development of artesian groundwater conditions at the MacLellan site. This conceptualization is also not consistent with the inferred irrelevance of the bedrock topography cited in the response to IAAC-61. As variation in bedrock topography may affect the assessment of seepage from the TMF, and therefore the assessment of potential effects to VCs, the effect of this variability must be addressed in the assessment of Project effects to groundwater flow. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to groundwater and, through groundwater-surface interactions, surface water quality and quantity.	
IAAC-R2-62	Natural Resources Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.1.5 Groundwater and Surface Water`	8.2.2.3 Hydraulic Conductivity Federal IR Responses, Round 1, Package 2, Response to IAAC-62	The EIS Guidelines require the Proponent to provide an appropriate hydrogeologic model for the Project area, which discusses the hydrostratigraphy and groundwater flow systems. The Proponent is also required to perform a sensitivity analysis to test model sensitivity to climatic variations (e.g. recharge) and hydrogeologic parameters (e.g. hydraulic conductivity). In its response to IAAC-62, the Proponent notes that, despite the fact that hydraulic conductivity tests have not been completed within the deep bedrock at the Gordon site or within the lower 100 metres of the deep bedrock at the MacLellan site, the gaps in information and the related uncertainty associated with the limited testing of the deep bedrock units have been addressed through calibration of the groundwater model. NRCan notes that calibration of the model is not evidence of support for the parameterization of the bedrock units. Further, groundwater wells used in the calibration of the groundwater model extend to a maximum total depth of 80 metres for the Gordon site and 30 metres for the MacLellan site. Therefore, calibration of the model would not be sufficiently sensitive to the deep and potentially to the intermediate bedrock. In its response to IAAC-62, the Proponent also cites the sensitivity analyses presented in Appendices F and G of the EIS, which address the hydraulic	a) Conduct a sensitivity analysis on the hydraulic conductivity of the intermediate and deep bedrock units for the Gordon and MacLellan sites. i. Discuss the potential effects of hydraulic conductivity variability on groundwater inflow to the open pits and the associated drawdown. ii. Discuss the level of uncertainty associated with predictions of hydraulic conductivity and effects to groundwater flow and drawdown due to the limited data available regarding the physical properties of deep and intermediate bedrock units. b) Provide any information available on the dewatering of the historical Gordon pits to support the conceptual model presented in the groundwater assessment.

				conductivity of the shallow and faulted bedrock, to address the data gaps and uncertainty noted above. NRCan notes that, while these units contribute the majority of the groundwater flow to the open pit under the calibrated conditions, they represent a small portion of the overall pit depth. The calibration of the model and the sensitivity analyses do not address any uncertainty in the hydraulic conductivity of the lower 90% of the MacLellan pit and the lower 50% of the Gordon pit. Uncertainty exists regarding the groundwater inflow to the open pits and the associated drawdown, resulting from the limited data for calibration over the deeper portion of the pits. This uncertainty must be discussed and quantified to complete the groundwater assessment. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to groundwater and, through groundwater-surface interactions, surface water quality and quantity.	
IAAC-R2-63	Natural Resources Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.1.5 Groundwater and Surface Water	Volume 4, Appendix H, 4.2.1.4 Estimate of Bedrock Aquifer Parameters Federal IR Responses, Round 1, Package 2, Response to IAAC-65 Federal IR Responses, Round 1, Package 2, Response to IAAC-69	The EIS Guidelines require the Proponent to describe groundwater flow patterns and seasonal variability for each hydrostratigraphic unit. In its response to IAAC-65 and IAAC-69, the Proponent describes the data that was used to support the delineation of the horizontal extent and hydraulic conductivity of the fault zone within the Gordon site model. NRCan notes that the Proponent does not provide a rationale to support the termination of the fault zone within the upper 50 metres of bedrock at the Gordon site. As this fault zone provides enhanced hydraulic connectivity between Gordon Lake, the open pit, and Farley Lake, the depth of this fault zone affects the assessment of groundwater flow into the open pit, drawdown associated with dewatering, and the efficacy of the groundwater interceptor wells. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to groundwater and, through groundwater-surface interactions, surface water quality and quantity.	a) Provide a rationale, including a description of the data used, to limit the vertical extent of the fault zone to the shallow bedrock (i.e. upper 50 metres) at the Gordon Site. b) Provide a sensitivity analysis of the effect of the depth of this zone on the groundwater assessment. c) Discuss how the depth of this fault zone may affect the design, feasibility, and efficacy of the interceptor well system.
IAAC-R2-64	Natural Resources Canada – Technical Review of	4.3 Study strategy and methodology	Volume 5, Appendix F: Hydrogeology Assessment – Gordon Site	The EIS Guidelines require the Proponent to document all data, models, and studies such that the analyses are transparent and reproducible, including the assignment of boundaries to represent groundwater interactions with surface water.	a) Provide a rationale for the discrepancy between the fluid transfer condition value described in the response to IAAC-72 and the values provided in Table IAAC-72-1b regarding the MacLellan model boundaries.

	Round 1, Package 2 Information Request Responses		Technical Modelling Report Appendix G: Hydrogeology Assessment - MacLellan Site Technical Modelling Report Federal IR Responses, Round 1, Package 2, Response to IAAC-72	In its response to IAAC-72, the Proponent states that the fluid transfer condition, which was assumed to be two metres above the lake elevation, was applied to the southern edge of the MacLellan model domain at the shores of lakes external to the model (i.e. Simpson and Serge Lakes for the Gordon site, and Cockeram, Arbour, and Burge Lakes for the MacLellan site). NRCan notes that this information is not consistent with the information provided in Table IAAC-72-1b, which states that these boundaries were assigned a value of 0.01 metres below the surface water elevation. Clarity is required regarding this discrepancy. The Proponent also notes in its response to IAAC-72 that the lakes at the southern boundary of the Gordon model (i.e. Swede and Simpson Lakes) were assigned a constant head value of 314.25 metres. This head is significantly higher than the head value assigned to the tributaries of these lakes (i.e. 311.0 metres at FAR3-SIM2 (Simpson Lake) and 305.40 metres at FAR3-A1 (Swede Lake)). NRCan notes that it is unclear whether these assigned heads are consistent with surface water elevations or flow directions. As boundary conditions exert significant control over the results of groundwater models, proper assignment and documentation is required to ensure confidence in model results. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to groundwater and, through groundwater-surface interactions, surface water quality and quantity.	i. If this discrepancy is the result of an error, indicate the correct value and revise any applicable assessments to ensure that the correct value is used. ii. If correction of this error affects conclusions with respect to potential Project effects to VCs or the significance of effects, describe how effects have changed and describe mitigation measures that will be implemented to address any new or worsened adverse effects. b) Describe the data that was used to determine the head values for Swede Lake, Simpson Lake, FAR3-SIM2, and FAR3-A1, and the inferred surface water flow directions at these waterbodies. i. If the head values were for the lakes and/or tributaries in the Gordon model were assigned in error, indicate the correct value and revise any applicable assessments to ensure that the correct value is used. ii. If correction of this error affects conclusions with respect to potential Project effects to VCs or the significance of effects, describe how effects have changed and describe mitigation measures that will be implemented to address any new or worsened adverse effects.
IAAC-R2-65	Natural Resources Canada – Technical Review of Round 1, Package 2 Information Request Responses	4.3 Study strategy and methodology	Volume 5, Appendix F: Gordon Lake Hydrogeology Assessment Volume 5, Appendix G: MacLellan Hydrogeology Assessment	The EIS Guidelines require the Proponent to document all data, models, and studies such that the analyses are transparent and reproducible, including the calibration of the groundwater model to observed groundwater levels. In its response to IAAC-73, the Proponent states that seasonal variability is a potential explanation for select simulated heads within the MacLellan site pit being more than seven metres lower than observed. NRCan notes that, as seasonal variability at wells MWM-09A/b and GBHM-06A appears to be on the order of two metres, it is unclear how seasonal variability at these wells may relate to calibrated differences greater than seven metres. While these differences may predominantly effect the drawdown at the open pit, as the Proponent states in its the response to IAAC-73, the related	a) Describe the conditions, beyond seasonal variability, at wells MWM-09A/b and GBHM-06A relative to those with lower calibration residuals, which may explain why simulated groundwater levels are more than seven metres lower than observed. i. Describe the level of uncertainty with respect to the rationale provided in a), the assumptions that were used to derive this rationale, and how those assumptions may influence the uncertainty of predictions.

			Federal IR Responses, Round 1, Package 2, Response to IAAC-73	uncertainty extends to the forecasted hydraulic gradients, and groundwater inflows to the open pit. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to groundwater and, through groundwater-surface interactions, surface water quality and quantity.	b) Describe efforts made to improve the calibration of the groundwater model at these wells and the resulting effect on other calibration points within the pit area. i. Describe the level of certainty with respect to the predictions made regarding observed versus simulated heads. ii. Should actual head values be higher than simulated, describe how this condition will affect predicted effects of the Project to groundwater.
IAAC-R2-66	Natural Resources Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.1.5 Groundwater and Surface Water	Volume 5, Appendix F, Gordon Lake Hydrogeology Assessment Federal IR Responses, Round 1, Package 2, Response to IAAC-74	The EIS Guidelines require the Proponent to include an appropriate hydrogeological model in the assessment for groundwater, which should have the ability to replicate the observed seasonal variability in groundwater elevations. In its response to IAAC-74, the Proponent states that the poor fit of the model results to the observed seasonal variation of groundwater levels is due to the constant elevation assigned to the model boundaries at the lakes and streams. NRCan notes that seasonal variation of the boundary conditions at the lakes and streams would not be expected to improve the performance of the model based on the following factors: • the magnitude of the seasonal variation appears to have limited dependence on proximity to surface water features. For example, groundwater elevations at well GBHM-10, located approximately one kilometre from the Keewatin River, are shown to rise by three metres during the spring freshet. This magnitude of fluctuation is unlikely to be caused by river level variability alone; and • none of the simulated water levels show any seasonal variation; rather model results show a consistent decline throughout the two year transient simulation period. The magnitude of this decline (e.g. 10 metres at well GBHM-06A) suggests that the initial condition used in the transient simulation was not a steady-state condition. Based on these results, the rationale provided in response to IAAC-74 does not address the poor fit of the model results to the observed seasonal variation of groundwater levels. Therefore, the transient calibration of the groundwater model must be re-evaluated.	a) Re-evaluate the transient calibration of the groundwater model for the MacLellan site given the simulated consistent decline in groundwater elevations over the two year simulation period. b) Describe the impact of these simulations on the results of the groundwater assessment, and provide updated modelling results as required. i. If the results of the groundwater assessment are impacted by the simulations and/or if updated modelling is required, update the effects assessments for other related VCs, such as Indigenous peoples and fish and fish habitat.

				This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to groundwater and, through groundwater-surface interactions, surface water quality and quantity.	
IAAC-R2-67	Natural Resources Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.1.5 Groundwater and Surface Water	Volume 5, Appendix F: Gordon Lake Hydrogeology Assessment Volume 5, Appendix G: MacLellan Hydrogeology Assessment Federal IR Responses, Round 1, Package 2, Response to IAAC-78	The EIS Guidelines require the Proponent to document all data, models, and studies such that the analyses are transparent and reproducible. In its response to IAAC-78, the Proponent provides details of the parameterization of the Freeze-Thaw Module (FTM) plugin used with the groundwater flow model, and states that the FTM plugin was run separately from the groundwater flow model. Results from the FTM plugin were used to assign hydraulic conductivities of zero where frozen ground is present. NRCan notes that the extent to which the subsurface and pit face are frozen is unclear. It is also unclear whether running the FTM plugin separately from the flow model sufficiently accounts for the advective flux of heat related to groundwater inflow to the open pit. As these two factors affect the timing and overall quantity of groundwater inflow to the open pit, impacting the assessment of groundwater and groundwater-surface water interactions, further information is required regarding seasonal variation in ground temperature and hydraulic conductivity, how advective heat was accounted for in the model, and any limitations to this modelling approach. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to groundwater and, through groundwater-surface interactions, surface water quality and quantity.	a) Provide cross-sections showing the seasonal variation in ground temperature and hydraulic conductivity for both the MacLellan and Gordon site pits at the intermediate and ultimate depths, including model mesh overlay. i. If this information is not available, provide a rationale for how assigning a value of zero to frozen ground sufficiently accounts for seasonal variation in ground temperature and hydraulic conductivity at the intermediate and ultimate depths. ii. Describe the level of uncertainty with respect to the rationale provided in i), the assumptions that were used to derive this rationale, and how those assumptions may influence the uncertainty of predictions, including predictions with respect to Project effects to groundwater and effects to other VCs as a result of Project changes to groundwater. b) Describe how groundwater flow and the associated advective heat flow were represented in the FTM plugin simulations. c) Describe any limitations of the modelling approach described, any associated uncertainty with predictions based on the model outputs due to these limitations, and the potential effect of these limitations and uncertainty on assessment results, including the assessment of effects for VCs that may be affected by changes to groundwater, including Indigenous peoples and fish and fish habitat.
IAAC-R2-68	Natural Resources Canada – Technical Review of	6.2.2 Changes to Groundwater and Surface Water	Volume 5, Appendix F, Gordon Lake Hydrogeology Assessment	The EIS Guidelines require the Proponent to describe any changes to groundwater flow patterns, fluxes, and divides based on the results of groundwater flow modelling that incorporates changes related to mining.	a) Provide a rationale for the change in flux at Susan and Marnie Lakes during construction and operation as it relates to simulated changes (or the absence of changes) in groundwater elevation as a result of dewatering at the

	Round 1, Package 2 Information Request Responses		Federal IR Responses, Round 1, Package 2, Response to IAAC-79	In its response to IAAC-79, the Proponent provides a rationale for why Project-related changes to groundwater elevations and flux at Susan and Marnie Lakes are not anticipated. NRCan notes that in the EIS, the Proponent states that groundwater modelling shows that Susan and Marnie Lakes lose less water to the groundwater flow system during the construction and operation phases in comparison to baseline conditions, on the order of 37% and 30%, respectively. The Proponent's rationale does not address this unexpected change in flux resulting from the Project. NRCan also notes that it is unclear how the simulated change in groundwater flux from Susan and Marnie Lakes, and any changes in groundwater elevation may affect groundwater-surface water interactions and other VCs. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to groundwater and, through groundwater-surface interactions, surface water quality and quantity.	open pits. b) Describe how changes in groundwater flux from Susan and Marnie Lakes and any changes in groundwater elevation may affect groundwater-surface water interactions and other VCs that may be affected by changes in groundwater and surface water quality and quantity. i. Describe mitigation measures and follow-up and monitoring that will be implemented to address any effects identified in b).
IAAC-R2-69	Impact Assessment Agency of Canada Natural Resources Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.2.2 Changes to Groundwater and Surface Water	Volume 5, Appendix F, Gordon Lake Hydrogeology Assessment Federal IR Responses, Round 1, Package 2, Response to IAAC-81	The EIS Guidelines require the Proponent to describe any changes to groundwater flow patterns, fluxes, and divides based on the results of groundwater flow modelling that incorporates changes related to mining. In its response to IAAC-81, the Proponent notes that groundwater interceptor wells screened through the faulted shallow bedrock at the Gordon site will be used to capture a portion of the flux of groundwater from Gordon and Farley Lakes prior to reaching the open pit, and that simulated groundwater interceptor wells will continue to pump at the same rate throughout the operations period, despite water table drawdowns greater than 100 metres and complete dewatering of the well screen. NRCan notes that these simulation results indicate that the groundwater model was run under saturated conditions, allowing the wells to continue pumping despite being at negative pressure. Under saturated modelling mode the groundwater flow model can simulate larger pumping volumes than would be feasible given the well depth and simulated drawdown. As the surface water assessment is based on a constant volume of water pumped from the interceptor wells throughout the operations period, the feasibility of providing that quantity of water must be assessed given the expected drawdown through the operations period.	a) Provide the simulated pressure heads at the base of the interceptor well screens expected at the end of the operations period. b) Describe the implications, including for the effects assessments for groundwater, surface water, and other VCs, of the saturated simulation on the evaluation of the pumping volumes from the interceptor wells used in the water balance model. c) Provide details of the design features of the interceptor well system that will ensure that the pumping volumes required to mitigate effects to Gordon and Farley Lakes can be produced. Describe contingency options and the potential effects to the lakes under sub-optimal pumping performance. i. If effects to water levels in Gordon and Farley Lakes cannot be mitigated, describe potential effects to relevant VCs, including fish and fish habitat and Indigenous peoples. ii. Describe mitigation measures that will be implemented to address any effects identified in

				The Proponent also states in its response to IAAC-81 that groundwater extracted from the interceptor wells will be pumped to a water management pond prior to being recirculated back to Gordon and Farley Lakes. If required, the water will be treated to meet applicable federal and provincial regulatory requirements prior to discharge to the environment. Clarity is required regarding which water quality parameters are expected to exceed requirements, which requirements are being referred to, what treatment methods will be employed, and, in the event that water treatment is unsuccessful, how the Proponent will manage water from interceptor wells. In its response to IAAC-81, the Proponent notes that the detailed design of the interceptor wells will be completed as the Project moves into the detailed design phase. The MMF expresses concerns that the Proponent has not discussed how Indigenous nations will be involved in the design of the interceptor well system, including the placement of wells on the landscape. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to groundwater and, through groundwater-surface interactions, surface water quality and quantity.	i). d) Describe the water quality parameters that may exceed applicable federal and provincial water quality requirements in groundwater extracted from interceptor wells, which water quality requirements are being referenced, what treatment methods will be employed if water quality requirements are exceeded, and the anticipated efficacy of the treatment methods proposed. i. If treatment is not possible or unsuccessful, describe alternative methods that will be employed to manage water extracted from interceptor wells. e) Provide details of how the Proponent will involve Indigenous nations in the detailed design of the interceptor well system, including the selection of well locations, and how the Proponent will ensure that Indigenous knowledge is considered and reflected in the design.
IAAC-R2-70	Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses	2.2 Alternative means of carrying out the project 6.1.5 Groundwater and Surface Water 6.2.2 Changes to Groundwater and Surface Water	Volume 5, Appendix F, Gordon Lake Hydrogeology Assessment Federal IR Responses, Round 1, Package 2, Response to IAAC-81	The EIS Guidelines require the Proponent to describe any changes to groundwater flow patterns, fluxes, and divides based on the results of groundwater flow modelling that incorporates changes related to mining. The Proponent is also required to describe alternative means of carrying out the Project, including water management infrastructure. In its response to IAAC-81, the Proponent notes that an alternatives analysis for mitigating inflow to the open pit was completed at the start of the Project which included an evaluation of the feasibility and benefits of a seepage cut off wall and grout curtain as alternatives to the interceptor well system. MMF expresses concerns that details of the alternatives analysis, including the modelling methodology and results, have not been provided. MMF also notes that the Proponent has not outlined the potential benefits of a seepage cut off wall or grout curtain, only the negative attributes of these alternatives.	a) Provide further details of the alternatives analysis for the seepage cut off wall and grout curtain, including the modelling methodology and results. b) Describe the potential benefits of the seepage cut off wall and grout curtain and compare these to the benefits of the interceptor well system for mitigating effects to Gordon and Farley Lakes. Discuss why the benefits of the inceptor well system outweighed the benefits of the seepage cut off wall and grout curtain.

				This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to groundwater and, through groundwater-surface interactions, surface water quality and quantity.	
IAAC-R2-71	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical Review of Round 1, Package 2 Information Request Responses	4.3 Study strategy and methodology 6.1.5 Groundwater and surface water	9.4.1.1 Analytical Assessment Methods for Surface Water Quantity Federal IR Responses, Round 1, Package 2, Response to IAAC-82	The EIS Guidelines require the Proponent to document the assumptions that underlie any models used, the quality of the data, and the degree of certainty of the predictions obtained. The Proponent is also required to describe the baseline conditions for surface water, including hydrological regimes. In its response to IAAC-82, the Proponent notes that long-term average annual precipitation conditions and 1:25 year wet and dry scenarios (i.e. extreme scenarios) based on current annual precipitation conditions for the Project area were used to inform water balance modelling. While the impacts of climate change on average annual precipitation values were not addressed specifically, average annual climate change predictions for the Municipality of Lynn Lake, based on information from the Climate Atlas, are within the range of extreme precipitation event conditions (i.e. 1:25 year wet and dry scenarios) used in the assessment. MCCN notes concerns that while the annual average precipitation conditions predicted under future climate change for the Project area are within the range of values used in the assessment, the Proponent did not consider precipitation extremes (i.e. wet and dry scenarios) under future climate change scenarios in the water balance modelling. Further, while the impacts of climate change on average annual precipitation values are within the range considered in the assessment, these extreme conditions (i.e. 1:25 year extremes based on current average conditions) were considered to occur less frequency than average/normal precipitation conditions. Therefore, potential Project effects to VCs may have been underestimated, should the conditions assessed currently as "extreme" become the norm under climate change. Without this information, it is unclear how the Project will interact with future precipitation extremes under climate change scenarios, which may yield more extreme precipitation values than considered and changing "normal" precipitation conditions, and how this may affect potential Project effects. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water.	a) Provide estimates of extreme (i.e. wet and dry scenarios) annual precipitation values given the anticipated effects of climate change in the region on average annual (i.e. normal) precipitation conditions. i. Use this data to inform water balance modelling for the Project area under climate change scenarios and provide the results of this modelling as it relates to future baseline water balance conditions. ii. Based on the modelling results discussed in i), describe how extreme precipitation conditions under climate change scenarios may affect the assessment of potential Project effects to VCs. iii. If any new or worsened effects to VCs are identified, describe mitigation measures that will be implemented to address these effects and follow-up and monitoring that will be conducted. b) Revise the assessment of potential Project effects to relevant VCs to consider the fact that annual precipitation conditions currently considered to be "extreme" may become the norm under climate change scenarios. i. If any new or worsened effects to VCs are identified, describe mitigation measures that will be implemented to address these effects and follow-up and monitoring that will be conducted.

IAAC-R2-72	Natural Resources Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.2.2 Changes to groundwater and surface water	Volume 5, Appendix F: Gordon Lake Hydrogeology Assessment Volume 5, Appendix G: MacLellan Hydrogeology Assessment Federal IR Responses, Round 1, Package 2, Response to IAAC-83	The EIS Guidelines require the Proponent to describe Project-related changes to groundwater flow patterns, fluxes, and divides based on the results of groundwater flow modelling that incorporates changes related to mining. In its response to IAAC-83, the Proponent states that the applied recharge rates for the MRSA represent the infiltrated water that does not flow laterally to the MRSA seepage collection system. In the EIS, the Proponent states that particle tracking simulation results for the Gordon and MacLellan sites represent fluxes with no operating contact water collection system. Revisions to any relevant assessments and/or analyses are required to reflect the fact that particle tracking results are inherently representative of particle tracks under an operating seepage collection system. The Proponent also indicates in its response to IAAC-83 that the porosity applied to the bedrock at the Gordon site is a factor of 2000 higher than the MacLellan site. NRCan notes that this difference in porosity is not anticipated and a rationale for this difference has not been provided. If this difference was reported in error, the value(s) provided must be corrected. In its response to IAAC-83, the Proponent states that the assumption that 50% of the infiltration to the MRSA will reach the base of the pile during the wetting up period is an assumption applied within the water balance model. Further information is required to support this assumption and the conclusions presented with respect to groundwater seepage. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water.	a) Revise any relevant assessments and/or analyses, including any effects assessments for relevant VCs, presented in the EIS to reflect the fact that particle tracking results are inherently representative of particle tracks under an operating seepage collection system. i. If new or worsened effects to VCs are identified, describe mitigation and follow-up and monitoring measures that will be implemented to address these effects. b) Update the bedrock porosity values for the Gordon site to reflect those modeled. If a value of 0.2 was applied within the Gordon site groundwater flow model, provide a rationale for the use of this value. i. If the updated porosity values affect conclusions with respect to potential effects of the Project to groundwater, update the effects assessments for other VCs that may be affected by changes to groundwater. ii. If new or worsened effects to VCs are identified, describe mitigation and follow-up and monitoring measures that will be implemented to address these effects. c) Provide a rationale and supporting information, including any relevant literature, for the assumption that 50% of the infiltration to the MRSA will be stored within the micropore system during the wetting up period. i. If this assumption cannot be supported, revise the value used to represent the amount of the infiltration to the MRSA that will be stored within the micropore system during the wetting up period and present modelling results. ii. Describe the implications of the revised results of the model referenced in i) to the assessment of effects for all relevant VCs. iii. If new or worsened effects to VCs are predicted as a result of the revised modelling results, describe mitigation measures that will be

					implemented to address these effects and any follow-up and monitoring that will be conducted.
IAAC-R2-73	Natural Resources Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.2.2 Changes to groundwater and surface water	Volume 5, Appendix G: Hydrogeology Assessment – MacLellan site Technical Modelling Report 5.3.2.1 Open Pit Dewatering Federal IR Responses, Round 1, Package 2, Response to IAAC-91	The EIS Guidelines require the Proponent to describe Project-related changes to groundwater, including any changes to groundwater fluxes. In its response to IAAC-91, the Proponent states that while the East Pond will likely drain during Project operations, the outlet of this pond (i.e. KEE3-B2-A1) will likely continue to flow and contribute recharge to the groundwater flow system. Within the groundwater assessment, boundary conditions for these features were not changed in operations, such that both features were able to contribute to the groundwater flow system. For the assessment of fish and fish habitat, as the Proponent also describes in its response to IAAC-91, it appears that the assessment was based on both the East Pond and KEE3-B2-A1 being dry and not contributing to the groundwater flow system. The rationale for the representation of these waterbodies within the groundwater flow model should be provided as it differs from the expected conditions, and the assessment of fish and fish habitat. In the EIS, the Proponent indicates that the flux from surface water to groundwater at KEE3-B2-A1 increases by a factor of four at the end of operations, with drawdown at this feature ranging from more than 10 metres to less than one metre. NRCan notes that, if KEE3-B2-A1 were to drain during operations, groundwater drawdown associated with the open pit would propagate further than simulated, and other surface water bodies may experience changes in groundwater-surface water interactions that are not captured by the model. This information is required to support the Agency's understanding of potential effects to Indigenous peoples, fish and fish habitat, and other VCs that may be affected by changes to groundwater and surface water, through groundwater-surface water interactions.	a) Provide the total flow and any low flow data for KEE3-B2-A1 during the operation phase, including the anticipated boundaries of this waterbody. Discuss these values in comparison to the flux to groundwater from this waterbody during Project operation. i. Complete a sensitivity analysis showing the effect of the representation of this boundary on groundwater flow patterns and groundwater-surface water interactions. ii. If the representation of KEE2-B2-A1, as discussed in i), affect the effects assessment and/or any conclusions reached with respect to the severity and significance of potential effects for groundwater or any other related VCs, revise the effects assessments for all relevant VCs. iii. If new or worsened effects to VCs are identified, describe mitigation and follow-up and monitoring measures that will be implemented to address these effects. b) If the boundaries for the East Pond are unchanged from baseline to operation conditions, report the fluxes between groundwater and surface water for the East Pond under baseline, end of operations, and post-closure conditions. i. If the results of this exercise may affect the conclusions reached in the groundwater assessment or other related assessments for other VCs, revise the effects assessments for all relevant VCs. ii. If new or worsened effects to VCs are identified, describe mitigation and follow-up and monitoring measures that will be implemented to address these effects.

IAAC-R2-74	Mathias Colomb Cree Nation – Technical Review of Round 1, Package 2 Information Request Responses Peter Ballantyne Cree Nation - Technical Review of Round 1, Package 2 Information Requests	4.2.2 Community knowledge and Aboriginal traditional knowledge 6.2.2 Changes to groundwater and surface water 6.5 Significance of residual effects	8.1.6 Significance Definition Federal IR Responses, Round 1, Package 2, Response to IAAC-103	The EIS Guidelines require the Proponent to make reasonable efforts to integrate Aboriginal traditional knowledge into the assessment of environmental effects and provide evidence of all efforts. The Proponent is also required to describe Project-related changes to groundwater, including an assessment of the anticipated significance of residual environmental effects. In its response to IAAC-103, the Proponent describes its approach for assessing the anticipated significance of residual environmental effects. With respect to the anticipated significance of Project effects to groundwater, MCCN notes concerns with the Proponent's characterization of predicted increases in the concentration of indicator parameters above drinking water guidelines as "not significant" on the basis that no groundwater users are currently known to withdraw water through a drilled or dug well within the area of influence of Project components. MCCN further notes that data provided by the Nation, including traditional and community knowledge, regarding use and rights related to groundwater quantity and quality have not been considered in the assessment, therefore the conclusion that no groundwater users are currently known to withdraw water through a drilled or dug well within the area of influence of Project components may not be valid. PBCN notes concerns that no opportunities for engagement have been offered by the Proponent to date in relation to potential Project effects to groundwater quantity, potential Project impacts to their rights related to effects to groundwater quantity, or regarding the development of thresholds for the significance determination. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples, including the current use of lands of resources for traditional purposes, Indigenous health and socioeconomic conditions, and Indigenous rights. **See Annex I for related advice.**	a) Demonstrate that information provided by MCCN, including traditional and community knowledge, regarding use and rights related to groundwater quantity and quality was considered in the assessment of potential Project effects to Indigenous peoples and the significance determination for potential effects to groundwater quality. i. If information from MCCN has not been considered, revise the assessment of potential effects to Indigenous peoples and the significance determination for potential effects to groundwater quality to consider this information. b) Describe how the Proponent will ensure that Indigenous nations are engaged regarding potential Project effects to groundwater quantity, potential Project impacts to Indigenous rights related to effects to groundwater quantity, and regarding the development of thresholds for the significance determination, including a description of future engagement activities.
IAAC-R2-75	Manitoba Metis Federation – Technical Review of Round 1,	2.2 Alternative means of carrying out the project	9.9 Follow-up and Monitoring 22.5.1 Tailings Management	The EIS Guidelines require the Proponent to conduct an alternative means assessment for Project components, including mine waste disposal. The Proponent is also required to consider the magnitude of an accident and/or malfunction, including the quantity, mechanism, rate, form, and characteristics of the contaminants and other materials likely to be	a) Provide a comparison of the anticipated effects to VCs, including short term and long term effects, for the following scenarios:

	Packages 1 and 2 Information Request Responses	2.4 Application of the precautionary approach 6.1.5 Groundwater and Surface Water 6.6.1 Effects of potential accidents or malfunctions	Facility Malfunction Volume 4, Appendix F: Geochemistry Baseline Technical Data Report, Appendix B Federal IR Responses, Round 1, Package 2, Response to IAAC-104	released into the environment during the accident and malfunction events and describe the preventative measures and design safeguards that have been established to protect against such occurrences. The analyses included in the EIS must also demonstrate that all aspects of the Project have been examined and planned in a careful and precautionary manner in order to avoid significant adverse environmental effects. In its response to IAAC-104, the Proponent notes that the entire footprint of the TMF will not be lined as grouting of the bedrock and installation of a seepage collection system will allow tailings to consolidate and gain strength over time to facilitate closure and improve long-term stability, and is also more economically feasible. The Proponent also notes how blending of potentially acid generating (PAG) and non-potentially acid generating (non-PAG) material and/or dry and/or wet covers will be used to control ARD/ML from mine rock and is the preferred method of control compared with lining of the MRSA. The MMF notes concerns that a comparison of potential effects to VCs from each option for preventing effects of seepage from the TMF and MRSA (i.e. usage of a full liner beneath the TMF versus grouting of bedrock and a seepage collection system; and usage of a full liner beneath the MRSA versus blending of PAG and non-PAG material and/or dry and/or wet covers) has not been provided to support the Proponent's rationale for the selection of the preferred options. Further information is required to support the Proponent's rationale for the selection of grouting of the bedrock and installation of a seepage collection system over lining the entire footprint of the TMF, and blending of PAG and non-PAG material and/or dry and/or wet covers over usage of a full liner beneath the MRSA. In its response to IAAC-104, the Proponent also notes that filtered tailings and co-disposal were considered as alternative tailings disposal methods. However, an assessment of the environmental and socioeconomic effects of these options was not conducted as it was determined to be not legally, technically, and-or economically feasible. It is unclear how the Proponent determined that an assessment of the environmental and socioeconomic effects of these options is not legally, technically, and-or economically feasible. The Proponent also notes in its response to IAAC-104 that an independent TMF review board to review the detailed design of the TMF may be established. The goal of the review would be to confirm that plans and	i. the combined use of grouting of the bedrock and installation of a seepage collection system versus lining the entire footprint of the TMF; and ii. blending of PAG and non-PAG material and/or dry and/or wet covers versus usage of a full liner beneath the MRSA. b) Provide further information to support the rationale that an assessment of the environmental and socioeconomic effects of filtered tailings and co-disposal is not legally, technically, and-or economically feasible. i. If no rationale can be provided, provide a comparison of potential effects to VCs of filtered tailings and co-disposal as options for tailings disposal. c) Should an independent TMF review board be established, describe how the Proponent will provide an opportunity for Indigenous nations to participate on the board and be involved in the detailed design of the TMF.

				design criteria for the tailings facility reduces risks for all phases of the life cycle, including closure and post-closure. The MMF notes concerns that it is unclear whether Indigenous nations will be invited to participate on the independent TMF review board, if one were to be established. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to water quality. **See Annex I for related advice.**	
IAAC-R2-76	Natural Resources Canada – Technical Review of Round 1, Package 2 Information Request Responses	2.2 Alternative means of carrying out the project 6.2.2 Changes to groundwater and surface water	2.9 Alternative Means for Carrying Out the Project Volume 5, Appendix D: Lynn Lake Gold Project, Hydrology Water Balance and Water Quality Impact Assessment: Gordon Site Technical Modelling Report, Appendix I Federal IR Responses, Round 1, Package 2, Response to IAAC-105 Federal IR Responses, Round 1, Package 2, Response to IAAC-106	The EIS Guidelines require the Proponent to consider potential environmental effects of alternative means of carrying out the Project. The Proponent is also required to describe Project-related changes to groundwater, including an assessment of the anticipated significance of residual environmental effects. In its response to IAAC-105 and IAAC-106, the Proponent notes that the preferred option for mine rock disposal at the Gordon and MacLellan sites is the use of a soil cover placed over the proposed MRSA and MRSA and TMF, respectively. This cover will be the primary use for overburden stockpiled at both the MacLellan and Gordon sites during construction and operation. The Proponent also notes that the disposal of mine rock in the open pit was not considered economically feasible due to the high costs of recovering the mine waste and increased atmospheric emissions due to double handling and transporting materials from the far end of the MRSA to the open pit. NRCan notes concerns that the Proponent did not provide an assessment of the potential for release of contaminants of potential concern (COPCs) from the MRSA to the receiving aquatic environment, including anticipated concentrations of contaminants, as a result of cover deterioration over the long-term. Further, the Proponent does not consider that, with changing climate, engineered covers may erode at faster rate due to changes in precipitation patterns, extreme weather events, etc. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to water quality.	a) Describe the likelihood of the release of COPCs from the MRSA at the Gordon site and MRSA and TMF at the MacLellan site to the receiving environment due to cover deterioration, including consideration of long-term deterioration, the concentration and types of contaminants that may be released, and associated potential effects to VCs. Ensure that consideration is given to the effects of climate change on the rate of cover deterioration. i. Describe mitigation and follow-up and monitoring measures that will be implemented to address any effects identified in a).

IAAC-R2-77	Natural Resources Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.1.5 Groundwater and Surface Water 8.0 Follow-up and Monitoring Programs	8.4.3 Assessment of Change in Groundwater Quality 9.9 Follow-up and Monitoring 23.5.4 Groundwater Monitoring Plan 23.5.5 Surface Water Monitoring and Management Plan Federal IR Responses, Round 1, Package 1, Response to IAAC-57 Federal IR Responses, Round 1, Package 2, Response to IAAC-108	The EIS Guidelines require the Proponent to describe potential Project effects to water quality attributed to ARD/ML associated with mine material, and describe environmental management and monitoring programs to verify the accuracy of the effects assessment and, where necessary, identify adaptive management measures that will be implemented. In its response to IAAC-108, the Proponent notes that the groundwater flow model results will be used to delineate the groundwater monitoring network to confirm groundwater quality and contaminant attenuation. NRCan notes that, given the simulated travel time for the particle tracking relative to the operations period, changes in groundwater elevation may be the primary observation used to validate the groundwater model results. To support adaptive management, groundwater monitoring must be initiated during the construction phase of the Project to monitor the development of vertical and horizontal hydraulic gradients for comparison to model results. The Proponent also notes in its response to IAAC-57 and IAAC-108 that the groundwater monitoring program will continue until the results of the groundwater seepage assessment and the attenuation of the associated chemical load can be confirmed, and that the groundwater model will be updated throughout the operations period should observations show statistically significant differences from model results. NRCan notes that information has not been provided regarding the triggers or thresholds that will be used to determine when groundwater model updates are required. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to groundwater quality. **See Annex I for related advice.**	a) Describe how the Proponent will ensure that groundwater monitoring will be initiated in the construction phase of the Project to monitor the development of vertical and horizontal hydraulic gradients. b) Describe the triggers and/or thresholds that will be used to determine when groundwater model updates are required and provide a rationale for the triggers/thresholds identified.
IAAC-R2-78	Natural Resources Canada – Technical Review of Round 1, Package 2	6.2.2 Changes to groundwater and surface water 6.4 Mitigation measures	5.2.6 Geochemistry 8.4 Assessment of Residual Environmental	The EIS Guidelines require the Proponent to describe potential Project effects to groundwater and surface water, including changes to groundwater and surface water quality. The Proponent is also required to identify and describe measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the Project.	a) Provide the results of sediment quality modelling for the Project and revise the assessment of potential Project effects to surface water quality, including for the Expected and Upper Case scenarios, to consider this information. If applicable, update the conclusions presented with respect to the anticipated significance of potential Project effects.

	Information Request Responses Peter Ballantyne Cree Nation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses		Effects on Groundwater 20.1 Summary of Changes to the Environment, Potential Effects, Mitigation and Residual Effects Federal IR Responses, Round 1, Package 2, Response to IAAC-110	In its response to IAAC-110, the Proponent notes that for both the Expected and Upper Case scenarios, contact water quality, including collection pond water quality, is predicted to remain below the limits and short-term water quality guidelines of the *Metal and Diamond Mining Effluent Regulations* (MDMER), with the exception of ammonia. The Proponent also notes in its response to IAAC-110 that sediment quality has not been modelled for the Project as there is no widely used or established approach to predict changes to sediment quality. NRCan notes concerns with the lack of sediment quality modelling as water quality predictions are linked to adsorption of contaminants to suspended particles and their settling into sediments. This transfer of contaminants to sediments can result in lower water quality predictions, resulting in an underestimation of potential effects to water quality. Therefore, without a sediment modelling component, it is not possible to verify if the water quality predictions for the Expected and Upper Case scenarios are reasonable. Further, NRCan notes that sediment quality modelling has been conducted to support the environmental assessments for other projects; therefore, even though there may not be an established approach to sediment quality modelling, it can be completed to support the assessment. PBCN also notes concerns with respect to the anticipated exceedance of the MDMER limits and short-term water quality guidelines for ammonia, as exceedances may affect Indigenous health and/or fish, wildlife, and plant species of importance to Indigenous nations for traditional, cultural, and spiritual practices. In its response to IAAC-110, the Proponent states that in the Keewatin River, the mixing zone is expected to be short and that the effluent discharge will be located immediately upstream of a large, swift-flowing cascade which will quickly mix and dilute the effluent discharge with river water. In its response to IAAC-111, the Proponent also notes that phosphorus is a nutrient that, together with nitrogen and dissolved carbon, control production of phytoplankton. PBCN raises concerns regarding effluent discharges and potential effects to fish and fish habitat and water quality in the mixing zone in the Keewatin River. For instance, effluent discharge above spawning locations could cause adverse effects due to nutrient loading and subsequent fouling of spawning substrates by algal growth. It is unclear whether this factor was considered in the Proponent's assessment and/or the mitigation measures that will be implemented to address this potential effect.	i. Based on the updated assessment of effects to surface water quality, update the effects assessments for all related VCs to consider the updated conclusions presented in the surface water quality effects assessment. ii. If new or worsened potential effects are identified in a) or i), describe mitigation and follow-up and monitoring measures that will be implemented to address effects. b) Describe mitigation measures that will be implemented to reduce ammonia concentrations in contact water to the extent possible and to ensure that ammonia concentrations remain below MDMER limits. i. If mitigation measures are not available or not effective at reducing ammonia concentrations to below MDMER limits, describe alternative methods for disposal of contact water. c) Clarify whether fish and fish habitat, including spawning locations, are or may be present at or directly downstream of the location where effluents will be released to the Keewatin River and/or in the anticipated mixing zone. i. If fish and/or fish habitat may be present at these locations, describe potential effects to fish and fish habitat, including spawning, and Indigenous peoples and revise the assessment of potential Project effects to fish and fish habitat and Indigenous peoples, including the residual and cumulative effects assessments, to consider these effects. ii. Describe mitigation and follow-up and monitoring measures that will be implemented to address any effects identified in i).

				This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water quality.	
IAAC-R2-79	Sayisi Dene First Nation - Technical Review of Round 1, Package 2 Information Request Responses Peter Ballantyne Cree Nation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses	6.2.2 Changes to groundwater and surface water 6.4 Mitigation measures	5.2.6 Geochemistry 8.4 Assessment of Residual Environmental Effects on Groundwater 20.1 Summary of Changes to the Environment, Potential Effects, Mitigation and Residual Effects Federal IR Responses, Round 1, Package 2, Response to IAAC-111	The EIS Guidelines require the Proponent to describe Project-related changes to groundwater and surface water, including changes to groundwater and surface water quality. The Proponent is also required to describe measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the Project. In its response to IAAC-111, the Proponent describes the best available treatment technologies and techniques that will be implemented to treat water from collection ponds, and identifies the criteria that would trigger the implementation of these treatment measures for phosphorus, fluoride, and selenium. SDFN notes concerns that it is unclear how Indigenous nations were involved and/or how Indigenous knowledge was used to inform the development of this criteria. PBCN expresses concerns regarding the proposed trigger concentration for fluoride of 1.0 mg/L, as it is quite close to the chronic effects benchmark, and recommends a more conservative trigger be used. PBCN also raises concerns regarding selenium, noting that site specific selenium bioaccumulation modeling, which is necessary to determine what concentrations would result in bioaccumulation in fish, has not been completed to inform the trigger concentration. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water quality.	a) Describe how Indigenous nations were involved and/or how Indigenous knowledge was used to inform the selection of criteria for phosphorus, fluoride, and selenium that would trigger the implementation of treatment of water from collection ponds. i. Describe the activities that were conducted to verify the data used and conclusions formed with the applicable Indigenous nations and the outcome of these activities. ii. Identify and discuss areas of disparity between the views of Indigenous nations and the Proponent, efforts made to reconcile disparities, and a rationale for conclusions on matters for which disparity in views remains. b) Provide a rationale for the criteria concentration chosen that would trigger the implementation of treatment measures for fluoride and selenium and why a more conservative trigger value for fluoride was not chosen. c) Clarify whether site specific selenium bioaccumulation modeling has been completed to inform the criteria concentration chosen that would trigger the implementation of treatment measures. If this modelling has not been completed, provide a rationale.
Fish and Fish Habitat					
IAAC-R2-80	Impact Assessment Agency of Canada Fisheries and Oceans Canada – Technical Review of Round 1,	6.1.6 Fish and fish habitat 6.2.3 Changes to riparian, wetland and terrestrial environments 6.3.1 Fish and fish habitat	11.4.2.3 Project Residual Effects Federal IR Responses, Round 1, Package 3, Response to IAAC-147	The EIS Guidelines require the Proponent to characterize the spatial extent of potential or confirmed fish habitat for spawning, rearing, nursery, feeding, overwintering, and migration routes. The Proponent is also required to describe primary and secondary productivity of aquatic resources (e.g. benthic communities, feeder species, and aquatic plants) in terms of abundance and distribution in affected water bodies with a characterization of season variability. The EIS Guidelines also state that certain intermittent streams or wetlands may constitute fish habitat or contribute indirectly to fish habitat, and that an absence of fish at the time of the survey does not irrefutably indicate an absence of fish habitat.	a) Describe the area of shrubby swamps and treed swamps that may be indirectly affected and/or lost as a result of the Project. i. For those shrubby and treed swamps that may be indirectly affected by the Project, describe which of these swamps are or may be fish-bearing and include the area of these wetlands in the calculation of the total area of fish habitat lost as a result of the Project.

	Package 3 Information Request Responses Environment and Climate Change Canada – Technical Review of Round 1, Package 3 Information Request Responses		Federal IR Responses, Round 1, Package 3, Response to IAAC-148	In its response to IAAC-148, the Proponent states that swamps (i.e. treed and shrubby) within the PDA are non-fish bearing as they are not connected to any fish-bearing watercourses, as determined by field surveys, and as they are sufficiently shallow to freeze to the bottom in winter (i.e. less than 50 centimetres deep). Of the swamps present in the PDA, only shrubby swamps located around the East Pond and adjacent to the East Pond outlet channel will be affected by the Project, as a result of water draw-down caused by development of the open pit. As these shrubby swamps are used by brook stickleback for spawning, rearing, and potential overwintering, their spatial area will be included in the calculation of harmful alteration, disruption, or destruction (HADD) of fish habitat. Fisheries and Oceans Canada (DFO) expresses concerns with the Proponent's approach to identifying the fish-bearing status of wetlands, specifically as it pertains to wetlands that will be directly impacted (i.e. permanently destroyed) as a result of construction of the MSRA and TMF. Currently, impacts related to fish-bearing wetlands are only accounted for around East Pond. However, as the Proponent notes in its response to IAAC-147, waterbodies KEE3-B2, COC2-LOB2-MIN5-C1, COC2-LOB2-MIN5, FAR7-A1, and FAR5-CA have all been assessed as fish-bearing according to Proponent field studies. Therefore additional fisheries data, including fish inventories, for wetlands upstream of these waterbodies that overlap with the PDA is required. Alternatively, the Proponent must take the precautionary approach and assume that all treed and shrubby wetlands which directly overlap with the MRSA and TMF support fish and include these as part of the total impacts to fish and fish habitat. In its response to IAAC-147, the Proponent also notes that the Gordon site has 1.8 ha of shrubby swamps and 2.3 ha of treed swamps that will be permanently destroyed during construction through to mine closure within the PDA. The MacLellan site has 9.2 ha of shrubby swamps and 59.8 ha of treed swamp that will be permanently destroyed during construction through to mine closure within the PDA. As noted in the Proponent's response to IAAC-147, wetlands may be indirectly affected by Project due to, for instance, groundwater drawdown. The area of shrubby swamps and treed swamps that may be indirectly affected and/or lost as a result of the Project has not been characterized.	b) If the Proponent elects not to take the precautionary approach of assuming that all treed and shrubby wetlands which directly overlap with the MRSA and TMF support fish, provide further fisheries data for wetlands upland of the following waterbodies that overlap with the PDA: i. KEE3-B2, COC2-LOB2-MIN5-C1, and COC2-LOB2-MIN5 (located within the MacLellan site footprint); and ii. FAR7-A1 and FAR5-CA (located within the Gordon site footprint). c) Revise the assessment of potential Project effects to fish and fish habitat and any related VCs, including the residual and cumulative effects assessments, to consider: i. the total area of shrubby swamps and treed swamps that may be indirectly affected and/or lost as a result of the Project and which are or may be fish-bearing, as discussed in a); and ii. the additional fisheries data collected for wetlands upland of fish-bearing waterbodies that overlap with the PDA, as discussed in b) or, if the precautionary approach is taken, the assumption that all treed and shrubby wetlands which directly overlap with the MRSA and TMF support fish. d) Describe mitigation and follow-up and monitoring measures that will be implemented to address any effects identified in c). e) Describe how the Proponent will integrate monitoring of water quality within wetlands located inside and outside of the PDA for the Gordon and MacLellan sites into the SWMMP for the Project, and describe how Indigenous nations will be provided the opportunity to be involved in wetland monitoring, including Indigenous monitoring. See IAAC-R2-02 for a list of the details of the monitoring plan to be included in the response.

				In its response to IAAC-147 and IAAC-159, the Proponent indicates that wetlands outside of the PDA have not been assessed to determine whether or not they are fish-bearing and that potential Project effects to vegetation and wetlands will be monitored indirectly by monitoring Project-related changes to surface water quality and quantity downstream of the TMF at the MacLellan site and downstream of the MRSAs at the MacLellan and Gordon sites. Environment and Climate Change Canada (ECCC) notes that it is unclear whether water quality monitoring within wetlands will be included in the Surface Water Management and Monitoring Plan (SWMMP). As baseline information has not been collected with respect to whether wetlands outside of the PDA are fish-bearing, wetland monitoring must be included in the SWMMP to ensure that potential effects to fish-bearing wetlands due to Project-related changes to water quality are monitored. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat as a result of wetland removal. **See Annex I for related advice.**	f) Describe whether baseline water quality data within wetlands inside and outside of the PDA has been collected. If not, describe the data that will be used to inform the baseline water quality of these wetlands to support the follow-up and monitoring plan referred to in e).
Atmospheric Environment					
IAAC-R2-81	Environment and Climate Change Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.1.1 Atmospheric environment 6.2.1 Changes to the atmospheric environment	6.4.1.2 Project Pathways 6.4.2 GHG Emissions Federal IR Responses, Round 1, Package 2, Response to IAAC-122	The EIS Guidelines require the Proponent to describe changes to the atmospheric environment as a result of the Project, including an estimate of the direct greenhouse gas (GHG) emissions associated with all phases of the Project. The Proponent is also required to justify all estimates and factors used in the analysis of effects and to provide the methods and calculations used. In its response to IAAC-122, the Proponent states that power for the Gordon site will be supplied on site via two stationary 300 kilowatt diesel generators, one continuous and one standby, and presents the fuel consumption for the generators to inform the assessment of Project contributions to GHG emissions. It is unclear how the Proponent proposes to operate the generators (i.e. whether only one generator will operate at a time or if the potential exists for both generators to operate at once) and how this will affect the Project's GHG emissions estimates. This information is required to support the Agency's understanding of potential Project effects to Indigenous nations, federal lands, and other VCs that may be affected by changes to the atmospheric environment.	a) Describe how the generators at the Gordon site will be operated (i.e. whether only one generator will operate at a time or if the potential exists for both generators to operate at once). i. If the potential exists for the secondary "standby" generator to operate at the same time as the continuous generator (e.g. in emergency situations, to provide overload capacity, etc.), describe whether and by how much, use of the standby and continuous generators will exceed the quoted 82 litres per hour and how this will affect projected GHG emissions for all Project phases.

IAAC-R2-82	Environment and Climate Change Canada – Technical Review of Round 1, Package 2 Information Request Responses Peter Ballantyne Cree Nation - Technical Review of the EIS and Round 1 Information Requests	4.3 Study strategy and methodology 6.1.1 Atmospheric Environment	5.2.2 Air Quality and Greenhouse Gases 6.2.1.2 Air Quality Volume 5, Appendix A: Lynn Lake Gold Project Air Quality Impact Assessment Technical Modelling Report Federal IR Responses, Round 1, Package 2, Response to IAAC-112	The EIS Guidelines require the Proponent to provide a baseline survey of ambient air quality in the Project area and in the airshed likely to be affected by the Project. The EIS Guidelines also require that baseline data that has been extrapolated or otherwise manipulated to depict environmental conditions in the study areas, including modelling methods and equations, will be described and will include calculations of margins of error and other relevant statistical information, such as confidence intervals and possible sources of error. In its response to IAAC-112 and in the EIS, the Proponent indicates that baseline concentrations of nitrogen dioxide (NO_2), carbon monoxide (CO), and sulphur dioxide (SO_2) for the Project area are based on an analysis of ambient air quality monitoring data from the Fort Smith continuous monitoring station in the Northwest Territories. The Proponent also provides a rationale, including supporting statistical information, for the selection of this monitoring station as representative of the Project area over other monitoring stations located closer to the Project, including the monitoring station at the Town of Lynn Lake. ECCC notes that the Proponent does not discuss the limitations and uncertainties associated with using air quality data from the Fort Smith monitoring station as a proxy for the Project area, given the distance of the station from the Project. Further, ECCC notes that Fort Smith, when compared with Lynn Lake, is slightly warmer, drier, more northerly, located on the banks of a major river, and is surrounded by fewer lakes, all of which may influence the applicability of air quality data to the Project area. The Proponent also does not comment on any differences in climatic, topographic, or landscape considerations that would contribute to limitations of the applicability of the Fort Smith air quality data to the Project area. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples and other VCs that may be affected by changes to the atmospheric environment.	a) Describe the criteria that were used to determine that baseline air quality data from the Fort Smith continuous monitoring station is representative of the Project area. b) In addition to the differences noted by ECCC between Fort Smith and Lynn Lake in terms of climate, topography, and latitude, describe any other relevant differences between Fort Smith and Lynn Lake and/or the Project area that may influence the applicability of air quality monitoring data from Fort Smith to the Project area. c) Describe the limitations of using data from the Fort Smith air quality monitoring station as a proxy for the Project area, given the noted differences in climate, topography, and latitude between Fort Smith and Lynn Lake and based on the Proponent's response to b). Describe whether actual NO_2, CO, and SO_2 levels in the Project area are likely to be higher or lower than the values from the Fort Smith monitoring station, including supporting data and/or rationale. i. Describe the assumptions that were made in concluding that air quality monitoring data from the Fort Smith station is representative of the Project area and how the Proponent accounted for this uncertainty and the precautionary approach in assessing potential effects to air quality and related VCs, including Indigenous health.
IAAC-R2-83	Impact Assessment Agency of Canada	6.1 Project setting and baseline conditions 6.1.1 Atmospheric Environment	6.4.1.4 Project Residual Effects 6.5.1 Project Residual Effects Likely to Interact Cumulatively	The EIS Guidelines require the Proponent to describe changes to the atmospheric environment, including changes to air quality. In its response to IAAC-115, the proponent states that baseline air quality emissions were not modelled due to the remote location of the Project and that Project construction emissions were not modelled as construction emissions are anticipated to be less than emissions during operation.	a) Provide a rationale for how the Proponent concluded that construction phase emissions will be less than emissions during Project operation. b) Clarify the emissions data used to inform the assessment of potential Project effects to VCs as a result of atmospheric emissions during construction.

		6.2.1 Changes to the atmospheric environment 6.3.4 Indigenous peoples	Volume 5, Appendix A: Lynn Lake Gold Project Air Quality Impact Assessment Technical Modelling Report Federal IR Responses, Round 1, Package 2, Response to IAAC-115	Contour maps for the baseline and construction phases of the Project have also not been provided. It is unclear how the Proponent concluded that construction emissions are anticipated to be less than emissions during operation. Further, as modelling of expected Project emissions of COPCs and criteria air contaminants (CACs) during construction was not conducted and maximum concentrations of COPCs and CACs were not provided, it is unclear what information was used to inform the assessment of potential Project effects to VCs as a result of atmospheric emissions during construction, or how the Proponent accounted for potential differences in the distribution, location, source, duration, magnitude, and type of emissions that may occur. For instance, construction may result in a disproportionately high amount of emissions of dust, PM, and other contaminants associated with vegetation clearing and open burning. If operation phase emissions were used as a proxy for construction phase emissions, these nuances may not have been accounted for. It is also unclear whether emissions associated with upgrades to and traffic along PR 391 during construction, including both Project-related and non-Project related traffic, were considered in assessing potential effects of the Project during construction on air quality and related VCs and, if so, what data was used to represent emissions associated with this activity as upgrades to PR 391 will not occur during the operation phase. In its response to IAAC-115, the Proponent did not provide contour maps to represent cumulative or future development and states that there are no future reasonably foreseeable emission sources that could interact with Project emissions, therefore a cumulative air quality assessment is not warranted. In the EIS, the Proponent also notes that future mineral development activities are located further than 10 kilometres from the Project and therefore, are not expected to have an overlapping effect with the Project with respect to air quality. However, as shown in contour maps provided in response to IAAC-115, Project effects to the atmospheric environment may extend beyond 10 kilometres from the PDA (e.g. Map IAAC-115-16, Map IAAC-115-19, etc.). Further information is required to support the rationale that effects of future physical activities will not extend beyond 10 kilometres, and therefore will not interact cumulatively with the Project.	i. If operations phase atmospheric emissions were used to inform the assessment of potential Project effects to VCs during the construction phase, describe the assumptions that were made with respect to construction phase air emissions, including their distribution, location, source, type, duration, and magnitude, and how the Proponent accounted for any related uncertainty and the precautionary approach in assessing potential effects to air quality and related VCs, including Indigenous health. c) Confirm whether emissions associated with upgrades to and traffic along PR 391 during construction, including both Project-related and non-Project related traffic, were considered in assessing potential effects of the Project during construction on air quality and related VCs. i. If so, clarify the emissions data used as a proxy for these emissions to inform the assessment of effects to VCs and provide a rationale for how this data is representative of anticipated actual emissions from these activities. ii. If not, revise the assessment of potential Project effects to VCs as a result of atmospheric emissions during the construction phase to include emissions associated with upgrades to and traffic along PR 391 during construction, including both Project-related and non-Project related traffic and indicate the data that were used as a proxy for these emissions given that upgrades to PR 391 will not occur during the operation phase. d) Provide a rationale to support the statement that effects of future physical activities will not extend beyond 10 kilometres, and therefore will not interact cumulatively with the Project, including supporting data and/or literature. i. If air emissions associated with future physical activities may interact with the Project, revise the cumulative effects assessment for air quality to

				This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples and other VCs that may be affected by changes to the atmospheric environment.	account for this interaction and provide contour maps representing CAC and COPC concentrations for the Project plus future developments/activities.
IAAC-R2-84	Impact Assessment Agency of Canada Environment and Climate Change Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.1.1 Atmospheric environment 6.2.1 Changes to the atmospheric environment 6.1.11. Human environment	Federal IR Responses, Round 1, Package 2, Response to IAAC-115	The EIS Guidelines require the Proponent to describe Project-related changes to the atmospheric environment and to consider effects to human health and health outcomes from potential changes in air quality. The Proponent is also required to describe the rural and urban settings likely to be affected by the Project. In its response to IAAC-115, the Proponent provided updated contour maps and an updated map of potential human receptors in the air quality Local Assessment Area (LAA), including receptors in the Town of Lynn Lake. The predicted maximum ground level concentrations of NO_2, SO_2, hydrogen cyanide (HCN), particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), and diesel particulate matter (DPM) at these receptor locations for the worst case project operation phase are also provided. While this information is useful for understanding potential worst-case Project effects to air quality, the Proponent does not discuss the implications of long-term changes to air quality for the life of the Project (i.e. construction phase to post-closure phase), particularly as it relates to potential short and long term effects to human health, including Indigenous health. ECCC also notes that the Proponent does not discuss the interaction of Project emissions within the Town of Lynn Lake to understand potential effects to receptors and air quality within the Town. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples and other VCs that may be affected by changes to the atmospheric environment.	a) Discuss the implications of long-term changes to air quality for the life of the Project, particularly as it relates to potential short and long term effects to human health, including Indigenous health. Ensure that the Proponent's response to IAAC-R2-83 is considered. b) Describe how long the worst-case operation emissions scenario presented in response to IAAC-115 is expected to persist and how this may influence the severity of long-term effects discussed in a). c) Discuss the interaction of Project emissions within the Town of Lynn Lake and describe potential effects to receptors and air quality within the Town. d) If new or worsened potential short and long term effects to human health, including Indigenous health, are identified in response to a), b), and/or c), describe mitigation and follow-up and monitoring measures that will be implemented to address potential effects.
IAAC-R2-85	Impact Assessment Agency of Canada	3.2.3 Spatial and temporal boundaries 6.1.1 Atmospheric Environment 6.2.1 Changes to the atmospheric environment	6.4.1.4 Project Residual Effects Volume 5, Appendix A: Lynn Lake Gold Project Air Quality Impact Assessment Technical Modelling Report	The EIS Guidelines require the Proponent to describe Project-related changes to the atmospheric environment, including changes to air quality. In its response to IAAC-115, the proponent provides updated contour maps representing operations phase air emissions and states the predicted emissions concentrations presented in the contour maps include all emission sources during Project operation, including peak truck traffic along PR 391 for hauling ore from the Gordon to the MacLellan site. As noted in IAAC-R2-09 and IAAC-R2-96, it is unclear whether traffic estimates include all Project-related traffic, including heavy and light vehicles, and non-Project related traffic, and whether Project-related traffic estimates	a) If traffic estimates are updated based on the Proponent's responses to IAAC-R2-09 and IAAC-R2-96, provide updated contour maps for Project operational air emissions to reflect the revised traffic estimates along PR 391.

			Federal IR Responses, Round 1, Package 2, Response to IAAC-115	reflect round trips, particularly for haul trucks. If traffic estimates are updated based on the Proponent's responses to IAAC-R2-09 and IAAC-R2-96, update contour maps for Project operational air emissions to reflect the revised traffic estimates along PR 391. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples and other VCs that may be affected by changes to the atmospheric environment.	
IAAC-R2-86	Health Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.1.1 Atmospheric environment 6.2.1 Changes to the atmospheric environment 6.3.4 Indigenous Peoples	6.4.1.4 Project Residual Effects Volume 5, Appendix A: Lynn Lake Gold Project Air Quality Impact Assessment Technical Modelling Report, Federal IR Responses, Round 1, Package 2, Response to IAAC-115	The EIS Guidelines require the Proponent to describe Project-related changes to the atmospheric environment, including changes to air quality, and quantify emissions sources for COPCs, including total suspended particulates (TSP) and fine particulates. In its response to IAAC-115, the Proponent provides contour maps which present predicted air quality concentrations during operations across the LAA. For the maps depicting predicted 30 day and annual average dustfall deposition during operations, a background dustfall deposition rate of 0.99 g/m^2/30-days is used, which was derived from the mean dustfall baseline data collected in 2016 at multiple locations across the assessment area. The 2015 sampling data was excluded due to the influence of forest fires. Health Canada notes that, given that baseline data is limited to one year and cannot represent annual variability, it would be more conservative to use data from the location with the maximum mean dustfall deposition value (i.e. Black Sturgeon Reserve Road, 0.55 mg/dm^2/day, equivalent to 1.65 g/m^2/30-day), rather than averaging values across all locations sampled. The Black Sturgeon Reserve Road is also more representative of the primary location where people, including Indigenous peoples, are expected to be present during Project activities. Health Canada also notes that, for each map provided in response to IAAC-115, the maximum concentration of COPCs for each mine site often occur on the Project boundary for both the Gordon and MacLellan sites. However, the Human Health Risk Assessment (HHRA) uses concentration values for human receptors that are located further from the mine sites. This approach is not conservative for traditional land use receptors that may be present closer to the Project boundary. For example, Map IAAC-115-2 reports a maximum 98% daily 1-hour NO_2 value of 224 $\mu g/m^3$ on the Gordon site Project boundary, while Table 4-1 of the HHRA technical report indicates that a Future Case 1-hour maximum concentration of NO_2 of 95.5	a) Provide a rationale for the use of a baseline dustfall deposition rate of 0.99 g/m^2/30-days (i.e. single year mean) as a conservative input into the HHRA. b) Provide a rationale for excluding maximum concentrations of COPCs located at the Project boundary for both the Gordon and MacLellan sites from the inhalation assessment in the HHRA. c) If revised deposition and/or maximum COPC concentrations are required in response to a) and b), revise the HHRA and the effects assessments for the atmospheric environment and Indigenous health and socioeconomic conditions to reflect these updated values i. If new or worsened effects to VCs are identified in c), describe mitigation and follow-up and monitoring measures that will be implemented to address these effects. ii. If a revised baseline dustfall deposition rate is identified, provide updated contour maps that reflect this change.

				µg/m^3 was used in the assessment. Likewise, the 1-hour maximum concentration of SO_2 was 342 µg/m^3 at the Gordon site Project boundary, while a concentration of 44.7 µg/m^3 was used in the assessment. Despite the non-conservative assumption, exceedances of 1-hour NO_2 Canadian Ambient Air Quality Standards (CAAQS) values were predicted at the location of several potential Indigenous receptors and exceedances of 1-hour NO_2, 24-hour $PM_{2.5}$, and 2-hour DPM standards were predicted at the permanent work camp at the MacLellan site. Further information is required to understand how maximum concentrations of COPCs were considered as part of the HHRA. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples and other VCs that may be affected by changes to the atmospheric environment.	
IAAC-R2-87	Health Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.2.1 Changes to the atmospheric environment 6.3.4 Indigenous peoples	Federal IR Responses, Round 1, Package 2, Response to IAAC-115 Federal IR Responses, Round 1, Package 2, Response to IAAC-132	The EIS Guidelines require the Proponent to describe potential Project effects to the atmospheric environment, including changes to air quality, and potential effects to human health. In its response to IAAC-132, the Proponent identifies two worker camps, including a temporary worker camp and a future permanent worker camp, which will be constructed as part of the Project. Health Canada notes that the air quality maps presented in the Proponent's response to IAAC-115 only identify one worker camp. It is unclear whether both potential worker camps were considered in the air quality assessment and the assessment of Project effects to human health, including the HHRA. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples and other VCs that may be affected by changes to air quality.	a) Clarify whether the temporary and future permanent worker camps were included in the air quality assessment and the assessment of Project effects to human health, including the HHRA. i. If the worker camps were not included in the air quality and human health effects assessments, revise these assessments to include receptors at the temporary and future permanent worker camps. ii. Should new or worsened effects be identified in i), describe mitigation and follow-up and monitoring measures that will be implemented to address any effects identified.
IAAC-R2-88	Impact Assessment Agency of Canada Sayisi Dene First Nation – Technical Review of Round 1,	3.2.1 Changes to the environment 3.2.3 Spatial and temporal boundaries 4.2.2 Community knowledge and Aboriginal	6.0 Assessment of Potential Effects on The Atmospheric Environment 6.4.1.4 Project Residual Effects	The EIS Guidelines require the Proponent to describe Project-related changes to the atmospheric environment and human health, including effects related to changes in air quality and to provide baseline information regarding sites used by Indigenous nations as permanent/seasonal/temporary residences, drinking and recreational use water sources, sites of traditional foods and related activities, and commercial and recreational activities. The Proponent is also required to describe any changes that could detract from use of the area or lead to avoidance of the area as a result of real and perceived disturbance of the	a) Provide a rationale describing how the chosen receptor points for the assessment of potential effects to human health and Indigenous peoples due to potential Project effects to air quality are representative of key receptor points for each Indigenous nation, including locations of importance for the exercise of Indigenous rights. i. Describe how information provided by each Indigenous nation since submission of the EIS and the March 2021 Supplemental Filing, including any information related to areas used for the exercise

	Package 2 Information Request Responses Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests Chemawawin Cree Nation – Technical Review of Round 1, Package 2 Information Request Responses	traditional knowledge 4.2.3. Existing information 6.1.9 Indigenous peoples 6.2.1 Changes to the atmospheric environment 6.3.4. Indigenous peoples	Federal IR Responses, Round 1, Package 2, Response to IAAC-116 Federal IR Responses, Round 1, Package 2, Response to IAAC-117	environment (e.g. observation of and fear of contamination of water or country foods). In its response to IAAC-116, the Proponent states that information from Traditional Land and Resource Use (TLRU) studies submitted by some Indigenous nations and engagement with Indigenous nations were used to inform the selection of receptor locations related to the current use of lands and resources for traditional purposes. SDFN, PBCN, and CCN express concerns that the Proponent does not discuss any limitations associated with the information used to identify receptor locations for all Indigenous nations, including the absence of Nation-specific information for those Nations that have not conducted TLRU studies. It is also unclear what assumptions were made in extrapolating information from one Nation to another, in the event that Nation-specific information was not available for one or more Nations. In its response to IAAC-117, the Proponent indicates that input from engagement activities with Indigenous nations since May 2020 has been incorporated into the March 2021 *Supplemental Filing of Indigenous Engagement Activities* and that no new sensitive receptors were identified, therefore no changes to the conclusions of the EIS are required. Indigenous nations, including PBCN, CCN, and SDFN, express concerns regarding the selection of receptors for the assessment of effects to human health and Indigenous peoples as a result of changes to air quality, as the receptors selected do not appear to include locations of importance for the exercise of Indigenous rights for each Nation. Indigenous nations also note that they have provided new information to the Proponent, including traditional use information, since submission of the EIS and the March 2021 *Supplemental Filing of Indigenous Engagement Activities*. Nations express concerns that Proponent engagement activities to date are not adequate and that it may be inaccurate to assume that the existing receptors identified are representative of areas of importance for Indigenous peoples. Clarity is required regarding how information provided by each Indigenous nation since submission of the EIS and the Supplemental Filing, including information on areas used for the exercise of rights, have been considered in the selection of receptor locations, and a rationale for why receptor locations have not changed given the information provided. Information is also required regarding how the Proponent will adaptively manage and monitor potential effects of the Project to air quality and associated effects	of rights, was considered in the selection of receptor locations for the assessment of potential effects to human health and Indigenous peoples due to Project effects to air quality. ii. Describe the activities that were conducted to verify the data used and conclusions formed with the applicable Indigenous nations and the outcome of these activities. iii. Identify and discuss areas of disparity between the views of Indigenous nations and the Proponent, efforts made to reconcile disparities, and a rationale for conclusions on matters for which disparity in views remains. b) Describe how the Proponent considered Indigenous nations' established rights to use unoccupied Crown lands for the exercise of their rights and traditional and cultural practices, regardless of frequency of use, in the assessment of potential Project effects to air quality and Indigenous health. i. If this was not considered, revise the assessment of potential Project effects to the atmospheric environment and Indigenous health to consider that Indigenous use and the practice of rights may not be limited to discrete receptor locations. ii. Describe mitigation and follow-up and monitoring measures that will be implemented to address any new or worsened potential effects identified in response to i). c) Describe the level of uncertainty, limitations, and assumptions (including extrapolation of data from one Nation to another) associated with the assessment of potential Project effects to human health and Indigenous peoples, including the location of receptors, as a result of Project effects to air quality due to the absence of Nation-specific information for Nations that have not conducted TLRU studies and/or have not otherwise had the capacity to collect this data.

				to human health and Indigenous peoples, including Indigenous rights, should new receptor locations be identified. It is also unclear how Indigenous peoples will be notified of air quality guideline exceedances at receptor locations. PBCN also expresses concerns that the assessment of potential effects to Indigenous peoples, including the current use of lands and resources for traditional purposes and impacts to rights, due to Project-related changes to air quality and odour does not account for potential effects beyond direct effects to Indigenous peoples at selected receptor locations. PBCN notes that Indigenous peoples may avoid certain areas that are or may be used for the exercise of rights, traditional and cultural practices, and/or the collection/harvest of country foods due to perceived effects, whether or not actual effects of the Project may occur. Further, as noted in IAAC-R2-98, while current use sites or areas used for the exercise of Indigenous rights in the vicinity of the Project may not have not been identified to date, and therefore included as receptor locations in the assessment, Indigenous nations have established rights to use unoccupied Crown lands for the exercise of their rights, and traditional and cultural practices. While those areas may not be regularly used currently for the exercise of rights, they may be used infrequently, particularly for hunting if game were to move into the area, or may be used in the future. This potential pathway of effect has not been considered in the assessment of potential effects to Indigenous peoples due to changes to the atmospheric environment. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples and other VCs that may be affected by changes to the atmospheric environment. **See Annex I for related advice.**	i. If additional information was received from Indigenous nations since the submission of Round 1 Information Request responses, revise the assessment of potential Project effects to human health and Indigenous peoples to consider this new information, including any newly identified receptor locations. ii. If new or worsened effects are identified in response to i), describe mitigation and follow-up and monitoring measures that will be implemented to address potential effects. d) Describe how the Proponent will adaptively manage and monitor potential Project effects to human health and Indigenous peoples due to Project effects to air quality should new receptor locations be identified in the future, and describe the goals/outcomes of the adaptive management plan. Refer to IAAC-R2-04 for further details regarding information requirements for adaptive management plans. e) Describe the communication and/or notification plan that will be implemented by the Proponent to notify Indigenous nations of Project-related air quality guideline exceedances at receptor locations where community members may be present. Include a description of the mechanism through which Indigenous communities may submit complaints regarding Project effects to air quality and the complaint resolution process. f) Revise the assessment of potential Project effects to Indigenous peoples, including the current use of lands and resources for traditional purposes and impacts to rights, due to Project-related changes to air quality and odour to consider potential effects associated with the avoidance of certain areas that are or may be used for the exercise of rights and/or traditional and cultural practices due to perceived effects of the Project, including areas identified as potential receptor sites and areas of unoccupied Crown

					lands for which Indigenous nations have established rights to use. i. If new or worsened effects are identified in response to i), describe mitigation and follow-up and monitoring measures that will be implemented to address potential effects.
IAAC-R2-89	Peter Ballantyne Cree Nation – Technical Review of Round 1, Package 2 Information Request Responses Environment and Climate Change Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.2.1 Changes to the atmospheric environment	6.4.2 GHG Emissions Volume 5, Appendix A: Lynn Lake Gold Project, Air Quality Impact Assessment Technical Modelling Report, Tables F-7 and F-8 Federal IR Responses, Round 1, Package 2, Response to IAAC-120	The EIS Guidelines require the Proponent to provide estimates of the direct GHG emissions associated with each phase of the Project, presenting the information by individual pollutant and summarized in CO_2 equivalent per year. The Proponent is also required to describe any mitigation measures proposed to minimize Project GHG emissions. In its response to IAAC-120, the Proponent states that sufficient detailed engineering information for decommissioning is not available at this time to generate a detailed breakdown of the GHG emissions associated with this phase of the Project. In lieu of this information, the Proponent states that the level of activity for decommissioning is expected to be approximately 30% of the level of construction activity, therefore GHG emissions associated with the decommissioning phase at the Gordon site are estimated to be 0.46 kilotonnes of carbon dioxide equivalent (kt CO2e) and 3.78 kt CO2e for MacLellan site, based on construction emissions estimates for the equipment used to build the on-site infrastructure (e.g. off-road diesel equipment emissions, on-highway truck exhaust emissions, drilling, and blasting) but not including the equipment used during construction for pre-production. ECCC notes that the construction emissions for the Gordon and MacLellan sites that were used to estimate GHG emissions associated with the decommissioning phase of the Project (i.e. 1.53 kt CO_2e for Gordon site, and 12.59 kt CO_2e for MacLellan site) do not clearly correlate with the estimated construction emissions for off-road equipment, on-road equipment, and explosives detonation included in the EIS and ECCC is unable to reproduce the calculations when comparing the decommissioning emissions to the construction emissions. Clarity regarding the Proponent's approach to calculating the GHG estimates for the decommissioning phase of the Project is required to confirm the GHG estimates provided. It is also unclear the anticipated timeframe over which emissions associated with the decommissioning phase will occur and how this may affect the assessment of potential effects to the environment, including transboundary effects. Further, it is also unclear how the Proponent accounted for uncertainty with respect to anticipated	a) Clarify the extent of construction activities that were taken into account to calculate the GHG emissions estimates for the decommissioning phase of the Project. Include the calculations that were completed to aid in the verification of the GHG estimates for the decommissioning phase, including a clear indication of each values' origin. b) Describe the anticipated timeframe over which emissions associated with the decommissioning phase for each site will occur and whether this was factored into the assessment of potential effects to the environment, including transboundary effects. i. If the total anticipated duration of decommissioning phase GHG emissions from each Project site were not factored into the assessment of potential effects to the environment, including transboundary effects, or were incorrectly estimated, revise the effects assessments for all relevant VCs to consider the total anticipated duration of emissions. ii. If new or worsened effects are identified in response to i), describe mitigation and follow-up and monitoring measures that will be implemented to address potential effects. c) Describe how the Proponent accounted for uncertainty with respect to the use of construction emissions to estimate GHG emissions during decommissioning, given that atmospheric emissions associated with construction were not modelled. Describe any assumptions that were made with respect to construction and decommissioning phase GHG emissions, including their distribution, and how the Proponent accounted for any related uncertainty and the

				construction emissions, given that construction emissions were not modelled (refer to IAAC-R2-83). This information is required to support the Agency's understanding of potential transboundary Project effects to the atmospheric environment, including potential effects outside of Canada and/or in a province other than the one in which the Project is being carried out. **See Annex I for related advice.**	precautionary approach in assessing potential effects associated with GHGs.
IAAC-R2-90	Impact Assessment Agency of Canada Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Request Responses Environment and Climate Change Canada – Technical Review of Round 1, Package 2 Information Request Responses Sayisi Dene First Nation – Technical Review of Round 1,	6.2 Predicted changes to the physical environment 6.3.4 Indigenous peoples 6.4 Mitigation measures	6.2.1. Changes to the atmospheric environment 6.4.1.3 Mitigation Federal IR Responses, Round 1, Package 2, Response to IAAC-124	The EIS Guidelines require the Proponent to describe Project-related changes to the atmospheric environment, including concentrations of TSP and fine particulates. The Proponent is also required to describe any Project- related changes to the environment that could detract from use of the area by Indigenous peoples or lead to avoidance of the area as a result of real and perceived disturbance of the environment (e.g. observation of and fear of contamination of water or country foods). In its response to IAAC-124, the Proponent states that chemical dust suppressants will only be used as an adaptive management approach and application will be limited to periods of high wind, if measured ambient particulate matter concentrations are in exceedance of the Manitoba Ambient Air Quality Criteria, or if an increase of water application to suppress dust is determined ineffective or unfeasible. PBCN expresses concerns regarding the use of chemical dust suppressants as the substances may directly affect subsistence vegetation, including abundance and quality of vegetation, and may affect wildlife health through ingestion of contaminated vegetation and water, which may in turn result in adverse effects to Indigenous health. The application of chemical dust suppressants may also result in avoidance of certain areas and/or the traditional and cultural use of wildlife and vegetation species by Indigenous peoples due to perceived contamination of these resources. It is unclear whether these potential effects were considered in determining the suitability of use of chemical dust suppressants as a mitigation measure and/or the potential effects associated with their use. It is also unclear how the Proponent will ensure that Indigenous peoples are notified when chemical dust suppressants are used to avoid any adverse effects to Indigenous health through ingestion of these substances and how effects associated with chemical dust suppressants will be monitored.	a) Based on existing climate data for the Project area, describe how often wind speeds are predicted to exceed 15 to 20 km/h and how the frequency of these high wind speeds may affect potential effects to VCs, given that chemical dust suppressants will not be applied when wind speeds reach or exceed this threshold. b) Clarify why a range of wind speeds (i.e. 15 to 20 km/h) was chosen as a threshold to indicate when chemical dust suppressants will be applied. c) Describe potential effects to VCs associated with the use of chemical dust suppressants, including potential effects to the traditional and cultural practices of Indigenous peoples and the exercise of rights due to avoidance of certain areas as a result of real or perceived effects to the environment and resources of importance to Nations. i. Revise the effects assessments for all relevant VCs to consider potential effects associated with the use of chemical dust suppressants. ii. If new or worsened effects are identified in response to a) and/or i), describe mitigation measures that will be implemented to address potential effects. d) Describe how potential effects to VCs associated with chemical dust suppressants will be monitored throughout the Project life, including: i. the parameters to be measured/monitored;

	Package 2 Information Request Responses			In its response to IAAC-124, the Proponent notes that chemical dust suppressants will be applied to haul roads more frequently during dry and/or windy conditions; however, suppressants will not be applied when wind speeds exceed 15 to 20 kilometres per hour (km/h) to avoid ponding, runoff, drifting, and tracking of material beyond the area of application. ECCC expresses concerns with this method of application as fugitive dust suppression on haul roads is very important, particularly during periods of high wind. Proactive action will be required by the Proponent during periods when wind speeds exceed 15 to 20 km/h to ensure that additional chemical dust suppressants and/or other dust suppression techniques are employed before winds are expected to increase. It is also unclear why a range of wind speeds (i.e. 15 to 20 km/h) was chosen as a threshold to indicate when dust suppressants cannot be applied. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples and other VCs that may be affected by changes to the atmospheric environment.	ii. study design and/or the desired outcomes of the study; iii. planned protocols; iv. monitoring locations; v. the schedule of monitoring activities; vi. contingency measures to be implemented; vii. the thresholds or triggers that will be used to determine when to implement contingency measures; viii. plans for reporting the results of the follow-up and monitoring program to federal and provincial regulators and Indigenous peoples, including the timing and frequency of reports; and ix. how Indigenous nations will be provided opportunities to participate in the design and implementation of the follow-up and monitoring plan. e) Describe proactive measures that will be implemented by the Proponent in advance of periods of high winds (i.e. wind speeds in excess of 15 to 20 km/h) to ensure that fugitive dust along haul roads is mitigated effectively. Describe alternative measures to the use of chemical dust suppressants that may be used during periods of high winds to mitigate Project-related fugitive dust emissions. f) Describe the communication and/or notification plan that will be implemented by the Proponent to notify Indigenous nations of the planned use of chemical dust suppressants, where these substances will be applied, and the risks associated with consumption or interaction with these substances. Include a description of the mechanism through which Indigenous communities may submit complaints regarding Project effects associated with the use of chemical dust suppressants and the complaint resolution process.

IAAC-R2-91	Environment and Climate Change Canada – Technical Review of Round 1, Package 2 Information Request Responses Health Canada – Technical Review of Round 1, Package 2 Information Request Responses Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests	6.2.1 Changes to the atmospheric environment 6.4 Mitigation measures 8.0 Follow-up and monitoring programs	6.7.1.1 Changes in air quality 6.9 Follow-up and Monitoring Volume 5, Appendix A: Lynn Lake Gold Project, Air Quality Impact Assessment Federal IR Responses, Round 1, Package 2, Response to IAAC-126	The EIS Guidelines require the Proponent to describe Project-related changes to the atmospheric environment, including air quality. The Proponent is also required to describe technically and economically feasible mitigation measures to address potential adverse effects of the Project and follow-up programs designed to verify the environmental assessment and the effectiveness of mitigation measures. In its response to IAAC-126, the Proponent notes that NO_2 monitoring has not been included in the Air Quality Management Plan. Health Canada and ECCC note concerns with this approach as NO_2 monitoring is required to verify environmental assessment predictions and adjust mitigation strategies, if required. Further, while the mitigation measures proposed by the Proponent in its response to IAAC-126 are commonly used to reduce NO_2 emissions, in the absence of modelling scenarios specifically for these mitigation measures, it is not possible to anticipate how effective they are anticipated to be in improving air quality in the assessment area. Given that exceedances of the 1-hour NO_2 CAAQS are predicted at various receptor locations by the modelling conducted, air quality monitoring for NO_2 must be conducted to determine the accuracy of predictions and to assist with implementing or modifying mitigation measures, as required. ECCC also expresses concerns that modelling of expected NO_2 emissions for the Project may have been underestimated. For instance, in the EIS, the Proponent's baseline data shows a warm bias of up to five degrees Celsius for predicted monthly average air temperature at the Lynn Lake Airport station. The Proponent also states in the EIS that predicted air quality guideline exceedances for NO_2 that were sustained over three or more consecutive hours occurred during the overnight hours of the winter months. ECCC notes that maximum NO_2 concentrations would be expected to occur during stagnant winter weather patterns when surface based temperature inversions are strongest and Project-related emissions would be trapped vertically with minimal horizontal winds for dispersion. Therefore, the peak of the warm bias in the winter months indicates that the numerical modelling underestimates the strength of surface-based temperature inversions, thereby overestimating vertical dispersion of contaminants and underestimating the concentration of contaminants; this results in a reduction of the stated model conservatisms. The Proponent's reliance on NO_2 data from another location (i.e. Fort Smith) located	a) Describe the follow-up and monitoring plan that will be implemented for NO_2, including: i. the parameters to be measured/monitored; ii. study design and/or the desired outcomes of the study; iii. planned protocols; iv. monitoring locations, including a rationale for the locations chosen and how they are representative of areas of the highest predicted NO_2 concentrations and sensitive receptor sites; v. the schedule of monitoring activities; vi. contingency measures to be implemented; vii. the thresholds or triggers that will be used to determine when to implement contingency measures; viii. plans for reporting the results of the follow-up and monitoring program to federal and provincial regulators and Indigenous peoples, including the timing and frequency of reports; and ix. how Indigenous nations will be provided opportunities to participate in the design and implementation of the follow-up and monitoring plan. b) Describe additional mitigation measures that will be implemented and/or are being considered to limit NO_2 emissions to the greatest extent possible.

				hundreds of kilometres away to estimate background concentrations adds additional uncertainty. Health Canada also notes that, as there is no threshold for NO_2 and adverse health effects can occur even at low concentrations, the applicable air quality standards, such as CAAQS thresholds, should not be considered as "pollute up-to" levels. Given that any increase in NO_2 exposure may result in an incremental population health risk, the Proponent must also describe any additional mitigation measures that will be implemented to reduce NO_2 levels to greatest extent possible. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples and other VCs that may be affected by changes to the atmospheric environment. **See Annex I for related advice.**	
IAAC-R2-92	Impact Assessment Agency of Canada Health Canada – Technical Review of Round 1, Package 2 Information Request Responses Mathias Colomb Cree Nation – Technical Review of Round 1, Package 2 Information Request Responses	6.2.1 Changes to the atmospheric environment 6.4 Mitigation measures 8.0 Follow-up and Monitoring Programs	6.7.1.1 Changes in Air Quality 18.7.1 Significance of Project Residual Effects Volume 5, Appendix A: Lynn Lake Gold Project, Air Quality Impact Assessment Technical Modelling Report Federal IR Responses, Round 1, Package 1, Response to IAAC-12 Federal IR Responses, Round	The EIS Guidelines require the Proponent to describe Project-related effects to the atmospheric environment, including changes to air quality, technically and economically feasible mitigation measures that will be applied to address potential adverse environmental effects, and follow-up programs designed to verify the accuracy of the environmental assessment and the effectiveness of mitigation measures. In its response to IAAC-125, the Proponent states that despite the fact that modelled concentrations of ambient TSP, particulate matter less than 10 microns in diameter (PM_{10}), $PM_{2.5}$, and dust fall deposition are sometimes found to be greater than the applicable ambient air quality criteria, this does not imply that the effect on ambient air quality is significant, as dispersion models are often highly conservative and over-predict contaminant concentrations. As such, although maximum predicted 24-hour PM_{10} and TSP concentrations along and outside the Project boundary are greater than their respective ambient air quality criteria, the effects to air quality and receptors were determined to be not significant. The Proponent also states in its response to IAAC-125 that an ambient air monitoring program will be implemented to monitor $PM_{2.5}$, PM_{10}, and TSP ambient concentrations and to evaluate the need for additional mitigation measures to reduce fugitive dust emissions during construction and operation. MCCN expresses concerns with the Proponent's approach to assessing the significance of Project effects to	a) Describe additional mitigation measures that will be implemented during all Project phases to reduce ambient concentrations of TSP, PM_{10}, and $PM_{2.5}$ to the greatest extent possible at receptor locations, and in areas of unoccupied Crown lands to which Indigenous nations have rights of use and for which receptor locations have not been identified. i. If additional mitigation measures are not available, not feasible, or are not anticipated to be effective at reducing ambient concentrations of TSP, PM_{10}, and $PM_{2.5}$ below ambient air quality guidelines, revise the assessment of Project-related effects to air quality and associated effects to human health and Indigenous health, including the residual and cumulative effects assessments, to account for the exceedances of ambient air quality criteria for TSP, PM_{10}, and $PM_{2.5}$ and to account for the fact that $PM_{2.5}$ is a non-threshold contaminant. Ensure that areas of unoccupied Crown lands to which Indigenous nations have rights of use and for which receptor locations have not been identified are reflected in this revised assessment.

			1, Package 2, Response to IAAC-125 Federal IR Responses, Round 1, Package 3, Response to IAAC-181	air quality from $PM_{2.5}$, PM_{10}, and TSP as it does not align with the precautionary approach. As modelling of $PM_{2.5}$, PM_{10}, and TSP concentrations shows exceedances at certain Project locations, potential effects to receptors may be underestimated by assuming that modelled concentrations will be less than actual concentrations. In its response to IAAC-12, the Proponent notes that that shift rotations for workers will likely be three weeks on, one week off for construction and either two weeks on, two weeks off or four weeks on, four weeks off for operation. In its response to IAAC-181, the Proponent indicates that a schedule of two weeks on, two weeks off was assumed when the HHRA was completed and provides an updated assessment to consider the inhalation risks associated with a three week on, one week off schedule. This schedule change increases the annual average hazard quotient (HQ) for $PM_{2.5}$ from 0.82 to 1.2, which was deemed overly conservative by the Proponent given that these results are based on air quality modelling that does not account for frozen ground on the stockpiles, TMF, or in the open pit that would prevent particulate release from these sources during the winter months. Health Canada notes that $PM_{2.5}$ is a non-threshold pollutant, meaning that human health effects may occur even at low levels below the CAAQS. Given that construction will not be limited to winter months and that CAAQS values for $PM_{2.5}$ should not be construed as "pollute up to" limits, additional mitigation options must be considered for the construction phase to limit $PM_{2.5}$ emissions to the greatest extent possible. IAAC-R2-88 and IAAC-R2-97 note that, while current use sites or areas used for the exercise of Indigenous rights in the vicinity of the Project may not have not been identified to date, and therefore included as receptor locations in the assessment, Indigenous nations have established rights to use unoccupied Crown lands for the exercise of their rights, and traditional and cultural practices. While those areas may not be regularly used currently for the exercise of rights, they may be used infrequently or may be used in the future. This must be considered when determining the anticipated effectiveness of mitigation measures and/or in re-evaluating the assessment of significance for potential effects to receptors due to changes in ambient air quality.	ii. Describe any new factors that were considered in determining the level of significance for Project-related changes to air quality and effects to receptors referred to in i).

				This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples and other VCs that may be affected by changes to the atmospheric environment. **See Annex I for related advice.**	
IAAC-R2-93	Impact Assessment Agency of Canada	6.2.1. Changes to the atmospheric environment 8.0 Follow-up and Monitoring Programs 8.1. Follow-up program	23.5.7 Air Quality Management Plan Federal IR Responses, Round 1, Package 2, Response to IAAC-125 Federal IR Responses, Round 1, Package 2, Response to IAAC-127	The EIS Guidelines require the Proponent to describe the follow-up and monitoring programs that will be implemented, including the parameters to be measured, the planned implementation timetable for follow-up studies, monitoring methods, reporting mechanisms, and how Indigenous nations will be involved in the design, implementation, and evaluation of the follow-up results. In its response to IAAC-125 and IAAC-127, the Proponent states that the four proposed locations for ambient air quality monitoring stations, including for TSP, PM_{10} and $PM_{2.5}$, were selected based on areas where PM concentrations are expected to be elevated, the predominant wind directions upwind and downwind of Project activities, and the location of sensitive receptors. The Proponent does not discuss how the chosen monitoring station locations meet the criteria noted above. Further, it is unclear why monitoring stations were not chosen along PR 391 or in proximity to the Black Sturgeon reserve. In its response to IAAC-127, the Proponent notes that, as part of the Air Quality Management and Monitoring Plan, an ambient air monitoring program will be implemented to monitor ambient $PM_{2.5}$, PM_{10}, and TSP concentrations during Project construction and operation. It is unclear whether the Air Quality Management and Monitoring Plan will including monitoring for other air quality contaminants of concern, such as arsenic, HCN, SO_2, or CO. As these contaminants may result in adverse effects to human health, including Indigenous health, monitoring for these substances must be included in the Air Quality Management and Monitoring Plan. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples and other VCs that may be affected by changes to the atmospheric environment.	a) Describe the rationale for the four monitoring station locations chosen based on the criteria defined by the Proponent and why monitoring station locations were not chosen near PR 391 and in proximity to the Black Sturgeon reserve. b) Clarify whether the Air Quality Management and Monitoring Plan will including monitoring for air quality contaminants of concern other than TSP, $PM_{2.5}$, and PM_{10}, such as arsenic, HCN, SO_2, and CO. i. If not, revise the proposed Air Quality Management and Monitoring Plan to ensure that these contaminants are adequately monitored during Project construction and operation to verify the environmental assessment and to ensure that proposed mitigation measures are effective.
Noise and Vibration					

IAAC-R2-94	Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests Health Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.2.1 Changes to the atmospheric environment 6.3.4 Indigenous peoples	7.4.1.4 Project residual effects Volume 5, Appendix C:, Noise and Vibration Impact Assessment Technical Modelling Report Federal IR Responses, Round 1, Package 2, Response to IAAC-134	The EIS Guidelines require the Proponent to describe Project-related changes in ambient day-time and night-time noise and vibration levels at key receptor locations. The Proponent is also required to describe potential Project effects to human health, including risks associated with noise exposure and effects of vibration from blasting. In its response to IAAC-134, the Proponent states that blasting associated with the Project is not expected to generate audible sound. Health Canada notes that, while the noise assessment considered high frequency noise, it is unclear whether the potential for Project-related blasting to generate low frequency noise (LFN) was considered and how this may affect VCs. Overpressure from blasting can result in LFN, which can travel longer distances with less attenuation than higher frequencies. When LFN is present with audible tonal and/or broadband noise, this may result in increased annoyance. PBCN also expresses concerns that noise and overpressure generated from blasting may have the potential to affect the exercise of Indigenous rights and species of cultural importance, including through annoyance, avoidance, startle response, and displacement of wildlife from known areas. This information is required to support the Agency's understanding of potential Project effects to Indigenous nations and other VCs that may be affected by changes in noise and vibration levels.	a) Describe whether LFN may be generated by Project-related activities, including blasting. i. If so, describe potential long-term and acute effects to VCs (e.g. annoyance, startle response, avoidance behaviours, etc.), including human health, wildlife, and Indigenous peoples, including Indigenous health and impacts to Indigenous rights. Health Canada recommends that their *Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise* (2017) be utilized to inform this assessment. ii. Describe mitigation and follow-up and monitoring measures that will be implemented to address any effects identified in i).
IAAC-R2-95	Impact Assessment Agency of Canada	3.2.3 Spatial and temporal boundaries 6.1.1 Atmospheric Environment	7.2.1.1 Methods Volume 4, Appendix D: Acoustic Baseline Technical Data Report Volume 5, Appendix C: Noise and Vibration Impact Assessment Technical Modelling Report	The EIS guidelines require the Proponent to identify the current ambient day-time and night-time noise and vibration levels at key receptor points (e.g. Indigenous communities) or priority areas as described by Indigenous nations and the results of a baseline ambient noise survey, including information on typical sound sources, geographic extent, and temporal variations. In its response IAAC-131, the Proponent indicates that traffic from public use of Provincial Road (PR) 391 was considered in describing baseline noise levels. Monitoring results from baseline monitoring station NM2, which is considered representative of a remote area with limited human activity, were used in the assessment to represent the baseline noise levels at the closest receptors to PR 391 (i.e. receptors 81 and 104). The Proponent also notes that the actual baseline noise levels could be marginally higher at NM2 than the monitoring data suggests due to the influence of the low traffic volume at this station and that using the quieter baseline noise level is considered a more conservative approach. It is unclear how the	a) Provide a rationale for why noise levels at monitoring station NM2 are considered to be representative of the baseline conditions for receptors along PR 391. i. Describe the assumptions that were made to reach this conclusion and comment on how those assumptions may influence the uncertainty of predictions. b) Provide a rationale for how the Proponent concluded that using a lower baseline noise level based on data from monitoring station NM2 would be a more conservative approach, given that actual baseline noise levels may be higher than predicted. i. If this conclusion was made in error, revise the assessment of potential Project effects to noise levels, and any related effects assessments for

			Federal IR Responses, Round 1, Package 2, Response to IAAC-131	Proponent determined that noise levels at monitoring station NM2 are representative of the baseline conditions for PR 391. It is also unclear how the Proponent concluded that using a lower baseline noise level based on data from monitoring station NM2 would be a more conservative approach, given that actual baseline noise levels may be higher than predicted. This information is required to support the Agency's understanding of potential Project effects to Indigenous nations and other VCs that may be affected by changes in noise levels.	other VCs, to include a baseline noise level that is more representative of actual conditions. ii. If any new or worsened Project effects are identified, describe mitigation measures and follow-up and monitoring that will be conducted to address these effects.
IAAC-R2-96	Impact Assessment Agency of Canada Health Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.1.1 Atmospheric environment 6.2 Predicted changes to the physical environment	7.1.4.1 Spatial boundaries 7.3 Project interactions with noise and vibration 7.4.1. Noise Volume 5, Appendix C: Noise and Vibration Impact Assessment Technical Modelling Report Federal IR Responses, Round 1, Package 2, Response to IAAC-132	The EIS Guidelines require the Proponent to describe Project-related changes in ambient day-time and night-time noise levels at key receptor locations. In its response to IAAC-132, the Proponent states that the construction traffic volume, including mixer trucks, delivery trucks, and fuel trucks, of two trucks per hour and operation traffic volume of 12 trucks per hour are included in the noise model. Health Canada notes concerns that the noise modelling only considers Project-related heavy truck traffic along PR 391 and seems to exclude other vehicle traffic, such as smaller Project-related personnel vehicles and non-Project-related vehicle traffic. This approach may underestimate the total traffic-related noise along PR 391 between the Gordon and MacLellan sites by 3 decibels (dBL) or more. This information is required to support the Agency's understanding of potential Project effects to Indigenous nations and other VCs that may be affected by changes in noise levels.	a) Clarify whether all Project-related traffic, including both heavy and light vehicles, and non-Project-related vehicle traffic were included in the assessment of total traffic-related noise along PR 391 during Project construction and operation. i. If only Project-related heavy vehicle traffic was included in the assessment, revise the estimates provided for traffic levels and anticipated noise levels during Project construction and operation along PR 391 and update the noise assessment, and any related effects assessments for other VCs, to include all Project-related and non-Project-related vehicles that would be expected to utilize PR 391 during Project construction and operation. Consider the Proponent's response to IAAC-R2-09 in determining the volume of traffic to include in the revised assessment(s).
IAAC-R2-97	Impact Assessment Agency of Canada	6.2.1 Changes to the atmospheric environment	7.1.2.1 Indigenous Engagement 7.2.1.2 Overview	The EIS Guidelines require the Proponent to describe Project-related changes in ambient day-time and night-time noise levels and vibration levels at key receptor locations, including sites used by Indigenous nations as permanent residences or on a seasonal/temporary basis, drinking and	a) Provide a rationale for how the chosen receptor points for the noise and vibration VC are representative of key receptor points for each Indigenous nation, including locations of importance for the exercise of Indigenous rights. Clarify whether receptor points are representative of

	Sayisi Dene First Nation - Technical Review of the EIS and Round 1 Information Requests Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests Peter Ballantyne Cree Nation – Technical Review of Round 1, Package 2 Information Requests		7.4.2.4 Project Residual Effects Construction Federal IR Responses, Round 1, Package 2, Response to IAAC-133	recreational water sources, sites of traditional foods and related activities, and sites used for commercial and recreational activities. In its response to IAAC-133, the Proponent indicates that receptors selected for the noise and vibration VC include Indigenous communities and residences in the Project area, and sites utilized by Indigenous peoples for current use, as identified through engagement activities, submissions from Nations, and publically available data. The Proponent states that Indigenous receptors were selected early in the assessment process and that no new sensitive receptors since submission of the EIS and the March 2021 *Supplemental Filing of Indigenous Engagement Activities* have been identified. Indigenous nations, including PBCN, CCN, and SDFN, express concerns regarding the selection of receptors for the noise and vibration VC, as the receptors selected do not appear to include locations of importance for the exercise of Indigenous rights for each Nation. Indigenous nations also note that they have provided new information to the Proponent, including traditional use information, since submission of the EIS and the March 2021 *Supplemental Filing of Indigenous Engagement Activities* and express concerns that engagement activities conducted by the Proponent to date have not been adequate, therefore assuming that the existing receptors identified are representative of areas of importance for Indigenous peoples may not be accurate. Clarity is required regarding how information provided by each Indigenous nation since submission of the EIS and the Supplemental Filing, including information on areas used for the exercise of rights, have been considered in the selection of receptor locations, and a rationale for why receptor locations have not changed given the new information provided. Information is also required regarding how the Proponent will adaptively manage and monitor potential Project contributions to noise and vibration effects should new receptor locations be identified in the future. PBCN also expresses concerns that receptor locations selected for the noise and vibration VC appear to focus on potential Project effects on land. As rights-based activities, such as fishing and navigation, occur within the boundaries of waterbodies and watercourse, potential receptors in these locations, including Indigenous and fish receptors, must also be considered.	areas where the exercise of rights and/or traditional and cultural practices occur on or in water, such as fishing and navigation, were included in the assessment. i. If receptor points for the exercise of rights and/or traditional and cultural practices that occur on or in water were not included in the assessment, identify areas where these activities occur, including consideration of Indigenous traditional knowledge, and revise the assessment of potential Project effects to noise and vibration conditions to consider these new receptor points. ii. If new or worsened potential Project effects are identified in i), describe mitigation and follow-up and monitoring measures that will be implemented to address these effects. iii. Describe how information provided by each Indigenous nation since submission of the EIS and the March 2021 Supplemental Filing, including any information related to areas used for the exercise of rights, has been considered in the selection of receptor locations for the noise and vibration VC. iv. Describe the activities that were conducted to verify the data used and conclusions formed with the applicable Indigenous nations and the outcome of these activities. v. Identify and discuss areas of disparity between the views of Indigenous nations and the Proponent, efforts made to reconcile disparities, and a rationale for conclusions on matters for which disparity in views remains. b) Describe how the Proponent will adaptively manage and monitor potential Project contributions to noise and vibration effects to VCs, including Indigenous peoples, should new receptor locations be identified in the future, and describe the goals/outcomes of the adaptive management plan. Refer to IAAC-R2-04 for further details regarding information requirements for adaptive management plans.

				This information is required to support the Agency's understanding of potential Project effects to Indigenous nations and other VCs that may be affected by changes in noise and vibration levels.	
IAAC-R2-98	Peter Ballantyne Cree Nation – Technical Review of Round 1, Package 2 Information Requests	6.2.1 Changes to the atmospheric environment	7.4.2.4 Project Residual Effects Construction Federal IR Responses, Round 1, Package 2, Response to IAAC-133	The EIS Guidelines require the Proponent to describe Project-related changes in ambient day-time and night-time noise levels and vibration levels at key receptor locations, including sites used by Indigenous nations as permanent residences or on a seasonal/temporary basis, drinking and recreational water sources, sites of traditional foods and related activities, and sites used for commercial and recreational activities. In its response to IAAC-133, the Proponent states that, based on engagement with Indigenous nations and publicly available information on current use of the area by Indigenous peoples, no known areas of extended occupancy with one kilometre of the Gordon or MacLellan sites were identified, therefore no receptor points within one kilometre of the PDA were identified for the noise and vibration VC. As Project-related noise and vibration effects are not expected to extend beyond one kilometre from the PDA, annoyance effects to receptors from Project equipment, infrastructure, and activities, such as blasting, is not expected. PBCN notes concerns that the potential for Project noise and vibration to contribute to sensory disturbance and avoidance behaviours for wildlife and Indigenous land users is not well understood. Further, while current use sites or areas used for the exercise of Indigenous rights within one kilometre of the PDA have not been identified to date, Indigenous nations have established rights to use areas within one kilometre of the PDA for the exercise of their rights and traditional and cultural practices. While those areas may not be regularly used currently for the exercise of rights, they may be used infrequently, particularly for hunting if game were to move into the area, or may be used in the future. This information is required to support the Agency's understanding of potential Project effects to Indigenous nations and other VCs that may be affected by changes in noise and vibration levels.	a) Should Indigenous land users be present within one kilometre of the PDA during Project activities that may result in elevated noise and vibration levels, describe potential effects, including sensory disturbance, avoidance behaviours, effects to current use and the ability to exercise rights, and potential health effects. i. Describe mitigation measures that will be implemented to address any effects identified in a). b) Describe adaptive management and follow-up and monitoring measures that will be implemented to monitor for potential Project-related effects of noise and vibration to Indigenous receptors that may be present within one kilometre of the PDA, given that Indigenous nations have established rights to use lands in that area. Refer to IAAC-R2-04 for further details regarding information requirements for adaptive management plans.
IAAC-R2-99	Chemawawin Cree Nation - Technical Review of Round 1	6.3.4 Indigenous peoples 6.4 Mitigation measures	7.4.2.3 Mitigation 7.4.2.4 Project Residual Effects	The EIS Guidelines require the Proponent to describe technically and economically feasible mitigation measures that will be implemented, as well as describe monitoring and follow-up programs designed to verify the effectiveness of mitigation measures.	a) Describe potential effects, including sensory disturbance, avoidance behaviours, effects to current use and the ability to exercise rights, and potential Indigenous health effects should Indigenous peoples be present on unoccupied Crown land in the vicinity of the Project during blasting activities.

	Information Requests Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests Peter Ballantyne Cree Nation – Technical Review of Round 1, Package 2 Information Requests Health Canada – Technical Review of Round 1, Package 2 Information Request Responses	8.0 Follow-up and Monitoring Programs	7.9 Follow-up and Monitoring 23.5.8 Noise Monitoring Plan Federal IR Responses, Round 1, Package 2, Response to IAAC-135	In the EIS, the Proponent states that, to meet the Health Canada overpressure level target of 125 dBL, the blast charge reduction to 85 kg per hole per delay is required. In its response to IAAC-135, the Proponent states that a reduction in blast charge is not necessary to achieve an overpressure of 125 dBL in areas of unoccupied Crown land in the vicinity of the Project, as these areas are not occupied seasonally or permanently, and therefore are not included as receptor locations. PBCN expresses concerns with the Proponent's conclusion that areas of unoccupied Crown land in the vicinity of the Project are not occupied seasonally or permanently. While current use sites or areas used for the exercise of Indigenous rights in the vicinity of the Project may not have not been identified to date, Indigenous nations have established rights to use unoccupied Crown lands for the exercise of their rights, and traditional and cultural practices. While those areas may not be regularly used currently for the exercise of rights, they may be used infrequently, particularly for hunting if game were to move into the area, or may be used in the future. The Proponent also notes in its response to IAAC-135 that a communication mechanism will be established to distribute information and accept inquiries from Indigenous nations and land users. Indigenous communities and land users will be informed on an ongoing basis regarding blast monitoring results and anticipated blasting schedules. Further details regarding the Proponent's communication plan are required, including a description of the Indigenous nations that will be informed of blasting activities, the mechanisms for disseminating information and blasting schedules, how the Proponent will ensure that Indigenous nations are given sufficient notice in advance of blasting activities, and how the Proponent will respond to and accommodate concerns regarding the blasting schedule and effects of blasting. This information is required to support the Agency's understanding of potential Project effects to Indigenous nations and other VCs that may be affected by changes in noise and vibration levels.	i. Describe mitigation measures that will be implemented to address any effects identified in a), including the blast charges will be used to maintain noise and vibration levels within regulatory guidelines on unoccupied Crown land in the vicinity of the Project where Indigenous peoples may be present. b) Describe adaptive management and follow-up and monitoring measures that will be implemented to monitor for potential effects of blasting to Indigenous receptors that may be present on unoccupied Crown lands in the vicinity of the Project, given that Indigenous nations have established rights to use lands in that area. Refer to IAAC-R2-04 for further details regarding information requirements for adaptive management plans. c) Provide further details regarding the Proponent's communication plan with respect to blasting, including a description of the Indigenous nations that will be informed of blasting activities and monitoring results, the mechanisms for disseminating information and blasting schedules, how the Proponent will ensure that Indigenous nations are given sufficient notice in advance of blasting activities, and how the Proponent will respond to and accommodate concerns regarding the blasting schedule and effects of blasting.
Geology and Geochemistry					
IAAC-R2-100	Natural Resources Canada – Technical Review of	6.1.2 Geology and geochemistry	Volume 4, Appendix F: Geochemistry Baseline Technical Data	The EIS Guidelines require the Proponent to provide a geochemical characterization of expected mine material, including changes to water quality attributed to ARD and ML.	a) Describe the chemical composition for lithologies at the MacLellan and Gordon sites according to the worst case scenario that may reasonably occur, including the presence of materials with high sulphur content and low NP.

	Round 1, Package 2 Information Request Responses	6.2.2 Changes to groundwater and surface water	Report, 3.4.2 Characterization of Composite Samples; 3.4.3 Kinetic Tests Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials. Mine Environment Neutral Drainage (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. Sexsmith, K., D. MacGregor, and A. Barnes. 2015. *Comparison of Actual and Calculated Lag*	In its response to IAAC-95 and IAAC-99, the Proponent provides tables summarizing the average chemical composition of each lithology for the MacLellan and Gordon sites and the results of acid-base accounting for samples subjected to kinetic testing. NRCan notes that the Proponent does not analyze worst-case conditions, as recommended in NRCan's *Manual for Drainage Chemistry from Sulphidic Geologic Materials* (2009); specifically, material with high sulphur content and low neutralization potential (NP) that can produce problematic drainage chemistry in terms of ARD and ML and which can negatively impact site water drainage. This also has implications for the estimated time to onset of ARD and assumptions made in the water quality model (i.e. that the mine rock with not produce ARD), which could occur if PAG waste rock is not sufficiently blended with non-PAG waste rock and/or stored on the edges or top of the waste rock pile. Further information regarding worst case conditions for sulphur content and NP is required with respect to waste segregation, management of waste rock, low grade ore, exposed pit walls, and water management and treatment. The Proponent must also update the water and sediment quality predictions model, specifically the determination of acidic loading rates, to include this information and assess potential effects to VCs should PAG waste be insufficiently blended or placed on the edge or top of the storage facility. With respect to the results of acid-base accounting for samples subjected to kinetic testing provided in the Proponent's response to IAAC-99, NRCan notes that metal leaching potential under acidic conditions has not been captured in the humidity cell tests completed to date. It is therefore not possible to confirm that PAG samples from the Gordon and MacLellan sites would maintain leachate concentrations below the limits defined in the MDMER in the long-term. This factor must be considered in water and sediment quality modelling to ensure an accurate reflection of potential effects to VCs. In its response to IAAC-99, the Proponent notes that a conservative estimate of depletion of buffering capacity for the argillite unit is three years based on a NP depletion rate of 25 $CaCO_3$ mg/kg/week and a minimum NP of 4.2 $CaCO_3$ kg/t as measured in PAG samples. NRCan notes that it is unclear how these depletion rates were calculated. Standard practice is to calculate the lag time from laboratory kinetic test results on PAG samples by applying various assumptions; however, this approach is	i. Based on this information, revise the estimated time to onset of ARD and revise the assessment of metal leaching potential under acidic conditions. ii. Based on the revised estimate and assessment referred to in i), update the water and sediment quality model. Provide a sensitivity analysis that considers ARD through imperfect segregation or blending of PAG rock. iii. Revise the assessments of potential effects to VCs to reflect the updated information and analyses discussed in i) and ii). iv. Should new or worsened potential effects be identified in i) through iii), describe mitigation and follow-up and monitoring measures that will be implemented to address any effects identified and to limit ARD/ML to the extent possible if the worst case scenario described in a) were to occur. b) Describe options for mine waste management that will or may be implemented to minimize ARD/ML, including considerations for geology, planned mine sequencing, and operational practicality. i. Provide a rationale for the preferred options for both the Gordon and MacLellan sites. ii. Describe how mine rock blending will be undertaken to limit the size of hot spots and reduce the potential for ARD/ML. c) Provide a detailed plan to test PAG samples from the MacLellan site and argillite from the Gordon site, including static, mineralogy, and kinetic tests as recommended in NRCan's *Manual for Drainage Chemistry from Sulphidic Geologic Materials* (2009), prior to construction to verify the results of the ARD/ML assessment. i. Describe how the Acid Rock Drainage and Metal Leaching Management and Monitoring Plan (see IAAC-R2-101) will be updated to account for changes in predicted ARD onset time based on observed acidic leachate in the kinetic test

			Times in Humidity Cell Tests. 10thInternational Conference on Acid Rock Drainage & IMWA Annual Conference. Federal IR Responses, Round 1, Package 2, Response to IAAC-95 Federal IR Responses, Round 1, Package 2, Response to IAAC-99	theoretical and does not consider the increasing rate of acid production once ARD has commenced. If the above depletion rate calculations were based on this standard approach, calculations must be updated when acidic leachate is observed from PAG samples. Consideration should be given to the results reported by Sexsmith et al. (2015), who found that actual lag time for PAG kinetic samples are often shorter than calculated times for the same sample. NRCan also notes that, for the Gordon site argillite unit, eight of the 11 tested samples are interpreted to be PAG with the average total sulphur and NP values skewed by the remaining three samples. The argillite composite sample (FL S2C) represents average total sulphur and NP and has an uncertain ARD potential (NPR 1.1), and thus does not capture the potential risk associated with ARD/ML. For the MacLellan Site, the two composite waste rock samples "ML WR S>1%" and "ML WR Avg" both report similar sulphide mineralogy, including an average NP and uncertain ARD potential based on NPR values between one and two. With 19% of the 160 mine rock samples classified as PAG, consideration must be given to testing more material with higher sulphide content and lower NP to ensure that samples are reflective of actual conditions and/or taking a precautionary approach to developing mitigation measures to address the uncertainty in sampling accuracy. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to water quality.	samples. d) Describe how buffering capacity depletion rates for the argillite unit were calculated. If the noted standard approach to these calculations were used, revise the calculations of buffering capacity depletion rates to consider the increasing rate of acid production once ARD has commenced and provide updated values. e) Describe the level of uncertainty with respect to the predictions of chemical composition of lithologies for the Gordon and MacLellan sites, including ARD and ML potential. f) Describe the assumptions that were used to derive predictions regarding the chemical composition of lithologies for the Gordon and MacLellan sites and comment on how those assumptions may influence the uncertainty of predictions.
IAAC-R2-101	Natural Resources Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.1.2 Geology and geochemistry 8.0 Follow-up and monitoring programs	Volume 4, Appendix F: Geochemistry Baseline Technical Data Report, 3.0 Methods; 4.6 ARD Volume 4, Appendix F: Block modelling results	The EIS Guidelines require the Proponent to provide a geochemical characterization of expected mine material such as waste rock, ore, low grade ore, tailings, overburden and potential construction material in order to predict ML and ARD potential. The Proponent is also required to describe follow-up and monitoring programs 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. In its response to IAAC-97, the Proponent states that an Acid Rock Drainage and Metal Leaching Management and Monitoring Plan will be developed prior to Project construction. Insufficient information is provided to determine whether the proposed plan will be sufficient to verify the accuracy of the effects assessment and to determine the effectiveness of	a) Provide details of the Acid Rock Drainage and Metal Leaching Management and Monitoring Plan for the Project, including: i. the parameters to be measured/monitored; ii. methods that will be used to sample and test mine rock; iii. study design and/or the desired outcomes of the study; iv. planned protocols; v. monitoring locations; vi. the schedule of monitoring activities; vii. contingency measures to be implemented;

			Geochemical Baseline Technical Data Validation Report, 2.0 Existing Data Federal IR Responses, Round 1, Package 2, Response to IAAC-97 Federal IR Responses, Round 1, Package 2, Response to IAAC-98	mitigation measures. Further details are required regarding the parameters to be measured/monitored, study design, planned protocols, monitoring locations, schedule of monitoring activities, contingency measures to be implemented, the thresholds or triggers that will be used to determine when to implement contingency measures, and plans for reporting the results of the follow-up and monitoring program to federal and provincial regulators and Indigenous peoples, including the timing and frequency of reports. In its response to IAAC-97 and the EIS, the Proponent discusses the ARD block model and states that the breakdown of PAG mine rock from the MacLellan site is predicted to be lower based on the block model results. Specifically the block model predicts 14% PAG rock and 15% uncertain rock at the MacLellan site, while the geochemistry baseline testing program predicts that 28% of samples at the MacLellan site are PAG and 13% are uncertain. NRCan notes that the difference between the two predictions is 12% of the total tonnage of waste rock, which could result in PAG material being managed as non-PAG at the MacLellan site. The more robust sampling program for the block model (i.e. 20,782 samples) assesses ARD potential using NP derived from statistical analysis, as the Proponent notes in the EIS. A detailed evaluation comparing the measured NP from the geochemical baseline program and the statistically derived NP must be completed to verify that the predicted lower quantity of PAG rock for the MacLellan site is valid. It is unclear how this evaluation will be included in the Acid Rock Drainage and Metal Leaching Management and Monitoring Plan. The Proponent also notes in its response to IAAC-97 and in the EIS that, if the average sulfur content in the block is below 0.11%, a block would be classified as non-PAG and that PAG and non-PAG materials will be physically segregated. NRCan notes concerns regarding the feasibility of physical segregation of mine rock should PAG and non-PAG materials be highly interlayered. NRCan also notes that the multi-element scan includes parameters of concern identified in the EIS and observed during monitoring of the historical mine features, which the Proponent reports have been impacted based on elevated sulphate, arsenic, and other metal concentrations for the MacLellan site, and ammonia and selenium for the Gordon site. In its	viii. the thresholds or triggers that will be used to determine when to implement contingency measures; and ix. plans for reporting the results of the follow-up and monitoring program to federal and provincial regulators and Indigenous peoples, including the timing and frequency of reports. b) Describe strategies that will be included in the Acid Rock Drainage and Metal Leaching Management and Monitoring Plan to manage, monitor, and mitigate neutral mine drainage and metal leaching from waste rock stockpiles. Describe how metal(loids) of concern will be monitored and included in the block model for the identification of mine rock with higher metal leaching potential. c) Describe how the Proponent will integrate information from the Acid Rock Drainage and Metal Leaching Management and Monitoring Plan into the ARD/ML block model and validate predictions for PAG mine rock. i. Include a comparison of the statistically derived NP from exploration assay data and NP results from the geochemistry baseline program for each lithology, considering the spatial distribution of results from both data sets. d) Evaluate the feasibility of physical segregation of PAG and non-PAG mine rock should these materials be highly interlayered.

				response to IAAC-98, the Proponent notes that future mine rock from the Gordon site contains various trace metals at higher concentrations than observed in the historic mine rock. NRCan notes concerns that metal(loid)s of concern have not been included in the block model, and notes that, should metal(loid) leaching be correlated with total metal(loid) content, metal(loid)s of concern must be considered to ensure that rock with elevated neutral mine drainage potential is managed appropriately during operations to minimize impacts to the receiving environment in the post-closure phase. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to water quality.	
IAAC-R2-102	Natural Resources Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.1.2 Geology and geochemistry	Volume 4, Appendix F Geochemistry Baseline Technical Data Report 3.3.1 Solid Samples Appendix C Geochemical Baseline Technical Data Validation Report 4.0 Closure Federal IR Responses, Round 1, Package 2, Response to IAAC-101	The EIS Guidelines require the Proponent to provide a geochemical characterization of expected mine material, including changes to water quality attributed to ARD and ML. In its response to IAAC-101, the Proponent provides maps and tables describing the locations of drill holes where overburden samples were collected. NRCan notes that all overburden samples were collected from the perimeter of the pit outline at both the Gordon and MacLellan sites. Overburden above the mineralized zone can contain elevated concentrations of sulphide minerals and metals if it was developed through weathering of the underlying bedrock, which could limit use of this material for construction purposes or require special management. Further information is required to understand how the Proponent will consider this information in developing the Acid Rock Drainage and Metal Leaching Management and Monitoring Plan. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to water quality.	a) Describe how sampling and testing of overburden within the pit footprint prior to or during construction to confirm the ARD/ML potential of this material and its appropriate use and/or management will be included in the Acid Rock Drainage and Metal Leaching Management and Monitoring Plan. Include a description of the parameters to be measured, sampling locations, contingency measures to be implemented should materials contain elevated sulphide concentrations, and the thresholds or triggers that will be used to determine when to implement contingency measures. b) Describe the level of uncertainty with respect to predictions of potential effects to VCs based on data from overburden samples. i. Describe the assumptions that were used to derive predictions regarding potential effects to VCs based on this data and comment on how those assumptions may influence the uncertainty of predictions.
IAAC-R2-103	Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and	6.1.2 Geology and geochemistry 6.2.2 Changes to groundwater and surface water	22.5.1 Tailings Management Facility Malfunction Volume 4, Appendix F	The EIS Guidelines require the Proponent to provide a geochemical characterization of expected mine material, including changes to water quality attributed to ARD and ML. The Proponent is also required to describe potential Project effects to surface water and groundwater, including changes to water quality attributed to ARD and ML associated	a) Describe how ARD formation in tailings throughout the Project life will be included in the Acid Rock Drainage and Metal Leaching Management and Monitoring Plan. See IAAC-R2-101 for a list of information that must be provided regarding this plan.

	2 Information Request Responses	6.6.1 Effects of potential accidents or malfunctions	Geochemistry Baseline Technical Data Report Geochemical Baseline Technical Data Validation Report Federal IR Responses, Round 1, Package 2, Response to IAAC-102	with the storage of waste rock, ore, low grade ore, tailings, overburden and potential construction material. In its response to IAAC-102, the Proponent describes how ARD onset time for tailings were calculated and notes that, while the composition of tailings will change depending on ore feed, the most relevant samples are the master composite sample (CND 2P) and composite MacLellan tailings samples (CND 5 and CND2P), representing the surface of the tailings at closure. The MMF notes that, while composite samples are the best information available at this time to estimate ARD onset time, the data available is limited. It is unclear how the Proponent will monitor ARD formation in tailings throughout the Project life or how the Proponent plans to involve Indigenous nations in the development of geochemical follow-up and monitoring programs to verify predictions with respect to ARD onset time in tailings. In its response to IAAC-102, the Proponent describes options that were considered to manage seepage from tailings during all phases of the Project. The Proponent also notes that, while discharge from the TMF during normal operations is not anticipated, should discharge be required, it will be monitored and treated to meet relevant federal and provincial regulatory requirements, including, the MDMER. The MMF notes concerns that the MDMER does not provide sufficiently conservative effluent criteria for the protection of Manitoba Métis community members. Further, while discharges from the TMF may meet federal and provincial discharge criteria, the MMF is concerned that insufficient information has been provided to confirm that the treatment methods selected will reduce contaminant levels in discharge to the lowest levels possible. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to water quality.	b) Should discharge of tailings from the TMF be required, describe the method(s) that have been selected or are being considered to treat effluents. i. Describe the anticipated effectiveness of each proposed treatment option that were considered or are being considered. ii. If a treatment option has been selected, provide a rationale for why it was selected, including how the chosen treatment method will reduce contaminant concentrations to the greatest extent possible. iii. Describe the anticipated timing and duration of discharges from the TMF following treatment, including the time of year/season, and describe how release of this treated effluent may affect VCs, including surface water quantity and quality, fish and fish habitat, and Indigenous peoples. iv. If new or worsened potential effects to VCs are identified in iii), describe mitigation and follow-up and monitoring measures that will be implemented to address effects.
Riparian, Wetland, and Terrestrial Environments					
IAAC-R2-104	Impact Assessment Agency of Canada	3.2.3 Spatial and temporal boundaries 6.2.3. Changes to riparian, wetland	8.4.2.3 Project Residual Effects 11.1.4.1 Spatial Boundaries	The EIS Guidelines require the Proponent to describe the spatial and temporal boundaries selected for each VC and provide a rationale for each boundary. Spatial boundaries are to be defined taking into account the appropriate scale and spatial extent of potential environmental effects; community knowledge and Indigenous traditional knowledge; current use	a) Describe how Indigenous knowledge and/or other information from each Indigenous nation regarding potential effects to vegetation and wetlands, including areas of importance for current use and the exercise of rights, was considered in establishing spatial and temporal

	Mathias Colomb Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses Peter Ballantyne Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses	and terrestrial environments	11.4.6 Project Residual Effects Federal IR Responses, Round 1, Package 3, Response to IAAC-146	by Indigenous nations; and ecological, technical, social, and cultural considerations. In its response to IAAC-146, the Proponent states that the wetlands and vegetation LAA includes a 100 metre buffer around the furthest groundwater drawdown contours, which represents the maximum area within which Project environmental effects can be predicted or measured with a reasonable degree of accuracy and confidence. The Proponent also notes that Project-specific TLRU studies completed by Indigenous nations include boundaries that differ from those chosen by the Proponent for the environmental assessment, but that traditional use sites, activities, and resources beyond the spatial boundaries defined the EIS are considered in the assessment. MCCN notes concerns that it is not apparent how information, including the location of and values associated with important vegetation and wetland resources, identified in its Traditional Knowledge and Use Study (submitted to the Proponent on June 3, 2021), was taken into account in assessing potential effects to vegetation and wetlands. PBCN and MCCN also express concerns that the Proponent did not engage with Indigenous nations regarding the selection of spatial and temporal boundaries for the assessment of Project effects to vegetation and wetlands. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples, migratory birds, species at risk listed under Schedule 1 of the *Species at Risk Act* (SAR), and other VCs that may be affected by changes to vegetation and wetlands.	boundaries for the vegetation and wetlands VC. b) Describe the disparity between the Proponent's view and the Indigenous nations' view(s) of the selected spatial and temporal boundaries for the wetlands and vegetation VC effects assessment, and provide a rationale for the Proponent's view. c) Describe how any new information from Indigenous nations provided before the end of the Agency's assessment will be integrated into the assessment and provided to the Agency. i. Describe how the Proponent considered information provided by or collected from each Indigenous nation, including information gathered through engagement activities and TLRU studies, in the assessment of potential Project effects to vegetation and wetlands, including traditional and cultural use sites, sites of importance for the exercise of rights, and resources/species of importance, including information provided by MCCN in its Traditional Knowledge and Use Study. ii. If this information was not considered, revise the assessment of potential Project effects to vegetation and wetlands and any related VCs, including the residual and cumulative effects assessments, to consider information provided by or collected from Indigenous nations. d) If new or worsened potential effects are identified, describe mitigation and follow-up and monitoring measures that will be implemented to address effects.
IAAC-R2-105	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical	6.2.3. Changes to riparian, wetland and terrestrial environments	8.4.2.3 Project Residual Effects 11.4.6 Project Residual Effects Federal IR Responses, Round	The EIS Guidelines require the Proponent to describe Project-related landscape disturbance; changes to the habitat of migratory and non-migratory birds; and structural changes and fragmentation of riparian habitat of terrestrial environments and wetlands frequented by birds (i.e. types of cover, ecological unit of the area in terms of quality, quantity, diversity, distribution and functions).	a) Describe all potential indirect effects of the Project to vegetation (including vegetation classes) and wetlands, and associated plant species of importance that may be indirectly affected by edge effects associated with clearing, dust deposition, and/or the introduction and spread of invasive species and weeds. Describe the spatial extent and distribution of indirect effects.

	Review of Round 1, Package 3 Information Request Responses		1, Package 3, Response to IAAC-146 Federal IR Responses, Round 1, Package 3, Response to IAAC-147	In its response to IAAC-146 and IAAC-147, the Proponent indicates that direct and indirect effects to vegetation and wetlands may result from vegetation clearing, changes in surface water and groundwater flow patterns, and groundwater drawdown. MCCN notes concerns that the Proponent has not fully characterized potential indirect effects of the Project to vegetation and wetlands, such as the extent to which each vegetation class, and associated plant species of importance, may be indirectly affected by edge effects associated with clearing, dust deposition, and/or the introduction and spread of invasive species and/or weeds. The Proponent also states in its response to IAAC-147 that the Gordon site is expected to directly affect 269.5 hectares (ha) of land (i.e. 119.4 ha of native upland and 64.8 ha of wetland habitat) and indirectly result in the loss of 660.0 ha of wetlands. The MacLellan site is expected to directly affect 987.5 ha (i.e. 476.8 ha of native upland and 336.2 ha of wetland habitat) and indirectly result in the loss of 603.3 ha of wetlands. This information is required to support the Agency's understanding of potential Project effects to SAR, migratory birds, Indigenous peoples and other VCs that may be affected by Project effects to vegetation and wetlands.	i. Describe the total area for each vegetation class that may be indirectly affected by the Project as a result of the pathways identified in a). ii. Revise the assessment of potential Project effects to vegetation and wetlands and any associated VCs, including the residual and cumulative effects assessments, to consider the potential effects referred to in a). iii. Describe mitigation and follow-up and monitoring measures that will be implemented to address any effects identified in a) and/or i). b) Clarify whether direct or indirect effects are anticipated to extend into the Regional Assessment Area (RAA). If so, revise the assessment of potential Project effects to vegetation and wetlands and any related VCs to consider these potential effects. i. If new or worsened effects to VCs are identified in b), describe mitigation and follow-up and monitoring measures that will be implemented to address effects. c) Describe and provide maps showing the spatial extent and distribution of potential direct and indirect vegetation and wetland losses within the PDA, LAA, and RAA. Ensure that any additional indirect effects described in response to a) are depicted.
IAAC-R2-106	Impact Assessment Agency of Canada	3.1 Project components 3.2.1 Site preparation and construction 6.1.4 Riparian, Wetland and Terrestrial Environments	2.7.2 Site Preparation Federal IR Responses, Round 1, Package 3, Response to IAAC-149	The EIS Guidelines require the Proponent to identify environmentally sensitive areas and to describe any site clearing/grading and excavation activities that will be carried out during site preparation and construction and to describe areas to be used for topsoil storage and stockpiles (i.e. footprint, locations, volumes, development plans, and design criteria), and characterize soils in the excavation area. The Proponent is also required to describe the location and extent of wetlands likely to be affected by Project activities according to their size type (i.e. class and form) and describe the ecological function of wetlands in the area. In its response to IAAC-149, the Proponent states that site clearing and wetland removal activities will involve the use of heavy machinery,	a) Provide details regarding how pre-construction surveys, clearing, timber removal, grubbing and mulching, removal of topsoil and some overburden, soil stockpiling, wetland draining and infilling, open burning, and other activities associated with site preparation will be undertaken, and the distribution, scope, and magnitude of potential effects of the these activities within the PDA to vegetation and wetlands and associated VCs, including the total area of vegetation and wetlands to be cleared/removed and the proximity of these activities to sensitive areas. i. With respect to wetland draining specifically, describe how wetlands will be drained, where

				including bulldozers and excavators, and describes the general weed management activities that will be employed. The Proponent does not provide details regarding how pre-construction surveys, clearing, timber removal, grubbing and mulching, removal of topsoil and some overburden, wetland draining and infilling, open burning, and other activities associated with site preparation will be undertaken, or the distribution, scope, and magnitude of potential effects of the these activities within the PDA to vegetation and wetlands. Information has also not been provided regarding the size and spatial distribution of soil stockpiles and storage areas. This information is required to support the Agency's understanding of potential Project effects to migratory birds, SAR, and other VCs that may be affected by vegetation and wetland removal.	water will be directed, and where organic materials will be stockpiled. Describe potential effects to VCs in areas where water will be directed, such as effects to surface water quality and quantity and associated VCs. ii. With respect to soil stockpiling specifically, describe the size, spatial distribution, and location of soil stockpiles and storage areas. iii. Provide maps showing the spatial distribution and extent of each of the activities referred to in a). Include the location of sensitive areas in relation to areas to be disturbed. b) Describe mitigation and follow-up and monitoring measures that will be implemented to address any effects identified in a). i. If construction activities will or may overlap with sensitive areas, describe additional mitigation measures that will be implemented to limit or avoid effects to these areas.
IAAC-R2-107	IAAC-147 Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests	6.2.3 Changes to riparian, wetland, and terrestrial environments 6.4 Mitigation measures	11.4.3.3 Project Residual Effects 11.4.4.2 Mitigation Federal IR Responses, Round 1, Package 3, Response to IAAC-150	The EIS Guidelines require the Proponent to describe potential Project effects to riparian, wetland, and terrestrial environments in the context of overall landscape disturbance and wildlife habitat. The Proponent is also required to describe specific measures that will be implemented to eliminate, reduce, or control the adverse environmental effects of the Project, and to determine the effectiveness of proposed mitigation measures. In its response to IAAC-150, the Proponent describes direct and indirect effects of the Project to wetlands from the TMF. However, the anticipated magnitude, duration, and reversibility of potential effects to wetlands, including for plant species cover, composition, structure, and decomposition rates, are not characterized. Further information regarding the magnitude, frequency, and reversibility of potential effects to wetlands is required in order to assess the accuracy of the assessment, including the anticipated significance of effects, and whether proposed mitigation measures will be effective.	a) Describe the expected magnitude, duration, and reversibility of changes to wetland functions and vegetation as a result of direct and indirect effects of the TMF. i. Provide a map showing the spatial extent of direct and indirect effects to wetlands as a result of the TMF. b) Provide a rationale for how the mitigation measures described in the EIS with respect to vegetation and wetlands will adequately address the unique potential effects of the TMF at the MacLellan and Gordon sites. i. If the mitigation measures described will not address the unique potential effects associated with the TMF, describe mitigation measures that will address these effects to vegetation and wetlands, including a description of the anticipated effectiveness of proposed mitigation measures.

				In its response to IAAC-150, the Proponent refers to the EIS for a description of mitigation measures aimed at reducing potential Project effects to vegetation and wetlands, including as a result of the TMF. However, the mitigation measures described in the EIS to address Project-related changes in wetland functions are not specific to potential effects associated with the TMF. Further rationale is required to understand how these general mitigation measures will adequately address the unique potential effects of the TMF to vegetation and wetlands and/or mitigation measures specific to the anticipated effects of the TMF to vegetation and wetlands must be described. This information is required to support the Agency's understanding of potential Project effects to migratory birds, SAR, Indigenous peoples, and other VCs that may be affected by Project-related effects to vegetation and wetlands.	ii. Revise the assessment of potential Project effects to vegetation and wetlands and any related VCs to consider any additional mitigation measures identified in i).
IAAC-R2-108	Impact Assessment Agency of Canada Sayisi Dene First Nation – Technical Review of Round 1, Package 3 Information Request Responses Peter Ballantyne Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses	6.1.4 Riparian, wetland, and terrestrial environments 6.2.3 Changes to riparian, wetland and terrestrial environments 6.3.4 Indigenous peoples	11.2 Existing Conditions for Vegetation and Wetlands 11.4.6 Project Residual Effects Federal IR Responses, Round 1, Package 3, Response to IAAC-151	The EIS Guidelines require the Proponent to provide baseline information for plant and animal species (i.e. abundance, distribution and diversity) and their habitats, with a focus on SAR or with special status that are of social, economic, cultural, or scientific significance, as well as invasive alien species and species used for traditional purposes by Indigenous nations. The Proponent is also required to describe Project-related changes to key habitat for species important for the current use of lands and resources for traditional purposes. In its response to IAAC-151, the Proponent describes the land cover types where plant species of importance to Indigenous nations are expected to occur and the observed abundance of the plant species from Project survey data. It is unclear whether the data provided represents land cover types in the PDA, LAA, and RAA, inclusive, or a smaller extent. SDFN and PBCN express concerns regarding the lack of Nation-specific baseline data presented with respect to plant species of importance to each Indigenous nation. These Nations also note that it is unclear whether, and if so how, information provided by Indigenous nations, including through engagement activities and TLRU studies, was considered in selecting plant species of importance to be included in the assessment and/or the assessment of potential Project effects to these species. The Proponent also does not discuss any limitations associated with the information used to identify plant species of importance for all Indigenous nations, including the absence of Nation-specific information for those Nations that have not	a) Describe whether the data presented regarding land cover types where plant species of importance to Indigenous nations are expected to occur represents land cover in the PDA, LAA, and RAA, or a smaller area. i. If the data does not include the entirety of the PDA, LAA, and RAA, provide revised values that represent land cover types where plant species of importance to Indigenous nations are expected to occur in the PDA, LAA, and RAA. b) Provide a rationale for how the plant species of importance selected for the assessment of potential effects to vegetation and wetlands and Indigenous peoples are representative of key species of cultural, spiritual, and traditional significance for each Indigenous nation, including species of importance for the exercise of Indigenous rights. i. Describe how information provided by each Indigenous nation, including any information related to species used for the exercise of rights, was considered in the selection of plant species of importance for the assessment of potential effects to vegetation and wetlands and Indigenous peoples, and how information from each Nation

				conducted TLRU studies and/or have not otherwise had the capacity to collect this data. It is also unclear what assumptions were made in extrapolating information from one Nation to another, in the event that Nation-specific information was not available for one or more Nations. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples, including the current use of lands and resources for traditional purposes.	regarding the location of plant species of importance was incorporated into the assessment of potential Project effects. ii. Describe the activities that were conducted to verify the data used and conclusions formed with the applicable Indigenous nations and the outcome of these activities. iii. Identify and discuss areas of disparity between the views of Indigenous nations and the Proponent, efforts made to reconcile disparities, and a rationale for conclusions on matters for which disparity in views remains. c) Describe the level of uncertainty, limitations, and assumptions (including extrapolation of data from one Nation to another) associated with the assessment of potential Project effects to plant species of importance to Indigenous nations, including the selection of plant species, due to the absence of Nation-specific information for Nations that have not conducted TLRU studies and/or have not otherwise had the capacity to collect this data. Discuss how those assumptions may affect the level of uncertainty with respect to predictions regarding potential Project effects to VCs. i. If additional information was received from Indigenous nations since the submission of Round 1 Information Request responses, revise the assessment of potential Project effects to vegetation and wetlands and Indigenous peoples to consider this new information, including plant species or locations where these plant species are present be identified that were not previously considered. ii. If new or worsened effects are identified in response to i), describe mitigation and follow-up and monitoring measures that will be implemented to address potential effects.

					d) Describe how the Proponent will adaptively manage and monitor potential Project effects to vegetation and wetlands and Indigenous peoples, including plant species of importance to Indigenous peoples, should plant species or locations where these plant species are present be identified in the future that were not previously considered, and describe the goals/outcomes of the adaptive management plan. Refer to IAAC-R2-04 for further details regarding information requirements for adaptive management plans.
IAAC-R2-109	Impact Assessment Agency of Canada Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests	6.4 Mitigation Measures	11.3 Project Interactions with Vegetation and Wetlands 11.4 Assessment of Residual Environmental Effects on Vegetation and Wetlands Federal IR Responses, Round 1, Package 3, Response to IAAC-153	The EIS Guidelines require the Proponent to identify technically and economically feasible mitigation measures to address potential Project effects to VCs. The Proponent is also required to identify adaptive management measures that would be informed by follow-up programs. In its response to IAAC-153, the Proponent states that the standard practices that will be employed to mitigate potential effects to landscape diversity and wetland functions include reducing removal of upland and wetland vegetation to the extent practicable to limit effects to wetland water quality, use of sediment fencing to prevent erosion and siltation into wetlands, and establishing 30 metre buffers around wetlands where possible. Limited details were provided regarding how and where these mitigation measures will be implemented and their anticipated effectiveness. For instance, it is unclear for which wetlands 30 metre buffers will be established (e.g. only wetlands within the PDA or wetlands within the LAA and RAA as well). Further, the mitigation measures described are specific to mitigating potential effects to wetlands associated with sedimentation and erosion. Also noted by the Proponent in the EIS, the Project may result in other direct and indirect effects to wetlands, such as through effects to groundwater and surface water that may affect the hydrology and water quality of wetlands. The Proponent also notes in its response to IAAC-153 that the TMF will be capped and a native seed mix will be applied to reduce potential sediment inputs to wetlands near the PDA and limit changes to wetland water quality. Details (e.g. timelines, process steps, equipment to be used, how coverage will occur if liquid tailings are still present, etc.) have not been provided regarding how this mitigation measure will be undertaken and at	a) Describe mitigation measures proposed for implementation to address all potential direct and indirect effects to wetlands, in addition to those described to mitigate potential effects associated with erosion and sedimentation, and discuss their anticipated effectiveness. i. If any direct or indirect effects to wetlands, including wetland function, cannot be mitigated, describe the spatial extent and location of wetland areas/functions that will be lost, including a map of these locations and the total area of unmitigated wetland loss. ii. If the Proponent is planning to utilize wetland offsets to compensate for Project-related wetland losses, describe the location(s) of wetland offsets selected or are being considered, the potential direct and indirect impacts of the offsets, and how the offsets will effectively compensate for the loss of wetland functions in the PDA and study areas. b) Describe if all mitigation measures identified in a) will be applied to all wetlands. If not, provide a rationale as to why. For instance, if a 30 metre buffer will not be established around all wetlands, explain why. i. With respect to capping and reseeding the TMF, describe the anticipated timelines and how coverage will occur if liquid tailings are still present.

				what point in the decommissioning process (i.e. before or after all liquid tailings are directed to the TMF). This information is required to support the Agency's understanding of potential Project effects to migratory birds, SAR, Indigenous peoples, and other VCs that may be affected by changes to vegetation and wetlands. **See Annex I for related advice.**	c) Describe the adaptive management plan that will be implemented to address any unanticipated effects to wetlands and/or to address potential Project effects if mitigation measures prove to be ineffective or less effective than anticipated. Refer to IAAC-R2-04 for further details regarding information requirements for adaptive management plans.
IAAC-R2-110	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests	4.2.2 Community knowledge and Aboriginal traditional knowledge 6.5 Significance of residual effects	11.4.6 Project Residual Effects 11.7.1 Significance of Project Residual Effects 11.54 Change in Species Diversity and 11.5.5 Change in Wetland Function Federal IR Responses, Round 1, Package 3, Response to IAAC-157	The EIS Guidelines require the Proponent to assess the significance of potential adverse residual environmental effects, following the implementation of mitigation measures, and identify the significance ratings criteria and terms used to describe the level of significance, including magnitude, geographic extent, timing, duration, frequency, reversibility, and ecological and social context. The Proponent is also required to integrate Indigenous traditional knowledge into the definition of significance criteria and analysis. In its response to IAAC-157, the Proponent notes that the ability of Indigenous nations to continue traditional practices outside of the PDA will be maintained and that indirect effects to wetlands are expected to persist until the open pits fill and groundwater levels return to baseline/existing conditions. PBCN and MCCN note that it is unclear how the Proponent concluded that the viability of wetland functions and plant species of importance to Indigenous nations will be maintained during Project construction, operation, and closure, given that effects to wetlands and vegetation, including indirect losses of wetlands and vegetation, are expected to extend into the LAA and persist for many years (i.e. approximately 10 years for the Gordon site and 50 years for the MacLellan site). In its response to IAAC-157, the Proponent also notes that effects threatening the long-term persistence or viability of a plant species or community, or contrary to or inconsistent with the goals, objectives or activities of recovery plans, action plans, and management plans, or the viability of wetland functions and plants of interest to Indigenous nations were considered significant. The Proponent does not discuss whether Project effects to vegetation and wetlands may be contrary to or inconsistent with the goals, objectives or activities of recovery plans, action plans and management plans. For instance, it is unclear whether vegetation	a) Provide a rationale for how the Proponent concluded that the viability of wetland functions and plant species of importance to Indigenous nations will be maintained during Project construction, operation, and closure, given that effects to wetlands and vegetation, including indirect losses, are expected to extend into the LAA and persist for many years. b) Provide a rationale as to why the Proponent concluded that potential Project effects to vegetation and wetlands are not contrary to or inconsistent with the goals, objectives or activities of recovery plans, action plans, and management plans and include a rationale for each. i. If the Project's effects to achieving the goals, objectives or activities of recovery plans, action plans, and management plans were not considered, revise the assessment of residual effects to vegetation and wetlands and the assessment of the anticipated significance of effects to consider this factor.

				and wetland losses may interfere with the goals and objectives of the federal *Recovery Strategy for the Woodland Caribou (Rangifer tarandus caribou)*. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples and other VCs as a result of changes to vegetation and wetlands.	
IAAC-R2-111	Impact Assessment Agency of Canada	8.0 Follow-up and Monitoring Programs	23.5 Environmental Monitoring and Management Plans Federal IR Responses, Round 1, Package 3, Response to IAAC-159	The EIS Guidelines require the Proponent to present a preliminary follow-up program, including the parameters to be measured, planned implementation timetable, contingency measures, and reporting mechanisms, including mechanisms to disseminate follow-up results among the concerned populations and ensure accessibility to the general public. In its response to IAAC-159, the Proponent provides details of the Soil Management and Rehabilitation Plan and Vegetation and Weed Management Plan for the Project, including the parameters to be measured, monitoring schedules, and monitoring locations. Information was not provided regarding contingency measures that will be implemented or the thresholds or triggers that will be used to determine when to implement contingency measures should unexpected deterioration of the environment occur. Further, while the Proponent refers to distributing annual reports regarding the results of the soil and vegetation monitoring programs to regulatory authorities, Indigenous nations, and interested stakeholders, the mechanism of how this information will be disseminated is not identified. It is also unclear whether the annual reports will be accessible to the general public or through which mechanism this will be possible. This information is required to support the Agency's understanding of potential Project effects to migratory birds, Indigenous peoples, SAR, and other VCs that may be affected by Project-related changes to vegetation, wetlands, and the terrestrial environment.	a) With respect to the Soil Management and Rehabilitation Plan and Vegetation and Weed Management Plan for the Project, describe the contingency measures that will be implemented and the thresholds or triggers that will be used to determine when to implement contingency measures, should unexpected deterioration of the environment occur. b) Describe the methods that will be used to share the results of the follow-up and monitoring programs for the Soil Management and Rehabilitation Plan and Vegetation and Weed Management Plan with regulatory authorities, Indigenous nations, interested stakeholders, and the general public.
IAAC-R2-112	Impact Assessment Agency of Canada	6.2.3 Changes to riparian, wetland and terrestrial environments	12.3 Project Interactions With Wildlife And Wildlife Habitat	The EIS Guidelines require the Proponent to describe overall changes related to landscape disturbance in terms of the magnitude, geographic extent, duration, and frequency of effects, and whether the environmental changes are reversible or irreversible. The EIS Guidelines also require that the assessment of effects for each of the Project components and physical activities, in all phases, is based on a comparison of the	a) Describe how the frequency and severity of natural landscape disturbance, including wildfires, may change throughout the life of the Project, including the closure and post-closure phases, and how this may affect VCs, including boreal woodland caribou and other SAR. Consider potential

		6.3.3 Species at risk	12.4.2 Assessment of Change in Habitat Federal IR Responses, Round 1, Package 3, Response to IAAC-161 Federal IR Responses, Round 1, Package 3, Response to IAAC-162	biophysical and human environments between the predicted future conditions with and without the Project, including the overall description of changes related to landscape disturbance. In its response to IAAC-161, the Proponent states that recovery of SAR habitat is possible provided that burned areas from wildfires do not burn again. In its response to IAAC-162, the Proponent also states that wildfire disturbance will continue to alter parts of the LAA and RAA throughout the life of the Project. It is unclear how natural landscape disturbance may change throughout the life of the Project, including the closure and post-closure phases. For instance, climate change may result in a change in the frequency and severity of wildfires in the area of the Project, which may affect the recovery of SAR habitat and the severity of potential Project effects to SAR through habitat loss. This information is required to support the Agency's understanding of potential Project effects to SAR and their habitat.	changes to the frequency and severity of natural landscape disturbances associated with climate change. i. If the anticipated changes to the frequency and severity of natural landscape disturbances, including those associated with climate change, described in response to a) were not considered in the effects assessments for VCs, revise the effects assessments for all applicable VCs, including the residual and cumulative effects assessments and the assessment of the anticipated significance of effects, to consider this factor. ii. Describe mitigation and follow-up and monitoring measures that will be implemented to address any effects discussed in a).
Wildlife and Wildlife Habitat					
IAAC-R2-113	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1	6.1.4 Riparian, Wetland and Terrestrial Environments 6.1.9 Indigenous peoples 6.2.3 Changes to riparian, wetland and terrestrial environments	12.2.2.1 Wildlife Species Federal IR Responses, Round 1, Package 3, Response to IAAC-160	The EIS Guidelines require the Proponent to identify wildlife species that are of social, economic, cultural, or scientific significance. The Proponent is also required to make reasonable efforts to integrate Indigenous traditional knowledge into the assessment of environmental effects and provide evidence of all efforts, and to provide Indigenous nations with reasonable opportunity to review and provide comments on the information used for describing and assessing effects on Indigenous peoples. In its response to IAAC-160, the Proponent lists wildlife species identified as being important to Indigenous nations, which were selected based on Project-specific TLRU studies from Marcel Colomb First Nation (MCFN) and the MMF, and engagement with Nations conducted to date; other TLRU studies are expected from PBCN, MCCN, and SDFN but have not been provided. It is unclear whether the information provided to the Proponent by MCCN in its Traditional Knowledge and Use Study was considered in the selection of wildlife species of importance to Indigenous nations. As this information may reveal unique interactions between the Project and species of importance to MCCN members for the exercise of rights and traditional, cultural, and spiritual practices, and/or additional species of importance that have not been identified, this information must be	a) Clarify whether the list of wildlife species of importance selected by the Proponent includes species of importance for the exercise of Indigenous rights. i. If not, provide a list of species identified by each Indigenous nation as being important for the exercise of rights. b) Revise the list of wildlife species of importance to Indigenous nations and the assessment of potential Project effects to current use and impacts to Indigenous rights, including the residual and cumulative effects assessment, to consider information provided by MCCN in its Indigenous Knowledge and Use Study, the information from the MMF, any new information provided by other Indigenous nations since submission of Round 1 Information Request responses, and any species of importance identified in a) that were not considered in the original assessment. Refer to IAAC-R2-57 for more information on the requirements for baseline data regarding Indigenous current use and impacts to rights.

	Information Requests Manitoba Metis Federation – Technical Review of Round 1, Package 3 Information Request Responses			considered. Further, the MMF notes that, while the TLRU study conducted for their Nation includes information on the current use of lands and resources by MMF members and wildlife/wildlife habitat, it does not list or specifically mention species of importance and no distinction was made as to whether or not the species listed are of importance. As such, the focal species specific to the MMF may not have been accurately accounted for. PBCN also notes concerns regarding the lack of Nation-specific baseline data presented with respect to species of importance to Nations other than the MMF and MCFN, it is not clear whether wildlife species of importance for the exercise of rights are included in the list presented by the Proponent, and the limited engagement conducted by the Proponent with respect to the selection of wildlife species of importance. In its response to IAAC-160, the Proponent notes that species that do not occur in the RAA (e.g. deer, barren-ground caribou, etc.) were not selected as focal species, even though they may have been noted as species of importance by Indigenous nations. The MMF notes that their TLRU report indicates that several members of the Manitoba Métis Community have harvested deer and caribou within the study areas defined for the Project. As such, the Proponent must reassess potential effects to wildlife species of importance to Indigenous nations to include deer and potentially barren-ground caribou. The Proponent also does not discuss the limitations and uncertainty associated with the information used to inform the list of wildlife species of importance to Indigenous peoples and the assessment of effects to current use and Indigenous rights, given the absence of Nation-specific information for some Indigenous nations, or what assumptions were made in extrapolating information from one Nation to another. Further, it is unclear whether the information that was used to inform the assessment of effects to Indigenous peoples, including current use, species of importance to Indigenous nations, and impacts to rights, including the analysis and conclusions that have been presented based on this data, has been verified with the applicable Indigenous nations to ensure that it is representative of their Nation and that data has been interpreted and applied correctly. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples, including current use and	i. If new or worsened effects are identified in b), describe mitigation and follow-up and monitoring measures that will be implemented to address effects. ii. Describe the activities that were conducted to verify the data used and conclusions formed with the applicable Indigenous nations and the outcome of these activities. iii. Identify and discuss areas of disparity between the views of Indigenous nations and the Proponent, efforts made to reconcile disparities, and a rationale for conclusions on matters for which disparity in views remains. c) Describe Proponent plans to address Indigenous nations' concerns regarding the level of engagement conducted with respect to the list of wildlife species of importance to Indigenous nations. d) Describe the level of uncertainty and limitations associated with the list of wildlife species of importance selected, and the corresponding effects assessments for current use and impacts to rights, due to the absence of Nation-specific information for some Nations. Describe assumptions that were made, including any extrapolation of data from one Nation to another, and discuss the impact of those assumptions on the level of uncertainty with respect to predictions regarding potential Project effects.

				impacts to rights, as a result of Project effects to wildlife species of traditional, cultural, and spiritual importance.	
IAAC-R2-114	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests	3.2.3 Spatial and temporal boundaries 6.1.7 Migratory birds and their habitat 6.2.3 Changes to riparian, wetland and terrestrial environments 6.3.2 Migratory birds 6.3.3 Species at risk	12.4 Assessment of Residual Environmental Effects on Wildlife and Wildlife Habitat 12.7.1 Significance of Project Residual Effects Federal IR Responses, Round 1, Package 3, Response to IAAC-147 Federal IR Responses, Round 1, Package 3, Response to IAAC-161 Federal IR Responses, Round 1, Package 3, Response to IAAC-169	The EIS Guidelines require the Proponent to describe potential effects to migratory birds and their habitat, and any Project-related changes to the habitat of migratory and non-migratory birds, critical habitat for federally listed SAR, and important habitat for species designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). The Proponent is also required to provide a rationale for the spatial boundaries selected for the environmental assessment, including consideration of the appropriate scale and spatial extent of potential environmental effects, and to ensure that spatial boundaries reflect community and Indigenous traditional knowledge, and current use by Indigenous nations, including ecological, technical, social, and cultural considerations. In its response to IAAC-161 and IAAC-169, the Proponent states that migratory birds, SAR, species of conservation concern (SOCC), and species of importance to Indigenous nations are incorporated into the existing wildlife and wildlife habitat VC assessment and the determination of the anticipated significance of effects to the wildlife and wildlife habitat VC includes these wildlife species. As migratory birds, SAR, SOCC, and species of importance to Indigenous nations represent groups of species with unique life histories, habitat requirements, and abundance and distribution patterns, presenting aggregated conclusions with respect to potential Project effects, including the anticipated significance of effects, does not capture the unique nature in which the Project may interact with each of these groups of species. A revised, disaggregated assessment of potential effects of the Project, including residual and cumulative effects, and the anticipated significance of potential Project effects to these groups of species is required to ensure that the unique potential Project effects to each is adequately considered. In its response to IAAC-161, the Proponent indicates that the RAA for the wildlife and wildlife habitat VC is sufficient for capturing effects to migratory birds, SAR, SOCC, and species of importance to Indigenous nations as it is based on the home range size of moose, a representative, wide-ranging species. Given that all wildlife species have different home ranges and habitat needs, additional rationale is required to support the Proponent's conclusions that the home range of moose is representative of all wildlife species. It is also unclear whether Indigenous traditional	a) Provide a rationale to support the conclusion that the home range of moose is representative of all wildlife species captured under the wildlife and wildlife habitat VC. i. If the home range for moose may not be representative of potential effects and/or habitat use areas for all wildlife species, including migratory birds, define separate spatial boundaries for migratory birds, SAR, SOCC, and species of importance to Indigenous nations to reflect the unique life histories and habitat needs of these species. b) Clarify whether direct and indirect losses of vegetation and wetlands (i.e. habitat) were considered in establishing spatial boundaries for the wildlife and wildlife habitat VC. i. If not, revise the spatial boundary for the wildlife and wildlife habitat VC to include the areas where direct and indirect losses of vegetation and wetlands (i.e. habitat) are expected. c) Provide a disaggregated assessment of potential Project effects, including residual and cumulative effects, and the anticipated significance of potential Project effects for each of the following VCs, including consideration of any revised spatial boundaries discussed in a) and b): i. migratory birds; ii. SAR, as listed under Schedule 1 of the *Species at Risk Act* (SARA); iii. species designated by COSEWIC as extirpated, endangered, threatened or of special concern; and iv. species of importance to Indigenous nations. d) Considering the information provided in response to a), b), and c), revise the assessment of potential Project effects, including the residual and cumulative effects assessments, for Indigenous-related VCs (e.g. current use, impacts to

				knowledge was considered in the selection of the RAA for the wildlife and wildlife habitat VC and, if so, whether the use of the information and the selected spatial boundary was verified with Indigenous nations. Further, PBCN notes concerns that the spatial extent of the RAA was informed by a 1981 moose range sizes study and it is unclear whether this data relates to moose populations in northern Manitoba and/or Saskatchewan. PBCN also notes concerns with respect to the RAA selected for the assessment of potential Project effects to current use, which is also based on the home range of moose due to, as described by the Proponent in its response to IAAC-161, Indigenous use and reliance on moose in the area as described by MCFN. PBCN is concerned with this approach to selecting the RAA size considers input from one Indigenous nation, which may not be representative of the views and land and resource use of all Indigenous nations. In its response to IAAC-147, the Proponent discusses the anticipated extent of direct and indirect effects on vegetation and wetlands within the PDA and LAA for the Gordon and MacLellan sites. In its response to IAAC-161, the Proponent describes the criteria that were used to inform the selection of spatial and temporal boundaries for the wildlife and wildlife habitat VC. MCCN expresses concerns that, while the Proponent notes that potential habitat loss due to sensory disturbance was considered in establishing spatial boundaries for the wildlife and wildlife habitat VC, it is unclear whether direct and indirect losses of vegetation and wetlands (i.e. habitat) were considered in establishing spatial boundaries. This information is required to support the Agency's understanding of potential Project effects to migratory birds, SAR, SOCC, and Indigenous peoples, including species of importance to Indigenous nations.	rights, etc.). e) If new or worsened potential effects are identified in c) and/or d), describe species-specific mitigation and follow-up and monitoring measures that will be implemented to address potential effects. f) Describe how Indigenous knowledge was used to inform the selection of the spatial boundaries for the current use VC, wildlife and wildlife habitat VC, and the assessment of significance for any of the VCs listed in c). i. Describe the activities that were conducted to verify the data used and conclusions formed with the applicable Indigenous nations and the outcome of these activities. ii. Identify and discuss areas of disparity between the views of Indigenous nations and the Proponent, efforts made to reconcile disparities, and a rationale for conclusions on matters for which disparity in views remains. g) Describe the level of uncertainty and limitations associated with the RAA selected for the current use VC, wildlife and wildlife habitat VC, and the corresponding effects assessments, due to the absence of input from more than one Nation. Describe any assumptions made, including any extrapolation of data from one Nation to another, and discuss how those assumptions may affect the level of uncertainty with respect to predictions regarding potential Project effects. h) Clarify whether more recent information is available regarding the range sizes of moose and whether the data from the 1981 study is applicable to moose populations in northern Manitoba and/or Saskatchewan. i. If more recent data is available, compare this data to the data from the 1981 study and describe whether the RAA for wildlife and wildlife habitat is still accurate.

IAAC-R2-115	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses	3.2.2 Valued components to be examined 6.2 Predicted changes to the physical environment 6.2.3 Changes to riparian, wetland and terrestrial environments 6.3.2 Migratory birds	12.0 Assessment of Potential Effects on Wildlife and Wildlife Habitat 12.2.2.1 Wildlife Species 12.2.2.3 Habitat 12.4.2 Assessment of Change in Habitat Federal IR Responses, Round 1, Package 3, Response to IAAC-163	The EIS Guidelines require the Proponent to describe changes to the habitat of migratory and non-migratory birds and species of traditional and cultural importance to Indigenous peoples, including any losses, structural changes, and fragmentation of riparian habitat and wetlands frequented by birds. The Proponent is also required to describe potential direct and indirect adverse Project effects to migratory birds, including sensory and observable change indicators and population level effects. In its response to IAAC-163, the Proponent summarizes the existing conditions of the PDA, LAA, and RAA for wildlife habitat and the residual change in wildlife habitat in the LAA and RAA relative to each land cover class as a result of the Project. MCCN notes concerns that the data provided has not been sufficiently disaggregated to indicate the amount of habitat present before and after Project construction and operation for migratory birds and bird species of importance to Indigenous peoples. Therefore, it is not possible to determine the severity of Project effects to these species from Project-related habitat loss. It is also unclear whether the Proponent has considered the effects of potential indirect habitat losses to migratory bird species and bird species of importance to Indigenous nations. For instance, in its response to IAAC-163, the Proponent reports a total loss of 401 hectares of wetland habitat. In its response to IAAC-147, however, the Proponent states that the Project could result in indirect effects to 1,263.60 ha of wetland habitat. A rationale for this disparity has not been provided. In its response to IAAC-163, the Proponent summarizes residual effects to migratory birds and states that the criteria for residual effects characterization and the significance definition established for the assessment of wildlife and wildlife habitat was applied to all focal species and groups, including for migratory birds, and that residual effects of the Project on migratory birds are not significant. The Proponent does not provide sufficient detail to understand potential direct and indirect effects of the Project to migratory birds. Further, the Proponent concludes that effects to migratory birds will not be significant; however, there is insufficient information and rationale provided to support this conclusion, including the anticipated magnitude, duration, reversibility, and direction of effects.	a) Provide a list of all migratory bird species and bird species of importance to Indigenous nations present or potentially present in the RAA. Identify which migratory birds are considered to be of importance to Indigenous nations. b) Describe the amount of habitat currently available in the PDA, LAA, and RAA for migratory bird species and species of importance to Indigenous nations, including a description of habitat associations (i.e. land cover classes) for each species. c) Quantify the area of habitat for each species that may be directly and indirectly affected or lost as a result of the Project. Ensure that direct and indirect habitat losses/effects are differentiated. d) Describe potential direct and indirect effects of the Project to migratory bird species and bird species of importance to Indigenous nations, including potential effects related to sensory disturbance, atmospheric emissions, mortality, and impacts to bird health. e) Describe mitigation measures that will be implemented to address any effects identified in c) and d), the follow-up and monitoring program that will be implemented to verify the effectiveness of the mitigation measures proposed, and the adaptive management plan that will be employed. Refer to IAAC-R2-04 for further details regarding information requirements for adaptive management plans. f) Provide additional rationale to support the conclusion that Project effects to migratory birds will not be significant, including information regarding the anticipated magnitude, duration, reversibility, and direction of effects specific to migratory birds. i. If, based on the Proponent's response to c), d), and e), effects to migratory birds may be more severe than originally anticipated, provide a revised assessment of the anticipated significance of

				This information is required to support the Agency's understanding of potential Project effects to migratory birds and Indigenous peoples, including bird species of traditional and cultural importance to Indigenous peoples.	potential Project effects, including a rationale for the ratings selected for each criteria.
IAAC-R2-116	Impact Assessment Agency of Canada	2.4 Application of the precautionary approach 4.2.3. Existing information 6.1.8. Species at Risk 6.3.3 Species at risk	12.2.2.2 Species at Risk and Species of Conservation Concern Federal IR Responses, Round 1, Package 3, Response to IAAC-164	The EIS Guidelines require the Proponent to provide baseline data and assess potential adverse Project effects on SARA listed species and species assessed by COSEWIC as extirpated, endangered, threatened, or of special concern, including residences, seasonal movements, movement corridors, habitat requirements, key habitat areas, identified critical habitat and/or recovery habitat (where applicable), and general life history of SAR that may occur in the Project area or be affected by the Project. The EIS Guidelines also require that the Proponent utilize existing data and literature as well as surveys to provide current field data and that the precautionary approach be applied. In its response to IAAC-164, the Proponent provides a list of SAR and SOCC that are not known to regularly occupy the RAA and are therefore unlikely to be affected by the Project due to a lack of suitable breeding habitat or lack of geographic range overlap with the Project. Although some SAR and SOCC may not regularly utilize the RAA currently or their established range may not overlap with the Project area, these species may still be present in the RAA and this does not preclude potential increased use of the LAA and RAA by these species in the future. Further, although these species may not have been observed during field surveys, the Proponent should take the precautionary approach and assess potential direct and indirect effects of the Project to these species assuming that they may be present in the RAA. In the EIS, the Proponent states that yellow-banded bumble bee (*Bombus terricola*) and transverse lady beetle (*Coccinella transversoguttata*) are relatively common in the northern boreal forest; however there have been no incidental observations of these species during baseline field surveys, therefore information has not been provided regarding potential Project effects to these SAR. Given that specific field studies were not conducted to determine whether these SAR are present in the PDA, LAA, and/or RAA, further rationale is required to support the exclusion of these species from the assessment, given the publically available data that suggests that these species are relatively comment in the boreal forest.	a) Taking the precautionary approach, assess potential effects of the Project to SAR and SOCC that may be present in the PDA, LAA, and/or RAA, even infrequently. i. Revise the assessment of potential Project effects, including the residual and cumulative effects assessment, for SAR and SOCC to consider any potential effects identified in a). ii. If new or worsened potential effects are identified in a) or i), describe mitigation and follow-up and monitoring measures that will be implemented to address effects. b) Provide additional rationale to support the exclusion of yellow-banded bumble bee and transverse lady beetle from the list of SAR that may be affected by the Project, including a discussion of the limitations and uncertainty associated with basing their exclusion on the lack of incidental field observations only. i. If additional rationale cannot be provided, describe potential Project effects to yellow-banded bumble bee and transverse lady beetle, revise the assessment of potential Project effects to SAR, including the residual and cumulative effects assessments, and describe mitigation and follow-up and monitoring measures that will be implemented to address any effects identified.

				This information is required to support the Agency's understanding of potential Project effects to SAR.	
IAAC-R2-117	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests	6.2.3 Changes to riparian, wetland and terrestrial environments	12.0 Assessment of Potential Effects on Wildlife and Wildlife Habitat Table 12-12 Volume 4, Appendix M Mammal Baseline Technical Data Report Federal IR Responses, Round 1, Package 3, Response to IAAC-165	The EIS Guidelines require the Proponent to describe Project-related changes to key habitat for species of importance to Indigenous nations for the current use of lands and resources for traditional purposes. In its response to IAAC-165, the Proponent states that species of importance to Indigenous nations, such as moose, gray wolf, black bear, and beaver, are typically habitat generalists and/or use a variety of upland and wetland habitats throughout the year. Therefore, all land cover types are considered habitat for these species as a conservative approach in the assessment. MCCN notes that, while moose, gray wolf, black bear, and beaver may typically be considered habitat generalists, the Proponent's approach of assuming that all habitat is used by these species may result in an underestimation of potential Project effects. For instance, with respect to moose, availability of food and climate factors are generally considered the most critical limiting factors during the winter. Therefore, mixed stands that provide both food and shelter are particularly important to moose during this season and the conservation of wetlands and riparian areas, including forested buffers, is considered important for maintaining winter habitat values for moose. Direct and indirect Project effects to these habitats may have a disproportionately high effect on moose distribution and abundance within the PDA, LAA, and RAAs than for other species. Further information regarding the distribution and quantity of important habitat areas for each wildlife species of cultural, spiritual, and traditional importance to Indigenous nations is required. MCCN also notes concerns that habitat modeling and assessments of potential Project effects on habitat availability have not been provided for moose, gray wolf, black bear, American marten, and beaver (i.e. species of importance to Indigenous peoples). Baseline studies conducted for the Project reveal high moose density, numerous furbearer observations, and active beaver lodge locations overlapping with both of the wildlife PDAs and LAAs indicating frequent use of the Project area by these species. Therefore, it is important to consider potential effects of the Project to the habitat availability of these species.	a) Describe the distribution and quantity of habitat in the PDA, LAA, and RAA for each wildlife species of cultural, spiritual, and traditional importance to Indigenous nations, including moose, gray wolf, black bear, American marten, beaver, and any other species identified by Indigenous nations through engagement activities and/or in TLRU studies, taking into account information from habitat suitability index models. i. Provide maps indicating the habitat suitability score for areas within the PDA, LAA, and RAA for each species. b) Based on the information provided in a), describe potential direct and indirect effects of the Project to important habitat areas for each species of importance to Indigenous nations identified, including habitat availability. Revise the assessment of potential Project effects, including the residual and cumulative effects assessments, for the wildlife VC and for Indigenous nations to consider effects to each species. i. Describe mitigation and follow-up and monitoring measures that will be implemented to address effects identified in b). c) Describe whether, and if so, how, Indigenous traditional knowledge was used to inform the selection of wildlife species of importance to Indigenous nations, the identification of important habitat areas for each species in the PDA, LAA, and RAA, and the assessment of effects to the habitat of these species. If not, provide a rationale as to why traditional knowledge was not considered. i. Describe the activities that were conducted to verify the data used and conclusions formed with the applicable Indigenous nations and the outcome of these activities. ii. Identify and discuss areas of disparity between the views of Indigenous nations and the Proponent,

				This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples, including species of cultural, spiritual, and traditional importance to Nations.	efforts made to reconcile disparities, and a rationale for conclusions on matters for which disparity in views remains.
IAAC-R2-118	Impact Assessment Agency of Canada	6.4 Mitigation measures	12.4.2.3 Mitigation for Change in Habitat 12.4.3.3 Mitigation 12.4.4.3 Mitigation Federal IR Responses, Round 1, Package 3, Response to IAAC-163 Federal IR Responses, Round 1, Package 3, Response to IAAC-164 Federal IR Responses, Round 1, Package 3, Response to IAAC-168	The EIS Guidelines require the Proponent to describe mitigation measures to lessen or avoid potential Project effects to species and/or critical habitat listed under SARA, species assessed by COSEWIC as extirpated, endangered, threatened, or of special concern, and species harvested by Indigenous nations. In its response to IAAC-163, IAAC-164, and IAAC-168, the Proponent describes proposed mitigation measures to address potential Project effects to wildlife species, including setback distances and restricted activity periods for SAR/SOCC and other wildlife species and key wildlife features that will be applied to known locations of environmentally sensitive features (e.g. nests, burrows, etc.). It is unclear how the Proponent will accommodate restricted activity periods within the Project schedule and apply setback distances within the PDA, particularly if wildlife species or features occur or are discovered in areas required for construction activities or in areas where Project infrastructure is sited. It is also unclear what measures will be implemented if previously unidentified SAR, SOCC, and/or species of importance to Indigenous nations or associated features are discovered and/or if these species or features are encountered outside of the specified restricted activity period. This information is required to support the Agency's understanding of potential Project effects to SAR and Indigenous peoples, including species of traditional and cultural importance to Indigenous peoples.	a) Describe how the Proponent will accommodate restricted activity periods within the Project schedule for construction, operation, and decommissioning, and how setback distances will be applied within the PDA, particularly if wildlife species or features occur or are discovered in areas required for construction activities or in areas where Project infrastructure is sited. b) Describe measures that will be implemented if previously unidentified SAR, SOCC, and/or species of importance to Indigenous nations or associated features are discovered and/or if these species or features are encountered outside of the specified restricted activity period, including where and for how long these measures will be applied.
IAAC-R2-119	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical	6.4 Mitigation Measures 6.5 Significance of residual effects 8.0 Follow-Up and	12.2.2.2 Species at Risk and Species of Conservation Concern 12.4.2.4 Project Residual Effect for Change in Habitat	The EIS Guidelines require the Proponent to describe follow-up and monitoring programs 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. The Proponent is also required to describe mitigation measures to lessen or avoid potential Project effects to species and/or critical habitat listed under SARA, species assessed by COSEWIC as extirpated, endangered, threatened, or of special concern, and species harvested by Indigenous nations.	a) Provide details regarding the WMMP for the Project, including: i. the parameters to be measured/monitored; ii. study design and/or the desired outcomes of the study; iii. planned protocols and/or the objectives; iv. monitoring locations; v. the schedule of monitoring activities;

	Review of Round 1, Package 3 Information Request Responses Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests	Monitoring Programs 8.1. Follow-up program 8.2 Monitoring	12.7.1 Significance of Project Residual Effects 23.5.14 Wildlife Monitoring and Management Plan Federal IR Responses, Round 1, Package 3, Response to IAAC-166 Federal IR Responses, Round 1, Package 3, Response to IAAC-170	In its response to IAAC-166, the Proponent notes that the Wildlife Monitoring and Management Plan (WMMP) will focus on continuing to monitor the distribution of woodland caribou in the RAA and will incorporate an adaptive management framework and mitigation measures that account for the uncertainty of woodland caribou distribution in the RAA. Insufficient information is provided to determine whether the proposed WMMP will be sufficient to verify the accuracy of the effects assessment and to determine the effectiveness of mitigation measures. Further details are required regarding the parameters to be measured/monitored, study design, planned protocols, monitoring locations, schedule of monitoring activities, contingency measures to be implemented, the thresholds or triggers that will be used to determine when to implement contingency measures, and plans for reporting the results of the follow-up and monitoring program to federal and provincial regulators and Indigenous peoples, including the timing and frequency of reports. In its response to IAAC-170, The Proponent states that various plans under the Environmental Management and Monitoring Program (EMMP) will monitor emissions, discharges, and wastes generated by the Project, including COPCs where applicable, in accordance with relevant regulatory guidelines; however, there are no follow-up or monitoring activities proposed to specifically validate the Ecological Risk Assessment as it relates to the assessment of change in wildlife health because, following mitigation, there is relatively little uncertainty associated with the assessment. MCCN expresses concerns regarding the lack of follow-up and monitoring proposed with respect to potential Project effects to wildlife health, as monitoring for Project-related changes to the physical environment may not detect Project effects to wildlife health and the Indigenous nations that rely upon wildlife species for subsistence and cultural purposes. For instance, although programs will be in place to monitor Project effects to water quality, air quality, etc., this does not account for potential bioaccumulation of contaminants in wildlife tissues. Therefore, although COPC concentrations in/on water, air, and plants may be below regulatory thresholds, bioaccumulation of COPCs in wildlife tissues may result in adverse effects to wildlife health, and therefore Indigenous health and current use, and impacts to rights.	vi. contingency measures to be implemented; vii. the thresholds or triggers that will be used to determine when to implement contingency measures; viii. plans for reporting the results of the follow-up and monitoring program to federal and provincial regulators and Indigenous peoples, including the timing and frequency of reports; and ix. the process through which Indigenous nations will be provided opportunities to participate in the design and implementation of the follow-up and monitoring plan, including the development of contingency measures. b) Identify follow-up and monitoring measures that will be implemented as part of the WMMP to monitor potential Project effects to wildlife health and to verify the accuracy of the effects assessment for wildlife health. c) Describe the adaptive management plan that will be implemented as part of the WMMP. Refer to IAAC-R2-04 for further details regarding information requirements for adaptive management plans. d) Provide additional rationale to demonstrate that the mitigation measures proposed by the Proponent in its response to IAAC-166 will be/are anticipated to be effective at reducing or avoiding potential effects to caribou. i. Describe how Indigenous knowledge was considered in the development of these mitigation measures. e) If additional mitigation measures with respect to caribou, beyond those listed in the Proponent's response to IAAC-166, will be implemented or are being considered for inclusion in the WMMP for the Project, describe these measures. Ensure that sufficient detail is provided regarding when, how, and where these measures will be implemented to allow an assessment of whether the measures proposed

				In its response to IAAC-166, the Proponent also describes two caribou-specific mitigation measures that will be included in the WMMP, should caribou be detected in the area of the Project, and several general mitigation measures related to mitigating effects to wildlife habitat. It is unclear whether the WMMP will include additional caribou-specific mitigation measures beyond those that are listed in the Proponent's response to IAAC-166. Describing additional planned mitigation measures is needed to determine whether the measures proposed may be adequate to address potential Project effects to caribou. MCCN also notes concerns that the mitigation measures proposed may not be effective at mitigating potential effects to caribou. Additional rationale is required to demonstrate that the mitigation measures proposed will be/are anticipated to be effective at reducing or avoiding potential effects to caribou. MCCN and PBCN also note that it is unclear how Indigenous nations to be provided the opportunity to be involved in the development of mitigation measures for caribou and how Indigenous knowledge has been and will be considered moving forward. This information is required to support the Agency's understanding of potential Project effects to SAR, migratory birds, and Indigenous peoples, including wildlife species of cultural and traditional importance to Indigenous peoples.	may be adequate to address potential Project effects to caribou. i. Describe how Indigenous knowledge was considered in the development of these mitigation measures and/or the process through which Indigenous nations will be provided opportunities to participate in the development/selection of mitigation measures.
IAAC-R2-120	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses Peter Ballantyne Cree Nation –	4.2.3 Existing information 4.3 Study strategy and methodology 6.3.3 Species at Risk	12.2.2.2 Species at Risk and Species of Conservation Concern 12.4.2.4 Project Residual Effect for Change in Habitat 12.2.2.2 Species at Risk and Species of Conservation Concern	The EIS Guidelines require the Proponent to describe potential Project effects to SARA-listed species using existing data and literature as well as surveys to provide current field data. The EIS Guidelines also require that, when relying on existing information, a description be provided regarding how the data were applied, separate factual lines of evidence from inference, and state any limitations on the inferences or conclusions that can be drawn from the existing information. In its response to IAAC-166, the Proponent describes the limitations of the information gathered through the camera trap study in the effects assessment and on the conclusions drawn about the presence of caribou in the Project area. The Proponent also notes that other data gathering techniques were used to draw conclusions about the presence of boreal woodland caribou in the Project area, including aerial surveys, Indigenous and local knowledge, TLRU study results, and information shared during engagement with provincial and federal regulators. MCCN expresses concerns that information has not been provided regarding survey effort	a) Provide additional details regarding the survey effort for the camera trap study and any other surveys/studies conducted by the Proponent to collect information regarding boreal woodland caribou in the PDA, LAA, and/or RAA and any gaps identified. i. Describe the limitations and uncertainty associated with the information gathered and study/survey techniques (i.e. aerial surveys, Indigenous and local knowledge collected, TLRU study results, etc.). Describe any assumptions made in integrating this information into the assessment of potential Project effects to boreal woodland caribou. b) Clarify whether MCCN's Indigenous Knowledge and Use Study and any Indigenous knowledge provided by other Indigenous nations with respect to caribou since submission of the EIS, including through engagement activities, was

	Technical Review of the EIS and Round 1 Information Requests		Federal IR Responses, Round 1, Package 3, Response to IAAC-166	for the studies described, on which conclusions regarding the presence of caribou in the area of the Project were based. Further, information was not provided regarding the limitations and uncertainty associated with the survey/data gathering techniques described. PBCN also notes concerns regarding the lack of data provided regarding the population size and distribution of caribou within the Boreal Caribou Kamuchawie Management Unit (KMU). The Proponent notes in its response to IAAC-166 that the assessment of effects to boreal woodland caribou relied on information provided by local resource users and in Project-specific TLRU reports. This includes Project-specific TLRU studies from MCFN and the MMF. It is unclear whether the Proponent considered the results of MCCN's Indigenous Knowledge and Use Study; this study may reveal new information regarding the distribution of caribou in the region, new current use information with respect to caribou, and/or potential Project interactions with caribou. It is also unclear whether information, including Indigenous knowledge, from other Indigenous nations was considered and whether the use of information provided by MCFN, the MMF, and other Indigenous nations, including any conclusions drawn from this information, was verified with the applicable Nation. This information is required to support the Agency's understanding of potential Project effects to SAR.	considered in the assessment of potential Project effects to caribou. i. If not, revise the assessment of potential project effects to caribou, including the residual and cumulative effects assessments, to consider any information provided by Indigenous nations related to the distribution of caribou in the area of the Project, current use of caribou, and/or potential Project interactions with caribou. ii. If any new or worsened potential effects to caribou are identified in response to i), describe mitigation and follow-up and monitoring measures that will be implemented to address effects. c) Describe the activities that were conducted to verify the data used and conclusions formed with the applicable Indigenous nations and the outcome of these activities. i. Identify and discuss areas of disparity between the views of Indigenous nations and the Proponent, efforts made to reconcile disparities, and a rationale for conclusions on matters for which disparity in views remains.
IAAC-R2-121	Impact Assessment Agency of Canada Environment and Climate Change Canada – Technical Review of Round 1, Package 3 Information Request Responses	6.4 Mitigation measures 6.3.3 Species at Risk	12.2.2.2 Species at Risk and Species of Conservation Concern 12.4.2.4 Project Residual Effect for Change in Habitat 12.5.2.2 Mitigation for Cumulative Effects	The EIS Guidelines require the Proponent to identify and describe mitigation measures to lessen or avoid effects to species and/or critical habitat listed under SARA. The Proponent is also required to determine the anticipated significance of residual effects after applying technically and economically feasible mitigation measures. In its response to IAAC-167, the Proponent states that the proposed mitigation measures for boreal woodland caribou do not include habitat compensation because there is no evidence to suggest that the Project will affect critical habitat for the species. In the EIS, the Proponent indicates that the Project is located in the Province of Manitoba's woodland caribou KMU (i.e. 56% undisturbed habitat for boreal woodland caribou) and also overlaps with the Manitoba North Range (MB9), defined in the federal *Recovery Strategy for Woodland Caribou (Rangifer tarandus caribou), Boreal Population* (Amended 2020).	a) Develop and describe a plan to address Project effects on boreal woodland caribou habitat which is consistent with the Province of Manitoba and the Government of Canada's objectives with respect to the conservation of boreal woodland caribou habitat. i. Provide a rationale for how the plan will adequately address potential Project effects to boreal woodland caribou habitat, including consideration of the anticipated effectiveness of mitigation and/or compensation measures proposed. ii. Describe any assumptions made and the level of uncertainty with respect to the predicted effectiveness of mitigation and/or compensation measures proposed.

	Mathias Colomb Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests		Federal IR Responses, Round 1, Package 3, Response to IAAC-167	ECCC notes that Manitoba's *Boreal Woodland Caribou Recovery Strategy* (2015) has a recovery goal to manage and protect caribou habitat to sustain boreal woodland caribou populations. The recovery objectives of this plan include the conservation of large intact boreal woodland caribou habitat at a coarse scale and an increase in boreal caribou habitat to ensure that sufficient habitat quality and quantity (in appropriate spatial and temporal distributions) exists across all management units to support self-sustaining local populations and habitat connectivity within and between local ranges and management units; and where required, the reduction or mitigation of direct threats that have an impact on the survival and recovery of boreal caribou populations. Further, the Federal *Recovery Strategy for Woodland Caribou, Boreal Population* (Amended 2020) lists the MB9 range as 67% undisturbed. Critical habitat for the MB9 range is identified in the recovery strategy as all existing habitat in the range that would contribute to at least 65% undisturbed habitat, including the biophysical attributes required by boreal woodland caribou to carry out life processes. ECCC notes concerns that, based on the habitat condition of the MB9 range, critical habitat must increase over time to reach a minimum of 65% undisturbed habitat. The recovery strategy identifies a minimum 65% undisturbed habitat in a range as the disturbance management threshold, which provides a measurable probability (60%) for a local population to be self-sustaining. This threshold is considered a minimum threshold because at 65% undisturbed habitat there remains a significant risk (40%) that local populations will not be self-sustaining. Given that caribou habitat disturbance in the MB9 range is approaching the minimum 65% undisturbed habitat threshold, the Province of Manitoba has identified the overlapping (KMU) caribou range as 56% undisturbed (i.e. below their 65% target), the Province of Manitoba has committed to conserve and increase boreal caribou habitat and reduce or mitigate direct threats, the Project will result in the destruction of 205 hectares of caribou habitat for 60 or more years, and the Proponent is not proposing caribou habitat compensation measures, the Proponent must develop a plan to address Project effects on boreal woodland caribou habitat. MCCN and PBCN echo ECCC's concerns, noting that continued impacts to boreal woodland caribou habitat, however incremental, do not align with the goals for the recovery of this species. MCCN and PBCN also note that it is unclear how	iii. Describe how Indigenous knowledge was considered in the development of this plan and the process through which Indigenous nations will be provided opportunities to participate in the implementation of the plan.

				Indigenous nations to be provided the opportunity to be involved in the development of mitigation measures for caribou, given the importance of the species to Indigenous nations, and how Indigenous knowledge has been and will be considered moving forward. This information is required to support the Agency's understanding of potential Project effects to SAR. **See Annex I for related advice.**	
IAAC-R2-122	Impact Assessment Agency of Canada	6.5 Significance of residual effects	12.1.5 Residual Effects Characterization 12.4.2.3 Mitigation for Change in Habitat 12.7.1 Significance of Project Residual Effects Federal IR Responses, Round 1, Package 3, Response to IAAC-168	The EIS Guidelines require the Proponent to provide a detailed analysis of the significance of the residual environmental effects that are considered adverse following the implementation of mitigation measures, including the magnitude, geographic extent, timing, duration, frequency, reversibility, and ecological and social context of residual effects. In its response to IAAC-168 and in the EIS, the Proponent indicates that a 'low' magnitude residual change in habitat for wildlife is defined as one in which the Project changes less than 10% of general wildlife habitat in the LAA, or less than 5% of habitat for wildlife SAR and SOCC in the LAA; a 'moderate' magnitude residual effects as one in which the Project changes 10-20% of general wildlife habitat in the LAA, or 5-10% of habitat for wildlife SAR and SOCC in the LAA; and a 'high' magnitude residual effects as one in which the Project changes more than 20% of wildlife habitat in LAA, or more than 10% of habitat for wildlife SAR and SOCC in the LAA. No rationale was provided regarding how the Proponent established the percentage thresholds applied for low, moderate, and high magnitude effects to wildlife habitat. It is also unclear why SAR and SOCC were assigned their own rating criteria while migratory birds, species of importance to Indigenous nations, and other wildlife species were assigned one aggregated criteria. This information is required to support the Agency's understanding of potential Project effects to SAR and Indigenous peoples, including species of traditional and cultural importance to Indigenous peoples.	a) Provide a rationale for the selection of the magnitude rating criteria chosen for low, moderate, and high residual effects to wildlife habitat, including a discussion of how this rating criteria ensures an accurate reflection of the potential significance of effects to all wildlife species. b) Provide a rationale for why SAR and SOCC were assigned their own rating criteria while migratory birds, species of importance to Indigenous nations, and other wildlife species were assigned one aggregated criteria. Refer to IAAC-R2-114 for further details on the requirements for providing a disaggregated assessment for migratory birds, SAR, SOCC, and wildlife species of importance to Indigenous nations. i. Discuss the level of uncertainty associated with using one rating criteria for migratory birds, species of importance to Indigenous nations, and other wildlife species, including any assumptions made and how these assumptions may affect the level of certainty with respect to the anticipated significance of potential effects.
Impacts to Rights					

IAAC-R2-123	Impact Assessment Agency of Canada Peter Ballantyne Cree Nation - Technical Review of the EIS and Round 1 Information Requests	4.2.2 Community knowledge and Aboriginal traditional knowledge 5.0 Engagement with Indigenous groups and concerns raised	19.9.3 Assessment of Impacts on Indigenous or Treaty Rights	The EIS Guidelines require the Proponent to document, for each Indigenous nation, the potential or established rights of the Indigenous peoples of Canada as recognized and affirmed in section 35 of the *Constitution Act, 1982* (section 35 rights), including title and related interests, and potential adverse impacts of each of the Project components and physical activities, in all phases, on potential or established section 35 rights, including title and related interests. The Proponent is also required to incorporate into the EIS the community knowledge and Aboriginal traditional knowledge to which it has access or that is acquired through public participation and engagement with Indigenous nations and should verify Aboriginal traditional knowledge in the EIS with the affected Indigenous nation. In the EIS, the Proponent states that potential effects of the Project on section 35 rights were derived directly or indirectly from the physical effects of the Project on the environment. Therefore the pathways are similar for potential effects on the exercise and practice of section 35 rights, as well as for the conditions that support the exercise of rights (including Indigenous health, Indigenous socio-economic conditions, and Indigenous physical and cultural heritage). PBCN expressed concerns with the approach of using potential effects on the environment as a proxy for impacts to rights as some potential effects of the Project on section 35 rights may not be derived from physical effects of the Project. For instance, the conversion of unoccupied Crown land to occupied Crown land is an administrative change rather than a physical change. However, this can impair the exercise of Indigenous rights (e.g. governance) through the change in legal instrument under which the land is held. Consideration must be given in the assessment of potential impacts to the rights of Indigenous peoples to section 35 rights beyond those tied directly to the physical environment (e.g. governance rights, right of access, right to cultural practice, etc.) and potential effects to rights beyond those directly tied to physical effects of the Project to the environment must be considered. This information is required to support the Agency's understanding of potential effects to Indigenous peoples, including impacts to the rights of Indigenous peoples.	a) Update the assessment of potential Project impacts on the rights of Indigenous peoples, for all Indigenous nations, to consider rights and potential impacts to rights beyond those tied directly to the physical environment. i. Describe how Indigenous nations were involved and/or how Indigenous knowledge was used to inform the Indigenous rights to consider in the assessment. ii. Describe the activities that were conducted to verify the data used and conclusions formed with the applicable Indigenous nations and the outcome of these activities. iii. Identify and discuss areas of disparity between the views of Indigenous nations and the Proponent, efforts made to reconcile disparities, and a rationale for conclusions on matters for which disparity in views remains.
Indigenous Health and Socioeconomic Conditions					

IAAC-R2-124	Health Canada – Technical Review of Round 1, Package 3 Information Request Responses	6.1.4 Riparian, Wetland, and Terrestrial Environments 6.1.11 Human environment 6.3.4 Indigenous peoples	18.4.1 Analytical Assessment Techniques Volume 5, Appendix H: Lynn Lake Gold Project, Human Health and Ecological Risk Assessment Technical Modelling Report 4.1 Air 5.4.1 Non-carcinogenic Chemicals Federal IR Responses, Round 1, Package 3, Response to IAAC-174	The EIS Guidelines require the Proponent to present baseline information in sufficient detail to enable the identification of how the Project could affect VCs, including for riparian, wetland, and terrestrial environments. The Proponent is also required to describe potential Project effects to the atmospheric environment and how changes to the environment caused by the Project will affect Indigenous peoples. When risks to human health due to changes in one or more components are predicted, the Proponent is also required to provide a complete HHRA examining all exposure pathways for pollutants of concern to adequately characterize potential risks to human health. In its response to IAAC-174, the Proponent notes that deposition of fugitive dusts from past mining activities could have resulted in metal accumulation in soil, terrestrial country foods, and backyard garden produce. Health Canada notes concerns that despite this, the HHRA does not consider the potential resuspension of dusts and associated COPCs, including those associated with historic mining activities, which may be present under current (i.e. baseline) conditions. As noted by the Proponent in the EIS, wind erosion risk for both topsoil and subsoil is high for both the Gordon and MacLellan sites, therefore dust resuspension could be reasonably expected. Further, the HHRA does not consider non-metal COPCs in any environmental media other than ambient air. Failure to consider resuspension of dust may underestimate the human health risk from potential exposure through inhalation and via ingestion of country foods onto which dust has deposited. The Proponent also notes in its response to IAAC-174 that, for non-metal COPCs, volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and metals, the maximum calculated concentration ratios (CRs) were below 0.01 and thus, applying a CR (HQ) of 0.2, as recommended by Health Canada, rather than 1.0 would not alter the conclusions of the HHRA. Health Canada notes that in the HHRA there are instances of CR values that are greater than 0.01. For example, acrolein in Table 5-48 (value of 0.28), trimethylbenzene in Table 5-49 (0.63), and total chromium in Table 5-60 (0.34). In these cases, the use of a threshold of 0.2 would change the conclusions of the HHRA, contrary to the information provided in the Proponent's response.	a) Clarify whether resuspension of dust was considered in the HHRA for the Project, including the evaluation of airborne metals and other COPCs and, if so, whether contaminants from historical mining and the construction and decommissioning phases of these past projects were incorporated into this assessment. i. If not, revise the HHRA to include an evaluation of the effects of airborne metals and other COPCs, including consideration of contaminants deposited due to past mining activities. Based on this revised assessment, update the effects assessments for human health and Indigenous peoples, including any conclusions regarding the anticipated significance of adverse effects. ii. If any new or worsened potential effects are identified in i), describe mitigation and follow-up and monitoring measures that will be implemented to address effects. b) Update the characterization of risks from COPCs using a HQ target of 0.2 for inhalation exposure. i. If this updated characterization of risks changes the conclusions of the HHRA with respect to health risks, revise the effects assessments for human health and Indigenous peoples to account for the updated HHRA conclusions. ii. If any new or worsened potential effects are identified in i), describe mitigation and follow-up and monitoring measures that will be implemented to address effects.

				This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples, including Indigenous health.	
IAAC-R2-125	Peter Ballantyne Cree Nation - Technical Review of the EIS and Round 1 Information Requests	4.2.2 Community knowledge and Aboriginal traditional knowledge 5.0 Engagement with Indigenous groups and concerns raised 6.1.9 Indigenous peoples	19.1.2.3 Pathways Carried Forward for Indigenous Health Conditions 19.5.2 Changes to Indigenous Health Conditions Federal IR Responses, Round 1, Package 3, Response to IAAC-175	The EIS Guidelines require the Proponent to provide baseline information for the health and socioeconomic conditions of Indigenous communities and to engage with Indigenous nations that may be affected by the Project to obtain and incorporate their views regarding potential Project effects. In its response to IAAC-175 and in the EIS, the Proponent describes the criteria that was used to assess potential Project effects to Indigenous health. Peter Ballantyne Cree Nation (PBCN) notes that, based on the criteria listed, the assessment of potential Project effects to Indigenous health appears to rely solely on effects to other VCs, such as current use and human health, which do not encompass aspects of Indigenous health important for the assessment. For instance, Indigenous use of the land is unique from that of members of the public in the area (e.g. Indigenous peoples may use natural waterbodies for drinking water to a greater extent than members of the public), so the assessment of effects to human health in general may not be reflective of potential effects to Indigenous peoples. Further, current use, while informative of effects to Indigenous health, does not encompass other unique factors important for the assessment of effects to Indigenous health, such as the governance and management of health through traditional means. The selection of criteria to be used to assess potential Project effects to Indigenous health must also consider input from Indigenous nations. This information is required to support the Agency's understanding of potential Project effects to Indigenous health and socioeconomic conditions.	a) Provide a rationale for how the criteria selected to assess potential Project effects to Indigenous health is reflective of the unique conditions and use of the landscape by Indigenous nations. This rationale must describe how input from Indigenous nations was considered in the selection of criteria. i. If input from Indigenous nations was not considered in the selection of criteria to assess potential Project effects to Indigenous health, engage with Indigenous nations on the criteria selected and, if necessary, revise the assessment of potential Project effects to Indigenous health to consider any new or revised criteria suggested by Indigenous nations.
IAAC-R2-126	Impact Assessment Agency of Canada Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1	4.2.2 Community knowledge and Aboriginal traditional knowledge 5.0 Engagement with Indigenous groups and concerns raised	19.5.2 Changes to Indigenous Health Conditions 19.5.4.1 Cumulative Effect Pathways Table 19-2: VCs and Potential	The EIS Guidelines require the Proponent to provide baseline information for each Indigenous nation, including information regarding the health and socioeconomic conditions of each Nation, and should verify any traditional knowledge used in the EIS with the affected Indigenous nation. The Proponent is also required to describe how changes to the environment caused by the Project will affect Indigenous peoples. In its response to IAAC-175, the Proponent describes the criteria that were used to assess Indigenous health conditions. PBCN notes that Indigenous perspectives on methods for health care were not included and that the	a) Confirm whether Indigenous perspectives on methods for health care were considered in the assessment of potential Project effects to Indigenous health conditions. i. If Indigenous perspectives on methods for health care were not considered, provide a rationale why this factor was excluded. ii. If factors other than those connected with the exercise of harvesting rights or other VCs, such as the governance and management of health through traditional means, were not considered,

	Information Request Responses Mathias Colomb Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses	6.1.9 Indigenous peoples	Effect Pathways Related to Indigenous Health Conditions Federal IR Responses, Round 1, Package 3, Response to IAAC-175	measurable parameters used to assess Indigenous health conditions relied fully on other VCs, including current use and human health. Other factors that are not connected with the exercise of harvesting rights, such as the governance and management of health through traditional means, must be considered. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples' health.	revise the assessment of potential Project effects to Indigenous health to consider these factors.
IAAC-R2-127	Health Canada – Technical Review of Round 1, Package 3 Information Request Responses	6.1.11 Human environment 6.3.4 Indigenous peoples	Volume 5, Appendix H: Lynn Lake Gold Project, Human Health and Ecological Risk Assessment Technical Modelling Report H.S. Brown et al. (1984). *The role of skin absorption as a route of exposure for volatile organic compounds (VOCs) in drinking water, Am. J. Public Health.* 74(5), 479-484. Federal IR Responses, Round 1, Package 3, Response to IAAC-179	The EIS Guidelines require the Proponent to, when risks to human health due to changes in one or more components are predicted, provide a complete HHRA examining all exposure pathways for pollutants of concern to adequately characterize potential risks to human health. In its response to IAAC-179, the Proponent states that the risks associated with inhalation exposures were calculated using toxicological reference values (TRVs) specific to inhalation exposures, and the mechanism of action, biological endpoints, and target organs differ from those associated with oral/dermal exposures. Therefore, summing inhalation and oral/dermal HQs has no meaningful toxicological basis. Health Canada expresses concerns with this approach as inhalation TRVs are primarily intended to address exposure scenarios where only inhalation exposure is operative and/or where toxic effects are specific to inhalation exposure. Even when addressing purely volatile compounds, both inhalation and dermal absorption are possible, and for some chemicals, dermal uptake can be quite extensive (e.g. see Brown et al. 1984). For example, PAHs do not exclusively produce portal-of-entry or other inhalation-specific effects, contrary to the Proponent's statement. In addition, the example COPCs cited in the Proponent's response to IAAC-179 (i.e. thallium and chromium) have dominant exposure pathways (i.e. ingestion and inhalation, respectively), and are not necessarily representative of COPCs with predicted exposure across several, more equal pathways. Further justification, including contaminant-specific information, is required to support separating inhalation exposure from all other pathways.	a) Provide a multi-media assessment in the HHRA for those COPCs that are present in several media, act on the same target organ(s), and/or share common mechanisms of action. For those COPCs where the inhalation pathway is assessed separately from other exposure pathways, provide a COPC-specific justification. i. Include sediment pathways for manganese and any other relevant COPCs as part of the multimedia HHRA. b) Provide further justification for excluding non-metal COPCs from all pathways except inhalation (e.g. via ingestion of airborne COPCs other than metals that have deposited onto soil, water, and vegetation). If additional COPCs should be considered for exposure pathways beyond inhalation, update the HHRA accordingly. c) If any new or worsened potential effects to VCs are identified in response to a) or b), update the effects assessments for relevant VCs, including the residual and cumulative effects assessments, and describe mitigation and follow-up and monitoring measures that will be implemented to address effects. d) Provide the literature source(s) for the uptake values that were used in Equation 4.1 in Section 4.0 of the HHRA.

			Federal IR Responses, Round 1, Package 3, Response to IAAC-183	Health Canada also notes that, with the exception of inhalation, all pathways deemed operable in the HHRA's Conceptual Site Model only considered potential risks from exposure to metals. It is unclear why the Proponent assumed that Project related semi-volatiles or non-volatile contaminants (e.g. PAHs) would be present in air (i.e. as components of dust and/or DPM or in other forms) without depositing and migrating to other environmental media (e.g. soil, sediment, plants, surface water, and groundwater) where they can be taken up by plants and animals used as human food sources. A multimedia assessment combining all of these exposures must be completed for these COPCs to understand potential Project effects to human health, including Indigenous health. In its response to IAAC-179, the Proponent notes that the sediment ingestion pathway was deemed operable but screened out of the HHRA because it was considered unlikely that human receptors would come into direct contact with sediment. However, in the EIS and in the Proponent's response to IAAC-183, the Proponent states that concentrations of manganese in sediments are expected to exceed soil quality guidelines for direct contact in the predicted Future Case scenario and that baseline HQ for total ingestion of manganese is already in exceedance of the health target of 0.2 for human receptors at both the Gordon and MacLellan sites. Therefore, Health Canada notes that the sediment pathway must be included in the multimedia HHRA as a precautionary approach. In the HHRA provided in the EIS, the Proponent indicates that concentrations of COPCs in plant and animal tissues were determined using uptake factors (i.e. Equation 4.1). Health Canada notes that these factors have not been provided; further information regarding the approach for determining baseline and Future Case concentrations of COPCs in soils and tissues is required to understand the results of the HHRA. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples, including Indigenous health.	
IAAC-R2-128	Health Canada – Technical Review of Round 1, Package 3	6.3.4 Indigenous peoples	Volume 5, Appendix H: Lynn Lake Gold Project, Human Health and Ecological	The EIS Guidelines require the Proponent to, when risks to human health due to changes in one or more components are predicted, provide a complete HHRA examining all exposure pathways for pollutants of concern to adequately characterize potential risks to human health.	a) Confirm whether non-developmental toxicity chronic TRVs were used for ethylbenzene and xylene. If the developmental toxicity-based annual TRVs were used for the chronic inhalation assessment, update the calculation

	Information Request Responses		Risk Assessment Technical Modelling Report 5.2.2.1 Inhalation Exposures Federal IR Responses, Round 1, Package 3, Response to IAAC-180	In its response to IAAC-180, the Proponent indicates that none of the chronic inhalation TRVs were based on developmental effects, so use of dose averaging (i.e. mathematically spreading out a short duration dose over a longer period) was appropriate for DPM, HCN, VOCs, non-carcinogenic PAHs, and metals evaluated in the HHRA. However, Table 5-9 of the HHRA indicates that the annual non-carcinogenic TRV for ethylbenzene (i.e. a VOC) was based upon a health endpoint of developmental toxicity and the annual TRV for xylenes (i.e. a VOC) was based on effects including fetal retardation, increased proportion of fetal mortality, and resorbed fetuses. Health Canada notes that the duration and use of dose averaging should be carefully considered, particularly in cases where chemicals have potential developmental (i.e. fetal) effects. As the annual TRVs for some COPCs used in the HRRA are based on development effects, dose averaging may not be appropriate for all VOCs without further justification to support the generalized approach. Health Canada also notes that the use of dose averaging for assessing inhalation risks of COPCs is not protective of off-duty workers, including potential Indigenous workers, who remain in the LAA. As the assessment was based on two weeks of exposure followed by two weeks off, during which time the worker is presumed to leave the LAA, the exposure assessment for off-duty workers has not fully considered workers from the local community who live in and use the LAA on their time off, as other human receptors from the local community would. Given the expressed local interest in potential employment opportunities, a worker from or engaging in traditional land use activities in the LAA is highly conceivable. As such, neither the dose-averaging approach nor the proposed measure to cover the work camp area with aggregate material to eliminate dust and soil exposure may be sufficient for protecting off-duty and off-rotation workers who remain in the LAA. The Proponent also notes in its response to IAAC-180 that off-duty workers were only assessed for risks via inhalation exposure. Health Canada notes that this approach may further underestimate the health risks, and the CR or HQ, for these receptors. Additional exposure pathways must be considered with respect to off-duty workers to ensure that potential effects to human health, including Indigenous health, are not underestimated. This information is required to support the Agency's understanding of potential effects to Indigenous peoples, including Indigenous health.	result and interpretation in the HHRA without applying dose averaging for these COPCs. b) Clarify whether a local off-duty worker receptor was considered in the HHRA (i.e. someone who would both be living on-site for 26 weeks of the year and living or engaging in traditional activities in the LAA for the remaining 26 weeks). If not, describe how the current HHRA and assumptions for human receptors would be protective of this particular situation or revise the HHRA and any associated effects assessments for VCs to consider this factor. c) Update the HHRA to include relevant exposure pathways and COPCs for off-duty workers as part of the multimedia HHRA (refer to IAAC-R2-124 and IAAC-R2-127 for further details). d) Revise the effects assessments for all relevant VCs to consider any required updates to the HHRA as discussed in a) to c). i. If any new or worsened potential effects to VCs are identified in response to d), describe mitigation and follow-up and monitoring measures that will be implemented to address effects.

IAAC-R2-129	Health Canada – Technical Review of Round 1, Package 3 Information Request Responses	5.0 Engagement with Indigenous groups and concerns raised 6.1 Project setting and baseline conditions 6.1.11 Human environment	Volume 5, Appendix H: Lynn Lake Gold Project, Human Health and Ecological Risk Assessment Technical Modelling Report Table 5-1 Receptor Parameters used in the HHRA *Chan et al., 2012. First Nations Food, Nutrition, and Environment Study: Results from Manitoba (2010)* Federal IR Responses, Round 1, Package 3, Response to IAAC-183	The EIS Guidelines require the Proponent to describe potential Project effects to Indigenous peoples, including Indigenous health, the current use of lands and resources for traditional purposes, and physical and cultural heritage. In its response to IAAC-183, the Proponent provides details of the analysis that was conducted regarding the contribution of each ingestion exposure pathway to total ingestion exposure. Health Canada notes that the Proponent does not specify how the consumption rates for human receptors used in this analysis were determined. Further, the Proponent notes in the explanation column of Table 5-1 in the EIS that intake rate data derived from Chan et al. (2012) were used for different country foods for different age classes and notes that 10% of fish were from local waterbodies, but it is unclear how this value was incorporated into the calculations and whether this value accounts for different trophic levels or sizes of fish that might be caught locally compared to commercially bought fish. This is particularly important in light of the potential exceedances of health risk targets (i.e. HQ of > 0.2) for the baseline case for methylmercury, thallium, and manganese, where consumption of country foods has been identified as the primary source. Health Canada also notes that the Proponent's response to IAAC-183 does not specify why all mercury in fish was assumed to be in the form of methylmercury, whereas inorganic mercury was assumed to be the predominant form in other country foods. In the absence of any mercury speciation data to support this assumption, Health Canada recommends using the assumption of 100% methylmercury in all country foods and that the tolerable daily intake (TDI) values for methylmercury be employed for all country foods, including wild game, vegetation, and fish. This approach ensures that the potential health risks are not underestimated. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples' health and socio-economic conditions.	a) Clarify how the data from the Chan et al. (2012) food study was used to determine consumption rates for non-Indigenous and Indigenous receptors in the local area (i.e. refer to Table 5-1 of the HHRA) and how assumptions for fish consumption accounted for varying sizes and species in local catch compared to supermarket fish. Provide adjustment ratios and/or sample calculations as appropriate. b) Provide a rationale for using inorganic mercury instead of methylmercury when assessing health risks from consumption of country foods other than fish, including supporting speciation data. Alternatively, update the HQ values used for this assessment to assume that all mercury is present in the form of methylmercury for all country foods. i. If a rationale is provided, describe any assumptions made and how this may affect the accuracy of the effects assessment and the determination of the anticipated significance of effects to Indigenous health and socioeconomic conditions. ii. If updated HQ values are used to assume that all mercury is present in the form of methylmercury in country founds, revise the assessment of potential Project effects to Indigenous health, including the residual and cumulative effects assessments, to account for this update. iii. If new or worsened potential effects to Indigenous peoples are identified in i), describe mitigation and follow-up and monitoring measures that will be implemented to address effects.

IAAC-R2-130	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses Manitoba Metis Federation – Technical Review of Round 1, Package 3 Information Request Responses	6.1.9 Indigenous peoples 6.3.4 Indigenous peoples	19.2.2.2 Indigenous Socio-Economic Conditions Lynn Lake Gold Project Environmental Impact Statement: Second Supplemental Filing of Indigenous Engagement Activities, Appendix B Federal IR Responses, Round 1, Package 3, Response to IAAC-190	The EIS Guidelines require the Proponent to provide baseline information for the current use of lands and resources for traditional purposes by Indigenous nations and Indigenous socioeconomic conditions, including a characterization of the attributes of the activity that may be affected by Project-related changes to the environment. The Proponent is also required to describe potential effects of the Project to Indigenous nations, including current use and Indigenous socioeconomic conditions. In its response to IAAC-190, the Proponent notes that Project clearing and construction activities will affect Pukatawagan Registered Traplines 30, 32, and 36, and the Youth Training Camp, and will lead to a loss of area available for trapping. However, the Project will not result in wide degradation, restriction, or disruption of present current use activities. Information was not provided regarding how local Project effects to the Pukatawagan Registered Traplines and the Youth Training Camp may affect current use and/or Indigenous socioeconomic conditions for each Indigenous nation that may rely on these local areas. Further, MCCN notes concerns that trappers may avoid mine sites due to noise and safety concerns. It is unclear whether potential avoidance behaviours were considered in assessing potential Project effects to trapping. The Proponent also states in its response to IAAC-190 that the Indigenous socioeconomic conditions LAA overlaps with 19 traplines within the Registered Trapline Districts of Pukatawagan and Southern Indian Lake, all of which have associated commercial trapper permits. It is unclear whether engagement activities were conducted with trapline permit holders to understand the extent of their use of traplines that may be affected by the Project to inform the assessment of potential Project effects to Indigenous socioeconomic conditions. MCCN notes concerns that information from their TLRU report regarding trapping activities was not considered in the Proponent's assessment of potential Project effects to current use and Indigenous socioeconomic conditions, including four locations used for trapping in the PDA, nine locations in the LAA, and over 35 locations in the RAA. As this information may reveal unique interactions between the Project and MCCN members' socioeconomic conditions and current use and/or new or worsened potential Project effects, this information must be considered.	a) Describe how local Project effects to the Pukatawagan Registered Traplines and the Youth Training Camp, including consideration of avoidance behaviours, may affect current use and/or Indigenous socioeconomic conditions, and revise the assessment of potential Project effects to Indigenous peoples, including the residual and cumulative effects assessments, to consider these effects. i. Describe mitigation and follow-up and monitoring measures that will be implemented to address effects identified in a). b) Clarify whether engagement activities were conducted with each the of the 19 commercial trapline permit holders within the Indigenous socio-economic conditions LAA that may be affected by the Project. i. If not, provide a rationale why these engagement activities have not been conducted and/or describe when these engagement activities will be conducted and how this information will be used to update the assessment of potential Project effects to Indigenous socioeconomic conditions. ii. Describe the activities that were conducted to verify the data used and conclusions formed with the trapline permit holders and the outcome of these activities. iii. Identify and discuss areas of disparity between the views of trapline permit holders and the Proponent, efforts made to reconcile disparities, and a rationale for conclusions on matters for which disparity in views remains. c) Revise the assessment of potential Project effects to Indigenous socioeconomic conditions and current use to consider potential impacts to trapping activities on any applicable traplines that overlap with the Indigenous socioeconomic conditions LAA. i. Describe mitigation and follow-up and monitoring measures that will be implemented to address effects.

				Further, several Indigenous nations, including MCCN and the MMF, express concerns regarding the lack of Nation-specific baseline data presented in the EIS and the Proponent's responses to several Round 1 Information Requests, and the limited engagement conducted by the Proponent with respect to Indigenous socioeconomic conditions, including as it relates to trapping. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples, including current use and Indigenous socioeconomic conditions. **See Annex I for related advice.**	d) Revise the assessment of potential Project effects to current use and Indigenous socioeconomic conditions, including the residual and cumulative effects assessment, to consider information provided by MCCN in its TLRU study, including the location of areas used for trapping within the PDA, LAA, and RAA, and any new information provided by other Indigenous nations since submission of Round 1 Information Request responses. Refer to IAAC-R2-57 for more information on the requirements for baseline data regarding Indigenous socioeconomic conditions and current use. i. If new or worsened effects are identified in d), describe mitigation and follow-up and monitoring measures that will be implemented to address effects.
Current Use of Lands and Resources for Traditional Purposes by Indigenous Peoples					
IAAC-R2-131	Mathias Colomb Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses Chemawawin Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses Sayisi Dene First Nation –	4.2.2 Community knowledge and Aboriginal traditional knowledge 6.4 Mitigation measures	11.4.4.2 Mitigation 11.4.4.3 Project Residual Effects Federal IR Responses, Round 1, Package 3, Response to IAAC-155	The EIS Guidelines require the Proponent to describe potential Project effects to Indigenous peoples, including species of importance to Nations, and describe mitigation measures to avoid or lessen potential adverse effects to species of importance to Indigenous peoples. The Proponent is also required to consider Indigenous traditional knowledge in the development of mitigation measures, and develop a follow-up program that evaluates the effectiveness of mitigation measures with input from Indigenous nations. In its response to IAAC-155 and IAAC-158, the Proponent describes mitigation and follow-up and monitoring measures that will be implemented to address potential Project effects to plant SOCC, plant species of importance to Indigenous nations, and wetlands. The Proponent has not described the anticipated effectiveness of the mitigation measures proposed or the contingency/adaptive management measures that will be implemented if mitigation measures, including reclamation, are ineffective or less effective than anticipated. MCCN, CCN, PBCN, and SDFN note concerns that mitigation measures, including the selection of native seed mixes to be used for reclamation and invasive species and erosion control, have been developed without input from Indigenous nations. It is also unclear how the Proponent will ensure that native plant species of importance to Indigenous nations are included in seed mixes when seeds	a) Discuss how input from Indigenous nations was used to inform the selection of mitigation measures to address potential Project effects to plant species of importance to Indigenous nations, including the selection of seed mixes. i. Describe the activities that were conducted to verify the data used and conclusions formed with the applicable Indigenous nations and the outcome of these activities. ii. Identify and discuss areas of disparity between the views of Indigenous nations and the Proponent, efforts made to reconcile disparities, and a rationale for conclusions on matters for which disparity in views remains. b) Discuss how input from Indigenous nations was used to inform the Proponent's proposed follow-up and monitoring plan with respect to plant species of importance to Indigenous nations. i. Describe Proponent plans to address Indigenous nations' concerns regarding the level of engagement conducted with respect to the follow-up and monitoring plans for plant species of

	Technical Review of Round 1, Package 3 Information Request Responses Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests			from these species may not be available in commercial seed mixes. Further, while an opportunity was provided to comment on the Proponent's proposed follow-up and monitoring plan with respect to plant species of importance to Indigenous nations, Nations were not provided with adequate time and resources to provide feedback. Therefore, a lack of comment on these plans should not be interpreted as a lack of interest and/or a lack of concern. SDFN also expresses concerns that it is unclear whether the Proponent will provide an opportunity for interested Indigenous nations to participate in Indigenous monitoring activities during Project construction, operation, and decommissioning, particularly with respect to monitoring vegetation re-establishment and ensuring that native plant species of importance to Indigenous nations are successfully re-establishing within the PDAs. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples, including species of importance to the exercise of rights and current use.	importance to Indigenous nations. c) Describe the anticipated effectiveness of mitigation measures proposed to address potential Project effects to plant SOCC, plant species of importance to Indigenous nations, and wetlands, including wetland function. i. Describe the contingency/adaptive management measures that will be implemented if mitigation measures, including reclamation, are ineffective or less effective than anticipated. d) Describe how reclamation measures for plant species of importance to Indigenous nations will be undertaken to recover native plant species of interest for which commercial seed mixes are not available. i. If reclamation measures to restore the presence, abundance, and distribution of native plant species of importance to Indigenous nations is unsuccessful, describe how this may influence the assessment of potential Project effects to Indigenous peoples and the assessment of impacts to rights, including the determination of the significance of potential effects. ii. Describe follow-up and monitoring measures, including Indigenous monitoring, that will be conducted to confirm whether reclamation measures, including restoration of native plant species, is successful. Describe contingency measures that will be implemented if restoration of native plant species is unsuccessful.
IAAC-R2-132	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical Review of	6.2.3 Changes to riparian, wetland and terrestrial environments 6.3.4 Indigenous peoples	11.5 Assessment of Cumulative Environmental Effects on Vegetation and Wetlands Federal IR Responses, Round	The EIS Guidelines require an assessment of the cumulative effects on current use of lands and resources for traditional purposes, focusing on relevant activities, and to consider overall impacts on Indigenous rights-based activities, traditional lands and resources, and health and socio-economic conditions. In its response to IAAC-158, the Proponent states that the wetland and vegetation cumulative effects assessment included consideration of potential cumulative effects to vegetation and wetlands used for traditional	a) Describe the level of uncertainty and limitations associated with the assessment (including the residual and cumulative effects assessments) of potential Project effects to plant species of importance to Indigenous peoples, including the assessment of the anticipated significance of effects, given the lack of quantitative data regarding the abundance of these plant species in the RAA. Describe any assumptions that were made, including any extrapolation of data from the PDA, and discuss how those assumptions may affect the

	Round 1, Package 3 Information Request Responses Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests	6.6.3 Cumulative effects assessment	1, Package 3, Response to IAAC-158	purposes by Indigenous peoples. However, effects could not be quantified as data on the extent of future projects and abundance of plant species of importance to Indigenous nations in the RAA are not available. PBCN and MCCN express concerns that the contribution of potential future projects in the area of the Project have not been assessed quantitatively, which limits their ability to accurately assess the anticipated significance of cumulative effects to current use. It is also unclear what assumptions (i.e. in terms of qualitatively defining potential cumulative effects of future projects) were made with respect to the assessment of effects of the Project, including the residual effects assessment, and the cumulative effects assessment for current use, given the lack of data regarding the abundance of plants of importance to Indigenous peoples in the RAA, and how these assumptions may affect the certainty of the Proponent's assessments. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples, including current use.	level of uncertainty with respect to predictions regarding potential Project and cumulative effects. i. Describe follow-up and monitoring and adaptive management plans that will be implemented to address any unanticipated effects of the Project and cumulative effects to plant species of importance to Indigenous peoples. Refer to IAAC-R2-04 for further details regarding information requirements for adaptive management plans. ii. Describe how Indigenous nations will be involved in the design and implementation of follow-up and monitoring and adaptive management plans.
IAAC-R2-133	Impact Assessment Agency of Canada Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Request Responses Mathias Colomb Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses	6.1.9 Indigenous peoples 6.3.4 Indigenous peoples	17.1.4 Potential Effects, Pathways and Measurable Parameters Federal IR Responses, Round 1, Package 3, Response to IAAC-188	The EIS Guidelines require the Proponent to describe changes to the environment that may affect current use, including how these changes may affect conditions that support traditional use and practices. The Proponent is also required to provide baseline information for each Indigenous nation to inform the assessment of potential effects of the Project to Indigenous peoples, including consideration of both primary and secondary sources of information regarding baseline conditions and changes to the environment. In its response to IAAC-188, the Proponent states that intangible effects can only be meaningfully evaluated by individuals and communities experiencing these values in their cultural context and such effects are difficult to mitigate or quantitatively assess by an external party. Where an Indigenous nation identified a related concern, the subjective and experiential components of current use that could not be measured or meaningfully assessed from a Western science perspective were considered narratively. Several Indigenous nations, including SDFN, MCCN, PBCN, and CCN, note that, while intangible effects may be difficult to quantitatively assess and mitigate, focused engagement with Indigenous nations can help to identify these potential effects and discuss potential mitigation and accommodation measures. Indigenous nations also note concerns that, to date, meaningful engagement with their Nations by the Proponent,	a) Provide baseline data regarding intangible aspects/values associated with current use that may be affected by the Project for each Indigenous nation, including consideration of the information provided by MCCN in its TLRU study. i. Where baseline data is not publically available, describe past and current engagement activities with Indigenous nations to collect this information. b) Describe potential Project effects, including the anticipated significance of potential effects, to intangible aspects/values associated with current use, including consideration of potential avoidance behaviours. i. Identify mitigation and follow-up and monitoring measures that will be implemented to address any potential effects identified in b). c) Describe the activities that were conducted to verify the data used and conclusions formed with the applicable Indigenous nations and the outcome of these activities. i. Identify and discuss areas of disparity between the views of Indigenous nations and the Proponent, efforts made to reconcile disparities,

	Chemawawin Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses Sayisi Dene First Nation – Technical Review of Round 1, Package 3 Information Request Responses			particularly with respect to potential Project effects to intangible aspects of current use, has been limited. Further, MCCN also notes that, their TLRU study identifies intangible elements of MCCN's current use, including knowledge transmission and sense of place, that have the potential to be adversely affected by the Project. This information was reflected in the Proponent's assessment of potential effects to current use. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples, including current use.	and a rationale for conclusions on matters for which disparity in views remains.
IAAC-R2-134	Impact Assessment Agency of Canada Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Request Responses Manitoba Metis Federation – Technical Review of Round 1,	6.3.4 Indigenous peoples	19.4.3.1 Effect Pathways Federal IR Responses, Round 1, Package 3, Response to IAAC-189	The EIS Guidelines require the Proponent to describe potential Project effects to current use. This assessment is to include any changes to access and perceived access to areas used for traditional purposes and changes that could detract from use of the area or lead to avoidance as a result of the Project and associated (e.g. actual and/or perceived) disturbance of the environment. In its response to IAAC-189, the Proponent states that signage may be posted indicating that hunting and the discharge or possession of a firearm or bow on or within 300 metres from the Gordon and MacLellan sites is prohibited for safety purposes under The General Hunting Regulation of Manitoba's *The Wildlife Act*. As the need for this signage has not yet been determined, and is outside the control of Alamos, the area that may be affected by this restriction has not been included in the calculation of the area of unoccupied Crown land where the use of firearms will be prohibited. Although it has not yet been determined whether a firearms restriction within 300 metres of the Project will be required, the Proponent must take a precautionary approach and consider this area within the area	a) Revise the assessment of potential Project effects to current use by Indigenous peoples and the impacts to rights assessment, including the residual and cumulative effects assessments, to consider that a firearms restriction within 300 metres of the Project may be required, including any potential effects associated with avoidance behaviours. i. Calculate the total area of land where Indigenous access may be restricted as a result of the Project. ii. If any new or worsened effects to Indigenous peoples are identified in a), describe mitigation and follow-up and monitoring measures that will be implemented to address potential effects.

	Package 3 Information Request Responses Chemawawin Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses			of land that may be affected by the Project and in turn affect current use and the hunting rights of Indigenous peoples. Although the restriction applies to firearms and bow use, it may result in avoidance of the area within the 300 metre buffer by Indigenous nations who otherwise may have used the area for purposes other than hunting, such as gathering and ceremonial use, as firearms and bows may be carried for protection. Therefore, although the restriction may affect other current use and/or rights-based activities that must be considered in the assessment. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples, including current use.	
IAAC-R2-135	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses	6.3.4 Indigenous peoples	17.3 Project Interactions with Current Use of Land and Resources for Traditional Purposes Lynn Lake Gold Project Environmental Impact Statement: Second Supplemental Filing of Indigenous Engagement Activities Federal IR Responses, Round 1, Package 3, Response to IAAC-192	The EIS Guidelines require the Proponent to describe changes to the environment caused by the Project that may affect the health of Indigenous peoples and the current use of lands and resources for traditional purposes, including changes to water quality and the availability of country foods. The Proponent is also required to provide information regarding potential adverse impacts of the Project on Indigenous rights. In its response to IAAC-193, the Proponent states that adverse effects on fish health, growth, or survival from changes in water quality downstream of the MacLellan and the Gordon sites are not expected. Given that the dissolved chemical concentrations in the water are not expected to alter the abundance or distribution of fish that could be harvested for subsistence purposes, effects to the exercise of Indigenous or Treaty rights are not anticipated. The Proponent also states in its response to IAAC-195 that, given that measurable changes in the abundance and distribution of wildlife in the LAA is not anticipated, population levels effects on wildlife are also not anticipated, resulting in low magnitude effects on the availability of and access to traditionally harvested species. It is unclear whether the Proponent considered potential effects to Indigenous peoples, including Indigenous health, current use, and the exercise of rights, due to avoidance of certain locations used for fishing, hunting, trapping, the harvest of country foods, and other purposes near the Project area due to real or perceived contamination of fish or surface water as a result of the Project.	a) Clarify whether potential effects to Indigenous health, current use, and Indigenous rights due to avoidance of certain locations currently used for traditional and cultural practices, including the harvest of country foods, and the exercise of rights due to real or perceived contamination of fish, wildlife, plants, and surface water were considered in the assessment of potential Project effects to Indigenous health, current use, and Indigenous rights. i. If potential effects associated with avoidance were not considered, revise the assessment of potential Project effects to Indigenous health, current use, and Indigenous rights, including the residual and cumulative effects assessments, to consider this potential effect. ii. If new or worsened potential effects are identified in response to i), describe mitigation and follow-up and monitoring measures that will be implemented to address effects. b) Revise the assessment of potential Project effects to Indigenous health, current use, and Indigenous rights to incorporate the new information provided by MCCN in its Indigenous Knowledge and Use Study and any new information provided by other Indigenous nations since submission of Round 1 Information Request responses.

			Federal IR Responses, Round 1, Package 3, Response to IAAC-193 Federal IR Responses, Round 1, Package 3, Response to IAAC-194 Federal IR Responses, Round 1, Package 3, Response to IAAC-195	The Proponent also states in its response to IAAC-192 to IAAC-195 that the information provided by MCCN in its TLRU report serves to confirm the assumptions made in the EIS regarding the nature and extent of Indigenous traditional use in relation to the Project and the information shared by MCCN is consistent with the EIS. In the EIS, the Proponent also notes that there are no known traditional, cultural, or spiritual sites or areas within the PDA. MCCN notes that its Indigenous Knowledge and Use Study identifies important values associated with resources in the Project area and a number of fishing, hunting, trapping, and plant harvesting sites of importance to MCCN members within the PDA, LAA, and RAA that have not been considered in either the EIS or in the Proponent's response to IAAC-192 to IAAC-195. Therefore, the assessment of potential Project effects to Indigenous health, current use, and Indigenous rights must be revised to consider the new information provided by MCCN in its Indigenous Knowledge and Use Study and any new information provided by other Indigenous nations since submission of Round 1 Information Request responses. This information is required to support the Agency's understanding of potential Project effects to Indigenous health, current use, and Indigenous rights.	i. Describe the activities that were conducted to verify the data used and conclusions formed with the applicable Indigenous nations and the outcome of these activities. ii. Identify and discuss areas of disparity between the views of Indigenous nations and the Proponent, efforts made to reconcile disparities, and a rationale for conclusions on matters for which disparity in views remains.
IAAC-R2-136	Mathias Colomb Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses Chemawawin Cree Nation – Technical Review of Round 1, Package 3 Information	6.1.9 Indigenous peoples 6.3.4 Indigenous peoples	7.1.2.1 Indigenous Engagement 7.4.2.4 Project Residual Effects Federal IR Responses, Round 1, Package 3, Response to IAAC-196	The EIS Guidelines require the Proponent to describe changes to the environment caused by the Project that may affect the health of Indigenous peoples, including changes to noise exposure, effects of vibration from blasting, and current and future availability of country foods. The Proponent is also required to provide information related to potential adverse impacts of the Project on Indigenous rights, including title and related interests. In its response to IAAC-196, the Proponent states that changes to the availability and access to wildlife were assessed relative to the predicted residual effects on wildlife habitat. In the EIS, the Proponent also states that, with mitigation, the change in resource availability is anticipated to be low, as the Project is not expected to cause population level effects, despite some mortalities and displacement. MCCN, PBCN, and CCN note concerns that, while population level effects are not anticipated, localized wildlife mortality and displacement could result in adverse effects to current use and impacts to rights due to changes in the availability of resources at preferred harvesting locations, changes to the timing of	a) Revise the assessment of potential Project effects to current use and impacts to rights, including the residual and cumulative effects assessments, to consider that localized wildlife mortality and displacement could result in adverse effects to current use and impacts to rights due to changes in the availability of resources at preferred harvesting locations, changes to the timing of current use activities, and the need to travel farther to access resources that, prior to the Project, were available and/or more abundant locally. i. If new or worsened potential effects are identified in a), describe mitigation and follow-up and monitoring measures that will be implemented to address effects.

	Request Responses Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests			current use activities, and the need to travel farther to access resources that, prior to the Project, were available and/or more abundant locally. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples, including current use, and impacts to rights.	
Indigenous Physical and Cultural Heritage					
IAAC-R2-137	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses	6.3.4 Indigenous peoples	16.4 Assessment of Residual Environmental Effects on Heritage Resources 19.4.5 Change in Indigenous Physical and Cultural Heritage Federal IR Responses, Round 1, Package 3, Response to IAAC-184 Federal IR Responses, Round 1, Package 3, Response to IAAC-185 Federal IR Responses, Round 1, Package 3,	The EIS Guidelines require the Proponent to describe, for each Indigenous nation, how changes to the environment resulting from the Project may affect physical and cultural heritage, and any structure, site, or thing of historical, archaeological, paleontological, or architectural significance to Indigenous peoples, including intangible cultural heritage values such as sacred areas, cultural landscapes, and language use and transmission. In its response to IAAC-184, IAAC-185, and IAAC-186, the Proponent states that no new information regarding Indigenous physical and cultural heritage values or sites were identified by Indigenous nations and that the information provided by MCCN in its TLRU report (i.e. MCCN's Indigenous Knowledge and Use Study) serves to confirm the assumptions made in the EIS regarding the nature and extent of Indigenous traditional use in relation to the Project. Therefore, no updates to the effects assessment for Indigenous physical and cultural heritage are required at this time. In the EIS, the Proponent also notes that at the time of filing the EIS, Indigenous nations engaged on the Project had not identified cultural sites, buildings, or landscapes within the MacLellan site or Gordon site PDA. MCCN notes that its TLRU report identifies important features required for MCCN's cultural continuity within the Project footprint and LAA, including harvesting sites for various species of berries and medicines, burial sites, camping and cabin sites, gathering places, teaching areas, terrestrial and water routes, and cultural, spiritual, and ceremonial sites. Therefore, the assessment of potential Project effects to physical and cultural heritage and any structure, site, or thing of historical, archaeological, paleontological, or architectural significance to Indigenous nations must be revised to consider the new information provided by MCCN in its Indigenous Knowledge and	a) Revise the assessment of potential Project effects to physical and cultural heritage and any structure, site, or thing of historical, archaeological, paleontological, or architectural significance to Indigenous nations to consider the new information provided by MCCN in its Indigenous Knowledge and Use Study and any new information provided by other Indigenous nations. i. Describe the activities that were conducted to verify the data used and conclusions formed with the applicable Indigenous nations and the outcome of these activities. ii. Identify and discuss areas of disparity between the views of Indigenous nations and the Proponent, efforts made to reconcile disparities, and a rationale for conclusions on matters for which disparity in views remains. b) If any new or worsened effects to Indigenous peoples are identified, describe mitigation and follow-up and monitoring measures that will be implemented to address effects.

			Response to IAAC-186	Use Study and any new information provided by other Indigenous nations since submission of Round 1 Information Request responses. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples, including physical and cultural heritage and any structure, site, or thing of historical, archaeological, paleontological, or architectural significance to Indigenous peoples.	
Accidents and Malfunctions					
IAAC-R2-138	Impact Assessment Agency of Canada	6.6.1 Effects of potential accidents and malfunctions 6.6.2 Effects of the environment on the project	22.5 Effects Assessment of Potential Accidents or Malfunctions 22.4.3 Ore Milling and Processing Plant Accident or Malfunction 22.4.4 Sewage Treatment Plant Malfunction or Discharge Pipeline Failure 22.4.6 Open Pit Slope Failure 22.4.8 Over-Blasting 22.4.9 Fire/Explosions 23.5.1 Emergency Response and Spill Prevention	The EIS Guidelines require the Proponent to conduct an analysis of the risks of accidents and malfunctions across all Project phases, taking into account the plausible worst case scenarios and effects of these scenarios. The Proponent is also required to demonstrate that the precautionary approach has been applied to its assessment and analysis to avoid significant adverse environmental effects. In its response to IAAC-137, the Proponent describes the potential effects of five potential accidental events or malfunctions that may result in adverse effects to VCs. In the EIS, the Proponent also lists five additional accident and/or malfunction scenarios that may occur but that are unlikely to result in effects to VCs, given the mitigation measures that will be implemented. These scenarios include an Ore Milling and Processing Plant accident or malfunction; Sewage Treatment Plant malfunction or discharge pipeline failure; open pit slope failure; over-blasting; and fires/explosions. In the event that these events occur and mitigation measures applied to prevent the accident and/or malfunction scenarios listed, including worst case scenarios, are not effective or are not as effective as anticipated, information is required to understand potential effects to VCs and contingency measures that will be applied to address these effects. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples, fish and fish habitat, and other VCs that may affected by accidents and malfunctions.	a) For each of the following accident and/or malfunction scenarios, assuming that mitigation measures are not effective or are not as effective as anticipated, describe the worst case scenario and the effects of these scenarios to VCs, including the magnitude of the event and the quantity, mechanism, rate, form, and characteristics of the contaminants and other materials likely to be released: i. Ore Milling and Processing Plant accident or malfunction; ii. Sewage Treatment Plant malfunction or discharge pipeline failure; iii. open pit slope failure; iv. over-blasting; and v. fires/explosions. b) For each of the scenarios listed in a), describe the emergency response measures, capacities, contingency measures, and emergency response procedures that will be implemented.

			and Contingency Plan Federal IR Responses, Round 1, Package 2, Response to IAAC-137		
IAAC-R2-139	Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses	6.6.1 Effects of potential accidents or malfunctions	22.4.1 Tailings Management Facility Malfunction Federal IR Responses, Round 1, Package 2, Response to IAAC-140	The EIS Guidelines require the Proponent to conduct an analysis of the risks of accidents and malfunctions across all phases of the Project, determine their effects, and present preliminary emergency response measures and capacities. This assessment will include an identification of the magnitude of an accident and/or malfunction, including the quantity, mechanism, rate, form, and characteristics of the contaminants and other materials likely to be released into the environment during the event. In its response to IAAC-140, the Proponent states that the worst case scenario of uncontrolled seepage from the TMF would likely be due to a pre-existing defect in the liner, which would result in a localized increase in seepage by one order of magnitude versus the rate that would be associated with a properly functioning liner (i.e. an increase from 10^{-6} metres per second to approximately 10^{-5} metres per second). However, an increase in dam seepage by an order of magnitude should still be able to be contained by the surrounding collection ditches and seepage collection systems. MMF expresses concerns that the Proponent has not provided a rationale or evidence to support the statement that a defect in the liner would cause an increase in seepage of only one order of magnitude or that surrounding collection ditches and seepage collection systems will have sufficient capacity to capture the seepage. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples, fish and fish habitat, and other VCs that may be affected by accidents and malfunctions.	a) Provide a rationale and/or data to support the statement that a defect in the liner of the TMF would result in a localized increase in seepage by one order of magnitude versus the rate that would be associated with a properly functioning liner and that surrounding collection ditches and seepage collection systems will have sufficient capacity to capture the additional seepage in the event of a liner malfunction. i. Describe the assumptions that were used to derive the conclusions above and comment on how those assumptions may influence the uncertainty of predictions.
IAAC-R2-140	Chemawawin Cree Nation - Technical Review of Round 1 Information Requests	2.4 Application of the precautionary approach 6.6.1 Effects of potential	23.5.1 Emergency Response and Spill Prevention and Contingency Plan	The EIS Guidelines require the Proponent to conduct an analysis of the risks of accidents and malfunctions across all Project phases, including the quantity, mechanism, rate, form, and characteristics of the contaminants and other materials likely to be released into the environment during the event. The Proponent is also required to identify preliminary emergency response measures, capacities for contingency and emergency response,	a) Provide further details regarding emergency response capacities in the event of an accident and/or malfunction, which parties will be responsible for responding and providing capacity to such an event, where personnel who will be responsible for responding to emergency scenarios will be located (i.e. to inform response times), and who will be responsible for implementing contingency measures to

		accidents or malfunctions 8.0 Follow-up and Monitoring Programs	22.5 Effects Assessment of Potential Accidents or Malfunctions Federal IR Responses, Round 1, Package 2, Response to IAAC-142 Federal IR Responses, Round 1, Package 2, Response to IAAC-143	and procedures that would be put in place if accidents and malfunctions occur. In its response to IAAC-142 and IAAC-143, the Proponent describes emergency response measures that will be implemented in the event of an accident and/or malfunction scenario. Further details are required regarding emergency response measures, including emergency response capacities, which parties will be responsible for responding and providing capacity in the event of an accident or malfunction, where personnel who will be responsible for responding to emergency scenarios will be located (i.e. to inform response times), and who will be responsible for implementing contingency measures to address effects to VCs of accidents and malfunctions. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples, fish and fish habitat, and other VCs that may be affected by accidents and malfunctions.	address effects to VCs of accidents and malfunctions. Include a discussion of whether resources available (e.g. personnel, equipment, etc.) will be sufficient to address the worst case scenarios for each accident and/or malfunction event.
IAAC-R2-141	Mathias Colomb Cree Nation – Technical Review of Round 1, Package 2 Information Request Responses Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests	6.6.1 Effects of potential accidents or malfunctions 6.6.2 Effects of the environment on the project	9.4.1.2 Project Pathways 21.4.1.2 Potential Effects of Climate and Climate Change on the Project 22.4.1 Tailings Management Facility Malfunction 22.5.1 Tailings Management Facility Malfunction 2.3 Project Activities and Components	The EIS Guidelines require the Proponent to conduct an analysis of the risks of accidents and malfunctions across all Project phases, taking into account the plausible worst case scenarios and effects of these scenarios. The Proponent is also required to take into account how local conditions and natural hazards could adversely affect the Project and how this in turn could result in effects to the environment. In its response to IAAC-141, the Proponent states that up to 1:100 year precipitation conditions in the operating range and a 1:100 year environmental design flood, based on historical records, were used to conduct the assessment of potential effects of the environment on the Project, particularly effects related to effects of the environment on the TMF and emergency spillway, and consequent effects to VCs. During the next phase of Project detailed design, effects of climate change will be considered, including extreme precipitation events, and a dam breach assessment will be performed to confirm the consequences of failure, the likelihood and consequence of a dam breach, and the potential modes of failure. As a TMF failure or dam breach could result in adverse effects to VCs (i.e. Indigenous peoples, the exercise of Indigenous rights, fish and fish habitat, etc.), MCCN expresses concerns that an analysis of the effects of climate change and extreme weather events on the TMF and emergency spillway, and a dam breach assessment have not been completed to inform	a) Describe the potential effects of climate change, including extreme precipitation events, flooding, and other related natural hazards under climate change scenarios, on the TMF and emergency spillway, including the likelihood and frequency of a dam breach and overtopping of berms, resulting in the uncontrolled release of contaminants and effluent. Include a rationale for the climate change scenario(s) used, describe any assumptions made, and how those assumptions may affect the uncertainty of predictions. i. Describe potential effects to VCs, including impacts to Indigenous rights, should a dam breach or overtopping of berms occur. ii. Describe the emergency response procedures and mitigation and/or contingency measures that will be implemented to address any adverse effects to VCs identified in i). b) Describe how Indigenous knowledge was considered and incorporated into the assessment of effects of climate change on the Project referred to in a), and resultant effects

			Federal IR Responses, Round 1, Package 2, Response to IAAC-141	the environmental assessment for the Project. Without this information, the potential effects of the Project, including the anticipated significance of effects, may be underestimated and/or not adequately mitigated. PBCN notes that it is important to consider Indigenous knowledge when determining applicable climate change scenarios and determining the effects of climate change, as these effects are already being experienced by Indigenous nations. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples, fish and fish habitat, and other VCs that may be affected by effects of the environment on the Project and/or accidents and malfunctions. **See Annex I for related advice.**	to VCs, including the selection of climate change scenario(s) and the assessment of effects to VCs. i. If Indigenous knowledge was not considered in the assessment, describe the engagement activities that the Proponent will conduct with Indigenous nations to collect this information and how the Proponent will ensure that this information is provided to the Agency to inform the environmental assessment and the Environmental Assessment Report.
Effects of the Environment on the Project					
IAAC-R2-142	Impact Assessment Agency of Canada Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses	6.6.2 Effects of the environment on the Project	5.2.1 Climate and Meteorology 5.2.5.1 Glacial and Post Glacial History 5.2.5.3 Terrain, Surficial Geology, and Permafrost 21.4.1 Climate and Climate Change 21.4.2 Geological Hazards Federal IR Responses, Round 1, Package 2, Response to IAAC-138	The EIS Guidelines require the Proponent to take into account how local conditions and natural hazards, such as severe and/or extreme weather conditions and external events could adversely affect the Project and how this in turn could result in effects to the environment. In its response to IAAC-138, the Proponent notes that localized degradation of permafrost is already occurring with the Project LAA and RAA and that permafrost degradation is known to have implications on terrain stability. While it is anticipated that construction activities will require removal of any soil/overburden susceptible to potential thaw settlement, in the event that permafrost soils would not be removed as part of Project construction activities, mitigation techniques to reduce the effects of permafrost degradation would be implemented. Details of these mitigation measures have not been provided. The Proponent also notes that monitoring of terrain stability, including permafrost monitoring, will not be conducted. The MMF expresses concerns with this lack of monitoring, as landslides caused by permafrost degradation may alter the landscape and contribute to or exacerbate Project effects to traditional land use and impacts to rights. It is also unclear how, in the absence of monitoring, the Proponent will verify its predictions with respect to potential effects of permafrost on the Project and ensure that mitigation measures to reduce the effects of permafrost degradation, if required, are effective.	a) Describe mitigation measures that will be implemented in the event that permafrost soils are not removed as part of Project construction activities. i. In the event that mitigation measures to reduce the effects of permafrost degradation are required, provide details of the monitoring plan that will be implemented to verify the effectiveness of mitigation measures, including the parameters to be measured/monitored, proposed monitoring locations, contingency measures, and the thresholds that will trigger the implementation of contingency measures.

				This information is required to support the Agency's understanding of potential effects of the environment on the Project, which in turn may affect VCs, such as Indigenous peoples. **See Annex I for related advice.**	
IAAC-R2-143	Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses	6.6.2 Effects of the environment on the Project	21.4 Assessment of the Effects of the Environment on the Project Federal IR Responses, Round 1, Package 2, Response to IAAC-145	The EIS Guidelines require the Proponent to take into account how local conditions and natural hazards, such as severe and/or extreme weather conditions and external events could adversely affect the Project and how this in turn could result in effects to the environment. In its response to IAAC-145, the Proponent notes that a draft flood modelling assessment was conducted for the Project, which was used to inform hydraulic modelling to determine the water surface elevation associated with the design flood events (i.e. 1:25 and 1:100 year floods). The MMF expresses concerns that the modelling and analysis of flood risks only considers the elevation of the flood waters and does not address the potential risks to mine infrastructure, including potential overtopping of the TMF, which may in turn affect VCs, including Indigenous peoples. This information is required to support the Agency's understanding of potential effects of the environment on the Project, which in turn may affect VCs, such as Indigenous peoples.	a) Describe potential risks to mine infrastructure associated with the modelled flood events (i.e. 1:25 and 1:100 year floods), including potential overtopping of the TMF. i. Based on the potential risks to infrastructure identified in a), describe potential effects to VCs should flood events damage or otherwise interact with Project infrastructure and contaminants be released to the surrounding environment. ii. Describe mitigation measures and follow-up and monitoring that will be implemented to address any adverse effects identified in i).
Cumulative Effects					
IAAC-R2-144	Impact Assessment Agency of Canada	3.2.3. Spatial and temporal boundaries 4.2.2 Community knowledge and Aboriginal traditional knowledge 6.6.3 Cumulative effects assessment	4.3.2.1 Spatial Boundaries 8.1.4.1 Spatial Boundaries 8.4.2.1 Project Pathways for Change in Groundwater Quantity and/or Flow 8.5.1 Project Residual Effects	The EIS Guidelines require the Proponent to define and justify the spatial and temporal boundaries for the cumulative effects assessment for each VC. The EIS Guidelines also specify that temporal boundaries be defined taking into account effects predicted after Project decommissioning and reclamation. In its response to IAAC-18, the Proponent states that the temporal boundaries for the cumulative effects assessment are the same for all VCs and consist of the construction, operation, and decommissioning/closure phases of the Project. In the EIS, the Proponent indicates that during decommissioning/closure, surface water runoff from the Project directed to the open pits and removal of water management facilities are expected to result in changes to groundwater flow direction and discharge that will persist into post-closure phase until the open pits are filled. The Proponent also notes in the EIS that potential Project effects to surface water,	a) Clarify whether the post-closure phase is included in the temporal boundary for the cumulative effects assessment, particularly for VCs for which residual Project effects are expected to persist into the post-closure phase. i. If the post-closure phase was not included in the temporal boundary for the cumulative effects assessment, revise the temporal boundary used for the assessment to include the post-closure phase and revise the cumulative effects assessments for all VCs to consider the updated temporal boundary. ii. Clearly describe which residual Project effects for each VC are expected to persist into the post-closure phase.

			Likely to Interact Cumulatively 9.4.3.2 Surface Water Quality 9.5.1 Project Residual Effects Likely to Interact Cumulatively Federal IR Responses, Round 1, Package 1, Response to IAAC-18	including changes to mean annual flows and water quality, are expected to continue into the post-closure phase. It is unclear whether the post-closure phase was included within the temporal boundary for the cumulative effects assessment. As residual effects of the Project to surface water and groundwater, and potentially other VCs, are expected to persist into the post-closure phase, this phase must be included within the temporal boundary for the cumulative effects assessment. In the EIS, the Proponent notes that without the Project, surface water quantity and quality within the RAA may be influenced by reasonably foreseeable projects such as mineral exploration or mining project developments. However, these projects would be expected to implement mitigation measures to protect water quantity, therefore significant cumulative effects to background water quantity as a result of future potential projects within the RAA are not anticipated. It is unclear what assumptions were made in reaching this determination or how the precautionary principle was applied. This information is required to support the Agency's understanding of potential cumulative effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water and groundwater, and other VCs for which residual Project effects are expected to persist into the post-closure phase.	b) Describe the assumptions that were made in concluding that significant cumulative effects to background water quantity and quality as a result of future potential projects within the RAA are not anticipated and how the Proponent accounted for uncertainty and the precautionary approach in assessing cumulative effects. i. Describe the level of uncertainty with respect to predictions and conclusions and how any assumptions made may influence the uncertainty of predictions.

Annex I. Advice and Requests

The following table includes advice and requests from federal authorities and Indigenous nations for Proponent consideration and/or that provide supporting information to the IRs above. The Proponent is not required to respond to the following advice or requests as part of its responses to Round 2 IRs.

Advice and Requests					
Relevant IR	**Expert Dept. or Group**	**EIS Guideline Reference**	**EIS Reference**	**Context and Rationale**	**Advice or Requests**
IAAC-R2-74 request	Mathias Colomb Cree Nation – Technical Review of Round 1, Package 2 Information Request Responses	4.2.2 Community knowledge and Aboriginal traditional knowledge 6.2.2 Changes to groundwater and surface water 6.5 Significance of residual effects	8.1.6 Significance Definition Federal IR Responses, Round 1, Package 2, Response to IAAC-103	In its response to IAAC-103, the Proponent describes its approach for assessing the anticipated significance of residual environmental effects. With respect to the anticipated significance of Project effects to groundwater, MCCN notes concerns with the Proponent's characterization of predicted increases in the concentration of indicator parameters above drinking water guidelines as "not significant" on the basis that no groundwater users are currently known to withdraw water through a drilled or dug well within the area of influence of Project components. MCCN further notes that data provided by the Nation, including traditional and community knowledge, regarding use and rights related to groundwater quantity and quality have not been considered in the assessment, therefore the conclusion that no groundwater users are currently known to withdraw water through a drilled or dug well within the area of influence of Project components may not be valid. MCCN requests that the Proponent commit to engaging with MCCN, including the provision of time and resources, to jointly revise the significance determination thresholds and analysis methods for Project impacts to groundwater quantity and quality.	a) MCCN requests that the Proponent commit to engaging with MCCN, including the provision of time and resources, to jointly revise the significance determination thresholds and analysis methods for Project impacts to groundwater quantity and quality.
IAAC-R2-75 request	Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information	2.2 Alternative means of carrying out the project	Federal IR Responses, Round 1, Package 2, Response to IAAC-104	In its response to IAAC-104, the Proponent notes that a description of how Indigenous traditional knowledge was incorporated into the design of the TMF was included in the EIS. MMF notes concerns that information has not been provided regarding how information from their TLRU study specifically was used to inform the design of the TMF.	a) The MMF requests that the Proponent provide information regarding how information from their TLRU study was used to inform the design of the TMF.

	Request Responses				
IAAC-R2-77 advice	Peter Ballantyne Cree Nation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses	6.1.5 Groundwater and Surface Water 8.0 Follow-up and Monitoring Programs	8.4.3 Assessment of Change in Groundwater Quality 9.9 Follow-up and Monitoring 23.5.4 Groundwater Monitoring Plan 23.5.5 Surface Water Monitoring and Management Plan Federal IR Responses, Round 1, Package 2, Response to IAAC-57 Federal IR Responses, Round 1, Package 2, Response to IAAC-108	In its response to IAAC-108, the Proponent notes that surface water quality samples will be collected at an appropriate regular frequency, including the spring freshet each year, from each site over the life of the Project. PBCN recommends collecting surface water quality samples monthly, in addition to collecting five samples over a period of 30 days during the spring freshet and winter low flow periods to effectively characterize the natural viability in water quality during periods when there is likely to be the most variation in water quality.	a) PBCN recommends collecting surface water quality samples monthly, in addition to collecting five samples over a period of 30 days during the spring freshet and winter low flow periods to effectively characterize the natural viability in water quality during periods when there is likely to be the most variation in water quality.
IAAC-R2-80 request	Fisheries and Oceans Canada – Technical Review of Round 1, Package 3 Information Request Responses	6.1.6 Fish and fish habitat 6.2.3 Changes to riparian, wetland and terrestrial environments	11.4.2.3 Project Residual Effects Federal IR Responses, Round 1, Package 3, Response to IAAC-147	In its response to IAAC-148, the Proponent states that swamps (i.e. treed and shrubby) within the PDA are non-fish bearing as they are not connected to any fish-bearing watercourses, as determined by field surveys, and as they are sufficiently shallow to freeze to the bottom in winter (i.e. less than 50 centimetres deep). Of the swamps present in the PDA, only shrubby swamps located around the East Pond and adjacent to the East Pond outlet channel will be affected by the Project, as a result of water draw-down caused by development of the open pit. As these shrubby swamps are used	a) If the Proponent elects not to take the precautionary approach of assuming that all treed and shrubby wetlands which directly overlap with the MRSA and TMF support fish, DFO requests that the Proponent provide photo evidence of the sites referred to in IAAC-R2-80, including sites where fish sampling could not be conducted due to limited habitat availability.

		6.3.1 Fish and fish habitat	Federal IR Responses, Round 1, Package 3, Response to IAAC-148	by brook stickleback for spawning, rearing, and potential overwintering, their spatial area will be included in the calculation of harmful alteration, disruption, or destruction (HADD) of fish habitat. DFO expresses concerns with the Proponent's approach to identifying the fish-bearing status of wetlands, specifically as it pertains to wetlands that will be directly impacted (i.e. permanently destroyed) as a result of construction of the MSRA and TMF. Currently, impacts related to fish-bearing wetlands are only accounted for around East Pond. However, as the Proponent notes in its response to IAAC-147, waterbodies KEE3-B2, COC2-LOB2-MIN5-C1, COC2-LOB2-MIN5, FAR7-A1, and FAR5-CA have all been assessed as fish-bearing according to Proponent field studies. Therefore additional fisheries data, including fish inventories, for wetlands upstream of these waterbodies that overlap with the PDA is required. Alternatively, the Proponent must take the precautionary approach and assume that all treed and shrubby wetlands which directly overlap with the MRSA and TMF support fish and include these as part of the total impacts to fish and fish habitat.	
IAAC-R2-88 request	Sayisi Dene First Nation – Technical Review of Round 1, Package 2 Information Request Responses	4.2.2 Community knowledge and Aboriginal traditional knowledge 6.1.9 Indigenous peoples 6.2.1 Changes to the atmospheric environment	6.0 Assessment of Potential Effects on the Atmospheric Environment 6.4.1.4 Project Residual Effects Federal IR Responses, Round 1, Package 2, Response to IAAC-116 Federal IR Responses, Round 1, Package 2,	In its response to IAAC-116, the Proponent states that information from TLRU studies submitted by some Indigenous nations and engagement with Indigenous nations were used to inform the selection of receptor locations related to the current use of lands and resources for traditional purposes. SDFN expresses concerns that Nation-specific information from all Indigenous nations was not used to identify receptor locations, therefore some areas of importance to Nations may not be represented. SDFN requests that the Proponent commit to ongoing monitoring at additional receptor locations to account for the limited Nation-specific information used to select receptor locations for the assessment of effects to human health and Indigenous peoples due to Project effects to air quality.	a) SDFN requests that the Proponent commit to ongoing monitoring at additional receptor locations to account for the limited Nation-specific information used to select receptor locations for the assessment of effects to human health and Indigenous peoples due to Project effects to air quality.

		6.3.4. Indigenous peoples	Response to IAAC-117		
IAAC-R2-89 advice	Environment and Climate Change Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.2.1 Changes to the atmospheric environment	23.5.7 Air Quality Management Plan 23.5.9 Greenhouse Gas Management Plan Federal IR Responses, Round 1, Package 2, Response to IAAC-127	In its response to IAAC-127, the Proponent states that a GHG Management and Monitoring Plan will be developed that will detail technically and economically feasible mitigation measures to manage and reduce GHG emissions throughout the life of the Project. ECCC notes that the *Strategic Assessment of Climate Change* provides guidance regarding measures to mitigate GHG emissions, including Best Available Technologies/Best Environmental Practices and emerging technologies and practices. ECCC recommends that the Proponent consider the *Strategic Assessment of Climate Change* in developing its GHG Management and Monitoring Plan, particularly as it relates to the selection of technically and economically feasible mitigation measures to address GHG emissions. ECCC also recommends that the Proponent's GHG Management and Monitoring Plan include the following, based on the *Strategic Assessment of Climate Change*: • identify all main GHG emission sources associated with the Project; • for each emission source identified, provide a list of technologies/practices to reduce GHG emissions, including emerging technologies with high technology readiness level that may become technically and economically feasible in the coming years; • based on the list of technologies/practices that are technically and economically feasible, develop and plan to implement the technologies/practices over the lifetime of the Project. The implementation plan should consider when equipment will need to be replaced and foresee the replacement with less GHG intensive equipment/practices; • based on the implementation plan, establish GHG emissions reduction targets at specified intervals; and • discuss any barriers, challenges and risks associated to the implementation plan and how the Proponent will overcome them.	a) ECCC recommends that the Proponent consider the *Strategic Assessment of Climate Change* in developing its GHG Management and Monitoring Plan, particularly as it relates to the selection of technically and economically feasible mitigation measures to address GHG emissions. b) ECCC recommends that the Proponent's GHG Management and Monitoring Plan include the following, based on the *Strategic Assessment of Climate Change*: i. identify all main GHG emission sources associated with the Project; ii. for each emission source identified, provide a list of technologies/practices to reduce GHG emissions, including emerging technologies with high technology readiness level that may become technically and economically feasible in the coming years; iii. based on the list of technologies/practices that are technically and economically feasible, develop and plan to implement the technologies/practices over the lifetime of the Project. The implementation plan should consider when equipment will need to be replaced and foresee the replacement with less GHG intensive equipment/practices; iv. based on the implementation plan, establish GHG emissions reduction targets at specified intervals; and v. discuss any barriers, challenges and risks associated to the implementation plan and how the Proponent will overcome them.

IAAC-R2-89 advice	Environment and Climate Change Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.2.1 Changes to the atmospheric environment	Federal IR Responses, Round 1, Package 2, Response to IAAC-128	In its response to IAAC-128, the Proponent states that GHG emissions will be managed throughout the life of the Project based on the GHG Management and Monitoring Plan, which will describe the technically and economically feasible mitigation measures for the all Project phases and the GHG emission sources. The GHG mitigation measures that may be included in the GHG Management and Monitoring Plan include electrification of operations and activities that rely on diesel generated power, process optimization, and the possible use of technically and economically feasible renewable energy sources. To inform the assessment of effects of the Project associated with GHG emissions, ECCC requests that a comparison between the Project's GHG emissions profile against other similar open pit mine operations be provided, subject to the availability of adequate data.	a) ECCC recommends that the Proponent compare the anticipated Project-related GHG emissions against other similar open pit mine operations, ideally in terms of emissions intensity (e.g. tonnes of CO_2e per tonne of ore), and compare and discuss the variation in the Project's projected GHG emissions intensity against the emissions intensity of similar high-performing, energy-efficient project types in Canada and internationally. b) ECCC recommends that the Proponent refer to Equation 2 and Section 3.1.2 of the *Strategic Assessment of Climate Change* for guidance on performing an emissions intensity comparison in accordance with ECCC expectations. c) ECCC recommends that the Proponent consider setting emissions intensity targets at specific time intervals for the lifetime of the Project in the GHG Management and Monitoring Plan.
IAAC-R2-89 advice	Environment and Climate Change Canada – Technical Review of Round 1, Package 2 Information Request Responses	1.4 Regulatory framework and the role of government 6.1.1 Atmospheric Environment 6.2.1 Changes to the atmospheric environment	6.4.2 GHG Emissions Volume 5, Appendix A: Lynn Lake Gold Project, Air Quality Impact Assessment Technical Modelling Report Federal IR Responses, Round 1, Package 2, Response to IAAC-128	In its response to IAAC-128, the Proponent states that Canada's international commitment is to reduce GHG emissions by 30% below 2005 levels by 2030. ECCC notes that in April 2021, the Government of Canada announced a new GHG emissions target of 40 to 45% below 2005 levels by 2030 under the Paris Agreement. ECCC recommends that the Proponent consider the Government of Canada's updated GHG emissions targets in the assessment of effects of the Project related to GHGs, including the assessment of the significance of effects.	a) ECCC recommends that the Proponent consider the Government of Canada's updated GHG emissions targets in the assessment of effects of the Project related to GHGs, including the assessment of the significance of effects.

IAAC-R2-91 advice	Environment and Climate Change Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.2.1 Changes to the atmospheric environment 6.4 Mitigation measures 8.0 Follow-up and monitoring programs	6.7.1.1 Changes in air quality 6.9 Follow-up and Monitoring Volume 5, Appendix A: Lynn Lake Gold Project, Air Quality Impact Assessment Federal IR Responses, Round 1, Package 2, Response to IAAC-126	In its response to IAAC-126, the Proponent notes that NO_2 monitoring has not been included in the Air Quality Management Plan. Health Canada and ECCC note concerns with this approach as NO_2 monitoring is required to verify environmental assessment predictions and adjust mitigation strategies, if required. Further, while the mitigation measures proposed by the Proponent in its response to IAAC-126 are commonly used to reduce NO_2 emissions, in the absence of modelling scenarios specifically for these mitigation measures, it is not possible to anticipate how effective they are anticipated to be in improving air quality in the assessment area. Given that exceedances of the 1-hour NO_2 CAAQS are predicted at various receptor locations by the modelling conducted, air quality monitoring for NO_2 must be conducted to determine the accuracy of predictions and to assist with implementing or modifying mitigation measures, as required.	a) ECCC recommends that Station B (Community) be included as a monitoring location in the NO_2 monitoring plan, as it is near several sensitive receptors.
IAAC-R2-91 request	Environment and Climate Change Canada – Technical Review of Round 1, Package 2 Information Request Responses	6.2.1 Changes to the atmospheric environment 8.0 Follow-up and monitoring programs	6.4.1.3 Mitigation - Proposed Air Quality Monitoring and Adaptive Management 6.9 Follow-up and Monitoring Federal IR Responses, Round 1, Package 2, Response to IAAC-126	In the EIS, the Proponent states that monitoring systems will include the installation and operation of a meteorological tower to monitor wind speed and wind direction and particulate matter (i.e. TSP, PM_{10}, $PM_{2.5}$) monitoring equipment. The Proponent also states in the EIS that reports from the ambient air quality monitoring program will be submitted annually to Manitoba Conservation and Climate and shared with interested Indigenous nations and stakeholders. ECCC recommends that the Proponent provide the public with real-time access to the measured contaminant values, specifically when concentrations exceed 1-hour or 24-hour CAAQS at the red air quality management level.	a) ECCC recommends that the Proponent provide the public with real-time access to the measured contaminant values, specifically when concentrations exceed 1-hour or 24-hour CAAQS at the red air quality management level.
IAAC-R2-92 request	Health Canada – Technical Review of Round 1, Package 3 Information Request Responses	2.4 Application of the precautionary approach 6.3.4 Indigenous peoples	14.4.2.1 Project Pathways 18.4.1 Analytical Assessment Techniques Federal IR Responses, Round	In its response to IAAC-12 the Proponent notes that that shift rotations for workers will likely be three weeks on, one week off for construction and either two weeks on, two weeks off or four weeks on, four weeks off for operations. In its response to IAAC-181, the Proponent indicates that a schedule of two weeks on, two weeks off was assumed when the HHRA was completed and provides an updated assessment to consider the inhalation risks associated with a three week on, one week off schedule. This schedule change increases the annual average HQ for $PM_{2.5}$ from	a) Health Canada recommends that the Proponent refer to the following guidance from the Canadian Council of Ministers of the Environment (CCME) with respect to limiting particulate matter emissions: *CCME 2007. Guidance Document on Continuous Improvement and Keeping-Clean-Areas-Clean (KCAC) - Canada-wide Standards for Particulate Matter and Ozone. PN 1389, ISBN 978-1-896997-72-8 PDF.*

			1, Package 1, Response to IAAC-12 Federal IR Responses, Round 1, Package 3, Response to IAAC-181	0.82 to 1.2, which was deemed overly conservative by the Proponent given that these results are based on air quality modelling that does not account for frozen ground on the stockpiles, TMF, or in the open pit that would prevent particulate release from these sources during the winter months. Health Canada notes that $PM_{2.5}$ is a non-threshold pollutant, meaning that human health effects may occur even at low levels below the CAAQS. Given that construction will not be limited to winter months and that CAAQS values for $PM_{2.5}$ should not be construed as "pollute up to" limits, additional mitigation options must be considered for the construction phase to limit $PM_{2.5}$ emissions to the greatest extent possible.	
IAAC-R2-109 request	Mathias Colomb Cree Nation – Technical Review of Round 1, Package 3 Information Request Responses	6.4 Mitigation Measures	11.4 Assessment of Residual Environmental Effects on Vegetation and Wetlands Federal IR Responses, Round 1, Package 3, Response to IAAC-153	In its response to IAAC-154, the Proponent states that the *Federal Policy on Wetland Conservation* (1991) was used to support the assessment of potential effects to wetlands and other biophysical resources, such as wildlife, that use wetlands. The Proponent also notes that the *Manitoba Boreal Wetlands Conservation Codes of Practice* (2020), which includes requirements for avoidance, minimization, and offsets with respect to wetlands, will be utilized to inform mitigation measures. It is unclear how these policies have or will inform specific actions and mitigations proposed to address potential Project effects to wetlands. MCCN also notes concerns regarding the lack of information regarding how the Proponent will meet the goal of "no net loss" of wetlands noted in the *Federal Policy on Wetland Conservation* (1991).	a) MCCN requests that the Proponent clarify how the *Federal Policy on Wetland Conservation* (1991) and the *Manitoba Boreal Wetlands Conservation Codes of Practice* (2020) were used to inform mitigation measures with respect to wetlands. b) MCCN requests that the Proponent describe how they will or plan to meet the goal of "no net loss" of wetlands noted in the *Federal Policy on Wetland Conservation* (1991).
IAAC-R2-121 advice	Environment and Climate Change Canada – Technical Review of Round 1, Package 3 Information Request Responses	6.4 Mitigation measures 6.3.3 Species at Risk	12.2.2.2 Species at Risk and Species of Conservation Concern 12.4.2.4 Project Residual Effect for Change in Habitat 12.5.2.2 Mitigation for Cumulative Effects	In its response to IAAC-167, the Proponent states that the proposed mitigation measures for boreal woodland caribou do not include habitat compensation because there is no evidence to suggest that the Project will affect critical habitat for the species. In the EIS, the Proponent indicates that the Project is located in the Province of Manitoba's woodland caribou KMU and also overlaps with the Manitoba North Range (MB9), defined in the federal *Recovery Strategy for Woodland Caribou (Rangifer tarandus caribou), Boreal Population* (Amended 2020). The EIS also states that the KMU is currently 56% undisturbed habitat for boreal woodland caribou, which is below the Province of Manitoba's target minimum of 65%; most disturbance is a result of forest fires.	a) ECCC recommends that the plan to address Project effects on boreal woodland caribou habitat include measures such as funding research and monitoring directed to the conservation of the MB9/KMU caribou and their range (e.g. Province of Manitoba telemetry studies, aerial surveys, etc.) and/or other related priorities consistent with the Province of Manitoba's direction on caribou management needs.

			Federal IR Responses, Round 1, Package 3, Response to IAAC-167	ECCC notes concerns that, based on habitat condition of the MB9 range, the critical habitat must increase over time to reach a minimum of 65% undisturbed habitat. The recovery strategy identifies a minimum 65% undisturbed habitat in a range as the disturbance management threshold, which provides a measurable probability (60%) for a local population to be self-sustaining. This threshold is considered a minimum threshold because at 65% undisturbed habitat there remains a significant risk (40%) that local populations will not be self-sustaining. Given that caribou habitat disturbance in the MB9 range is approaching the minimum 65% undisturbed habitat threshold, the Province of Manitoba has identified the overlapping (KMU) caribou range as 56% undisturbed, which is below their 65% target, the Province of Manitoba has committed to conserve and increase boreal caribou habitat and reduce or mitigate direct threats, the Project will result in the destruction of 205 hectares of caribou habitat for 60 or more years, and the Proponent is not proposing caribou habitat compensation measures, the Proponent must develop a plan to address Project effects on boreal woodland caribou habitat. ECCC recommends that this plan include measures such as funding research and monitoring directed to the conservation of the MB9/KMU caribou and their range (e.g. Province of Manitoba telemetry studies, aerial surveys, etc.) and/or other related priorities consistent with the Province of Manitoba's direction on caribou management needs.	
IAAC-R2-130 advice	Impact Assessment Agency of Canada	6.1.9 Indigenous peoples 6.3.4 Indigenous peoples	19.2.2.2 Indigenous Socio-Economic Conditions Lynn Lake Gold Project Environmental Impact Statement: Second Supplemental Filing of Indigenous Engagement Activities,	In its response to IAAC-190, the Proponent states that it engages in quarterly meetings with potentially affected harvesters on a Knowledge Holders and Harvesters Committee to provide updates on Project activities and to provide an opportunity for the committee to provide feedback and recommended mitigations to the Proponent. Committee members include trapline holders. It is unclear whether engagement activities were conducted with trapline permit holders to understand the extent of their use of traplines that may be affected by the Project to inform the assessment of potential Project effects to Indigenous socioeconomic conditions or whether these individuals and/or members of Indigenous nations are included as members on the Knowledge Holders and Harvesters Committee.	a) The Agency recommends that the Proponent open membership on the Knowledge Holders and Harvesters Committee to Indigenous nations being engaged as part of the environmental assessment for the Project.

			Appendix B Federal IR Responses, Round 1, Package 3, Response to IAAC-190		
IAAC-R2-141 request	Environment and Climate Change Canada – Technical Review of Round 1, Package 2 Information Request Responses	2.4 Application of the precautionary approach 4.3 Study strategy and methodology 6.6.1 Effects of potential accidents or malfunctions 6.6.2 Effects of the environment on the project	21.4.1.2 Potential Effects of Climate and Climate Change on the Project 22.4.1 Tailings Management Facility Malfunction Federal IR Responses, Round 1, Package 2, Response to IAAC-141	In its response to IAAC-141, the Proponent states that climate change, including extreme precipitation scenarios, will be considered in the next phase of Project design for the TMF, emergency spillway, and contact water collection ditches. ECCC requests that the Proponent provide details during the next design phase on how projected climate change and scenarios (e.g. extreme precipitation events, probable maximum flood, and drought) will be considered or accommodated for in Project design.	a) ECCC requests that the Proponent provide details during the next design phase on how projected climate change and scenarios (e.g. extreme precipitation events, probable maximum flood, and drought) will be considered or accommodated for in Project design.
IAAC-R2-142 request	Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses	6.6.2 Effects of the environment on the Project	5.2.1 Climate and Meteorology 5.2.5.1 Glacial and Post Glacial History 5.2.5.3 Terrain, Surficial Geology, and Permafrost 21.4.1 Climate and Climate Change	In its response to IAAC-138, the Proponent describes how climate change was taken into account as it relates to potential effects of the environment on the Project, such as flooding, precipitation events, etc. MMF notes that they remain concerned regarding potential effects of the Project to water quality as a result of effects of the environment on the Project and request that the Proponent model long-term surface water and groundwater quality using conservative climate change projections. The MMF also request that the Proponent conduct a climate change risk assessment similar to that conducted for the Kam Kotia Mine Site and follow the recommendations made in the *Kam Kotia Mine Site Climate Change Risk Assessment Report* (2020).	a) The MMF requests that the Proponent model long-term surface water and groundwater quality using conservative climate change projections. b) The MMF request that the Proponent conduct a climate change risk assessment for the Project similar to that conducted for the Kam Kotia Mine Site and follow the recommendations made in the *Kam Kotia Mine Site Climate Change Risk Assessment Report* (2020).

			21.4.2 Geological Hazards Federal IR Responses, Round 1, Package 2, Response to IAAC-138		